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About this document

This document describes the process for upgrading DMS-100 Family switches to software vintages of Batch Change Supplement (BCS) 29 through 36 and PCL releases during 1994 on in-service sites. This document set supports both NT40 and SuperNode switches. However, NT40 is not supported beyond BCS36.

"One Night Process" (ONP) software delivery refers to the delivery of a software update in one night. This is done on like processors including NT40 to NT40, SuperNode to SuperNode, and the various applications of SuperNode.

"Hybrid Process" and "2-Night Process" methods, which are based on the ONP, are also included in this document. To understand the differences see the "Introduction" section.

How this document is organized

The information in this document is organized in the following manner.

The Introduction chapter introduces the One Night Process and briefly describes how the various software delivery methods work.

The Site preparation overview chapter provides an overview of Telco/Carrier administrative and site responsibilities. It also explains the use of the Methods of Procedure (MOP) sections in performing a software delivery.

This is followed by the Method of Procedure (or MOP) sections which contain a series of detailed procedure modules needed to prepare for and deliver the new software load. Separate MOPs are included for specific purposes.

Appendix A: Command Summaries contains example console sessions and command syntax used throughout the software delivery process.

Appendix B: Supplementary Procedures contains additional procedures which may be referenced during the software delivery process.
Appendix C: Test Call Scripts provides a generic test plan for the verification of the new software release. The test plan requires the site to fill-in and test the applicable test call types both prior to and following the software delivery.
### Introduction

#### About the software delivery process

One Night Process (ONP) methods may be used with offices going to BCS29 or higher. This document set supports both NT40 and SuperNode switches. However, NT40 is not supported beyond BCS36.

The One Night Process is an automated software delivery process. ONP consists of procedure oriented type enforcing language (PROTEL) programs which have been developed to step the user through the software delivery. This enables the use of high level commands which can be completed in a shorter time than with previous methods.

In many cases the software program, itself, prompts the user to perform the required tasks as they are needed. In this respect the ONP actually controls the delivery of software to the site.

The events of the One Night Process can be divided into two main areas. The first area is the data transfer (using MOVEBCS or TABXFR, depending on the BCS). It includes the applicable table data move functions sometimes known as dump and restore. The second area is BCSUPDATE, which includes all the required application functions needed to activate the new BCS software load.

**ONP description**

Even though not all the activities performed by the Telco or the software delivery engineer can be automated, the use of ONP does allow in many cases a complete software delivery in one night.

Since ONP collapses the overall software delivery time into one night; therefore, for jobs scheduled as ONP normally there are no Data Modification (DMO) restrictions, no frozen image capture, and no journal file maintenance by the site.

**Hybrid process description**

With the Hybrid Process the data transfer (dump and restore) is done ahead-of-time in a captive office using a frozen image supplied by the Telco and
resulting in a data-filled image. With this method the site should initiate an office data freeze (normally by activating JFFREEZE) and must follow journal file rules until the scheduled software delivery. This ensures that critical data is captured in journal files and can be restored on the night of the application.

This method is used when an office is determined to be too large to complete the ONP in one night, or if certain special activities are requested by the operating company. Examples of such activities might include LGC to LTC conversions, 100/200 splits, NPA splits, ISDN sparing, special requests for tuple changes or deletion, and certain office parameter changes.

With BCS32-34 MOVEBCS tools must be used to perform the dump and restore. Starting with BCS35 TABXFR is used for this. When either MOVEBCS or TABXFR is used to perform the dump and restore on a Hybrid job, it will be done in a captive lab and is referred to as a "Local Application."

Two Night process description
The Two Night Process is a combination of the ONP and Hybrid delivery methods. This process provides the data transfer (dump and restore) function on-site with a minimum of twelve hours of journal files as opposed to the minimum of ten days of data freeze (Hybrid process).

This process is used when an office is determined to be too large to complete the delivery in one night and the customer does not wish to freeze data modifications for an extended period (Hybrid process).

Using the MOPs
Perform the procedures in order. The responsibility for performing a step is indicated at the start. Throughout this document "Telco" refers to either a Telephone Company or Carrier; "site" refers to the craftperson or other personnel on-location at the DMS switch; and "App" is the BCS applicator who performs the actual software delivery update. (Occasionally "SDE" is also used referring to a Northern Telecom software delivery engineer.) In the procedures "ACT" or "INACT" refers to the active side or inactive side of the switch, respectively, on which to perform an action.
Site preparation overview

Planning activities

It is imperative that the administrative functions outlined below are reviewed by all offices immediately upon receipt of this document.

Administrative functions

The following administrative functions need to occur for all offices well in advance of the scheduled software delivery.

- In offices equipped with TOPS-OC (Operator Centralization), ensure the host OC office is upgraded prior to the remote OC office.
- For TOPS-MP offices, software upgrades should be performed in the following order:
  1. Patch the HOST OC.
  2. Upgrade the TPC with software compatible with the new BCS load.
  3. Upgrade the HOST OC.
  4. Upgrade the REMOTE OC.
- Since specific Telco policies may exist within various locations, an estimated time of SWACT should be established between Telco and the NT software delivery engineer.

  Note: Northern Telecom recommends that the front-end activity switch (SWACT) be scheduled to take place during low traffic periods to minimize the impact on the office.

- Advanced notification of the software update must be provided by the site to operator services, service control centers, repair bureau, and other special services.
- Advise the data transferal regional coordinator (or equivalent) when the software delivery update will occur.
- The central office foreman will determine if an Operational Measurements (OM) tape is to be shipped and will make the necessary arrangements with the appropriate department.
• Offices equipped with Centralized Automatic Message Accounting (CAMA) or Local Automatic Message Accounting (LAMA) will arrange for the validation of an Automatic Message Accounting (AMA) test tape with the site billing center. Such testing may also include Station Message Detail Accounting (SMDR) or Other Common Carrier (OCC). The site billing center must be informed of this requirement four weeks prior to the software update. This test will be performed during POSTSWACT activities (Appendix C: Test Call Scripts). Ensure that the AMADUMP User’s Guide (NTP 29C-1001-119) is readily available.

• Offices equipped with DPP or BMC actively collecting billing information may arrange with the downstream processing center to poll the billing information during PRESWACT and, optionally, during POSTSWACT.

Warnings
Ensure no hardware changes or retrofits will be in progress during a software delivery. These activities are prohibited during the BCS application. The affected hardware must be made INB (installation busy), and any further software changes must cease. Such activities would include, but are not restricted to, any of the following:

- Network extensions
- Memory extensions
- Peripheral additions or deletions
- MSB7 to LPP cutovers

Special activities
The operating company may request special changes to office data which can best be done during the dump and restore. These requests must be identified ahead-of-time and the job scheduled appropriately as either ONP or Hybrid (Local). Such activities, referred to as Customer Special Request workarounds, can include but are not restricted to, any of the following:

- deleting entries in table LINEATTR or changing certain restricted fields
- LGC to LTC (or LTC to LGC) conversion

*Note:* This request requires Telco to complete a workaround after CC SWACT. In Appendix B refer to Procedure B-4: Converting one PM to another.

- XPM to FXPM upgrade or Inservice FXPM relocation
- down-sizing of a switch involving deleting peripherals
- changing an MDC group to allow the installation of an attendant console
- changing table TRKGRP field SEL SEQ from MIDL or LIDL to ASEQ or DSEQ
• changing number of entries in TOPSDEV and TOPSPOS if certain pseudo-cllis or office parm TOPS_NUM_TRAFFIC_OFFICES has been maxed out
• NPA splits
• increasing amount of ICI codes per ATTCONS in table CUSTCONS
• changing or deleting carrier names in TOPEACAR
• 100/200 splits
• deleting or changing Serving Translation Scheme (STS)
• DCH sparing in ISDN offices
• changing or deleting remote site names

Pre-application site activities
The site personnel responsible for assisting Northern Telecom during the software delivery should become familiar with all sections of this document to ensure designated activities are completed in a timely manner.
• After reviewing this document, the Telco site should select the appropriate MOP in this document. To help in scheduling the needed site preparation work, be sure to consult your confirmation letter or Site Notification Package for an exact schedule of events.
• Turn to the Site preparation procedure section of the appropriate MOP, and begin completing the procedures in that section.
• Site should continue performing all needed procedures up through the Site responsibilities the day of the software delivery procedure section, which completes the pre-application phase.

In addition to this document, the site must also be familiar with the Data Schema Changes in the Batch Change Supplement (BCS) Release Document for the new BCS load.

Returning tapes
After a software delivery is completed the site should return to Northern Telecom for recycling all of the following tapes (if applicable) that were used with the previous BCS:
• New Peripheral load tapes
• ISN Peripheral load tapes
• ISDN load tapes
• BCSTOOLS tapes
• TAS Non-Res tapes
• Super Non-Res tapes
- Commissioning tapes

*Please return the old tapes to:*

For RTP market area please use the UPS Authorized Return Service:

Refer to PINK FLYER included with shipment of preliminary tapes and documents. Use the pre-printed UPS Return Service labels provided. Tape return shipments are charged to Northern Telecom.

NORTHERN TELECOM
Service and Operations-Richardson
S/W Production, Dept: 6755
2150 Lakeside Boulevard
Richardson, Texas
U.S.A. 75082

NORTHERN TELECOM Europe, Ltd.
Meridian HouseConcorde Road
134 Bridge Road
Maidenhead, Berkshire
England SL6 8DJ

NORTHERN TELECOM Canada, Ltd.
S/W Production, Dept: S644
8200 Dixie Road
Brampton, Ontario
Canada L6V 2M6

S/W Update Verification, Dept: S645/7M24 For VO sites for Canadian ONPs and retrofits
1285 Baseline Road
Ottawa, Ontario
Canada K2C 0A7
ONP SNODE MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures before being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1
Take image

1. **Site/ACT** Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup—one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
Procedure 2
Route logs SNODE

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1  Site/ACT
   > LOGUTIL
   > LISTREPS SPECIAL
   
   If specific logs are suppressed use
   > RESUME <log>
   
   If logs have threshold set use
   > THRESHOLD 0 <log>
   where <log> refers to specific CM, MS, SLM, and MM logs.

2  > LISTROUTE DEVICE <printer>
   
   If critical logs are not routed use
   > ADDREP <printer> <log>
   > STOPDEV <printer>
   
   Verify only critical logs are enabled on the device and are correctly routed.

3  > STARTDEV <printer>
   > LEAVE
Procedure 3
Processor tests SNOE

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

**Note:** Perform the following front-end testing during low traffic periods.

1 **Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.

2 **ACT** Match the memory from the Memory level of the MAP.
   
   > MAPCI;MTC;CM;MEMORY
   > MATCH ALL
   > QUIT

3 **INACT** From the inactive RTIF (remote terminal interface), jam the inactive CPU.
   
   RTIF> \JAM
   RTIF> YES  *(for confirmation)*

4 **ACT** Drop SYNC from the CM level of the MAP.
   
   > DPSYNC
   > YES  *(for confirmation)*

5 **INACT** Wait for the inactive CPU to return to flashing A1.

6 Test the CM stability with each of the following restarts on ONLY the *inactive* RTIF.

   a. **INACT** RTIF> \RESTART WARM
      
      RTIF> YES  *(for confirmation)*
      *Wait for a flashing A1.*

   b. **INACT** RTIF> \RESTART COLD
      
      RTIF> YES  *(for confirmation)*
      *Wait for a flashing A1.*

   c. **INACT** RTIF> \RESTART RELOAD
      
      RTIF> YES  *(for confirmation)*
      *Wait for a flashing A1.*

   -continued-
Procedure 3
Processor tests SNODE (continued)

7 ACT Test the memory cards from the Memory level of the MAP.
   > MEMORY;TST ALL
   > QUIT

8 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

9 ACT SYNC the CPUs from the CM level of the MAP.
   > SYNC

10 After receiving the "Synchronization Successful" message, verify no faults are displayed at the CM or Memory levels of the MAP (shows all dots and no Xs or fs).

11 INACT At the inactive RTIF release the jam.
    RTIF> \RELEASE JAM

12 ACT Switch activity of the CPUs from the CM level.
   > SWACT

13 INACT Repeat steps 1 through 12 on the newly-inactive CPU.

14 Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

15 ACT Match the memory from the Memory level of the MAP.
   > MEMORY;MATCH ALL
   > QUIT

16 ACT Perform a REX test long from the CM level.
   > REXTST LONG
   > YES {for confirmation}
   CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states will change. The SuperNode will be out of SYNC for at least 60 minutes.

-continued-
Procedure 3  
Processor tests SNOKE (continued)

17 ACT After completion of the test, verify the test results:
   > QUERYCM REXRESULT
   *The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 16 and 17.*

18 Repeat (with the other CPU active) steps 16 and 17.

19 ACT Perform an image test from the CMMNT level of the MAP.
   > CMMNT
   > IMAGE
   > QUIT

20 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

Note: If on BCS 26-28 and patch BKR24C<xx> is present and activated (PATCHEDIT shows it ON), then skip over the rest of this procedure and go to the next procedure.

21 ACT Busy the Slave MS from the MS level of the MAP.
   > MS;BSY <x>
   *where <x> refers to the Slave MS (look under Clock field).*

22 ACT Test the MS from the MS level.
   > TST <x>

23 After completion of the test the results of the test are displayed. If the test failed, resolve any problems and repeat the test.

24 ACT Return the busied MS to service.
   > RTS <x>

25 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MS should be inservice.

-continued-
Procedure 3
Processor tests SNODE (continued)

26  **ACT**  Switch MS clock mastership.
    >  **SWMAST**

27  Test the other MS by repeating steps 21 through 26.

28  **ACT**  >  **QUIT ALL**
Procedure 4  
Responsibilities before pre-application checks SN

1 Site Site is encouraged to verify all new software load and patch tapes received in a shipment.

   Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

   a. INSERT (or MOUNT) and LIST each tape.

b. From the tape header or first file verify the header matches the tape label and the tape is correct for the to_BCS. For a BCS IMAGE tape also verify the image filename is correct.  
   *Verify a tape is good by listing the tape to the end without any errors.*

c. If any problems are found notify your NT customer service representative immediately.

d. Keep the tapes on-site for use during the scheduled software update.

2 Site Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

   Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

---

**CAUTION**

For MS preloading it is recommended that the MS be loaded using the new BCS IMAGE tape, and NOT the PM load tape. The MS load provided on the IMAGE tape contains a more current patch set.

Richardson customers may require loading of the MS prior to the arrival of the IMAGE tape. Contact Richardson BCS Applications for MS loading procedures.

If problems are encountered during loading, contact the appropriate TAS group for assistance.

The recommended procedure for MS preloading is found in section *Updating loads in the Message Switch* of this MOP. Wait to upgrade the MS until the new BCS IMAGE tape arrives on site.

3 Site Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the *Peripheral Software Release Document* (*Application Procedures* section).

-continued-
Procedure 4
Responsibilities before pre-application checks SN (continued)

Peripheral modules include all PMs, XPMs, DPP, MPC, and the various application processors associated with a DMS-SCP/STP/SSP such as the ENET, LPP (including EIUs, LIUs and LIMs) and the FP.

Note: If a cross-reference file (BCSxxXPM$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

4 Site Monitor front-end stability watching SuperNode CM, MM, and MS logs through the day of the software delivery.
Procedure 5
Save site files

1  Site/ACT  Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.  
   Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-DO NOT ERASE!
Procedure 6
Peripheral verification SNODE

1 **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the Peripheral Software Release Document.)

**Note:** Procedures for preloading the MSs are in section *Updating loads in the Message Switch* of this MOP.
Procedure 7
Table ACDGRP

1 App/ACT Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
   a. > OMSHOW ACDGRP ACTIVE
   b. Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
   c. If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
   d. Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
Procedure 8
Fill in Test Call Scripts

1 Site Fill in and test the Test Call Scripts in Appendix C.
   This is to provide a thorough test plan exercise for testing the new BCS load.
   You will be asked to make your test calls after switching activity to the new BCS.
Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

Procedure 2 is for offices on BCS33 and lower.

CAUTION
Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1
Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in Appendix A. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

1 Site/ACT Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

- To use the "FROM" and "TO" options see substep a below.
- To use the "ALL" option see substep b below.

Warning: If a device is not specified when issuing the TABAUDIT ALL command, only a SUMMARY$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-
Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted. To stop
TABAUDIT at anytime, use break HX. When restarting TABAUDIT,
determine the last table verified by reviewing the "SUMMARY$FILE " file in
SFDEV. The last table verified can also be determined by listing table DART
and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently
verified table.

Some tables will output information or warning messages as though they
are being changed. However, no changes will be made since TABAUDIT
does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the
following message is output for every tuple checked:
"A restart is needed for this change to take effect. Check the NTP as to
which is appropriate warm or cold."

Or for example, when STDPRTCT is checked, the additional output is:
"Warning: Changes in table STDPRTCT may alter office billing."

a. Until the amount of time required to verify all tables is known for a
particular site it is recommended to perform the verification on a range
of tables using the "FROM" and "TO" options and information found in
table DART.

> TABAUDIT FROM <start table> [TO <end table>] <device name>

For example, to obtain table names in increments of 100, enter Table
DART, list, go down 100 and list two. Record or print the table names.
Continue this until the end of table DART is reached.

> TABLE DART; LIST (output will be the "FROM" table name)
> DOWN 100; LIST 2 (output will be the "TO" table name of the
first 100 and the "FROM" table name for the second 100)
> DOWN 100; LIST 2 (repeat until the end of table is reached)
> LEAVE

Perform TABAUDIT on the first 100 tables as shown in the following
example:

> TABAUDIT FROM DART TO BGDATA <device name>

When complete, perform TABAUDIT on the next 100. Repeat until all
tables have been verified.

b. Use the TABAUDIT ALL command to perform the data verification
function on all tables listed in table DART using just one command.

> TABAUDIT ALL <device name>

-continued-
Procedure 1
Run TABAUDIT (continued)

2 Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

> TABAUDIT ONLY <table name> <device name>
Continue until all tables have been corrected.

3 When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
Procedure 2
Run CHECKTAB (BCS33 and lower)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

For offices on BCS 33 and lower that are scheduled for a complete One Night Process (not Hybrid), please refer to your Site Notification Package (or contact the NT Customer Service Representative) for the appropriate procedure concerning the use of CHECKTAB.
Updating loads in the Message Switch

Begin this section as soon as the new BCS IMAGE tape arrives on site (normally two to three days before the software delivery).

Procedure 1 is to copy the new CM and MS loads onto a SLM disk. This is for all offices, and is required in order to load the MS and to enable loading the mate CM from SLM disk.

Procedure 2 is only for offices on BCS34 and higher. Procedure 2 is to preload the MSs with the new MS load. (For offices on BCS33 and lower, the MSs will be loaded by the BCS Applicator on the night of the software delivery.)

Note: When scheduled for a BCS-n to BCS-n application (for example, BCS34 to BCS34) Telco may choose to NOT preload MSs as long as the present MS load is patched current.

Procedure 1

Restore CM and MS loads

Restore (that is, copy) the new CM and MS loads onto a SLM disk.

1. **Site/ACT** List the SLM tape cartridge with the new BCS IMAGE files (both _MS and _CM loads).
   a. Place the cartridge into the SLM tape drive on the same side as the inactive CPU.
   b. > DISKUT
   c. > IT <tape_device>
      Inserts the tape into the inactive-side SLM, for example:
      IT S00T or IT S01T
   d. > LF <tape_device>
      for example, LF S00T or LF S01T. May take up to one hour to list.
   e. Verify the MS and CM load files are the correct ones to use.
      To help understand the image filenames, you may use CI command
      DISPMS <filename> which displays the image header information.
      (Refer to Appx. A for more details of this command.)

-continued-
Procedure 1

Restore CM and MS loads (continued)

2  Select a SLM disk volume onto which to restore the new BCS IMAGE.

•  The volume selected should not be on the same SLM with active DIRP billing.

•  The volume should not be the same volume normally used to take images. (This is so that AUTOIMAGE won't fail for lack of disk space.)

If there is a problem completing this step, please contact the next level of support.

3  Restore both the CM load and the appropriate MS load onto the selected SLM disk volume.

a.  > RE FILE <disk_volume><tape_device><filename_CM>
  Restores the CM load onto the SLM, for example:
  RE FILE S01DIMG0 S01T LD101015ND36_CM

b.  > RE FILE <disk_volume><tape_device><filename_MS>
  Restores the MS load onto the SLM, for example:
  RE FILE S01DIMG0 S01T LD101015MS36CR_MS

c.  > ET <tape_device>
  Ejects the SLM tape, for example:
  ET S01T

d.  > QUIT
**Procedure 2**

**Preload both MSs**

As of BCS34, backward-compatibility is supported in the Message Switch (MS). This means, if the office is on BCS34 or higher, then it is possible to PRELOAD both MSs with the new MS load before the CM is upgraded to the new BCS.

---

**CAUTION**

**Do not attempt to upgrade the Message Switch at this time unless the office is currently on BCS34 or higher.**

Failure to heed this caution could result in degradation of the switch since the MS load is not backward compatible until the office is on BCS34.

---

**CAUTION**

If the office is on BCS34 or higher, both MSs must be loaded with the MS load provided on the BCS IMAGE tape prior to starting the BCS application. The following procedure assumes the proper MS load was successfully copied to a SLM disk volume.

---

**Note:** The BCS IMAGE provided is patched current. If any new patches are required, these will be downloaded to SFDEV and applied on the night of the BCS application.

1. **Site/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM loads) were previously restored (copied).
   
   a. > DISKUT
      > LF SOOD<volume>  
      where <volume> is the SLM disk volume with the BCS IMAGE.
   
   b. Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new BCS IMAGE tape.
   
   To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for more details of this command.)

2. At the MS level of the MAP, determine which MS contains the SLAVE clock. (Look for "slave" under the CLOCK field.)
   
   > MAPCI;MTG;MS

---

-continued-
Procedure 2
Preload both MSs (continued)

3  >  BSY <MS#>  {the MS with the slave clock}

4  >  LOADMS <MS#>  <filename>
   where <filename> is the name of the _MS load file listed above in step 1.
   >  YES  {for confirmation}

5  When prompted, perform an out-of-service test on the MS just loaded.
   >  TST <MS#>  {on the OOS MS}
   Ensure the test passes with no faults. Determine the cause for any failure, fix
   the fault, and repeat the test.

   CAUTION
   Do not proceed unless NO faults are reported.
   Replace cards if necessary and repeat the test. Contact site supervisor
   if the test fails repeatedly.

6  >  RTS <MS#>  {not OOBAND!}

7  Wait 5 minutes to ensure the clocks are stable and to allow the hardware
   audit to run. Both MSs should be inservice.
   
   Note: The MS load on the CM image tape is patched as current as possible.
   Copies of all MS patches that were applied to this load will be in mate
   SFDEV when the CM image is loaded for the BCS application. Once the CM
   load is made active (by the SWACT) the MATCHALL MS (PATCHER) will
   function as intended.

8  Switch MS clock mastership.
   >  SWMAST

9  Monitor MS logs for 10 minutes to ensure stability.

10 Repeat steps 3 through 9 to update the load in the other MS.

11 >  QUIT MAPCI
Site responsibilities the day of the software delivery

The following steps must be completed by site personnel before the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1
Day zero checklist

1. **Site** Verify that all problems identified from performing table data checks have all been resolved.

2. Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

3. Verify an image has been taken in the last 24 hours and backed to tape.

4. Ensure you have undertaken your critical test call plan and verified it. (See Appendix C: Test Call Scripts.)

5. Verify SFDEV has been cleared of all Telco/site-created files.

6. Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7. **LIU7 image with feature AQ1102**

   In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs. This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

   **Note:** If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.
Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

1. **Site/ACT** All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
   - *From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.*
   - *To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.*
Procedure 3
Run DATADUMP

1  Site/ACT  Run DATADUMP to output important switch information for future reference.

a.  > LOGUTIL;STOPDEV <printer>
   where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
   > LEAVE

b.  > RECORD START ONTO <printer>

c.  > BCSUPDATE;DATADUMP  {for BCS33 and higher}
   When DATADUMP is completed:
   > QUIT

d.  > DRCI;RUNEXEC DATA_DUMP  {for BCS32 and lower}
   When DATADUMP is completed:
   > QUIT

e.  > RECORD STOP ONTO <printer>
### Procedure 4
**FX voice and data**

1. **Site** Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

2. Ensure at least two dialup ports are operational—one on each IOC. These should have COMCLASS of ALL.

3. Verify user names to be used during the software update have PRIVCLAS of ALL.
Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a One Night Process software delivery.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the new BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

*Note:* Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>.

**CAUTION**

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.
**Procedure 1**

**Interrupt/ABORT process**

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

1. If the MOVEBCS process must be halted or interrupted, use the MOVEBCS HALT option. Refer to "Interrupt MOVEBCS" in *Appendix A* (page A-19).

2. If the TABXFR process must be halted or interrupted, use the HALT option. Refer to "Interrupt TABXFR" in *Appendix A* (page A-24).

3. It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in *Appendix A* (page A-29).

4. If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 3-119).

5. If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 3-145).
Procedure 2
Remote login

1 App/ACT  Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2 App/ACT  Login the users and if applicable, set LOGINCONTROL.
   a.  
   b.  ?LOGIN
       Enter username and password  
       > <username> <password>  
       or > <username>  
       > <password>  
       where username and password can both be found on the Pre-application report.
   c.  For BCS33 and higher enter:
       > BCSUPDATE;DEVICE  
       > QUIT
   d.  For BCS32 and lower enter:
       > LOGUTIL;STOP;STOP  
       > LEAVE
       > LOGINCONTROL <device> QUERY  
   e.  Verify Open Condition Logout is N. If not, retain the original status and enter:
       > LOGINCONTROL <device> OPENFORCEOUT FALSE
       Verify Max Idle Time is Forever. If not, retain original status and enter:
       > LOGINCONTROL <device> MAXIDLETIME FOREVER
       > LOGINCONTROL <device> DISABLEON REMOVE
       <forceout_conditions>  
   f.  Repeat this entire step on the other terminal device.
Procedure 3
Check logs SNODE

1  **App/ACT**  For BCS33 and higher check logs to verify processor stability.
   > BCSUPDATE; LOGCHECK
   > QUIT
   *Do not continue until all logs have been explained.*

2  **App/ACT**  For BCS32 and lower check logs to verify processor stability.
   > LOGUTIL
   > OPEN <log_buffer>; WHILE (BACK) ()
   *where <log_buffer> refers to CM, MS, SLM and MM logs.*
   > LEAVE
   > TRAPINFO
   *Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.*
Procedure 4
Stop journal file

1  App/ACT  ROTATE and STOP the Journal File recording.
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b.  > CLOSE JF ACTIVE
       QUERY again to verify rotation.
   c.  > JF STOP
       Verify stopped.
   d.  > QUIT MAPCI
**Procedure 5**  
**Ensure MSs loaded**

As of BCS34, backward-compatibility is supported in the Message Switch. This means, if the office is on BCS34 or higher, then it is possible to PRELOAD both MSs with the new MS load before the CM is upgraded to the new BCS.

1. **App/ACT** If the office is on BCS34 or higher, then ensure both MSs are loaded with the new MS load that was provided on the new BCS IMAGE tape.
Procedure 6
Drop sync SNODE

1 App/ACT  Type:
   > MAPCI; MTC; CM

2 App/ACT  Ensure the CM you want to load with the new BCS load is inactive and the corresponding MS and SLM components are used. For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.
   a.  Determine where the new BCS image resides (normally SLM disk 0).
   b.  If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
   c.  If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.

3 Site/INACT  From the inactive RTIF enter:
   RTIF> \JAM
   RTIF> YES  (for confirmation)

4 App/ACT
   > DPSYNC  {from CM level}
   > YES  {if prompted to disable AUTO PATCHING}
   > YES  {to confirm DPSYNC}

5 Site/INACT  Site must tell the engineer when the inactive CM is flashing A1.

6 App/ACT
   > QUIT MAPCI
Procedure 7
BULLETINS before LOADMATE

1  App  Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
Procedure 8
Loadmate SNODE

1  App/ACT  List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM load files) were previously restored (copied).
   a.  > DISKUT
       > LF SOOD<volume>           {or SO1D<volume>}
       where <volume> is the SLM disk volume with the BCS IMAGE.
   b.  Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.
       To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for details of this command.)

2  App/ACT  If the _CM image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

   CAUTION
   The _MS file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done). However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the _MS file to SLM disk.

   Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.
   > LDMATE DIRECT TAPE 2          {loads 2nd file on the tape}
Procedure 8
Loadmate SNODE (continued)

3 App/ACT If BCS28 and higher, loadmate using the SLM disk as follows.
   a. Ensure no DIRP files are opened on the SLM disk with the image.
      > DIRP;QUERY <subsystem> ALL
         where <subsystem> is AMA, OM, JF, or DLOG.
       If any opened files, close the files (or rotate the information to the active side).
      
      **CAUTION**
      LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.
      "DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."
      
      b. > LDMATE DIRECT DISK <filename_CM>
         If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.
         > LDMATE VIAMS <filename_CM>

4 App/ACT If BCS27 loadmate using the SLM disk as follows.
   a. Activate patch SSY05C27.
      > PATCHEDIT SSY05C27 ON

   b. > LDMATE <filename_CM>

5 App/ACT If BCS26 loadmate using the SLM disk as follows.
   > LDMATE <filename_CM>

6 Site and App/INACT Wait for loadmate to complete and the inactive processor to flash A1.
   While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).
Procedure 9
Login inactive after Loadmate SNODE

Login on the inactive processor after loadmate is complete.

1  App/ACT  Type:
   > MATELINK RTS

2  Allow initialization on the inactive side (flashing A1).

3  LOGOUT of the active side if logged in on the terminal labeled INACT.

4  > MATEIO
   > MATELOG <device>
   where <device> is the name of the terminal labeled INACT.

5  App/INACT
   Enter username and password  {mate-side response}
   Mate> OPERATOR OPERATOR
   or
   Enter username
   Mate> OPERATOR
   Enter password
   Mate> OPERATOR
Procedure 10
Set date and header message

1  **App/INACT**  Set the current date and site header message on the mate side.

   Mate> SETDATE \texttt{dd mm yy} \hspace{1cm} \textit{(set today's date)}

   Mate> SETLOGMSG 'text'

   where \texttt{text} becomes the office header on the new software load. Using the old header as the model, change the **Office Order** (COEO), **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

   **Note:** The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the Parmmail.

   **Example:**

   \texttt{94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***}
Procedure 11
Download application files (RTP)

1  App/ACT  Download special application files to active side SFDEV.
If to_BCS 37 and higher the Applicator Package will contain the following files:
   • PARMCHGS
     Download PARMCHGS renaming it as “FEATDATA.”
     Print this file for reference information.
   • SITEINFO
     Download SITEINFO. This file will be used to update the Inform list
     (next step) for the new software load.

   Note: PARMMAIL is also in the Applicator Package for reference.

2  Matecopy the SITEINFO file to the inactive, and read (execute) it.
   Note: To allow further calculation of patches for a given office, the site_key
   must be inserted into the inform list to identify that inform list to patadm. This
   is done by applying special patches which will correct the patch inform list.
   a. ACT
      Matecopy SITEINFO to inactive side SFDEV.
   b. INACT
      Read SITEINFO (to execute) on the inactive side.
      Note: When read, SITEINFO will enter patcher, create the “dummy
      patches” in sfdev, apply the patches to update the inform list, and
      erase the patches.
Procedure 12  
Check logs inactive SNODE

1  App/INACT  For to_BCS 33 and higher check mate logs to verify processor stability.

   Mate> BCSUPDATE;LOGCHECK  
   Mate> QUIT  
   *Do not continue until all logs have been explained.*

2  App/INACT  For to_BCS 32 and lower check mate CM logs.

   Mate> LOGUTIL;OPEN CM;WHILE(BACK)()  
   Mate> LEAVE  
   Mate> TRAPINFO
   *Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.*

3  App/INACT

   Mate> TRAPINFO CLEAR
Procedure 13
Mate-side memory check

1  **App/ACT**  If from_BCS 32 and higher, perform a mate-side memory check.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If this test fails do not continue-immediately notify the site supervisor.</strong></td>
</tr>
<tr>
<td>The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.</td>
</tr>
</tbody>
</table>

**Note:** Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

a.  > BCSUPDATE;RUNSTEP MATE_MEM_CHECK  
   **Note:** This displays on the active side the result of the test, “completed” or “not completed.” If it is not completed an error message is also printed on the active side.

b.  Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to “MATE_MEM_CHECK failure” in Appendix B.

c.  > QUIT
Procedure 14
Retain PARM values

1  **App**  Obtain a list of the following office parameters for reference.

> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
Procedure 15
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

*Note:* Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay—answer YES to the prompt.

1. **App/INACT** If coming from BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

2. **ACT** On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

   > TABLE PADNDEV; LIST ALL

   *If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.*

   *Note:* MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

   1. In procedure "MOVEBCS/TABXFR setup"—Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.

   2. In procedure "MOVEBCS/TABXFR completed"—Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

3. > BCSUPDATE; RUNSTEP VERIFY_DSLIMIT

4. > RESET

5. > RUNSTEP DISABLE_AUTOIMAGE

   *Note:* This step is not valid if the AUTOIMAGE feature is not available.

6. > RUNSTEP SET_OFFICE_TUPLES

7. > RUNSTEP SEND_PATCHES

8. > RUNSTEP APPLY_PATCHES

9. > QUIT

-continued-
Procedure 15
Patch inactive (continued)

10 Site and App/INACT Print the PATCH$FILE and review applied (mate) patches.

   Mate> LISTSF ALL;PRINT PATCH$FILE
   If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.

11 Mate> TRAPINFO
   If trap occurred, do not continue until the trap is explained and action taken to correct the error.
Procedure 16
Activate patches inactive

1  **App/ACT** Determine which ACT patches are activated in the old load.
   a. > PATCHEDIT
      
      This command shows a list of 'ACT' patches and which ones are activated (turned on).
   b. Review the patch list to determine which patches are currently activated (ON) on the active side.
      Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).

2  **Site and App/INACT** As needed activate ACT patches on the inactive side.
   a. Mate> PATCHEDIT
   b. Compare the mate-side patch list with active-side list obtained above.
      Decide with the site if any patches need to be activated (set "ON") at this time.
      Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.
   c. Mate> PATCHEDIT <patch> ON
      This activates the patch.
   d. Repeat this command for each patch to be activated.
   e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
   f. Mate> PATCHEDIT <patch> NA
      This sets the patch to "NA" state.
   g. Repeat this command for each patch to be set to "NA."
Procedure 17
Restart inactive for patches

1  **App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

   **Note:** Sequence of restarts is not important.

   **INACT**
   Mate> RESTART <**restart type**>
   Mate> YES *(for confirmation)*

2  Allow initialization on the inactive side (flashing A1).

3  Login on the inactive side.

4  Repeat above steps for each type of restart required.
Procedure 18
IPL modules

1 App/ACT If from BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

   a. > QUERY <module>
      where <module> is:
      NODESTAT STCSTAT IPMLSTAT
      CARRSTAT JCTRSTAT DCHSTAT
      Repeat QUERY for each module listed.

      Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

   b. If any module is loaded, as indicated by the QUERY command, enter the following:
      > RUN <xxxx> IPL
      where <xxxx> is a loaded module.

      Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.
Procedure 19
SWCTCHK verification

1  App/ACT  If from BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see Pre-application Report). If not done earlier complete this step.

a.  Ensure patch EWW08 is applied on the active (from-side) load.

b.  > SWCTCHK
Procedure 20
MASSTC

1  **App**  Check status in MASSTC level (TOPS office only).
   a.  **ACT**
       > MASSTC
       > STATUS
   b.  If the status is INITIAL, then no action is needed.
   c.  **INACT**  If the status is DUPLICATED, then with Telco consent on the
         MATE side enter:
         Mate> ENABLE
         or, if data is obsolete
         Mate> SCRAP
   d.  **ACT**  If the status is SWITCHED, then with Telco consent on the
             ACTIVE side enter:
             > PERM
Procedure 21
BULLETINS before data transfer

1  App  Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the data transfer (MOVEBCS/TABXFR).
MOVEBCS procedure

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 34 and lower, the MOVEBCS is used to perform the data transfer portion of a BCS application.

Procedure 1
Table DART

1 App For to_BCS 30 and 31 only, prepare table DART as follows.
   a. ACT > MATECOPY DRNOW
   b. INACT Mate> LISTSF ALL
      Mate> READ DRNOW
      Mate> ERASESF DRNOW
      Mate> DARTEDIT
      Mate> PRINTDART LONG {optional list for reference}
      Mate> QUIT
      Note: For additional DARTEDIT command syntax refer to MOVEBCS summary in Appendix A.

2 App For to_BCS 29 only, prepare table DART as follows.
   a. ACT > MATECOPY DRNOW
   b. INACT Mate> RESTTYPE EXTERNAL
      Mate> LISTSF ALL
      Mate> READ DRNOW
      Mate> ERASESF DRNOW
CAUTION

Before beginning read all bulletins concerning changes to office parameters (PARMs).

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the Parmmail (or Parm Variance Report).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

1 Office parameters are already set in the undatafilled BCS image.
   a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the Parm Variance Report.
   b. Normally, if any parms need to be corrected, make the required changes before beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

Note: On the mate side use commands "MOVEBCS STOP BEFORE <table name>" and "MOVEBCS STOP AFTER <table name>" to cause the MOVEBCS process to stop at specified tables. The "STOP BEFORE" option is safer because it does not involve pre- or post-activities which may be attached to a particular table. (For example, "MOVEBCS STOP AFTER NNASST" is not possible since the post-activity for NNASST may include a restart.)

When using these options remember to use "STOP CLEAR BEFORE <table name>" or "STOP CLEAR AFTER <table name>" before continuing MOVEBCS. This clears the previous stop points.
Procedure 3
Stop after CLLIMTCE$DIAGDATA

1. App/INACT For from_BCS 26 and to_BCS 29 type:

   Mate> MOVEBCS STOP AFTER CLLIMTCE$DIAGDATA
Procedure 4
MOVEBCS setup

1. **App** Set up TRACECI to monitor MOVEBCS summary and error messages on the primary terminal (ACT).
   
   a. **ACT** > TRACECI DEVICE `<device_name>`
      where `<device_name>` is the name of the device labeled INACT.
      Response on the inactive side:
      This device is selected for TRACEing
   
   b. **INACT** Mate> TRACECI TEST 'THIS IS A TEST'
      "THIS IS A TEST" is output on the device selected above.

2. **App/INACT** Set MOVEBCS to stop at each error with a limit of not more than 100.
   
   a. Mate> MOVEBCS LIMIT 25   *(limit of 25 is recommended)*
   
   b. Mate> MOVEBCS STOPIF 1
Procedure 5
Start MOVEBCS

1. **App** Start the data transfer using MOVEBCS as follows.

   **CAUTION**
   MOVEBCS will perform a mate-side memory check. If this test fails *do not continue* - immediately notify the site supervisor.
   The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

   a. **INACT** Mate> MOVEBCS;LOGOUT
      
      *MOVEBCS will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, MOVEBCS will automatically start transferring the next table listed in table DART.*

   b. Certain tables will fail with the message "This table is Recursive..." *No action is required other than to restart MOVEBCS.*

      **Note:** This message means the table will be re-datafilled automatically by MOVEBCS (since data for the table depends upon other tables being datafilled first). Recursive tables may include: XLANAME, ESAPXLA, NCOS, THOUGRP, IBNRTE, OFRT, FNMAP, and others.

   c. **ACT** If any table fails to restore properly on the mate side, MOVEBCS will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

      For any table in error investigate the problem by entering on the ACTIVE side:

      ```
      > DELTA <table> NOFILE  \{compares old and new tuples\}
      ```

      or

      ```
      > DELTA <table> SUB <subtable> NOFILE
      ```

   d. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first verify a flashing A1 on the inactive processor; then login on the mate side and make the needed changes.

   e. **INACT** Each time you restart the MOVEBCS, also LOGOUT on the mate side (as above).

      Mate> MOVEBCS;LOGOUT

      **Note:** Avoid unnecessary or prolonged logged-in sessions on the mate side while MOVEBCS is running.
Procedure 6  
Copy patches  

1  Site/ACT  While the data transfer is running and as time allows, on the active  
side copy patches in store file to the new patch tape (or to disk) and XPM  
patches to disk.  

Note: Following are steps to copy individual patches to tape or disk. You  
may instead create a file to automatically copy these patches.  

a.  Install the new patch tape on a tape drive (x) with a write enable ring.  
b.  > LISTSF ALL  
c.  > MOUNT <x>; LIST T<x>  
d.  > COPY <sfdev_patch> T<x>  
   where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.  
e.  Repeat COPY for each patch in SFDEV.  
f.  > DEMOUNT T<x>  
g.  > LISTSF ALL  
h.  List the disk volume where the XPM loads (and patches) normally  
   reside.  
i.  > COPY <xpm_patch> <pmload_disk>  
   where <xpm_patch> refers to XPM patches in SFDEV (format  
aaannXyy$PATCH: aaa is alphabetic, nn is numeric, and yy is the  
BCS number), and where <pmload_disk> is the XPM disk volume  
   listed above. Do not perform if there are no XPM patches in SFDEV, if  
   there are no XPMs or if there are no disks.  
j.  Repeat COPY for each XPM patch in SFDEV.
Procedure 7
Table CLLIMTCE$DIAGDATA

1. **App/INACT**  For from_BCS 26 and to_BCS 29: if a stop point was set previously, expect MOVEBCS to stop after table CLLIMTCE subtable DIAGDATA is restored to allow the following workaround to be done.

   a. After MOVEBCS stops, login on the inactive (mate) side and enter:
      
      Mate> FIXDIAG

   b. CLEAR the stop point that was set AFTER CLLIMTCE$DIAGDATA:
      
      Mate> MOVEBCS STOP CLEAR AFTER CLLIMTCE$DIAGDATA

   c. Restart MOVEBCS.
      
      Mate> MOVEBCS;LOGOUT
Procedure 8
MOVEBCS completed

1 MOVEBCS is finished when you receive the following message.
   INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored
   during the MOVEBCS. (See procedure "Patch inactive.")

2 ACT and INACT On BOTH the active and inactive sides, change table
   PADNDEV back the way it was before patching the mate side.
Procedure 9
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  \(\text{mate-side response}\)
       Mate> OPERATOR OPERATOR
       or
       Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 10
Print reports

1  App  Generate a final data transfer report. This will include both the table exception report and the NTX package delta.

   a.  ACT  Only if RECORD START was not done previously, type the following.
          > RECORD START FROM <terminal_id> ONTO <printer>
          where <terminal_id> is the terminal device labeled INACT, and
          <printer> refers to a printer used to collect the data transfer
          information.

   b.  INACT
       Mate> MOVEBCS REPORT

   c.  ACT  Only if RECORD START was done in substep a (above), type the following.
          > RECORD STOP FROM <terminal_id> ONTO <printer>
          where <terminal_id> and <printer> are the devices used above.
Procedure 11
Trapinfo inactive

1  App/INACT  Type:
     Mate> TRAPINFO
     *If a trap has occurred, do not continue until the trap is explained.*
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**TABXFR procedure**

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from BCS 35 and higher, the TABXFR increment is used to perform the data transfer portion of a BCS application.

**Procedure 1**

**Office PARMs with TABXFR**

---

**CAUTION**

*Before beginning read all bulletins concerning changes to office parameters (PARMs).*

Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

---

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the Parmmail (or Parm Variance Report).

- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

*Note:* A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

1. **If to BCS36 and lower**-Office parameters are already set in the undatafilled BCS image.
   
   a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the Parm Variance Report.

   b. Normally, if any parms need to be corrected, make the required changes before beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

---

-continued-
Procedure 1
Office PARMs with TABXFR (continued)

2 If to_BCS37/CSP02 and higher- With the introduction of CSP02 office parameters will be set as part of the TABXFR.
   a. Compare (delta) the parm changes to be applied by the FEATDATA file with the ordered parameters indicated in the Parmmail.
      
      Note: PARMMAIL and PARMCHGS files are in the Applicator Package. All new and changed parm values as indicated in PARMMAIL are also listed in PARMCHGS (and FEATDATA).
   
   b. If any parms need to be changed, edit the FEATDATA file to reflect the corrected parm values. TABXFR will use this file to set the parms.
   
   c. App/ACT Once the FEATDATA file is verified correct, MATECOPY the file to inactive (mate) side SFDEV. This file will be processed after the parm tables restore.
Procedure 2
TABXFR setup

1  App  Set up TRACECI to monitor TABXFR summary and error messages on the primary terminal (ACT).
   a.  ACT > TRACECI DEVICE <device_name>
       where <device_name> is the name of the device labeled INACT.
       Response on the inactive side:
       This device is selected for TRACEing
   b.  INACT Mate> TRACECI TEST 'THIS IS A TEST'
       "THIS IS A TEST" is output on the device selected above.

2  App/INACT  Set up and initialize the TABXFR platform used to perform the table transfers.
   a.  Mate> TABXFR
       TABXFR:   {system response}
   b.  Mate> STOPIF 1
       Table transfer will stop after this number of failures.
   c.  Mate> LIMIT 25
       Limits the number of failures allowed on a table.
   d.  Mate> SETUP STANDARD
       TABXFR type set to: STANDARD.   {system response}

Note: The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.
Procedure 3
Start TABXFR

1. **App** Start the data transfer using TABXFR as follows.

   **CAUTION**
   
   TABXFR will perform a mate-side memory check. If this test fails do not continue - immediately notify the site supervisor. The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

   a. **INACT** Mate> TABXFR; STARTXFR; LOGOUT
      
      TABXFR will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, TABXFR will automatically start transferring the next table listed in table DART.

      **Note:** A list of empty head tables is sent to the inactive side at the beginning of TABXFR. The applicator may also see empty sub tables that are not on the list being transferred. This is normal and is design intent.

   b. **ACT** If any table fails to restore properly on the mate side, TABXFR will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

      For any table in error investigate the problem by entering on the ACTIVE side:
      
      > DELTA <table> NOFILE   {compares old and new tuples}
      or
      > DELTA <table> SUB <subtable> NOFILE

   c. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first verify a flashing A1 on the inactive processor; then login on the mate side and make the needed changes.

   d. **INACT** Continue the TABXFR as follows. Also LOGOUT on the mate side (as above).

      Mate> TABXFR; STARTXFR; LOGOUT

      **Note:** Avoid unnecessary or prolonged logged-in sessions on the mate side while TABXFR is running.
Procedure 4
Copy patches

1 Site/ACT While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

   Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

   a. Install the new patch tape on a tape drive (x) with a write enable ring.
   b. > LISTSF ALL
   c. > MOUNT <x>; LIST T<x>
   d. > COPY <sfdev_patch> T<x>
       where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
   e. Repeat COPY for each patch in SFDEV.
   f. > DEMOUNT T<x>
   g. > LISTSF ALL
   h. List the disk volume where the XPM loads (and patches) normally reside.
   i. > COPY <xpm_patch> <pmload_disk>
       where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pmload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
   j. Repeat COPY for each XPM patch in SFDEV.
Procedure 5
TABXFR completed

1  **App**  TABXFR is finished when you receive the following message.

```
INACT - completed D/R of office
```

**Note:** Do not perform the following step if PADNDEV data was manually restored during the TABXFR. (See procedure "Patch inactive.")

2  **ACT and INACT**  On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
Procedure 6
Login inactive

1  App/INACT  *Verify a flashing A1* on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       *where <device> is the name of the terminal labeled INACT.*
   b.  INACT
       Enter username and password  
       {mate-side response}
       Mate> OPERATOR OPERATOR
       or
       Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 7
Print reports TABXFR

1  App  Generate a final data transfer report. This will include both the table exception report and (with BCS36 and lower) the NTX package delta.

   a.  ACT  Only if RECORD START was *not* done previously, type the following.

   > RECORD START FROM <terminal_id> ONTO <printer>
   where <terminal_id> is the terminal device labeled INACT, and <printer> refers to a printer used to collect the data transfer information.

   b.  INACT
   Mate> REPORT  {still in TABXFR increment}
   Mate> QUIT  {quits out of TABXFR}

   c.  ACT  Only if RECORD START was done in substep a (above), type the following.

   > RECORD STOP FROM <terminal_id> ONTO <printer>
   where <terminal_id> and <printer> are the devices used above.
Procedure 8
Trapinfo inactive

1  App/INACT  Type:

Mate> TRAPINFO
If a trap has occurred, do not continue until the trap is explained.
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PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1
BULLETINS before PRESWACT

1. **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
Procedure 2
Unload module JCTRSTAT

If this is an ENET office, perform this procedure. Note carefully the from and to BCS qualifiers.

1  App/ACT  If an ENET office is going from BCS31 to BCS34RTS, the module JCTRSTAT will have to be unloaded on the ACTIVE side of the switch before starting PRESWACT.

> UNLOAD  JCTRSTAT
System response: The module will be unloaded from the switch.

Note: This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.
Procedure 3
Start PRESWACT

1  App/ACT  Perform PRESWACT of BCSUPDATE.
   
   Note: Please logout all users on the inactive side while PRESWACT is running.
   
   > BCSUPDATE
   > PRESWACT

2  Read the following notes, and continue the procedure while PRESWACT is running.
   
   Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).
   
   As an example:
   
   TABLE_DELTA executing :
   Table AMAOPTS *** Checksum incorrect, keys incorrect :
   TABLE_DELTA not complete
   
   ACT - Error: Inactive table data did not match.
   Correct error condition. Enter Preswact to continue
   
   For any table in error, investigate the problem by entering:
   
   > DELTA <table> NOFILE {compares new/old tuples}
   or  > DELTA <table> SUB <subtable> NOFILE
   
   To continue, run PRESWACT again by entering:
   
   > PRESWACT

   Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.
   
   -continued-
Procedure 3
Start PRESWACT (continued)

**Note 3:** PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. *As an example:*

```
TABLE_DELTA             executing
:                     
Table ATTCONS Checksum incorrect, keys match
:                     
TABLE_DELTA            complete
```
Procedure 4
Override module JCTRSTAT

PRESWACT may STOP with the message "Failed SWACT_MODULE _CHECK." If you see this message and it is indicating that JCTRSTAT is the only module missing on the inactive side and if this is an ENET office, perform this procedure. If any other module is reported to be missing from the inactive side please investigate before taking any action. Note carefully the from and to BCS qualifiers.

1  **App/ACT** If an ENET office is going from BCS32 thru 34RTM to BCS34RTS or higher, PRESWACT step SWACT_MODULE_CHECK will have to be *overridden* as follows.

   > BCSUPDATE;SWACTCI;MODCHECK OVERRIDE  \{for BCS33 and higher\}
   > BCSUPDATE;SWCT;MODCHECK OVERRIDE  \{for BCS32\}

*System response: The user will be prompted to override module JCTRSTAT.*

**Note:** This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.
Procedure 5
PRESWACT DIRP and billing

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

a. Site/ACT In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume ($).

c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

d. Erase all closed parallel DIRP files from the disk:

   > CLEANUP FILE <parallel_filename>
   where <parallel_filename> is each file to be erased.

e. Reformat the parallel disk volume:

   > DIRPPFMT <parallel_volume>
   where <parallel_volume> is the original volume name.

f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

g. Site and App/INACT If from_BCS 31, ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

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Procedure 5
PRESWACT DIRP and billing (continued)

1.1 Disk drive parallel DIRP coming from BCS32 and higher

*Note:* If from BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

**Site and App/INACT** Ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

If from BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

---

**CAUTION**

*Recently recorded parallel data may be overwritten.*

Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

---

2 Disk drive PRIMARY billing

a. **Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).

b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).

c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

d. Site and App/INACT If from_BCS 32 and higher, ensure that regular
disk volumes are in table DIRPPOOL on the inactive side. This allows
the disk to be recovered by DIRP after SWACT. If necessary manually
datafill the volume names in DIRPPOOL on the inactive side before
SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK
displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

a. Site/ACT If on tape (MTD), from the DIRP level ROTATE any active
billing subsystem (such as AMA SMDR OCC CDR), CLOSE the
standby file, and DMNT the standby volume.

Example:
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1

{standby volume}

b. Remove the demounted standby tape from the tape drive, and put up a
new tape to be used as the next DIRP volume.

c. Prepare a new standby volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

> DEMOUNT T<x>

Leave the standby volume at load point and ON LINE. Immediately
following SWACT, it will become the ACTIVE volume of the
appropriate subsystem.

d. Site and App/INACT If from_BCS 32 and higher, ensure that regular
tape volumes are in table DIRPPOOL on the inactive side. This allows
the tape to be recovered by DIRP after SWACT. If necessary manually
datafill the volume names in DIRPPOOL on the inactive side before
SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK
displays the datafill for table DIRPPOOL on the inactive side.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

   *Note:* DIRP sees DPP/BMC as a tape drive port.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

   > MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA

   *This re-establishes the block header on the DPP.*

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. Prepare a new standby volume as follows.

   > MOUNT <x> FORMAT <volume_id>

   where <x> is the standby device number, and <volume_id> is the name of the standby volume.

   If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

   > ERASTAPE <x>

   where <x> is the standby device number.

   *Note:* On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

   System response is:

   ***WARNING, THIS TAPE WILL BE ERASED***

   **CAUTION**

   At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

   If a mistake is made, a real tape could be erased.

   Enter YES to confirm the command.

   > DEMOUNT T<x>

   If ERASTAPE command was used, repeat this substep (d) to rename the volume.

   *Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.*

   -continued-
Procedure 5
PRESWACT DIRP and billing (continued)

e. Site and App/INACT  If from BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#> 
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

**CAUTION**
Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE).
Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

f. Site and App/ACT  If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

**Note:** Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

g. Site and App/INACT  Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.
```
-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN ‘<poolname>’ {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

a. Site/ACT Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA

This re-establishes the block header on the DPP.

b. Site and App/ACT If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

c. Site and App/INACT Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

**CAUTION**
Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

   **Note:** TAPEX cannot be used for parallel recording.

b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume ($). Physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

   **Note:** This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

a. Site/ACT In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume ($). Then physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.
Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>
Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

d. Site and App/INACT Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

a. Site/ACT In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.
Procedure 5
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume ($).

e. Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

> ERASTAPE <x>
where <x> is the parallel device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:
***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

> DEMOUNT T<x>

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-
f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).

h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

   Mate> LISTSF ALL
   Mate> PRINT DIRP_REC
   If necessary, edit DIRP_REC to make corrections.

   If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

   Mate> EDIT DIRP_REC
   Mate> DOWN '<poolname> {name of the pool using the DPP}
   Mate> DELETE
   Mate> ERASESF DIRP_REC
   Mate> FILE SFDEV DIRP_REC

### 6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.
Procedure 6
Data extension

1 **App/INACT** For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.

   a. Log into the inactive side.

   b. Mate> LISTSF ALL

      **Note:** The file ‘NEWTRKS’ should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.

   c. Mate> MAPCI NODISP;MTC;TRKS;TTP

   d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)

   e. Mate> READ NEWTRKS

   f. Mate> QUIT ALL
Procedure 7
MS_CHECK failure

PRESWACT may STOP with the message "Failed MS_CHECK for inactive CM load." Only when you see this message, load the MS corresponding to the inactive CPU using this procedure. PRESWACT will stop at this point if the MS load version does not match the BCS level of the inactive CM.

Note: The MS_CHECK is a check against the inactive CM and the MSs. Its purpose is to ensure the BCS version for each MS will be matched with the new BCS.

1. App/INACT  Logout on the inactive side (if logged in).
2. ACT  Type:
   > MATELINK BSY
3. > DISKUT
   > LF S00D<volume>  {or S01D <volume>}
   where <volume> is the SLM disk volume with the _MS load file.
4. At the MS level of the MAP, note which MS corresponds to the inactive CPU. Both MSs should be inservice.
   > MAPCI;MTC;MS
5. Make the MS CLOCK corresponding to the inactive CM the SLAVE clock. If necessary, switch MS clock mastership with:
   > SWMAST  {only if needed to switch clocks}
6. If you switched mastership, wait 5 minutes to ensure the clocks are stable and to allow a hardware audit to run.
7. At the MS level of the MAP, busy the MS that corresponds to the inactive CM (and with the slave clock).
   > BSY <MS#>
8. > LOADMS <MS#> <filename>
   where <filename> is the name of the _MS load file listed above in step 3.
   > YES  {for confirmation}
   -continued-
Procedure 7
MS_CHECK failure (continued)

9  > TST <MS#> VIAMATE
   Ensure the test passes with no faults. Determine the cause for any failure, fix
   the fault, and repeat the test.

   CAUTION
   Do not proceed unless NO faults are reported.
   Replace cards if necessary and repeat the test. Contact site supervisor
   if the test fails repeatedly.

10  Monitor MS logs for 5 minutes to ensure stability.

11  Continue PRESWACT.
    > QUIT MAPCI
    > PRESWACT  (still in BCSUPDATE)
Procedure 8
STATUSCHECK if MS loaded in PRESWACT

1  **App/ACT**  After PRESWACT is completed and only if one MS was loaded during PRESWACT (BCS33 and lower), run a STATUSCHECK (to enable the matelink).

   **Note:** STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

   a.  $>\text{BCSUPDATE;SWACTCI;STATUSCHECK}$  
       {for BCS33 and higher}
       $>\text{BCSUPDATE;SWCT;STATUSCHECK}$  
       {for BCS31 or BCS32}
       $>\text{SWCT;STATUSCHECK}$  
       {for BCS30 and lower}

   b.  Ensure the STATUSCHECK passes (with both sides matching).

   *If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*
Procedure 9
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  {mate-side response}
       Mate> OPERATOR OPERATOR
       or
       Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 10
Logout DNC

1  **Site and App/ACT**  If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
Procedure 11
Table CRSFMT alarm

1  **App/ACT**  In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

  **Note:** If a volume is allocated in DIRPPOOL it is being used.
SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1
BULLETINS before SWACT

1. **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
Procedure 2
Before SWACT

1 Site  Do not proceed until both the Telco and NT on-line support agree.

2 Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

3 Site  Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

4 Site  Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

5 Site  Dump the SPMS register information to a printer (or other device) according to Telco practice.

6 Site  Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

CAUTION
If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

a. Enter the LTPDATA level of MAP.

b. Query all DTA monitors on the switch by issuing the command,
   > EQUIP DTA QUERY ALL

c. If the DMS responds with “No DTA equipment reserved on switch” then no further action is needed.

d. Make note of any connected monitors by looking at the CONNECT field of the query display.
   Use the POST command to post each monitored LEN, and then issue the command,
   > CONNECT <N> RLS
   where <N> is the integer number of the monitor from the first column of the query display.
   Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

-continued-
Procedure 2
Before SWACT (continued)

e. Reset all monitor LENs and DS0 channels by issuing the command,

> EQUIP DTA RESET <N>

where <N> is the integer number of the monitor from the first column of
the query display.

Do this until no equipment is left "Equipped." Repeat substep b as
necessary to review DTA status.

7 Site If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is
a manual action used to test the quality of a CCS7 link.

CAUTION
In BCS35 BERT should not be left running during the CC SWACT.
Otherwise, the link will hang up over the SWACT.
If BERT is left running over the SWACT, you will have to go into the
PM level, post the offending LIU7/MSB7, and BSY and RTS it.

a. To determine if BERT is on: Go into C7LKSET level and post each
linkset in turn. The link state should not indicate 'BERT'.

b. To turn off BERT, go into the C7LKSET level and post the linkset. Go
into C7BERT level and type STOP <linkno>. 
Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart reload on the mate side will cause supp/thresh settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1 App/ACT List all special logs on the active side.
   > LOGUTIL
   > LISTREPS SPECIAL

   Example output:
   LINE 138  7 INFO TRMT                *thresh= 25*
   PM 189  5 INFO PM SW Information...  *supp*

2 App/INACT Restore special logs on the mate side.
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL

   Commands to restore above example:
   Mate> THRESHOLD 25 LINE 138
   Mate> SUPPRESS PM 189

3 App/INACT Verify the correct logs are set up and match the active load.
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL
Procedure 4
Start logs

1  App/ACT  Set up LOGS for the SWACT.

   Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a.  > LOGUTIL;STOP
   b.  > DELDEVICE <device>
       where <device> is where logs are to be routed.
   c.  > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d.  > START
       This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
   e.  > LEAVE
Procedure 5
Release JAM SNODE

UNJAM the processors in preparation for the CC switch of activity (SWACT).

1  Site and App/INACT  Verify the inactive side is flashing A1.

2  Site/INACT  From the inactive RTIF enter:

   RTIF> \RELEASE JAM
Procedure 6
Perform TST <MS#> VIAMATE

CAUTION
This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.
Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the RESTARTSWACT or RESTARTSWCT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

1  App/ACT QUERYMS to verify the Message Switch loads. Complete this step only if either MS load version does not match the BCS level of the inactive CM.
   > MAPCI;MTC;MS
   > QUERYMS
   If MS loads are not identical, ensure the MS with the incompatible load is ManB, then continue.
   > MATELINK BSY  {if not done, mate side will restart when matelink RTS'ed}
   > TST <MS#> VIAMATE  {on the ManB MS}
   Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.
Procedure 7
Establish mate communication SNODE

1 App/ACT Establish communication with the mate (inactive) side.

Note: STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

a. > BCSUPDATE; SWACTCI; STATUSCHECK  {for BCS33 and higher}
> BCSUPDATE; SWCT; STATUSCHECK  {for BCS31 or BCS32}
> SWCT; STATUSCHECK  {for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching).
   If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
Procedure 8
SWACT

Refer to "CC Warm SWACT Summary" in Appendix A for a description of the CC warm SWACT process. Also refer to Appendix B for a procedure for testing call survivability over a CC warm SWACT and to Appendix C for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

1 App/ACT  Wait a minimum of 10 minutes after the completion (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

   **CAUTION**
   FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT. Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

   **CAUTION**
   After a CC warm SWACT do not JAM the inactive CPU RTIF. The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

2 App/ACT  INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

   Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

   > INTLSWCT;DATE;RESTARTSWCT  
     (only for INTL offices)

   -continued-
Procedure 8
SWACT (continued)

3 App/ACT  All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:
   > BCSUPDATE;SWACTCI;QUERYSWACT
   System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:
   > DATE;NORESTARTSWACT
   Respond (yes/no) to system prompt using lower-case.
   or else,
   > DATE;RESTARTSWACT

b. For BCS35 and lower type:
   > BCSUPDATE;SWACTCI;DATE;RESTARTSWACT  {for BCS33-BCS35}
   > BCSUPDATE;SWCT;DATE;RESTARTSWCT   {for BCS31 or BCS32}
   > SWCT;DATE;RESTARTSWCT       {for BCS30 and lower}

   System response varies with the BCS level, but the following prompt is a typical example.

   ACTIVE DEFAULT SETTINGS:
   FORCESWACT set ON
   LOADEXECs set ON
   NOMATCH set OFF
   Do you wish to continue?
   Please confirm ("YES" or "NO"):
   ...Starting Warm SWACT now.

4 Site/ACT  Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION
Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 9  
Start POSTSWACT

CAUTION  
After a CC warm SWACT do not JAM the inactive CPU RTIF.  
The system requires the JAM status to be clear on both CPUs in order  
to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:  
   <break>

2  ?LOGIN  
Enter username and password {system response}  
   > <username> <password>
or  
   > <username>  
   > <password>

3  > DATE  
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT  
POSTSWACT runs all steps required after the CC switch of activity and flags  
them as complete when they pass. If any error occurs, POSTSWACT will  
stop and give instructions. If this is the case, follow POSTSWACT  
instructions to correct the problem, and run POSTSWACT again (type  
>POSTSWACT) to continue.  
If no problems are encountered, POSTSWACT stops after BEGIN_TESTING  
and waits until the site verifies the sanity of the current load.
Procedure 10
SYSBSY Message Switch

1   App/ACT  If a Message Switch is SYSBSY, make it ManB.
   a. > MAPCI;MTC;MS
   b. > BSY <MS#> {for the sysbsy MS}
   c. > QUIT MAPCI
Procedure 11
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  {note which volume is ACTIVE}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT <x> FORMAT <stdby_volume>
       where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
       Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is:
       "request aborted. Tape not expired (use ERASTAPE)"
       then enter:
       > ERASTAPE <x>
       where <x> is the standby device number.
       Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
       System response is:
       ***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.
-continued-
Procedure 11
Recover billing (continued)

   d. > DEMOUNT T<x>

   e. If ERASTAPE command was used, repeat substeps b and d to rename
   the volume.

   f. Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

   a. > MNT <subsystem> <x>          (still in DIRP level)
      Example: MNT AMA 3
      Enter YES to confirm the command.

   b. > QUERY AMA                      {to confirm standby volume is available}

   c. Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)

   * If SMDR recording is on BMC and NO standby volume is available, then
     mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and
     back IN. Remove the tape volume after this is done.

   Note: Since some SMDR recording applications on BMC collect SMDR
   records based on the customer group ID only, this ensures that any changes
   to the customer group IDs are passed to the BMC upon rotate (and the
   RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

   a. For BCS31 and lower:
      In table DIRPSSYS position on a DIRP subsystem requiring a parallel
      volume. Activate the parallel volume by datafilling the volume name.
      Example:
      TABLE DIRPSSYS;POS AMA
      CHA PARVOL T4
      or CHA PARVOL D010PAMA

   b. For BCS32 and higher:
      In table DIRPSSYS position on a DIRP subsystem requiring a parallel
      volume. Note the PARLPOOL name for the DIRP subsystem selected.
      Example:
      TABLE DIRPSSYS;POS AMA
      In table DIRPPOOL position on the parallel pool number associated
      with the PARLPOOL from table DIRPSSYS. Then activate the parallel
      volume by datafilling the volume name.
      -continued-
Procedure 11
Recover billing (continued)

Examples:
TABLE DIRPOO;POS 62  (pool for AMAPool)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
**Procedure 12**

**Display DPP settings**

**App/ACT**  Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the **PRESWACT DIRP and billing** procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW

   *Note:* If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW

   *Note:* If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS

   *Note:* If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID

   *Note:* If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

   *Note:* If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TTP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 14
Restart inactive POST SNO TED

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1 Site/INACT From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR TESTING TO COMPLETE.

2 Site/INACT From the inactive RTIF perform a restart reload on the inactive side.

    RTIF> \RESTART RELOAD
    RTIF> YES (for confirmation)

3 Site/INACT Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 15
DRTIME statistics

1 App/ACT  Get a hardcopy of DRTIME statistics (if needed).

   > DRTIME PRINT

DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.
Procedure 16
Do Test Calls

1  **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts*.

**CAUTION**

If an abort becomes necessary due to critical test failures, revert to the old load using the *Revert to the old load* procedure; otherwise, continue.

*Note:* Verify AMAB logs in conjunction with certain AMA test calls.
Procedure 17
After testing is complete SYNC SNODE

1  App/ACT POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

*Note:* Do not enter POSTSWACT again until the processors are in sync.

a.  > MAPCI; MTC; CM; SYNC
    > YES
        *(for confirmation)*

b.  > QUIT MAPCI

c.  > POSTSWACT
    *(still in BCSUPDATE)*
Procedure 18
POST_MS_CHECK failure

**App/ACT** POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) Only if you see this message, load the MS reported to have an incompatible load with the compatible MS load as follows.

1. > DISKUT
   > LF S00D<volume> {or S01D <volume>}
   where <volume> is the SLM disk volume with the correct _MS load file.

2. > MAPCI;MTC;MS

3. > LOADMS <MS#> <filename>
   where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
   > YES {for confirmation}

4. > TST <MS#> {not VIAMATE}
   Ensure the test passes with no faults.

5. > RTS <MS#> {not OOBAND!}

6. > QUIT MAPCI
Procedure 19
Finish POSTSWACT

1. **App/ACT** If necessary run POSTSWACT one more time to completion.
   
   ```bash
   > BCSUPDATE;POSTSWACT
   ```
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2. **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3. **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4. **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5. **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

6. **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7. **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

8. **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9. **Site/ACT** Return PORTS and USER information back to original values.

10. **Site/ACT** Notify DNC end users to LOGIN the DNC.
Procedure 20  
Take image SNODE

1  Site/ACT  DUMP AN IMAGE of the new BCS load for backup-one  
SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape  
cartridge.

2  After the image is completed, you may set the AUTODUMP ‘RETAIN’ option  
back to ‘ON’ if desired. The option was set to "OFF" during the ONP.  

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is  
design intent. This was done to prevent setting the system recovery route to  
the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 21
Start journal file

1 Site/ACT  If equipped, start journal file and verify started.

   a.  > JF START
   b.  > MAPCI;MTC;IOD;DIRP
   c.  > QUERY JF ALL
       QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d.  > QUIT ALL
Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before REVERT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive SNODE 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT Perform a restart reload on the inactive processor (old BCS load).
   a. From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
   b. From the inactive RTIF perform a restart reload on the inactive processor (old load).
      RTIF> \RESTART RELOAD
      RTIF> YES {for confirmation}
   c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 3
Establish mate communication SNODE

1  App/ACT  Establish communication with the mate (inactive) side.
   a.  > BCSUPDATE;SWACTCI;STATUSCHECK  \{for BCS33 and higher\}
       > BCSUPDATE;SWCT;STATUSCHECK  \{for BCS31 or BCS32\}
       > SWCT;STATUSCHECK  \{for BCS30 and lower\}

   b.  Ensure the STATUSCHECK passes (with both sides matching).  
If STATUSCHECK fails, investigate and correct any mismatches and 
any devices not okay or offline. Once all problems have been 
corrected, rerun STATUSCHECK and ensure it passes.

   Note: STATUSCHECK may cause a restart on the inactive side (watch 
the inactive RTIF). If the inactive side does restart, it should initialize 
and come back to a flashing A1.
Procedure 4
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       *where <device> is the name of the terminal labeled INACT.*
   b.  INACT
       Enter username and password  {mate-side response}
       Mate> OPERATOR OPERATOR
       or  Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 5
TRACECI close

1     App/INACT  If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

Mate> TRACECI CLOSE  \{for BCS34 and lower\}
Procedure 6
Configure DIRP billing

1 Site/App Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

a. ACT Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.
   Disk volumes will rotate and recover automatically after SWACT.
   Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

b. INACT If reverting to BCS31 or higher:
   Ensure datafill is correct on the mate side for tables DIRPPOOL or DIRPSSYS.

c. INACT If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.
   Note: In DIRP_REC the parallel volume assignments for DIRPPOOL should be set to nil ($) for all pools.
Procedure 7
Start logs

1  App/ACT  Set up LOGS for the SWACT.

   Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a.  > LOGUTIL; STOP
   b.  > DELDEVICE <device>
       where <device> is where logs are to be routed.
   c.  > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d.  > START
       This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
   e.  > LEAVE
Procedure 8
Ensure inactive unjammed

1 Site and App/INACT Ensure inactive side is unjammed.
Procedure 9
Perform TST <MS#> VIAMATE for Revert

CAUTION
This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.
Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the ABORTSWACT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

1 App/ACT Test the ManB Message Switch to ensure the MS clocks are in sync. Complete this step only if one MS load is incompatible with the BCS level of the inactive CM (for example, when reverting to BCS33 or lower).

> MAPCI;MTC;MS
Ensure that the MS corresponding to the inactive CPU is ManB.

> MATELINK BSY {If not done, mate side will restart when matelink RTS'd}

> TST <MS#> VIAMATE {on the ManB MS}
Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.
Procedure 10
Establish mate communication SNODE

1  **App/ACT**  Establish communication with the mate (inactive) side.
   
   **Note:** STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

   a.  > BCSUPDATE;SWACTCI;STATUSCHECK  {for BCS33 and higher}
       > BCSUPDATE;SWCT;STATUSCHECK  {for BCS31 or BCS32}
       > SWCT;STATUSCHECK  {for BCS30 and lower}

   b.  Ensure the STATUSCHECK passes (with both sides matching).
       If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
Procedure 11
Revert

1 App/ACT Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORTSWACT, ABORTSWCT, or RESTARTSWCT command.

CAUTION
FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

2 App/ACT INTERNATIONAL offices switch CC activity (SWACT) as follows.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT;DATE;RESTARTSWCT {only for INTL offices}

3 App/ACT ALL OTHER offices switch CC activity (SWACT) with CC warmSWACT as follows.

CAUTION
If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be unloaded from the active side in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-
Procedure 11
REVERT (continued)

> BCSUPDATE;SWACTCI;DATE;ABORTSWACT {for BCS33 and higher}

CAUTION
In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option only as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE;SWCT;DATE;ABORTSWCT {for BCS31 or BCS32}
> SWCT;DATE;RESTARTSWCT {for BCS30 and lower}

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS:
FORCESWACT set ON
LOADEXECS set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION
Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 12
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

   2  ?LOGIN
      Enter username and password  \{system response\}
      > <username> <password>
      or  > <username>
           > <password>

   3  > DATE
      Verify the date and time are correct.

   4  Reestablish recording onto devices (console session) as required.

   5  > BCSUPDATE;POSTSWACT
      POSTSWACT runs all steps required after the CC switch of activity and flags
      them as complete when they pass. If any error occurs, POSTSWACT will
      stop and give instructions. If this is the case, follow POSTSWACT
      instructions to correct the problem, and run POSTSWACT again (type
      >POSTSWACT) to continue.
      If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
      and waits until the site verifies the sanity of the current load.
Procedure 13
SYSBSY Message Switch

1 App/ACT If a Message Switch is SYSBSY, make it ManB.
   a. > MAPCI;MTC;MS
   b. > BSY <MS#>                  \{for the sysbsy MS\}
   c. > QUIT MAPCI
Procedure 14
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1
   > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL          (note which volume is ACTIVE)

2
   If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3
   TAPEX volumes must be manually remounted using the DIRP MNT command.

4
   Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. > MOUNT <x> FORMAT <stdby_volume>
      where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is:
      "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      > ERASTAPE <x>
      where <x> is the standby device number.
      Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      System response is:
      ***WARNING, THIS TAPE WILL BE ERASED***

   CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.
-continued-
Procedure 14
Recover billing (continued)

d.  > DEMOUNT T<x>
e.  If ERASTAPE command was used, repeat substeps b and d to rename the volume.
f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.

a.  > MNT <subsystem> <x>  
     Example: MNT AMA 3
     Enter YES to confirm the command.
b.  > QUERY AMA  
     {to confirm standby volume is available}
c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP.  
    (This will ensure the RECORD HEADER is correct.)
    * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume.  Rotate the BMC port OUT and back IN.  Remove the tape volume after this is done.
    
    Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.

a.  For BCS31 and lower:
    In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume.  Activate the parallel volume by datafilling the volume name.
    Example:
    TABLE DIRPSSYS;POS AMA
    CHA PARVOL T4
    or CHA PARVOL D010PAMA

b.  For BCS32 and higher:
    In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume.  Note the PARLPOOL name for the DIRP subsystem selected.
    Example:
    TABLE DIRPSSYS;POS AMA
    In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS.  Then activate the parallel volume by datafilling the volume name.
    -continued-
Procedure 14
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 15
Display DPP settings

App/ACT  Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW

   Note: If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW

   Note: If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS

   Note: If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID

   Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

   Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 16
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the
         correct state after SWACT, post all INI trunks, perform a force release, and
         return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 17
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 18
After testing is complete SYNC SNODE

1  App/ACT POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

*Note:* Do not enter POSTSWACT again until the processors are in sync.

a.  > MAPCI;MTC;CM;SYNC
    > YES  {for confirmation}

b.  > QUIT MAPCI

c.  > POSTSWACT  {still in BCSUPDATE}
Procedure 19
POST_MS_CHECK failure

App/ACT  POSTSWACT may STOP with the message "Failed
POST_MS_CHECK for active CM load: #." (Both MS loads will be
displayed.) Only if you see this message, load the MS reported to have an
incompatible load with the compatible MS load as follows.

1  > DISKUT
   > LF S00D<volume>   {or S01D <volume>}
   where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>
   where <MS#> is the MS to be loaded, and <filename> is the name of the
   _MS load file listed above in step 1.
   > YES               {for confirmation}

4  > TST <MS#>        {not VIAMATE}
   Ensure the test passes with no faults.

5  > RTS <MS#>        {not OOBAND!}

6  > QUIT MAPCI
Procedure 20
Finish POSTSWACT

1   App/ACT  If necessary run POSTSWACT one more time to completion.

   > BCSUPDATE; POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and
   flag them as completed when they pass. If failures occur, follow given
   instructions to correct the problem, then continue POSTSWACT.

2   Site and App/ACT  Copy any new MS patches in store file to the PM loads
   disk volume (or SLM disk).

3   App/ACT  Clean up SFDEV by erasing any application-related files (for
   example: DRNOW, FEATDATA, and all patches).

4   Site/ACT  Passwords for ADMIN and OPERATOR may have changed. For
   security Telco should change these passwords back to the original.

5   Site/ACT  Re-input any data changes made prior to the software update but
   not captured on journal file.

6   Site/ACT  Reassign all current PROFILE information (LOGIN or RESTART)
   in SFDEV.

7   Site/ACT  Reassign any temporary log ROUTING setup via LOGUTIL.

8   Site/ACT  Reassign any changes in the INTEG level of the MAP (for
   example, UPTH, BUFFSEL, FILTER and others).

9   Site/ACT  Return PORTS and USER information back to original values.

10  Site/ACT  Notify DNC end users to LOGIN the DNC.
**Procedure 21**  
Take image SNODE

1. **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2. After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

   *Note:* Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 22
Start journal file

1 Site/ACT If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with “AVAIL.” If a standby device is being
      used, both active and standby volumes should be marked “AVAIL.”
   d. > QUIT ALL
Procedure 23
More Revert/ABORT steps

1 Site and App/INACT If asked to do so by technical support take an image of the inactive (mate) side load.

2 Site and App/ACT With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3 Site and App Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4 App/ACT On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a. If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   b. If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
Emergency abort procedure

CAUTION
Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before EABORT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive SNODE 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT Perform a restart reload on the inactive processor (old BCS load).
   a. From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
   b. From the inactive RTIF perform a restart reload on the inactive processor (old load).

   RTIF> \RESTART RELOAD
   RTIF> YES {for confirmation}
   c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 3
Ensure inactive unjammed

1  **Site and App/INACT**  Ensure inactive side is *unjammed*. 
### Procedure 4
#### Cold SWACT SNODE

1. **Site/ACT** JAM active side to force a switch of activity (cold swact).
   
   RTIF> \OVERRIDE
   
   RTIF> \JAM
   
   RTIF> YES  \[for confirmation\]

2. **Site/ACT** Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.  
   *At this point the CC switch of activity is over.*

3. **Site and App/ACT** Work quickly to complete the next procedure.  The POSTSWACT procedure (to follow) checks that the office is functioning as normal.

   **Note:** Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.
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Procedure 5
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password    {system response}
   > <username> <password>
   or
   > <username>
   > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 6
SYSBSY Message Switch

1   App/ACT  If a Message Switch is SYSBSY, make it ManB.
   a.  > MAPCI;MTC;MS
   b.  > BSY <MS#>  (for the sysbsy MS)
   c.  > QUIT MAPCI
Procedure 7
Recover billing

Site and App/ACT  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1
   > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  \{note which volume is ACTIVE\}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT \(<x>\) FORMAT \(<\text{stdby}\_\text{volume}>\)
       where \(<x>\) is the standby device number, and \(<\text{stdby}\_\text{volume}>\) is the name of the standby volume.
       Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is:
       "request aborted. Tape not expired (use ERASTAPE)"
       then enter:
       > ERASTAPE \(<x>\)
       where \(<x>\) is the standby device number.
       \textbf{Note:} On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
       \textit{System response is:}
       ***WARNING, THIS TAPE WILL BE ERASED***

\textbf{CAUTION}
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-
Procedure 7
Recover billing (continued)

d. > DEMOUNT T<x>

e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f. Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

a. > MNT <subsystem> <x> {still in DIRP level}
   Example: MNT AMA 3
   Enter YES to confirm the command.

b. > QUERY AMA {to confirm standby volume is available}

c. Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)

   * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

   Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

a. For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b. For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
   Example:
   TABLE DIRPSSYS;POS AMA

   In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

   -continued-
Procedure 7
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62 \( \text{pool for AMAPOOL} \)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.

d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 8
Display DPP settings

App/ACT  Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW
   Note: If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW
   Note: If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS
   Note: If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID
   Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT
   Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13  Repeat step 12 for each alarm that is different.
Procedure 9
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 10
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 11
After testing is complete SYNC SNODE

1  App/ACT  POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load,* then put the processors in sync as follows.

*Note:* Do not enter POSTSWACT again until the processors are in sync.

a.  > MAPCI;MTC;CM;SYNC
    > YES  
        *(for confirmation)*

b.  > QUIT MAPCI

c.  > POSTSWACT  
    *(still in BCSUPDATE)*
Procedure 12
POST_MS_CHECK failure

App/ACT  POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message*, load the MS reported to have an incompatible load with the compatible MS load as follows.

1  > DISKUT
   > LF S00D<volume>                     {or S01D <volume>}
   where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>
   where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
   > YES                          {for confirmation}

4  > TST <MS#>                   {not VIAMATE}
   *Ensure the test passes with no faults.*

5  > RTS <MS#>                   {not OOBAND!}

6  > QUIT MAPCI
Procedure 13
Finish POSTSWACT

1  App/ACT  If necessary run POSTSWACT one more time to completion.
   > BCSUPDATE; POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and
   flag them as completed when they pass. If failures occur, follow given
   instructions to correct the problem, then continue POSTSWACT.

2  Site and App/ACT  Copy any new MS patches in store file to the PM loads
disk volume (or SLM disk).

3  App/ACT  Clean up SFDEV by erasing any application-related files (for
   example: DRNOW, FEATDATA, and all patches).

4  Site/ACT  Passwords for ADMIN and OPERATOR may have changed. For
   security Telco should change these passwords back to the original.

5  Site/ACT  Re-input any data changes made prior to the software update but
   not captured on journal file.

6  Site/ACT  Reassign all current PROFILE information (LOGIN or RESTART)
in SFDEV.

7  Site/ACT  Reassign any temporary log ROUTING setup via LOGUTIL.

8  Site/ACT  Reassign any changes in the INTEG level of the MAP (for
   example, UPTH, BUFFSEL, FILTER and others).

9  Site/ACT  Return PORTS and USER information back to original values.

10 Site/ACT  Notify DNC end users to LOGIN the DNC.
Procedure 14
Take image SNODE

1. Site/ACT DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2. After the image is completed, you may set the AUTODUMP ‘RETAIN’ option back to ‘ON’ if desired. The option was set to “OFF” during the ONP.

   Note: Setting the AUTODUMP ‘RETAIN’ option to ‘OFF’ during the ONP is design intent. This was done to prevent setting the system recovery route to the ‘OLD’ BCS image that was taken prior to the BCS update.
Procedure 15  
Start journal file  

1  Site/ACT  If equipped, start journal file and verify started.  
   a.  > JF START  
   b.  > MAPCI;MTC;IOD;DIRP  
   c.  > QUERY JF ALL  
      QUERY JF should respond with "AVAIL." If a standby device is being  
      used, both active and standby volumes should be marked "AVAIL."  
   d.  > QUIT ALL
Procedure 16
More Revert/ABORT steps

1  Site and App/INACT  If asked to do so by technical support take an image of the inactive (mate) side load.

2  Site and App/ACT  With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3  Site and App  Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4  App/ACT  On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   
   a.  If old load is BCS35 and higher:
       > BCSUPDATE;ABORT_PRESWACT
       > TABXFR;CANCEL
       > QUIT ALL

   b.  If old load is BCS34 and lower:
       > BCSUPDATE;RESET
       > QUIT ALL
Hybrid SNODE MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures before being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1
Take image

1  Site/ACT  Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
Procedure 2
Route logs SNODE

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1 Site/ACT
   > LOGUTIL
   > LISTREPS SPECIAL

If specific logs are suppressed use
   > RESUME <log>

If logs have threshold set use
   > THRESHOLD 0 <log>

where <log> refers to specific CM, MS, SLM, and MM logs.

2 > LISTROUTE DEVICE <printer>

If critical logs are not routed use
   > ADDREP <printer> <log>
   > STOPDEV <printer>

Verify only critical logs are enabled on the device and are correctly routed.

3 > STARTDEV <printer>
   > LEAVE
Procedure 3
Processor tests SNODE

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

Note: Perform the following front-end testing during low traffic periods.

1 Site Ensure the CPUs are in SYNC and the inactive side is NOT jammed.

2 ACT Match the memory from the Memory level of the MAP.
   > MAPCI; MTC; CM; MEMORY
   > MATCH ALL
   > QUIT

3 INACT From the inactive RTIF (remote terminal interface), jam the inactive CPU.
   RTIF> \JAM
   RTIF> YES (for confirmation)

4 ACT Drop SYNC from the CM level of the MAP.
   > DPSYNC
   > YES (for confirmation)

5 INACT Wait for the inactive CPU to return to flashing A1.

6 Test the CM stability with each of the following restarts on ONLY the inactive RTIF.
   a. INACT RTIF> \RESTART WARM
      RTIF> YES (for confirmation)
      Wait for a flashing A1.
   b. INACT RTIF> \RESTART COLD
      RTIF> YES (for confirmation)
      Wait for a flashing A1.
   c. INACT RTIF> \RESTART RELOAD
      RTIF> YES (for confirmation)
      Wait for a flashing A1.

-continued-
Procedure 3  
Processor tests SNODE (continued)

7  ACT  Test the memory cards from the Memory level of the MAP.
> MEMORY;TST ALL
> QUIT

8  After completion of the test, check any logs indicating pass or fail. If above
test failed, clear the problem and repeat the test.

9  ACT  SYNC the CPUs from the CM level of the MAP.
> SYNC

10 After receiving the “Synchronization Successful” message, verify no faults
are displayed at the CM or Memory levels of the MAP (shows all dots and no
Xs or fs).

11 INACT  At the inactive RTIF release the jam.
RTIF> \RELEASE JAM

12 ACT  Switch activity of the CPUs from the CM level.
> SWACT

13 INACT  Repeat steps 1 through 12 on the newly-inactive CPU.

14 Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

15 ACT  Match the memory from the Memory level of the MAP.
> MEMORY;MATCH ALL
> QUIT

16 ACT  Perform a REX test long from the CM level.
> REXTST LONG
> YES {for confirmation}
CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states
will change. The SuperNode will be out of SYNC for at least 60 minutes.

-continued-
Procedure 3
Processor tests SNODE (continued)

17  ACT  After completion of the test, verify the test results:

> QUERYCM REXRESULT

*The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 16 and 17.*

18  Repeat (with the other CPU active) steps 16 and 17.

19  ACT  Perform an image test from the CMMNT level of the MAP.

> CMMNT
> IMAGE
> QUIT

20  After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

*Note: If on BCS 26-28 and patch BKR24C<xx> is present and activated (PATCHEDIT shows it ON), then skip over the rest of this procedure and go to the next procedure.*

21  ACT  Busy the Slave MS from the MS level of the MAP.

> MS;BSY <x>

*where <x> refers to the Slave MS (look under Clock field).*

22  ACT  Test the MS from the MS level.

> TST <x>

23  After completion of the test the results of the test are displayed. If the test failed, resolve any problems and repeat the test.

24  ACT  Return the busied MS to service.

> RTS <x>

25  Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MS should be inservice.

-continued-
Procedure 3
Processor tests SNODE (continued)

26 ACT Switch MS clock mastership.

> SWMAST

27 Test the other MS by repeating steps 21 through 26.

28 ACT > QUIT ALL
Procedure 4
Responsibilities before pre-application checks SN

1 Site  Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

a. INSERT (or MOUNT) and LIST each tape.

b. From the tape header or first file verify the header matches the tape label and the tape is correct for the to_BCS. For a BCS IMAGE tape also verify the image filename is correct. 
Verify a tape is good by listing the tape to the end without any errors.

c. If any problems are found notify your NT customer service representative immediately.

d. Keep the tapes on-site for use during the scheduled software update.

2 Site  Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

CAUTION
For MS preloading it is recommended that the MS be loaded using the new BCS IMAGE tape, and NOT the PM load tape. The MS load provided on the IMAGE tape contains a more current patch set.

Richardson customers may require loading of the MS prior to the arrival of the IMAGE tape. Contact Richardson BCS Applications for MS loading procedures.

If problems are encountered during loading, contact the appropriate TAS group for assistance.

The recommended procedure for MS preloading is found in section Updating loads in the Message Switch of this MOP. Wait to upgrade the MS until the new BCS IMAGE tape arrives on site.

3 Site  Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the Peripheral Software Release Document ("Application Procedures" section).

-continued-
Peripheral modules include all PMs, XPMs, DPP, MPC, and the various application processors associated with a DMS-SCP/STP/SSP such as the ENET, LPP (including EIUs, LIUs and LIMs) and the FP.

Note: If a cross-reference file (BCSxxXPM$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

4 Site Monitor front-end stability watching SuperNode CM, MM, and MS logs through the day of the software delivery.
Procedure 5
Save site files

1  Site/ACT  Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application. Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application—DO NOT ERASE!
Procedure 6  
Peripheral verification SNODE

1 Site/ACT  If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive “bad blocks” are present, reformat the disk.

3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the Peripheral Software Release Document.)

Note: Procedures for preloading the MSs are in section Updating loads in the Message Switch of this MOP.
Procedure 7  
Table ACDGRP

1  App/ACT  Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.

   a.  > OMSHOW ACDGRP ACTIVE

   b.  Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)

   c.  If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)

   d.  Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
Procedure 8
Fill in Test Call Scripts

1 Site Fill in and test the Test Call Scripts in Appendix C.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.
Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

CAUTION
Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1
Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in Appendix A. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

1  Site/ACT  Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

   TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

   • To use the "FROM" and "TO" options see substep a below.
   • To use the "ALL" option see substep b below.

   Warning: If a device is not specified when issuing the TABAUDIT ALL command, only a SUMMARY$FILE will be created in Store File and no separate file will be created for individual failed tables.

   -continued-
Procedure 1  
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted. To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY$FILE" file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

*A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.*

Or for example, when STDPRTCT is checked, the additional output is:

*Warning: Changes in table STDPRTCT may alter office billing.*

a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

```bash
> TABAUDIT FROM <start table> [TO <end table>] <device name>
```

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

```bash
> TABLE DART; LIST (output will be the "FROM" table name)
> DOWN 100; LIST 2 (output will be the "TO" table name of the first 100 and the "FROM" table name for the second 100)
> DOWN 100; LIST 2 (repeat until the end of table is reached)
> LEAVE
```

Perform TABAUDIT on the first 100 tables as shown in the following example:

```bash
> TABAUDIT FROM DART TO BGDATA <device name>
```

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

```bash
> TABAUDIT ALL <device name>
```

-continued-
Procedure 1
Run TABAUDIT (continued)

2  Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

> TABAUDIT ONLY <table name> <device name>

Continue until all tables have been corrected.

3  When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
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**JFFREEZE procedure**

This procedures in this section are required only when the office is scheduled for a Hybrid process software delivery. Site personnel should perform the procedure at 10 days prior to the software delivery date, or when instructed to do so by Northern Telecom.

Whenever possible JFFREEZE should be used to take the "frozen image" and begin the data freeze. Northern Telecom must receive the frozen image by 8 days prior to the software delivery date to allow enough time to complete the dump and restore.

**Procedure 1**

**Stop activities**

1. **Site/ACT** Advise all personnel that all activities must stop (including service orders, translations, trunking, and other data modification) until told otherwise.

2. Verify that no hardware changes or retrofits are in progress (such as network and memory extensions).
Procedure 2
Patch verification before frozen image

The Site is responsible for the following patch verification steps.

1 Site/ACT  Ensure any from-side patches recently downloaded to SFDEV are applied *before* dumping the frozen image (Hybrid method). NOTIFY THE SITE SUPERVISOR of any new from-side patches not yet applied.

2 Review a current list of from-side patches needed for the BCS application. This list can be obtained from your patch administrator.

3 Verify all required patches on the list are applied *before* dumping the frozen image (Hybrid method).

4 The front-end and MS patches should be copied to the patch tape (or to disk) and LEFT IN SFDEV.
Procedure 3
Stop journal file for freeze

1 Site/ACT  CLOSE and STOP the Journal File recording.
   a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b. > CLOSE JF ACTIVE
       > CLOSE JF ACTIVE
       JF is closed twice to ensure current timestamp on active journal file.
       QUERY again to verify rotation.
   c. > JF STOP
       Verify stopped.
   d. > QUIT MAPCI
Procedure 4
Setup for frozen image

1 Site/ACT Ensure user OPERATOR is correctly permitted.
   a. > SHOW USERS
      
      NAME      PRIO STACK NRDEV LANGUAGE  PRIV
      OPERATOR  4    5000        ENGLISH   ALL
   
   b. If OPERATOR is not permitted as stated above, change with the
      "PERMIT" command.
      *If OPERATOR is logged in, logout the user and use the "PERMIT"
      command from another user. Then again login as OPERATOR.*
   
   c. *Important:* Also change the PASSWORD to "OPERATOR" for the
      image. This is only temporary and can be changed back after the
      frozen image.

2 Site/ACT Delete MAP log device from table LOGDEV to ensure logs are not
   sent to to the MAP terminal.
   > TABLE LOGDEV;POS MAP
   Retain position MAP data for a later step.
   > DELETE
   > QUIT
   *Note:* This tuple can be added back at the end of this procedure.

3 Site/ACT Verify MAP datafill in table TERMDEV.
   a. > TABLE TERMDEV;LIS
      Retain position MAP data for a later step.
      
      MAP  0  8 VT100 B1200 CL 1X67BC NONE N NONE ALL
      System response with a new IOC, 1X61AB.
      or
      MAP  0 20 VT100 B1200 CL 1X67BC NONE N NONE ALL
      System response with an old IOC, 1X61AA.
   
   b. Change any fields which do not match. The **bold** type (fields IOCNO,
      CKTNO, BAUDRT, and INTYP) is a must, other fields are not critical.

   **CAUTION**
   Do not "<break>/STOP" or "HX" because it will
   cause the table changes to take effect.
   The tuple can be changed back at the end of this procedure.

-continued-
Procedure 4
Setup for frozen image (continued)

4 Verify the MAP device is in service.
   a. > MAPCI;MT;IOD;LISDEV CONS
   b. Verify MAP position is in service as follows.
      > IOC 0;CARD 2 {with a new IOC, 1X61AB}
      or
      > IOC 0;CARD 5 {with an old IOC, 1X61AA}
   If port 0 (MAP) is not in service (a dot represents in service) then do:
      > BSY 0;RTS 0
   c. > QUIT ALL

5 Verify tuple JF datafill in table DIRPSSYS.
   a. > TABLE DIRPSSYS;POS JF
      Example system response:
      JF Y 2 1 JFPool $ CR MJ NA NA 30 30 $ N NA
      FIRSTACT NNNNNNN 0 NORotate BOTH NONE
   b. Retain the original datafill to restore to the new load before the images
      are dumped in the SWACT/POSTSWACT procedures.
   c. Change the fields which do not match. The bold type (fields RETPD,
      CRETPD, FILEDATE, SHEDDAYS, ROTACLOS, and AUTOXFER) is
      a must. Other fields are not critical. (JFFREEZE automatically daily
      rotates journal file at approximately 0300 hours.)
   d. > QUIT
Procedure 5
Cleanup journal files

Copy journal files to tape and ERASE them from disk with this procedure.

1 Site/ACT > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
   Retain the volume names located under the VOLUME field for step 4 and step 8.

2 > QUIT MAPCI

3 > DSKUT

4 LISTVOL <volume> ALL
   where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 6.

5 Repeat step 4 for each volume found in step 1.

6 If the site does not require copying unprocessed journal files, go to step 8; otherwise, continue.
   Put up a tape on MTD 0. Either enter
   > DIRPAUTO JF {steps you through the process}
   or MOUNT the tape and enter
   > DIRPCOPY JF <unprocessed files> <T0>
   where <unprocessed files> refers to JF files that begin with the letter "U"
   (e.g. U890327133614JF) and which were listed in step 4.

7 Repeat step 6 for each unprocessed journal file.

8 > LISTVOL <volume> ALL
   where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 10.

9 Repeat step 8 for each volume found in step 1.

10 > MAPCI;MTC;IOD;DIRP
    > CLEANUP FILE <filename>
    > YES {for confirmation}
    or
    > ERASEFL <filename> {BCS23 and lower}
   where <filename> is all files except DIRP_FILESEG and active files. Active files start with the letter "A" (e.g. A890327133614JF).

-continued-
Procedure 5
Cleanup journal files  (continued)

11 Repeat step 10 for each filename found in step 4 or step 8 above.
Procedure 6
Start JFFREEZE

1 Site/ACT Start JFFREEZE. To see a complete console session of JFFREEZE, see Using JFFREEZE, Appendix A: Command Summaries.

Note: Verify the normal image disk volume has enough space for a new image (erase the oldest image on the volume if necessary).

a. > JFFREEZE ON
   DO YOU WISH TO CONTINUE? {system response}
   Please confirm ("YES" or "NO"):

b. > YES
   ENTER THE FREE IOC OR SLM DISK VOLUME TO RECEIVE THE SYSTEM IMAGE FILES(S):

c. > <disk>
   where <disk> is the normal image disk volume.
   JFFREEZE: THE SYSTEM...COMMENCE IN 2 MINUTES
   DO YOU WISH TO PROCEED? Please confirm ("YES" or "NO"):

d. > YES
   JFFREEZE image dump commences in 2 minutes...
   Dump START time: yyyy/dd/mm hh:mm:ss.sss ddd..
   JFFREEZE image dump information is output, followed by Journal file information.
Procedure 7
Duplicate image SNODE

1  Site/ACT  Make three copies of the frozen image on SLM tape cartridge.
   a.  Insert a blank SLM cartridge in the SLM where the image was dumped.
   b.  > DISKUT
        > INSERTTAPE <tape> WRITELABEL FROZEN
        where <tape> is the SLM tape on the same SLM device where the
        image was dumped.
   c.  > LISTFL <slm>
        where <slm> is the SLM disk volume where the image was dumped.
        Retain the filenames (both _MS and _CM).
   d.  > BACKUP FILE <slm> <filename>_MS
        > BACKUP FILE <slm> <filename>_CM
        where <slm> is the SLM disk volume where the image was dumped,
        and <filename> is the name of the file listed above in substep c.
   e.  > EJECTTAPE <tape>
   f.  Remove the SLM cartridge once the tape has stopped moving.
   g.  Repeat substeps a through f until three image copies are made.
Procedure 8
Resume work

1  Site/ACT  Advise change order personnel that service order activity may resume only by following Journal file rules procedure (to follow).
Procedure 9
Print table TERMDEV

1 Site/ACT Print a hard copy of table TERMDEV. Set the printout aside for the moment.
   This printout will be sent to Northern Telecom for use by the Dump and Restore engineer.
Procedure 10
Send in frozen image

1  Site/ACT  Send two "frozen images" to the appropriate Northern Telecom facility.
   a.  Label the tapes as "Frozen image."
   b.  Send the image tapes to the following address:
       PLEASE CONTACT YOUR NT CUSTOMER SERVICE REPRESENTATIVE FOR THE CORRECT ADDRESS.
   c.  Safely store the remaining tape at the DMS site.
   d.  Also include in the shipment the printout of table TERMDEV that was set aside above.

2  Safely store the remaining tape at the DMS site.
Procedure 11
Original data

1 Site/ACT If any changes were made above (for the frozen image) to user OPERATOR or to the MAP device, restore the original data if desired as follows.

a. If a permit option was changed for user OPERATOR, change it back if desired.

> SHOW USERS
If OPERATOR is logged in, logout the user and use the "PERMIT" command from another user. Then again login as OPERATOR.

b. The original password for user OPERATOR can also be restored at this time.

c. If MAP tuple was changed in table TERMDEV, restore the original data if desired.

d. If MAP device was deleted in table LOGDEV, restore the original data if desired.
Site  FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the frozen image is completed. Please inform control center and craftsperson personnel of the following restrictions.

1  LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.

   Warning: Whenever possible use SERVORD, not table control, to make data changes.

2  Journal file is never to be stopped, even during journal file rotations. If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.

3  ACTIVITIES WHICH ARE NOT PERMITTED

   • changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)

   Note: A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.

   • network changes, additions, and deletions (tables NETWORK and NETJUNCT)

   • PM changes, additions, and deletions (all tables ending with 'INV')

   • trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)

   • trunk member changes, additions, and deletions (table TRKMEM)

   • table TRKNAME changes, additions, and deletions

   • IBN customer group changes, additions, and deletions

   • OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDELTAC, and OMSET)

   • DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)

   • table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)

   • use of the RENAMECLLI command

   • use of the DMOPRO command

   • use of the JF STOP command

   -continued-
Procedure 12
Journal file rules (continued)

- erasing journal files from disk
- use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.

4 ACTIVITIES WHICH ARE PERMITTED

- all SERVORD commands
- table changes must be made with VERIFY ON and kept on hard copy
- emergency translation changes

5 If JFFREEZE is not activated, CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.
Procedure 13
System restart with JFFREEZE on

Site If BCS29 and lower with JFFREEZE activated and a system restart occurs for some reason, observe the following procedure.

1  ACT Rotate the journal file:
   a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
      Check which JF volume is currently active.
   b. > ROTATE JF
      QUERY again to verify rotation.
   c. > QUIT ALL

2  Print the journal file HISTORY file.
   > JFFREEZE HISTORY

3  Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

4  Verify tuple JF datafill in table DIRPSSYS:
   a. > TABLE DIRPSSYS;POS JF
      Example system response:
      JF Y 2 1 JFPOOL $ CR MJ NA NA 30 30 TAPE $
      FIRSTACT YYYYYY 3 X24 BOTH NONE
   b. Change all fields which do not match. The bold type (fields RETPD, CREATPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
   c. > QUIT

5  Manually START journal file if not already started.

6  DO NOT STOP JOURNAL FILE. Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

7  Observe Journal file rules procedure from this point on.
Procedure 14
Changing DRAMREC with JFFREEZE on

Site  When JFFREEZE is activated and it is necessary to do DRAMREC changes, additions or deletions (that is, ASSIGN or RECORD), observe the following procedure.

1  ACT  Rotate the journal file:
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b.  > ROTATE JF
       QUERY again to verify rotation.
   c.  > QUIT ALL

2  Contact TAS to SUSPEND JFFREEZE.

3  Print the journal file HISTORY file.
   > JFFREEZE HISTORY

4  Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

5  Contact TAS to STOP JFFREEZE.

6  Verify tuple JF datafill in table DIRPSSYS:
   a.  > TABLE DIRPSSYS;POS JF
       Example system response:
       JF Y 2 1 JFPool $ CR MJ NA NA 30 30 TAPE $ FIRSTACT YYYY 3 X24 BOTH NONE
   b.  Change all fields which do not match. The bold type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
   c.  > QUIT

7  Manually START journal file if not already started.

8  Make DRAMREC changes as required.

9  DO NOT STOP JOURNAL FILE. Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

-continued-
Procedure 14
Changing DRAMREC with JFREEZE on (continued)

10 Observe Journal file rules procedure from this point on.
Updating loads in the Message Switch

Begin this section as soon as the new BCS IMAGE tape arrives on site
(normally two to three days before the software delivery).

Procedure 1 is to copy the new CM and MS loads onto a SLM disk. This is
for all offices, and is required in order to load the MS and to enable loading
the mate CM from SLM disk.

Procedure 2 is only for offices on BCS34 and higher. Procedure 2 is to
preload the MSs with the new MS load. (For offices on BCS33 and lower,
the MSs will be loaded by the BCS Applicator on the night of the software
delivery.)

Note: When scheduled for a BCS-n to BCS-n application (for example,
BCS34 to BCS34) Telco may choose to NOT preload MSs as long as the
present MS load is patched current.

Procedure 1

Restore CM and MS loads

Restore (that is, copy ) the new CM and MS loads onto a SLM disk.

1 Site/ACT List the SLM tape cartridge with the new BCS IMAGE files (both
_MS and _CM loads).
   a. Place the cartridge into the SLM tape drive on the same side as the
      inactive CPU.
   b. > DISKUT
   c. > IT <tape_device>
      Inserts the tape into the inactive-side SLM, for example:
      IT S00T or IT S01T
   d. > LF <tape_device>
      for example, LF S00T or LF S01T. May take up to one hour to list.
   e. Verify the MS and CM load files are the correct ones to use.
      To help understand the image filenames, you may use CI command
      DISPMS <filename> which displays the image header information.
      (Refer to Appx. A for more details of this command.)

-continued-
Procedure 1  
Restore CM and MS loads  (continued)

2  Select a SLM disk volume onto which to restore the new BCS IMAGE.
   •  The volume selected should not be on the same SLM with active DIRP billing.
   •  The volume should not be the same volume normally used to take images. (This is so that AUTOIMAGE won’t fail for lack of disk space.)
   
   If there is a problem completing this step, please contact the next level of support.

3  Restore both the CM load and the appropriate MS load onto the selected SLM disk volume.
   a.  > RE FILE <disk_volume><tape_device><filename_CM>
        Restores the CM load onto the SLM, for example:
        RE FILE S01DIMG0  S01T  LD101015ND36_CM
   b.  > RE FILE <disk_volume><tape_device><filename_MS>
        Restores the MS load onto the SLM, for example:
        RE FILE S01DIMG0  S01T  LD101015MS36CR_MS
   c.  > ET <tape_device>
        Ejects the SLM tape, for example:
        ET S01T
   d.  > QUIT
Procedure 2  
Preload both MSs

As of BCS34, backward-compatibility is supported in the Message Switch (MS). This means, if the office is on BCS34 or higher, then it is possible to PRELOAD both MSs with the new MS load before the CM is upgraded to the new BCS.

**CAUTION**

*Do not attempt to upgrade the Message Switch at this time unless the office is currently on BCS34 or higher.*  
Failure to heed this caution could result in degradation of the switch since the MS load is not backward compatible until the office is on BCS34.

**CAUTION**

*If the office is on BCS34 or higher, both MSs must be loaded with the MS load provided on the BCS IMAGE tape prior to starting the BCS application.*  
The following procedure assumes the proper MS load was successfully copied to a SLM disk volume.

*Note:* The BCS IMAGE provided is patched current. If any new patches are required, these will be downloaded to SFDEV and applied on the night of the BCS application.

1  
**Site/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM loads) were previously restored (copied).

   a.  
      > DISKUT
      > LF SOOD <volume>  
      *{or SO1D <volume>}*  
      where <volume> is the SLM disk volume with the BCS IMAGE.

   b.  
      Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new BCS IMAGE tape.  
      *To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information. (Refer to Appx. A for more details of this command.)*

2  
At the MS level of the MAP, determine which MS contains the SLAVE clock. (Look for "slave" under the CLOCK field.)

   > MAPCI;MTC;MS

   -continued-
Procedure 2
Preload both MSs (continued)

3  > BSY <MS#>  \(\text{the MS with the slave clock}\)

4  > LOADMS <MS#> <filename>
where <filename> is the name of the _MS load file listed above in step 1.
   > YES  \(\text{for confirmation}\)

5  When prompted, perform an out-of-service test on the MS just loaded.
   > TST <MS#>  \(\text{on the OOS MS}\)
   \textit{Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.}

   \textbf{CAUTION}
   \textit{Do not proceed unless NO faults are reported.}
   Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

6  > RTS <MS#>  \(\text{not OOBAND!}\)

7  Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MSs should be inservice.
   \textbf{Note:} The MS load on the CM image tape is patched as current as possible. Copies of all MS patches that were applied to this load will be in mate SFDEV when the CM image is loaded for the BCS application. Once the CM load is made active (by the SWACT) the MATCHALL MS (PATCHER) will function as intended.

8  Switch MS clock mastership.
   > SWMAST

9  Monitor MS logs for 10 minutes to ensure stability.

10 Repeat steps 3 through 9 to update the load in the other MS.

11 > QUIT MAPCI
Site responsibilities the day of the software delivery

The following steps must be completed by site personnel before the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1
Day zero checklist

1. Site: Verify that all problems identified from performing table data checks have all been resolved.

2. Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

3. Verify an image has been taken in the last 24 hours and backed to tape.

4. Ensure you have undertaken your critical test call plan and verified it. (See Appendix C: Test Call Scripts.)

5. Verify SFDEV has been cleared of all Telco/site-created files.

6. Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7. LIU7 image with feature AQ1102
   In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs. This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

   Note: If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.
Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

1 Site/ACT All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
   • From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.
   • To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.
Procedure 3
Run DATADUMP

1 Site/ACT Run DATADUMP to output important switch information for future reference.

   a.  > LOGUTIL;STOPDEV <printer>
       where <printer> is an available printer to be used for recording. This
       makes sure the logs are stopped on the device.
       > LEAVE

   b.  > RECORD START ONTO <printer>

   c.  > BCSUPDATE;DATADUMP   {for BCS33 and higher}
       When DATADUMP is completed:
       > QUIT

   d.  > DRCI;RUNEXEC DATA_DUMP   {for BCS32 and lower}
       When DATADUMP is completed:
       > QUIT

   e.  > RECORD STOP ONTO <printer>
Procedure 4  
FX voice and data

1 Site  Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

2 Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

3 Verify user names to be used during the software update have PRIVCLAS of ALL.
Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a Hybrid process software delivery. The data transfer should already be completed.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the datafilled BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>.'"

CAUTION
Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.
Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

1. It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in Appendix A (page A-29).

2. If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 4-121).

3. If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 4-147).
Procedure 2
Remote login

1 App/ACT  Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2 App/ACT  Login the users and if applicable, set LOGINCONTROL.
   a. <break>
   b. ?LOGIN
       Enter username and password  
       > <username> <password>
       or > <username>
           > <password>
           where username and password can both be found on the Pre-application report.
   c. For BCS33 and higher enter:
       > BCSUPDATE;DEVICE
       > QUIT
   d. For BCS32 and lower enter:
       > LOGUTIL;STOP;STOP  
       > LEAVE
       > LOGINCONTROL <device> QUERY
   e. Verify Open Condition Logout is N. If not, retain the original status and enter:
       > LOGINCONTROL <device> OPENFORCEOUT FALSE
       Verify Max Idle Time is Forever. If not, retain original status and enter:
       > LOGINCONTROL <device> MAXIDLETIME FOREVER
       > LOGINCONTROL <device> DISABLEON REMOVE
       <forceout_conditions>  
       {conditions obtained in substep d above}
   f. Repeat this entire step on the other terminal device.
Procedure 3
Check logs SNODE

1  App/ACT  For BCS33 and higher check logs to verify processor stability.
   > BCSUPDATE;LOGCHECK
   > QUIT
   Do not continue until all logs have been explained.

2  App/ACT  For BCS32 and lower check logs to verify processor stability.
   > LOGUTIL
   > OPEN <log_buffer>;WHILE(BACK)()
   where <log_buffer> refers to CM, MS, SLM and MM logs.
   > LEAVE
   > TRAPINFO
   Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.
Procedure 4
Stop journal file

1  App/ACT  ROTATE and STOP the Journal File recording.
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b.  > CLOSE JF ACTIVE
       QUERY again to verify rotation.
   c.  > JF STOP
       Verify stopped.
   d.  > QUIT MAPCI
Procedure 5
Ensure MSs loaded

As of BCS34, backward-compatibility is supported in the Message Switch. This means, if the office is on BCS34 or higher, then it is possible to PRELOAD both MSs with the new MS load before the CM is upgraded to the new BCS.

1 App/ACT If the office is on BCS34 or higher, then ensure both MSs are loaded with the new MS load that was provided on the new BCS IMAGE tape.
Procedure 6
Drop sync SNODE

1 App/A CT Type:
   > MAP CI; MTC; CM

2 App/A CT Ensure the CM you want to load with the new BCS load is inactive and the corresponding MS and SLM components are used. For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.
   a. Determine where the new BCS image resides (normally SLM disk 0).
   b. If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
   c. If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.

3 Site/INACT From the inactive RTIF enter:
   RTIF> \JAM
   RTIF> YES (for confirmation)

4 App/A CT
   > DPSYNC {from CM level}
   > YES {if prompted to disable AUTO PATCHING}
   > YES {to confirm DPSYNC}

5 Site/INACT Site must tell the engineer when the inactive CM is flashing A1.

6 App/A CT
   > QUIT MAP CI
Procedure 7
BULLETINS before LOADMATE

1. **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
Procedure 8
Loadmate SNODE

1 App/ACT  List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM load files) were previously restored (copied).
   a.  > DISKUT
       > LF SOOD<volume> {or SO1D<volume>}
       where <volume> is the SLM disk volume with the BCS IMAGE.
   b.  Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.
       To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information.
       (Refer to Appx. A for details of this command.)

2 App/ACT  If the _CM image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

   CAUTION
   The _MS file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done).
   However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the _MS file to SLM disk.

   Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.
   > LDMATE DIRECT TAPE 2 {loads 2nd file on the tape}

   -continued-
Procedure 8  
Loadmate SNODE (continued)

3 App/ACT  If BCS28 and higher, loadmate using the SLM disk as follows.
   a. Ensure no DIRP files are opened on the SLM disk with the image.
      > DIRP;QUERY <subsystem> ALL
      where <subsystem> is AMA, OM, JF, or DLOG.
      If any opened files, close the files (or rotate the information to the active side).

    CAUTION
    LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.
    "DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."

   b. > LDMATE DIRECT DISK <filename_CM>
      If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.
      > LDMATE VIAMS <filename_CM>

4 App/ACT  If BCS27 loadmate using the SLM disk as follows.
   a. Activate patch SSY05C27.
      > PATCHEDIT SSY05C27 ON
   b. > LDMATE <filename_CM>

5 App/ACT  If BCS26 loadmate using the SLM disk as follows.
   > LDMATE <filename_CM>

6 Site and App/INACT  Wait for loadmate to complete and the inactive processor to flash A1.
   While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).
Procedure 9
Login inactive after Loadmate SNODE
Login on the inactive processor after loadmate is complete.

1. **App/ACT** Type:
   
   > MATELINK RTS

2. Allow initialization on the inactive side (flashing A1).

3. LOGOUT of the active side if logged in on the terminal labeled INACT.

4. > MATEIO
   
   > MATELOG `<device>`
   
   where `<device>` is the name of the terminal labeled INACT.

5. **App/INACT**

   Enter username and password  
   Mate> OPERATOR OPERATOR  
   (mate-side response)  

   or Enter username  
   Mate> OPERATOR  

   Enter password  
   Mate> OPERATOR
Procedure 10
Set date and header message

1  App/INACT  Set the current date and site header message on the mate side.

Mate> SETDATE <dd mm yy>  {set today's date}

Mate> SETLOGMSG 'text'
where <text> becomes the office header on the new software load. Using
the old header as the model, change the Office Order (COEO), office
name, Product Code (or BCS level), and application date. Ensure all
symbols at the beginning and end of the header message remain the same
(including spaces).

Note: The "Order/Suborder" (Office Order) and "To Product/Version"
(Product Code/BCS) can be found in the Parmmail.

Example:
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
Procedure 11
Check logs inactive SNODE

1  App/INACT  For to_BCS 33 and higher check mate logs to verify processor stability.
    Mate> BCSUPDATE;LOGCHECK
    Mate> QUIT
    Do not continue until all logs have been explained.

2  App/INACT  For to_BCS 32 and lower check mate CM logs.
    Mate> LOGUTIL;OPEN CM;WHILE(BACK)()
    Mate> LEAVE
    Mate> TRAPINFO
    Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

3  App/INACT
    Mate> TRAPINFO CLEAR
Procedure 12
Mate-side memory check

1 App/ACT If from_BCS 32 and higher, perform a mate-side memory check.

CAUTION
If this test fails do not continue-immediately notify the site supervisor. The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

Note: Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

a. > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

Note: This displays on the active side the result of the test, “completed” or “not completed.” If it is not completed an error message is also printed on the active side.

b. Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to “MATE_MEM_CHECK failure” in Appendix B.

c. > QUIT
Procedure 13
Retain PARM values

1  **App**  Obtain a list of the following office parameters for reference.

   > TABLE OFCVAR
   > POS NODEREXCONTROL
   > POS LCDREX_CONTROL
   > QUIT

   > TABLE OFCENG
   > POS GUARANTEED_TERMINAL_CPU_SHARE
   > QUIT

   > TABLE OFCSTD
   > POS DUMP_RESTORE_IN_PROGRESS
   > QUIT
Procedure 14  
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

*Note:* Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay—answer YES to the prompt.

1. **App/INACT**  
If coming from _BCS 31 and lower, on the mate side turn on access to _WTAB using TASTOOL procedure.

2. **ACT**  
On the active side, ensure table _PADNDEV points to the device (typically _SFDEV) containing the patches that were downloaded for the _to_BCS.  

   ```
   > TABLE PADNDEV;LIST ALL 
   *If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.*
   ```

   *Note:* MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table _PADNDEV. There are two ways of doing this:

   1. In procedure "MOVEBCS/TABXFR setup"—Set a stop point in MOVEBCS/TABXFR to stop before table _PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.

   2. In procedure "MOVEBCS/TABXFR completed"—Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table _PADNDEV on both the active and inactive sides.

3.  
   ```
   > BCSUPDATE;RUNSTEP VERIFY_DSLIMIT
   ```

4.  
   ```
   > RESET
   ```

5.  
   ```
   > RUNSTEP DISABLE_AUTOIMAGE
   *Note:* This step is not valid if the AUTOIMAGE feature is not available.
   ```

6.  
   ```
   > RUNSTEP SET_OFFICE_TUPLES
   ```

7.  
   ```
   > RUNSTEP SEND_PATCHES
   ```

8.  
   ```
   > RUNSTEP APPLY_PATCHES
   ```

9.  
   ```
   > QUIT
   ```

-continued-
Procedure 14
Patch inactive  (continued)

10  **Site and App/INACT**  Print the PATCH$FILE and review applied (mate) patches.

   Mate> LISTSF ALL;PRINT PATCH$FILE
   *If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.*

11  Mate> TRAPINFO
   *If trap occurred, do not continue until the trap is explained and action taken to correct the error.*
Procedure 15
Activate patches inactive

1 App/ACT Determine which ACT patches are activated in the old load.
   a. > PATCHEDIT
      This command shows a list of 'ACT' patches and which ones are activated (turned on).
   b. Review the patch list to determine which patches are currently activated (ON) on the active side.
      Normally any ACT patch activated in the old load should be manually activated in the new load (see next step).

2 Site and App/INACT As needed activate ACT patches on the inactive side.
   a. Mate> PATCHEDIT
   b. Compare the mate-side patch list with active-side list obtained above. Decide with the site if any patches need to be activated (set "ON") at this time.
      Passwords will be provided on the 'APF' report for any "feature patches" in the new BCS load. Give the password to Telco, but do NOT activate the patch at this time unless already ON in the old load.
   c. Mate> PATCHEDIT <patch> ON
      This activates the patch.
   d. Repeat this command for each patch to be activated.
   e. Also determine from comparing the patch lists if any ACT patches should be set to "NA" (no audit) state.
   f. Mate> PATCHEDIT <patch> NA
      This sets the patch to "NA" state.
   g. Repeat this command for each patch to be set to "NA."
Procedure 16
Restart inactive for patches

1  **App**  Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

   *Note:* Sequence of restarts is not important.

   **INACT**
   Mate> RESTART `<restart type>`
   Mate> YES  *(for confirmation)*

2  Allow initialization on the inactive side (flashing A1).

3  Login on the inactive side.

4  Repeat above steps for each type of restart required.
**Procedure 17**

**IPL modules**

1. **App/ACT** If from BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

   a. > QUERY <module>
      where <module> is:
         NODESTAT  STCSTAT  IPMLSTAT
         CARRSTAT  JCTRSTAT  DCHSTAT
      Repeat QUERY for each module listed.
      
      **Note:** OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

   b. If any module is loaded, as indicated by the QUERY command, enter the following:
      > RUN <xxxx> IPL
      where <xxxx> is a loaded module.
      
      **Note:** Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.
Procedure 18
SWCTCHK verification

1  **App/ACT**  If from_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see Pre-application Report). If not done earlier complete this step.
   
a.  Ensure patch EWW08 is applied on the active (from-side) load.
   
b.  > SWCTCHK
Procedure 19
MASSTC

1 App  Check status in MASSTC level (TOPS office only).
  a. ACT
     > MASSTC
     > STATUS
  b. If the status is INITIAL, then no action is needed.
  c. INACT If the status is DUPLICATED, then with Telco consent on the MATE side enter:
     Mate> ENABLE
     or, if data is obsolete
     Mate> SCRAP
  d. ACT  If the status is SWITCHED, then with Telco consent on the ACTIVE side enter:
     > PERM
Journal file restore procedure

For HYBRID method—This section is required to restore the journal file recorded during the DATA FREEZE period.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

CAUTION

In case of emergency situations and if an outage or degradation occurs, call the site supervisor immediately. If not service-affecting, use normal escalation policy.

Procedure 1
Journal file dump

1 Site and App  Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME recorded at the beginning of the DATA FREEZE.

2 App For from BCS 28 and higher and if JFFREEZE was used, perform Journal file dump with JFFREEZE procedure (to follow).

Otherwise, for the manual process perform Manual journal file dump procedure (to follow).
Procedure 2
Journal file dump with JFFREEZE

If from _BCS 28 and higher and if JFFREEZE was used, perform this procedure. Otherwise, perform the Manual journal file dump procedure (follows this procedure).

1 **App/ACT**  If currently on BCS33 and lower, enter:
   > QUERY JFDUMPF

   If the module is already loaded (module information is output) go to step 2 below.

   If the module is *not* loaded ("QUERY--module 'JFDUMPF' is not loaded" is output) load the module as follows.

   a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
   b. > TLIST (MOUNT <x>)  
      (BCSTOOLS tape)
   c. > LOAD JFDUMPF PRPTCHEC
   d. > DEMOUNT T<x>

2 **Site and App**
   > JFFREEZE HISTORY  
   (*site retains for their records*)

   Locate the FIRST JOURNAL FILE DISK VOLUME.

   **CAUTION**
   It is of utmost importance to start with the *first* journal file volume (containing the first journal files created since the data freeze).

3 **App**  List the JF disk volume as follows.
   > DSKUT;LISTVOL <JF_disk> ALL
   *where* <JF_disk> *refers to* the disk volume(s) containing journal files identified above in step 2. Be extra sure to list all the volumes with JF.

4 Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).

-continued-
Procedure 2
Journal file dump with JFREEZE (continued)

5.1 Only if coming from BCS33 and higher and going to BCS35 and higher, enter the following command.
(for example, BCS 33-35, 33-36, 34-35, or 34-36)
> JFDUMP <disk> <from_BCS> <from_BCS>
   where <disk> refers to the disk volume (or tape) from step 4.

5.2 Otherwise, for any other BCS enter the following commands.
> RFMT SET <from_BCS> <to_BCS>
> JFDUMP <disk> <from_BCS> <to_BCS>
   where <disk> refers to the disk volume (or tape) from step 4.

6 Verify that all journal files listed in step 3 are dumped, and retain the output filenames for Matebind journal files procedure (to follow).

7 > LISTSF ALL
Verify that DMOLIST was output from step 5, and retain the list for Matebind journal files procedure (to follow).
Procedure 3
Manual journal file dump

If from BCS 27 and lower, or if JFFREEZE was not used, perform this procedure. Otherwise, perform the JF dump with JFFREEZE procedure (precedes this procedure).

1 App/ACT  If currently on BCS33 and lower, enter:
   > QUERY JFDUMP

   If the module is already loaded (module information is output) go to step 2 below.

   If the module is not loaded ("QUERY--module 'JFDUMP' is not loaded" is output) load the module as follows.

   a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)
   b. > TLIST (MOUNT <x>) {BCSTOOLS tape}
   c. > LOAD JFDUMP PRPTCHEC
   d. > DEMOUNT T<x>

2 Site and App  Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME.

   CAUTION
   It is of utmost importance to start with the first journal file volume (containing the first journal files created since the data freeze).

   a. App  If journal files are on TAPE, list the JF tape as follows.
       Put up the tape without a write enable ring.
       > MOUNT <x> {journal file tape}
       > LIST T<x> {retain file names}
   b. App  If journal files are on DISK, list the JF disk volume as follows.
       > DSKUT;LISTVOL <JF_disk> ALL
       where <JF_disk> refers to the disk volume(s) containing journal files.
       Be extra sure to list all the volumes with JF.

3 Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).

-continued-
Procedure 3
Manual journal file dump (continued)

4.1 Only if coming from BCS33 and higher and going to BCS35 and higher, enter the following command.
(for example, BCS 33-35, 33-36, 34-35, or 34-36)

Note: In the following step the applicator may utilize a file to dump multiple journal files.

> JFDUMP <jfin> <jfout> <device> <from_BCS> <from_BCS>
where <jfin> refers to the journal file name. For <jfout> use ‘JFA’ thru ‘JFZ’, then use ‘JFAA’ thru ‘JFZZ’ (except Canada) -or use ‘JF$100 thru JF$999’ (Canada only). <device> refers to the recording device on which to dump journal file (disk, tape, or SFDEV).

As an example: ‘JFDUMP U880405000090JF JFA D000SCRATCH 33 33’
dumps file U880405000090JF to file JFA onto disk D000SCRATCH formatting from BCS33 to BCS35 and higher.

Retain the output filenames for Matebind journal files procedure (to follow).

4.2 Otherwise, for any other BCS enter the following commands.
(for example, BCS 32-35, 33-33, 33-34, or 34-34)

> RFMT SET <from_BCS> <to_BCS>

Note: In the following step the applicator may utilize a file to dump multiple journal files.

> JFDUMP <jfin> <jfout> <device> <from_BCS> <to_BCS>
where <jfin> refers to the journal file name. For <jfout> use ‘JFA’ thru ‘JFZ’, then use ‘JFAA’ thru ‘JFZZ’ (except Canada) -or use ‘JF$100 thru JF$999’ (Canada only). <device> refers to the recording device on which to dump journal file (disk, tape, or SFDEV).

As an example: ‘JFDUMP U880405000090JF JFA D000SCRATCH 29 32’
dumps file U880405000090JF to file JFA onto disk D000SCRATCH formatting from BCS29 to BCS32.

Retain the output filenames for Matebind journal files procedure (to follow).

5 Repeat step 4 for each journal file listed from step 2 above.

CAUTION
Review the time stamps of the reformatted JF to confirm the entire data freeze period is accounted for.
-JF active during the entire data freeze with no significant interval without journal file

-continued-
Procedure 3
Manual journal file dump (continued)

6  > DEMOUNT T<x>  {only if JF was recorded on tape}

7 Site  If journal file was recorded on tape, remove the previous journal file tape and replace the write enable ring. Install the next tape without a write enable ring.

CAUTION
Install each journal file tape in the order they were created.

8 Site and App  For each journal file tape, MOUNT and LIST the tape and repeat steps 4 through 7 above.
Procedure 4
Matebind journal files

1  App/ACT  Matebind the reformatted journal files.
   a.  ACT  List the device used for the journal file dump from the jf dump steps (previous procedure).
   b.  > MATEIO
   c.  > MATEBIND <jffile> <jffile>
       where <jffile> refers to all reformatted JF filenames created in the JF dump steps.
   d.  Repeat MATEBIND for each filename created in the JF dump steps.
   e.  > MATEBIND DMOLIST DMOLIST

       Note: The site is responsible to input all DMOs from the DMOLIST.
       (These are DMOs which were input since datafreeze was suspended.)
   f.  INACT
       Mate> MATEIO
Procedure 5
Restore journal files

1  **App**  Restore the journal files to the inactive side. If to_BCS 30 and higher perform substep a below. If to_BCS 29 and lower perform substep b.

   **Note:** In the following steps, `<jffile>` refers to all the reformatted JF filenames created previously in the journal file dump procedure.

   **CAUTION**
   Restore all journal files in the same order they were created.

   a.  For to_BCS 30 and higher enter:

      ```
      ACT
      > TRACECI DEVICE <device_name>
      where `<device_name>` is the name of the device labeled INACT.
      ```

      **Note:** This command allows you to monitor the results of the RESTAB command on the INACT terminal.

      ```
      INACT
      Mate> RESTAB <jffile> <from_BCS>
      Correct all errors which may occur.
      ```

      Repeat RESTAB for each filename created in the journal file dump.

   b.  For to_BCS 29 and lower enter:

      ```
      INACT
      Mate> DMOPRO <jffile>
      Correct all errors which may occur.
      ```

      Repeat DMOPRO for each filename created in the journal file dump.
PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1
BULLETINS before PRESWACT

1. App Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
Procedure 2
Unload module JCTRSTAT

If this is an ENET office, perform this procedure. Note carefully the from and to BCS qualifiers.

1  App/ACT  If an ENET office is going from BCS31 to BCS34RTS, the module JCTRSTAT will have to be *unloaded* on the ACTIVE side of the switch before starting PRESWACT.

    > UNLOAD JCTRSTAT

*System response:* The module will be unloaded from the switch.

*Note:* This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.
Procedure 3
Start PRESWACT

1  App/ACT Perform PRESWACT of BCSUPDATE.
   
   Note: Please logout all users on the inactive side while PRESWACT is running.
   
   > BCSUPDATE
   > PRESWACT

2  Read the following notes, and continue the procedure while PRESWACT is running.
   
   Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).
   
   As an example:
   
   TABLE_DELTA executing : 
   Table AMAOPTS *** Checksum incorrect, keys incorrect : 
   TABLE_DELTA not complete
   
   ACT - Error: Inactive table data did not match.
   Correct error condition. Enter Preswact to continue
   
   For any table in error, investigate the problem by entering:
   
   > DELTA <table> NOFILE {compares new/old tuples}
   
   or > DELTA <table> SUB <subtable> NOFILE
   
   To continue, run PRESWACT again by entering:
   
   > PRESWACT

   Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

   -continued-
Procedure 3
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. As an example:

```plaintext
TABLE_DELTA           executing
: Table ATTCONS Checksum incorrect, keys match
: TABLE_DELTA           complete
```
Procedure 4
Override module JCTRSTAT

PRESWACT may STOP with the message "Failed SWACT_MODULE_CHECK." If you see this message and it is indicating that JCTRSTAT is the only module missing on the inactive side and if this is an ENET office, perform this procedure. If any other module is reported to be missing from the inactive side please investigate before taking any action. Note carefully the from and to BCS qualifiers.

1   **App/ACT** If an ENET office is going from BCS32 thru 34RTM to BCS34RTS or higher, PRESWACT step SWACT_MODULE_CHECK will have to be overridden as follows.

> BCSUPDATE; SWACTCI; MODCHECK OVERRIDE    \{for BCS33 and higher\}
> BCSUPDATE; SWCT; MODCHECK OVERRIDE         \{for BCS32\}

**System response:** The user will be prompted to override module JCTRSTAT.

**Note:** This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.
Procedure 5
PRESWACT DIRP and billing

Site and software delivery engineer should work together to prepare both
PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of
activity (SWACT). This procedure gives the steps to accomplish this
preparation.

Note: Site can begin doing this procedure while the Applicator continues
with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

a. Site/ACT In table DIRPSSYS determine which disks are being used for
parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the
parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

b. For a parallel volume that is on DISK, from the DIRP level CLOSE the
parallel file and DMNT the volume. Then remove the volume from table
DIRPSSYS by replacing the volume name with nil volume ($).

c. Copy the parallel files to tape to prevent loss of parallel data if that is
Telco policy.

d. Erase all closed parallel DIRP files from the disk:

> CLEANUP FILE <parallel_filename>
where <parallel_filename> is each file to be erased.

e. Reformat the parallel disk volume:

> DIRPPFMT <parallel_volume>
where <parallel_volume> is the original volume name.

f. If to BCS 32 and higher, rename the first file on the reformatted
parallel volume (created by the "dirppfmt" command). Using the
"renamefl" command, change the file name from "DIRPPARALLEL" to
"B000000000000" (12 zeros).

g. Site and App/INACT If from BCS 31, ensure that parallel disk volumes
are in table DIRPPPOOL on the inactive side. This allows the disk to be
recovered by DIRP after SWACT. If necessary manually datafill the
volume names in DIRPPPOOL on the inactive side before SWACT.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

1.1 Disk drive parallel DIRP coming from BCS32 and higher

*Note:* If from BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

**Site and App/INACT** Ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

If from BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

---

**CAUTION**

*Recently recorded parallel data may be overwritten.* Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

- If a single parallel volume is in use, information on the volume will be lost over SWACT.
- If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

---

2 Disk drive PRIMARY billing

a. **Site/ACT** If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).

b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).

c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

d. **Site and App/INACT** If from BCS 32 and higher, ensure that regular
disk volumes are in table DIRPPOOL on the inactive side. This allows
the disk to be recovered by DIRP after SWACT. If necessary manually
datafill the volume names in DIRPPOOL on the inactive side before
SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK
displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active
billing subsystem (such as AMA SMDR OCC CDR), CLOSE the
standby file, and DMNT the standby volume.

Example:

> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1          {standby volume}

b. Remove the demounted standby tape from the tape drive, and put up a
new tape to be used as the next DIRP volume.

c. Prepare a new standby volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the
name of the standby volume.

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

> DEMOUNT T<x>

Leave the standby volume at load point and ON LINE. Immediately
following SWACT, it will become the ACTIVE volume of the
appropriate subsystem.

d. **Site and App/INACT** If from BCS 32 and higher, ensure that regular
tape volumes are in table DIRPPOOL on the inactive side. This allows
the tape to be recovered by DIRP after SWACT. If necessary manually
datafill the volume names in DIRPPOOL on the inactive side before
SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK
displays the datafill for table DIRPPOOL on the inactive side.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

a. Site/ACT If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.
   
   Note: DIRP sees DPP/BMC as a tape drive port.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.
   
   > MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
   
   This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. Prepare a new standby volume as follows.
   
   > MOUNT <x> FORMAT <volume_id>
   
   where <x> is the standby device number, and <volume_id> is the name of the standby volume.

   If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:
   
   > ERASTAPE <x>
   
   where <x> is the standby device number.

   Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

   System response is:
   
   ***WARNING, THIS TAPE WILL BE ERASED***

   CAUTION
   
   At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

   If a mistake is made, a real tape could be erased.

   Enter YES to confirm the command.

   > DEMOUNT T<x>

   If ERASTAPE command was used, repeat this substep (d) to rename the volume.

   Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

   -continued-
Procedure 5
PRESWACT DIRP and billing (continued)

e. **Site and App/INACT** If from BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

\[
\text{Mate>} \text{TABLE DIRPPOOL;POS<pool_#>}
\]
\[
\text{where } <\text{pool_#}> \text{ is the number for DPP AMA pool.}
\]

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

**CAUTION**

Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

**Note:** Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

g. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

\[
\text{Mate>} \text{LISTSF ALL}
\]

\[
\text{Mate>} \text{PRINT DIRP_REC}
\]

*If necessary, edit DIRP_REC to make corrections.*

---

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>'
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

a. Site/ACT Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTT;IOD;DPPAMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

b. Site and App/ACT If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

c. Site and App/INACT Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
-continued-
Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

**CAUTION**

Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

a. **Site/ACT** In table DIRPSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSYS or DIRPPOOL.

   *Note:* TAPEX cannot be used for parallel recording.

b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSYS or DIRPPOOL by replacing the volume name with nil volume ($). Physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

   *Note:* This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>

where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.
Procedure 5
PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

a. Site/ACT In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume ($). Then physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>

where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<
x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

d. Site and App/INACT Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

a. Site/ACT In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPPOOL by replacing the volume name with nil volume ($).

e. Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

> ERASTAPE <x>
where <x> is the parallel device number.

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:
***WARNING, THIS TAPE WILL BE ERASED***

---

**CAUTION**

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

> DEMOUNT T<x>

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

f. Site and App/INACT If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

g. Site and App/INACT If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).

h. Site and App/INACT Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN '<poolname> {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher
In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.
Procedure 6
Data extension

1  **App\INACT**  For a DATA EXTENSION only-Once PRESWACT step
MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has
completed, perform the following workaround. This allows the new trunks to
remain in the INB state after SWACT.

a. Log into the inactive side.
b. Mate> LISTSF ALL
   **Note:** The file ‘NEWTRKS’ should be in storefile. This file is created by
   Loadbuild to identify all the trunks added for the Data Extension.
c. Mate> MAPCI NODISP;MTC;TRKS;TTP
d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)
e. Mate> READ NEWTRKS
f. Mate> QUIT ALL
Procedure 7  
MS_CHECK failure

PRESWACT may STOP with the message "Failed MS_CHECK for inactive CM load." *Only when you see this message*, load the MS corresponding to the inactive CPU using this procedure. PRESWACT will stop at this point if the MS load version does not match the BCS level of the inactive CM.

*Note:* The MS_CHECK is a check against the *inactive* CM and the MSs. Its purpose is to ensure the BCS version for each MS will be matched with the new BCS.

1. **App/INACT** Logout on the inactive side (if logged in).
2. **ACT** Type:
   > MATELINK BSY
3. **DISKUT**
   > LF S00D<volume>  
   > LF S01D<volume>  
   _where <volume> is the SLM disk volume with the _MS load file._
4. **At the MS level of the MAP, note which MS corresponds to the inactive CPU. Both MSs should be inservice.**
   > MAPCI;MTC;MS
5. **Make the MS CLOCK corresponding to the inactive CM the SLAVE clock. If necessary, switch MS clock mastership with:**
   > SWMAST  
   _{only if needed to switch clocks}_
6. **If you switched mastership, wait 5 minutes to ensure the clocks are stable and to allow a hardware audit to run.**
7. **At the MS level of the MAP, busy the MS that corresponds to the inactive CM (and with the slave clock).**
   > BSY <MS#>
8. **LOADMS <MS#> <filename>**
   _where <filename> is the name of the _MS load file listed above in step 3._
   > YES  
   _{for confirmation}_

-continued-
Procedure 7
MS_CHECK failure (continued)

9  > TST <MS#> VIAMATE
   Ensure the test passes with no faults. Determine the cause for any failure, fix
   the fault, and repeat the test.

   CAUTION
   Do not proceed unless NO faults are reported.
   Replace cards if necessary and repeat the test. Contact site supervisor
   if the test fails repeatedly.

10 Monitor MS logs for 5 minutes to ensure stability.

11 Continue PRESWACT.
   > QUIT MAPCI
   > PRESWACT (still in BCSUPDATE)
Procedure 8
STATUSCHECK if MS loaded in PRESWACT

1 App/ACT After PRESWACT is completed and only if one MS was loaded during PRESWACT (BCS33 and lower), run a STATUSCHECK (to enable the matelink).

_Note:_ STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

a. > BCSUPDATE;SWACTCI;STATUSCHECK  
{for BCS33 and higher}
> BCSUPDATE;SWCT;STATUSCHECK  
{for BCS31 or BCS32}
> SWCT;STATUSCHECK  
{for BCS30 and lower}

b. Ensure the STATUSCHECK passes (with both sides matching). _If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes._
Procedure 9  
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  
       Mate> OPERATOR OPERATOR
       or  Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 10
Logout DNC

1. **Site and App/ACT** If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
Procedure 11
Table CRSFMT alarm

1 App/ACT In table CRSFMT, field ALARM, if any entry is set to ‘Y’, then the device must also be allocated in table DIRPPOOL. Otherwise, set it to ‘N’.

Note: If a volume is allocated in DIRPPOOL it is being used.
SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1
BULLETINS before SWACT

1 App Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
Procedure 2
Before SWACT

1 Site  Do not proceed until both the Telco and NT on-line support agree.

2 Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

3 Site  Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

4 Site  Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

5 Site  Dump the SPMS register information to a printer (or other device) according to Telco practice.

6 Site  Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

---

**CAUTION**

*If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.*

---

a. Enter the LTPDATA level of MAP.

b. Query all DTA monitors on the switch by issuing the command,

   ```
   > EQUIP DTA QUERY ALL
   ```

c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.

d. Make note of any connected monitors by looking at the CONNECT field of the query display.

   Use the POST command to post each monitored LEN, and then issue the command,

   ```
   > CONNECT <N> RLS
   ```

   where `<N>` is the integer number of the monitor from the first column of the query display.

   Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

   -continued-
Procedure 2
Before SWACT (continued)

e. Reset all monitor LENs and DS0 channels by issuing the command,
   > EQUIP DTA RESET <N>
   where <N> is the integer number of the monitor from the first column of
   the query display.
   Do this until no equipment is left "Equipped." Repeat substep b as
   necessary to review DTA status.

7 Site If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is
a manual action used to test the quality of a CCS7 link.

CAUTION
In BCS35 BERT should not be left running during the CC SWACT.
Otherwise, the link will hang up over the SWACT.
If BERT is left running over the SWACT, you will have to go into the
PM level, post the offending LIU7/MSB7, and BSY and RTS it.

a. To determine if BERT is on: Go into C7LKSET level and post each
   linkset in turn. The link state should not indicate 'BERT'.

b. To turn off BERT, go into the C7LKSET level and post the linkset. Go
   into C7BERT level and type STOP <linkno>.
Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart reload on the mate side will cause supp/thresh settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1  App/ACT  List all special logs on the active side.
    > LOGUTIL
    > LISTREPS SPECIAL

Example output:
LINE 138 7 INFO TRMT *thresh= 25*
PM 189 5 INFO PM SW Information... *supp*

2  App/INACT  Restore special logs on the mate side.
    Mate> LOGUTIL
    Mate> LISTREPS SPECIAL

Commands to restore above example:
    Mate> THRESHOLD 25 LINE 138
    Mate> SUPPRESS PM 189

3  App/INACT  Verify the correct logs are set up and match the active load.
    Mate> LOGUTIL
    Mate> LISTREPS SPECIAL
Procedure 4  
Start logs

1     App/ACT  Set up LOGS for the SWACT.
      
      Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.
      
      a.   > LOGUTIL; STOP
      
      b.   > DELDEVICE <device>
            where <device> is where logs are to be routed.
      
      c.   > ADDREP <device>  SWCT  {also add SWNR if on BCS30 and lower}
      
      d.   > START
            This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
      
      e.   > LEAVE
Procedure 5  
Release JAM SNODE

UNJAM the processors in preparation for the CC switch of activity (SWACT).

1. **Site and App/INACT**  Verify the inactive side is flashing A1.

2. **Site/INACT**  From the inactive RTIF enter:

   RTIF> \RELEASE JAM
Procedure 6
Perform TST <MS#> VIAMATE

**CAUTION**
This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.
Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

*Note:* When the RESTARTSWACT or RESTARTSWCT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

1. **App/ACT** QUERYMS to verify the Message Switch loads. **Complete this step only if either MS load version does not match the BCS level of the inactive CM.**
   
   > MAPCI;MTC;MS
   
   > QUERYMS
   
   *If MS loads are not identical, ensure the MS with the incompatible load is ManB, then continue.*
   
   > MATELINK BSY *(if not done, mate side will restart when matelink RTS’ed)*
   
   > TST <MS#> VIAMATE *(on the ManB MS)*
   
   *Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.*

**CAUTION**
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.
Procedure 7
Establish mate communication SNODE

1. **App/ACT** Establish communication with the mate (inactive) side.
   
   **Note:** STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

   a. > BCSUPDATE; SWACTCI; STATUSCHECK \*for BCS33 and higher*

   b. > BCSUPDATE; SWCT; STATUSCHECK \*for BCS31 or BCS32*

   > SWCT; STATUSCHECK \*for BCS30 and lower*

   Ensure the STATUSCHECK passes (with both sides matching).
   
   *If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*
Procedure 8
SWACT

Refer to "CC Warm SWACT Summary" in Appendix A for a description of the CC warm SWACT process. Also refer to Appendix B for a procedure for testing call survivability over a CC warm SWACT and to Appendix C for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

1. App/ACT Wait a minimum of 10 minutes after the completion (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

   **CAUTION**
   
   FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT. Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

   **CAUTION**
   After a CC warm SWACT do not JAM the inactive CPU RTIF. The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

2. App/ACT INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

   Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

   > INTLSWCT;DATE;RESTARTSWCT (only for INTL offices)

   -continued-
Procedure 8
SWACT (continued)

3 App/ACT All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:
   > BCSUPDATE;SWACTCI;QUERYSWACT
   System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:
   > DATE;NORESTARTSWACT
   Respond (yes/no) to system prompt using lower-case.
   or else,
   > DATE;RESTARTSWACT

b. For BCS35 and lower type:
   > BCSUPDATE;SWACTCI;DATE;RESTARTSWACT   {for BCS33-BCS35}
   > BCSUPDATE;SWCT;DATE;RESTARTSWCT   {for BCS31 or BCS32}
   > SWCT;DATE;RESTARTSWCT   {for BCS30 and lower}

   System response varies with the BCS level, but the following prompt is a typical example.

   ACTIVE DEFAULT SETTINGS:
   FORCESWACT set ON
   LOADEXECs set ON
   NOMATCH set OFF
   Do you wish to continue?
   Please confirm ("YES" or "NO"):
   ...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

   CAUTION
   Work quickly to complete the procedures to follow.
   The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 9  
Start POSTSWACT

CAUTION
After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order
to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:

2  ?LOGIN
   Enter username and password  {system response}
   > <username> <password>
   or  > <username>
   > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 10
SYSBSY Message Switch

1 App/ACT If a Message Switch is SYSBSY, make it ManB.
   a. > MAPCI;MTC;MS
   b. > BSY <MS#> {for the sysbsy MS}
   c. > QUIT MAPCI
Procedure 11
Recover billing

Site and App/ACT  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  \{note which volume is ACTIVE\}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT <x> FORMAT <stdby_volume>
        where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
        Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is:
        "request aborted. Tape not expired (use ERASTAPE)"
        then enter:
        > ERASTAPE <x>
        where <x> is the standby device number.
        \textbf{Note:} On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
        System response is:
        ***WARNING, THIS TAPE WILL BE ERASED***

\begin{center}
\textbf{CAUTION}
\end{center}
\begin{quote}
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.
\end{quote}

Enter YES to confirm the command.

-continued-
Procedure 11
Recover billing  (continued)

d.  > DEMOUNT T<x>
e.  If ERASTAPE command was used, repeat substeps b and d to rename
the volume.
f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.
   a.  > MNT <subsystem> <x>  {still in DIRP level}
      Example: MNT AMA 3
      Enter YES to confirm the command.
   b.  > QUERY AMA  {to confirm standby volume is available}
   c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)
   * If SMDR recording is on BMC and NO standby volume is available, then
      mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and
      back IN. Remove the tape volume after this is done.
      Note: Since some SMDR recording applications on BMC collect SMDR
      records based on the customer group ID only, this ensures that any changes
      to the customer group IDs are passed to the BMC upon rotate (and the
      RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.
   a.  For BCS31 and lower:
      In table DIRPSSYS position on a DIRP subsystem requiring a parallel
      volume. Activate the parallel volume by datafilling the volume name.
      Example:
      TABLE DIRPSSYS;POS AMA
      CHA PARVOL T4
      or  CHA PARVOL D010PAMA
   b.  For BCS32 and higher:
      In table DIRPSSYS position on a DIRP subsystem requiring a parallel
      volume. Note the PARLPOOL name for the DIRP subsystem selected.
      Example:
      TABLE DIRPSSYS;POS AMA
      In table DIRPPOOL position on the parallel pool number associated
      with the PARLPOOL from table DIRPSSYS. Then activate the parallel
      volume by datafilling the volume name.
      -continued-
Procedure 11
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62  (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

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<tr>
<td>c.</td>
<td>Repeat substep a or b for each parallel volume to be activated.</td>
</tr>
<tr>
<td>d.</td>
<td>&gt; QUIT MAPCI</td>
</tr>
</tbody>
</table>

8. Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 12
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW
  *Note:* If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW
  *Note:* If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS
  *Note:* If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID
  *Note:* If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT
  *Note:* If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1   > MAPCI;MTC;TRKS;TPP

2   > POST A INI

3   > REPEAT <x> (FRLS;RTS;NEXT)

   where <x> is the number of INI trunks in the posted set.
Procedure 14
Restart inactive POST SNODE

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1 Site/INACT From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR TESTING TO COMPLETE.

2 Site/INACT From the inactive RTIF perform a restart reload on the inactive side.
   RTIF> \RESTART RELOAD
   RTIF> YES (for confirmation)

3 Site/INACT Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 15
DRTIME statistics

1  **App/ACT**  Get a hardcopy of DRTIME statistics (if needed).

> DRTIME PRINT

*DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.*
Procedure 16
Do Test Calls

1  Site.ACT  Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.

CAUTION
If an abort becomes necessary due to critical test failures, revert to the old load using the Revert to the old load procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.
Procedure 17
After testing is complete SYNC SNODE

1  App/ACT  POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

   Note: Do not enter POSTSWACT again until the processors are in sync.

   a.  > MAPCI;MTC;CM;SYNC
       > YES  {for confirmation}
   b.  > QUIT MAPCI
   c.  > POSTSWACT  {still in BCSUPDATE}
Procedure 18
POST_MS_CHECK failure

App/ACT  POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) Only if you see this message, load the MS reported to have an incompatible load with the compatible MS load as follows.

1  > DISKUT
   > LF S00D<volume>  {or S01D <volume>}
   where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>
   where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
   > YES  {for confirmation}

4  > TST <MS#>  {not VIAMATE}
   Ensure the test passes with no faults.

5  > RTS <MS#>  {not OOBAND!}

6  > QUIT MAPCI
Procedure 19
Finish POSTSWACT

1  **App/ACT** If necessary run POSTSWACT one more time to completion.
   > BCSUPDATE;POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and
   flag them as completed when they pass. If failures occur, follow given
   instructions to correct the problem, then continue POSTSWACT.

2  **Site and App/ACT** Copy any new MS patches in store file to the PM loads
   disk volume (or SLM disk).

3  **App/ACT** Clean up SFDEV by erasing any application-related files (for
   example: DRNOW, FEATDATA, and all patches).

4  **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For
   security Telco should change these passwords back to the original.

5  **Site/ACT** Re-input any data changes made prior to the software update but
   not captured on journal file.

6  **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART)
   in SFDEV.

7  **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

8  **Site/ACT** Reassign any changes in the INTEG level of the MAP (for
   example, UPTH, BUFFSEL, FILTER and others).

9  **Site/ACT** Return PORTS and USER information back to original values.

10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the
   "JFFREEZE procedure" *(Site Preparation section)*, change data for position
   JF in table DIRPSSYS back to the original data.
Procedure 20
Take image SNODE

1. **Site/ACT** DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2. After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

   **Note:** Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 21
Start journal file

1 Site/ACT If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
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Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before REVERT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive SNODE 2

**CAUTION**
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1  Site/INACT  Perform a restart reload on the inactive processor (old BCS load).
   a.  From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
   b.  From the inactive RTIF perform a restart reload on the inactive processor (old load).
       RTIF> \RESTART RELOAD
       RTIF> YES  \textit{(for confirmation)}
   c.  Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2  App/INACT  Confirm that the inactive processor is flashing A1.
Procedure 3
Establish mate communication SNOIDE

1 App/ACT Establish communication with the mate (inactive) side.
   a. > BCSUPDATE;SWACTCI;STATUSCHECK  \{for BCS33 and higher\}
      > BCSUPDATE;SWCT;STATUSCHECK \{for BCS31 or BCS32\}
      > SWCT;STATUSCHECK \{for BCS30 and lower\}
   b. Ensure the STATUSCHECK passes (with both sides matching).
      If STATUSCHECK fails, investigate and correct any mismatches and
      any devices not okay or offline. Once all problems have been
      corrected, rerun STATUSCHECK and ensure it passes.

Note: STATUSCHECK may cause a restart on the inactive side (watch
the inactive RTIF). If the inactive side does restart, it should initialize
and come back to a flashing A1.
Procedure 4  
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  
       Mate> OPERATOR OPERATOR 
       or Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 5
TRACECI close

1 **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

    Mate> TRACECI CLOSE  \(\text{(for BCS34 and lower)}\)
Procedure 6
Configure DIRP billing

1  Site/App  Configure the DIRP billing subsystems for revert SWACT to the old load.

   Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

   a. ACT  Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.
           Disk volumes will rotate and recover automatically after SWACT.
           Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.
   b. INACT  If reverting to BCS31 or higher:
           Ensure datafill is correct on the mate side for tables DIRPPPOOL or DIRPSSYS.
   c. INACT  If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.
           Note: In DIRP_REC the parallel volume assignments for DIRPPPOOL should be set to nil ($) for all pools.
Procedure 7
Start logs

1  App/ACT  Set up LOGS for the SWACT.

   Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a. > LOGUTIL; STOP
   b. > DELDEVICE <device>
      where <device> is where logs are to be routed.
   c. > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d. > START
      This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
   e. > LEAVE
Procedure 8
Ensure inactive unjammed

1  Site and App/INACT  Ensure inactive side is unjammed.
Procedure 9
Perform TST <MS#> VIAMATE for Revert

CAUTION
This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.
Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the ABORTSWACT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

1  App/ACT  Test the ManB Message Switch to ensure the MS clocks are in sync. Complete this step only if one MS load is incompatible with the BCS level of the inactive CM (for example, when reverting to BCS33 or lower).

> MAPCI;MTC;MS
Ensure that the MS corresponding to the inactive CPU is ManB.

> MATELINK BSY  {If not done, mate side will restart when matelink RTS’d}

> TST <MS#> VIAMATE  {on the ManB MS}
Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.
Procedure 10
Establish mate communication SNODE

1  App/ACT  Establish communication with the mate (inactive) side.

  **Note:** STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

  a.  > BCSUPDATE;SWACTCI;STATUSCHECK  {for BCS33 and higher}
      > BCSUPDATE;SWCT;STATUSCHECK  {for BCS31 or BCS32}
      > SWCT;STATUSCHECK  {for BCS30 and lower}

  b.  Ensure the STATUSCHECK passes (with both sides matching).
      If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
Procedure 11
Revert

1 App/ACT Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

CAUTION
FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

2 App/ACT INTERNATIONAL offices switch CC activity (SWACT) as follows.
Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.
> INTLSWCT;DATE;RESTARTSWCT  {only for INTL offices}

3 App/ACT ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

CAUTION
If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be unloaded from the active side in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-
Procedure 11
REVERT (continued)

> BCSUPDATE;SWACTCI;DATE;ABORTSWACT  \{for BCS33 and higher\}

**CAUTION**
In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option only as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE;SWCT;DATE;ABORTSWCT  \{for BCS31 or BCS32\}
> SWCT;DATE;RESTARTSWCT  \{for BCS30 and lower\}

*System response varies with the BCS level, but the following prompt is a typical example.*

**ACTIVE DEFAULT SETTINGS:**
FORCESWACT set ON
LOADEXECs set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.

4 Site/ACT  Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

**CAUTION**
Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 12
Start POSTSWACT

**App/ACT** Login, check the date and time, and start POSTSWACT.

1. **Type:**
   
2. **?LOGIN**
   Enter username and password
   
   > <username> <password>
   
   or
   > <username>
   > <password>

3. **> DATE**
   Verify the date and time are correct.

4. **Reestablish recording onto devices (console session) as required.**

5. **> BCSUPDATE;POSTSWACT**
   POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
Procedure 13
SYSBSY Message Switch

1 App/ACT If a Message Switch is SYSBSY, make it ManB.
   a.  > MAPCI;MTC;MS
   b.  > BSY <MS#>          (for the sysbsy MS)
   c.  > QUIT MAPCI
Procedure 14
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1. `> MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL` *(note which volume is ACTIVE)*

2. If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3. TAPEX volumes must be manually remounted using the DIRP MNT command.

4. Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. `> MOUNT <x> FORMAT <stdby_volume>
      where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.`
      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      `> ERASTAPE <x>
      where <x> is the standby device number.`
      **Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      **System response is:**
      ***WARNING, THIS TAPE WILL BE ERASED***

   **CAUTION**
   At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
   If a mistake is made, a real tape may be erased.

   Enter YES to confirm the command.
   -continued-
Procedure 14
Recover billing (continued)

d.  > DEMOUNT T<x>
e.  If ERASTAPE command was used, repeat substeps b and d to rename the volume.
f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.

a.  > MNT <subsystem> <x>  {still in DIRP level}
   
   Example: MNT AMA 3
   
   Enter YES to confirm the command.

b.  > QUERY AMA  {to confirm standby volume is available}

c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)

   * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

   Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.

a.  For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

   Example:
   
   TABLE DIRPSSYS;POS AMA
   
   CHA PARVOL T4
   
   or CHA PARVOL D010PAMA

b.  For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

   Example:
   
   TABLE DIRPSSYS;POS AMA
   
   In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

   -continued-
Procedure 14
Recover billing (continued)

Examples:
TABLE DIRPOO;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 15
Display DPP settings

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1. `> MAPCI NODISP;MTC;IOD;DPP AMA`

2. `> COLLPW`
   
   **Note:** If different, perform steps 3 and 4; otherwise go to step 5.

3. `> COLLPW 1 <4_digits> <6_digits>`

4. `> COLLPW 2 <4_digits> <6_digits>`

5. `> AMATPSW`
   
   **Note:** If different, perform step 6; otherwise, go to step 7.

6. `> AMATPSW <4_digits> <6_digits>`

7. `> AMAHRS`
   
   **Note:** If different, perform step 8; otherwise, go to step 9.

8. `> AMAHRS <start_hour> <end_hour>`

9. `> VALPARM INVALID`
   
   **Note:** If different, perform step 10; otherwise, go to step 11.

10. `> VALPARM INVALID <threshold>`

11. `> ERRMAP ACT`
   
   **Note:** If different, perform steps 12 and 13.

12. `> ERRMAP <alarm_no> <type> <level>`

13. Repeat step 12 for each alarm that is different.
Procedure 16
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TTP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 17
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 18
After testing is complete SYNC SNODE

1  App/ACT  POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

a.  > MAPCI;MTC;CM;SYNC
    > YES  (for confirmation)

b.  > QUIT MAPCI

c.  > POSTSWACT  (still in BCSUPDATE)
Procedure 19
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) Only if you see this message, load the MS reported to have an incompatible load with the compatible MS load as follows.

1  > DISKUT
    > LF S00D<volume>  {or S01D <volume>}
    where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>
    where <MS#> is the MS to be loaded, and <filename> is the name of the
    _MS load file listed above in step 1.
    > YES  {for confirmation}

4  > TST <MS#>  {not VIAMATE}
    Ensure the test passes with no faults.

5  > RTS <MS#>  {not OOBAND!}

6  > QUIT MAPCI
Procedure 20
Finish POSTSWACT

1  **App/ACT**  If necessary run POSTSWACT one more time to completion.
   
   > BCSUPDATE; POSTSWACT
   
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2  **Site and App/ACT**  Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3  **App/ACT**  Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4  **Site/ACT**  Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5  **Site/ACT**  Re-input any data changes made prior to the software update but not captured on journal file.

6  **Site/ACT**  Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7  **Site/ACT**  Reassign any temporary log ROUTING setup via LOGUTIL.

8  **Site/ACT**  Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9  **Site/ACT**  Return PORTS and USER information back to original values.

10 **Site/ACT**  Notify DNC end users to LOGIN the DNC.

11 **Site/ACT**  For Hybrid and if table DIRPSSYS was changed during the "JFREEZE procedure" (Site Preparation section), change data for position JF in table DIRPSSYS back to the original data.
Procedure 21
Take image SNODE

1  **Site/ACT**  DUMP AN IMAGE of the new BCS load for backup-one
SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape
 cartridge.

2  After the image is completed, you may set the AUTODUMP 'RETAIN' option
back to 'ON' if desired. The option was set to "OFF" during the ONP.

_**Note:** Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is
design intent. This was done to prevent setting the system recovery route to
the 'OLD' BCS image that was taken prior to the BCS update._
Procedure 22
Start journal file

1. **Site/ACT**  If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
Revert to old load procedure

Procedure 23
More Revert/ABORT steps

1  **Site and App/INACT**  If asked to do so by technical support take an image of the *inactive* (mate) side load.

2  **Site and App/ACT**  With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3  **Site and App**  Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

4  **App/ACT**  On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a.  If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   b.  If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
Emergency abort procedure

CAUTION
Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before EABORT

1 Site  Do not proceed until both the Telco and NT on-line support agree.

2 Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive SNODE 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT  Perform a restart reload on the inactive processor (old BCS load).
   a. From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
   b. From the inactive RTIF perform a restart reload on the inactive processor (old load).
      RTIF> \RESTART RELOAD
      RTIF> YES {for confirmation}
   c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT  Confirm that the inactive processor is flashing A1.
Procedure 3
Ensure inactive unjammed

1. Site and App/INACT  Ensure inactive side is *unjammed.*
Procedure 4
Cold SWACT SNODE

1  Site/ACT  JAM active side to force a switch of activity (cold swact).
    RTIF> \OVERRIDE
    RTIF> \JAM
    RTIF> YES {for confirmation}

2  Site/ACT  Monitor the SWACT, and tell the software delivery engineer when
            the active processor is again flashing A1.
            At this point the CC switch of activity is over.

3  Site and App/ACT  Work quickly to complete the next procedure. The
                    POSTSWACT procedure (to follow) checks that the office is functioning as
                    normal.

            Note: Be sure to notify appropriate levels of support of the ABORT before
            putting the switch back in SYNC.
Procedure 5
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password  {system response}
   > <username> <password>
   or > <username>
       > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 6
SYSBSY Message Switch

1  App/ACT If a Message Switch is SYSBSY, make it ManB.
   a.  > MAPCI;MTC;MS
   b.  > BSY <MS#>  {for the sysbsy MS}
   c.  > QUIT MAPCI
Procedure 7
Recover billing

Site and App/ACT  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  \{note which volume is ACTIVE\}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT <x> FORMAT <stdby_volume>
       \{where \(<x>\) is the standby device number, and \(<stdby_volume>\) is the name of the standby volume.\}
       Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is:
       "request aborted. Tape not expired (use ERASTAPE)"
       then enter:
       > ERASTAPE <x>
       \{where \(<x>\) is the standby device number.\}
       \textbf{Note}: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
       \textit{System response is:}
       ***WARNING, THIS TAPE WILL BE ERASED***

\begin{center}
\textbf{CAUTION}
\end{center}
\begin{itemize}
\item At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
\item If a mistake is made, a real tape may be erased.
\end{itemize}

Enter YES to confirm the command.

-continued-
Procedure 7
Recover billing (continued)

d. > DEMOUNT T<x>
e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.
f. Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

a. > MNT <subsystem> <x>  (still in DIRP level)
   Example: MNT AMA 3
   Enter YES to confirm the command.
b. > QUERY AMA  {to confirm standby volume is available}
c. Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

a. For BCS31 and lower:
   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b. For BCS32 and higher:
   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
   Example:
   TABLE DIRPSSYS;POS AMA
   In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.
   -continued-
Procedure 7
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.

d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 8  
Display DPP settings

App/ACT  Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW  
  Note: If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW  
  Note: If different, perform step 6; otherwise go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS  
  Note: If different, perform step 8; otherwise go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID  
  Note: If different, perform step 10; otherwise go to step 11.

10  > VALPARM INVALID <threshold>

11  > ERRMAP ACT  
  Note: If different, perform steps 12 and 13.

12  > ERRMAP <alarm_no> <type> <level>

13  Repeat step 12 for each alarm that is different.
Procedure 9
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the
correct state after SWACT, post all INI trunks, perform a force release, and
return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 10
Do Test Calls

1  Site/ACT  Perform TEST CALLS that were identified ahead-of-time from
Appendix C: Test Call Scripts.
Procedure 11
After testing is complete SYNC SNODE

1  **App/ACT** POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

   **Note:** Do not enter POSTSWACT again until the processors are in sync.

   a.  > MAPCI;MTC;CM;SYNC
       > YES  
       {for confirmation}

   b.  > QUIT MAPCI

   c.  > POSTSWACT  
       {still in BCSUPDATE}
Procedure 12
POST_MS_CHECK failure

App/ACT POSTSWACT may STOP with the message "Failed
POST_MS_CHECK for active CM load: #." (Both MS loads will be
displayed.) Only if you see this message, load the MS reported to have an
incompatible load with the compatible MS load as follows.

1  > DISKUT
   > LF S00D<volume>       {or S01D <volume>}
   where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>
   where <MS#> is the MS to be loaded, and <filename> is the name of the
   _MS load file listed above in step 1.
   > YES             {for confirmation}

4  > TST <MS#>             {not VIAMATE}
   Ensure the test passes with no faults.

5  > RTS <MS#>             {not OOBAND!}

6  > QUIT MAPCI
Procedure 13
Finish POSTSWACT

1 App/ACT If necessary run POSTSWACT one more time to completion.

   > BCSUPDATE; POSTSWACT
At this point BCSUPDATE will run any remaining POSTSWACT steps and
flag them as completed when they pass. If failures occur, follow given
instructions to correct the problem, then continue POSTSWACT.

2 Site and App/ACT Copy any new MS patches in store file to the PM loads
disk volume (or SLM disk).

3 App/ACT Clean up SFDEV by erasing any application-related files (for
example: DRNOW, FEATDATA, and all patches).

4 Site/ACT Passwords for ADMIN and OPERATOR may have changed. For
security Telco should change these passwords back to the original.

5 Site/ACT Re-input any data changes made prior to the software update but
not captured on journal file.

6 Site/ACT Reassign all current PROFILE information (LOGIN or RESTART)
in SFDEV.

7 Site/ACT Reassign any temporary log ROUTING setup via LOGUTIL.

8 Site/ACT Reassign any changes in the INTEG level of the MAP (for
example, UPTH, BUFFSEL, FILTER and others).

9 Site/ACT Return PORTS and USER information back to original values.

10 Site/ACT Notify DNC end users to LOGIN the DNC.

11 Site/ACT For Hybrid and if table DIRPSSYS was changed during the
"JFFREEZE procedure" (Site Preparation section), change data for position
JF in table DIRPSSYS back to the original data.
Procedure 14
Take image SNODE

1  Site/ACT  DUMP AN IMAGE of the new BCS load for backup-one
SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape
   cartridge.

2  After the image is completed, you may set the AUTODUMP 'RETAIN' option
   back to 'ON' if desired. The option was set to "OFF" during the ONP.

   Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is
   design intent. This was done to prevent setting the system recovery route to
   the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 15
Start journal file

1 Site/ACT  If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
Procedure 16
More Revert/ABORT steps

1 Site and App/INACT  If asked to do so by technical support take an image of the inactive (mate) side load.

2 Site and App/ACT  With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3 Site and App  Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4 App/ACT  On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a.  If old load is BCS35 and higher:
       > BCSUPDATE;ABORT_PRESWACT
       > TABXFR;CANCEL
       > QUIT ALL
   b.  If old load is BCS34 and lower:
       > BCSUPDATE;RESET
       > QUIT ALL
ONP NT40 MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures before being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1
Take image

1  Site/ACT  Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
Procedure 2
Route logs NT40

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1 Site/ACT
   > LOGUTIL
   > LISTREPS SPECIAL
   If specific logs are suppressed use
   > RESUME <log>
   If logs have threshold set use
   > THRESHOLD 0 <log>
   where <log> refers to specific CC, CMC and MISM logs.

2 > LISTROUTE DEVICE <printer>
   If critical logs are not routed use
   > ADDRGP <printer> <log>
   > STOPDEV <printer>
   Verify only critical logs are enabled on the device and are correctly routed.

3 > STARTDEV <printer>
   > LEAVE
Procedure 3
Processor tests NT40

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

Note: Perform the following front-end testing during low traffic periods.

1 Site Ensure the CPUs are in SYNC and the inactive side is NOT jammed.
   On each CCC, at shelf 51, card location 16 (NT1X48), verify the Enab switches are down, the NoSync LEDs are off (in SYNC), the Dact switches are to the left (un jammed), and the thumbwheels are on 5.

2 ACT Match the memory from the CC level of the MAP.
   > MAPCI;MTC;CC
   > MTC

3 INACT On the inactive side, jam the inactive CPU.
   a. Locate the NT1X48 card with the Inact LED lit.
   b. Move the Dact switch to the right (jammed) and the Enab switch up.

4 ACT Drop SYNC from the CC level of the MAP.
   > DPSYNC
   > YES (for confirmation)

5 INACT Wait for the inactive CPU to return to flashing A1.

6 Test the stability of the inactive CPU from the NT1X48 card.
   a. INACT Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 5, DO NOT PRESS RESET. The hex display will flash 55 and initialize (warm restart).
      Confirm inactive CPU flashes A1.
   b. INACT Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 6, DO NOT PRESS RESET. The hex display will flash 66 and initialize (cold restart).
      Confirm inactive CPU flashes A1.
   c. INACT Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 7, DO NOT PRESS RESET. The hex display will flash 77 and initialize (restart reload).
      Confirm inactive CPU flashes A1.
   -continued-
**Procedure 3**  
**Processor tests NT40 (continued)**

**d. INACT** Set the thumbwheel on 0 and press reset, the hex display will cycle in (hex), from 00 to 16 repeatedly. Once the test has cycled three times, set the thumbwheel to 7 and press reset.

**e. INACT** Set the thumbwheel on 5, DO NOT PRESS RESET. Then put the *Enab* switch down.

---

7 **ACT** Perform a memory retention test from the DS and PS levels of the MAP.

*Note:* This test can take up to 2 hours to complete.

```
> DS <i>  
where <i> is the inactive DATA store.  
{from CC level}  
> TST MEM RETAIN #AAAA  
> YES {for confirmation}  
> TST MEM RETAIN #0001  
> YES {for confirmation}  
> TST MEM RETAIN #5555  
> YES {for confirmation}  
> QUIT  
> PS <i>  
where <i> is the inactive PROGRAM store.  
> TST MEM RETAIN #AAAA  
> YES {for confirmation}  
> TST MEM RETAIN #0001  
> YES {for confirmation}  
> TST MEM RETAIN #5555  
> YES {for confirmation}  
```

---

8 After completion of the tests check for CC108 or CC109 logs, indicating the test passed or failed. If the test failed, a CC101 log identifies the failed card. Resolve all problems and repeat step 7.

---

9 **ACT** Copy program store.

```
> COPY <m>  
{still in PS level}  
where <m> is the PS module. Start at 0, and repeat for each PS module equipped.  
```
Procedure 3  
Processor tests NT40  (continued)

10  **ACT**  SYNC the CPUs from the CC level of the MAP.  
   > QUIT; SYNC  
   > YES  \(^{(for\;confirmation)}\)

11  After receiving the "Synchronization Successful" message, verify no faults are displayed at the CC level of the MAP (shows all dots and no Xs or fs).

12  **INACT**  On the inactive side release the jam.  
   a.  Locate the NT1X48 card with the *Inact* LED lit.  
   b.  Move the *Dact* switch to the left (unjammed).

13  **ACT**  Switch activity of the CPUs from the CC level.  
   > SWACT

14  Repeat steps 1 through 13 on the newly-inactive CPU.

15  Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

16  **ACT**  Perform REX test from the CC level. Repeat with each CPU initially active.  
   > MTCH  
   > REXTST RETENTION  
   > YES  \(^{(for\;confirmation)}\)  
   *The CPUs will be out of SYNC during testing. CC activity switches will occur during this time.*

17  **ACT**  After completion of the test, verify the test results:  
   > QUERYCC RETENTION  
   *The CPUs should be back in SYNC with no REX alarms at the CC level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 15 and 16.*

18  Repeat (with the other CPU active) steps 15 through 17.
Procedure 3
Processor tests NT40 (continued)

19 ACT  Perform an image test from the CCMNT level of the MAP.
    > CCMNT
    > IMAGE
    > QUIT

20 After completion of the test, check for CC logs indicating pass or fail message. If test failed, clear the problem and repeat step 19.

21 ACT > QUIT ALL
Procedure 4
Responsibilities before pre-application checks NT40

1 Site Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

a. MOUNT and LIST the tape.
b. From the tape header or first file verify the tape is correct for the target BCS. For a BCS IMAGE tape also verify the image filename. 
   Verify a tape is good by listing the tape to the end without any errors.
c. If any problems are found notify your NT customer service representative immediately.
d. Keep the tapes on-site for use during the scheduled software update.

2 Site Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

3 Site Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the Peripheral Software Release Document ("Application Procedures" section).
   Peripheral modules include all PMs, XPMs, DPP, and MPC.

Note: If a cross-reference file (BCSxxXPM$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

4 Site Monitor front-end stability watching NT40 CC, CMC, and MISM logs through the day of the software delivery.
Procedure 5
Save site files

1  Site/ACT  Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.
   *Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application—DO NOT ERASE!*
Procedure 6
Peripheral verification NT40

1. **Site/ACT** If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

2. On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive “bad blocks” are present, reformat the disk.

3. Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the Peripheral Software Release Document.)
Procedure 7
Table ACDGRP

1 App/ACT Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.

a. > OMSHOW ACDGRP ACTIVE

b. Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)

c. If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)

d. Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
Procedure 8
Fill in Test Call Scripts

1 Site Fill in and test the Test Call Scripts in Appendix C.
This is to provide a thorough test plan exercise for testing the new BCS load.
You will be asked to make your test calls after switching activity to the new BCS.
This page purposely left blank.
Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

Procedure 2 is for offices on BCS33 and lower.

CAUTION
Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1
Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in Appendix A. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

1 Site/ACT Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

• To use the "FROM" and "TO" options see substep a below.
• To use the "ALL" option see substep b below.

Warning: If a device is not specified when issuing the TABAUDIT ALL command, only a SUMMARY$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-
Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted. To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY$FILE" file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:

Warning: Changes in table STDPRTCT may alter office billing.

a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

> TABAUDIT FROM <start table> [TO <end table>] <device name>

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

> TABLE DART; LIST (output will be the "FROM" table name)
> DOWN 100; LIST 2 (output will be the "TO" table name of the first 100 and the "FROM" table name for the second 100)
> DOWN 100; LIST 2 (repeat until the end of table is reached)
> LEAVE

Perform TABAUDIT on the first 100 tables as shown in the following example:

> TABAUDIT FROM DART TO BGDATA <device name>

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

> TABAUDIT ALL <device name>

-continued-
Procedure 1
Run TABAUDIT (continued)

2. Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

    > TABAUDIT ONLY <table name> <device name>

    Continue until all tables have been corrected.

3. When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
Procedure 2
Run CHECKTAB (BCS33 and lower)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

For offices on BCS 33 and lower that are scheduled for a complete One Night Process (not Hybrid), please refer to your Site Notification Package (or contact the NT Customer Service Representative) for the appropriate procedure concerning the use of CHECKTAB.
Site responsibilities the day of the software delivery

The following steps must be completed by site personnel before the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1
Day zero checklist

1. **Site** Verify that all problems identified from performing table data checks have all been resolved.

2. Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

3. Verify an image has been taken in the last 24 hours and backed to tape.

4. Ensure you have undertaken your critical test call plan and verified it. (See Appendix C: Test Call Scripts.)

5. Verify SFDEV has been cleared of all Telco/site-created files.

6. Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7. **LIU7 image with feature AQ1102**

   In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs. This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

   **Note:** If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.
Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

1 Site/ACT  All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
   • From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.
   • To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.
Procedure 3
Run DATADUMP

1 Site/ACT Run DATADUMP to output important switch information for future reference.
   a. > LOGUTIL;STOPDEV <printer>
      where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
      > LEAVE
   b. > RECORD START ONTO <printer>
   c. > BCSUPDATE;DATADUMP {for BCS33 and higher}
      When DATADUMP is completed:
      > QUIT
   d. > DRCI;RUNEXEC DATA_DUMP {for BCS32 and lower}
      When DATADUMP is completed:
      > QUIT
   e. > RECORD STOP ONTO <printer>
<table>
<thead>
<tr>
<th>Procedure 4</th>
<th>FX voice and data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Site</strong> Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)</td>
</tr>
<tr>
<td>2</td>
<td>Ensure at least two dialup ports are operational—one on each IOC. These should have COMCLASS of ALL.</td>
</tr>
<tr>
<td>3</td>
<td>Verify user names to be used during the software update have PRIVCLAS of ALL.</td>
</tr>
</tbody>
</table>
Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a One Night Process software delivery.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the new BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>.”

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.
Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

1. If the MOVEBCS process must be halted or interrupted, use the MOVEBCS HALT option. Refer to "Interrupt MOVEBCS" in Appendix A (page A-19).

2. If the TABXFR process must be halted or interrupted, use the HALT option. Refer to "Interrupt TABXFR" in Appendix A (page A-24).

3. It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in Appendix A (page A-29).

4. If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 5-107).

5. If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 5-129).
Procedure 2
Remote login

1  App/ACT  Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2  App/ACT  Login the users and if applicable, set LOGINCONTROL.
   a.  <break>
   b.  ?LOGIN
       Enter username and password  {system response}
       > <username> <password>
       or > <username>
       > <password>
       where username and password can both be found on the Pre-
       application report.
   c.  For BCS33 and higher enter:
       > BCSUPDATE;DEVICE
       > QUIT
   d.  For BCS32 and lower enter:
       > LOGUTIL;STOP;STOP  {Note the name of this device}
       > LEAVE
       > LOGINCONTROL <device> QUERY
   e.  Verify Open Condition Logout is N. If not, retain the original status and enter:
       > LOGINCONTROL <device> OPENFORCEOUT FALSE
       Verify Max Idle Time is Forever. If not, retain original status and enter:
       > LOGINCONTROL <device> MAXIDLETIME FOREVER
       > LOGINCONTROL <device> DISABLEON REMOVE
       <forceout_conditions>  {conditions obtained in substep d above}
   f.  Repeat this entire step on the other terminal device.
Procedure 3  
Check logs NT40

1  **App/ACT**  For BCS33 and higher check logs to verify processor stability.
   
   > BCSUPDATE; LOGCHECK
   > QUIT
   
   *Do not continue until all logs have been explained.*

2  **App/ACT**  For BCS32 and lower check logs to verify processor stability.
   
   > LOGUTIL
   > OPEN <log_buffer>; WHILE (BACK) ()
   
   *where* <log_buffer> *refers to CC, CMC and MISM logs.*
   > LEAVE
   > TRAPINFO
   
   *Check for store parity traps, MISM (mismatch), and store checksum logs. Do not continue until all logs have been explained.*
Procedure 4
Stop journal file

1 App/ACT  ROTATE and STOP the Journal File recording.
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b.  > CLOSE JF ACTIVE
       QUERY again to verify rotation.
   c.  > JF STOP
       Verify stopped.
   d.  > QUIT MAPCI
Procedure 5  
Drop sync NT40

CAUTION  
Observe ANTI-STATIC precautions  
throughout the NT40 drop sync and initialization procedure.

1 Site    On each CCC, at shelf 51, card location 16 (NT1X48), verify the Enab switches are down, the NoSync LEDs are off (in SYNC), the Dact switches are to the left (unjammed), and the thumbwheels are on 5.

2 App/ACT  Type:  
> MAPCI;MTC;CC

3 App/ACT  Ensure the CPU you want to load with the new BCS load is currently the inactive side.  
For example: If you will be loading CC 0 with the new BCS image, then CC 0 must be made inactive.  
b. If needed switch activity of the CC using SWACT (CC level).  
c. Align the CC and CMC clock on the same side (SYNCLK level).  
   For example: CC 0 inactive with clock 0 slaved.

4 Site/INACT  Locate the NT1X48 card on the inactive CPU (with the Inact LED lit).

5 Site/INACT  JAM the inactive CPU by moving the Dact switch to the right.

6 Site and App  From the MAP display confirm the JAM is on.

7 App/ACT  Drop sync from the CC level of the MAP.  
> MAPCI;MTC;CC;DPSYNC  
> YES               {if prompted to disable AUTO PATCHING}  
> YES                 {to confirm DPSYNC}

8 Site/INACT  Site must tell the engineer when the inactive CC is flashing A1.

9 App/ACT  
> QUIT MAPCI

-continued-
Procedure 5
Drop sync NT40 (continued)

10 Site  Initialize the inactive CPU as follows.

a.  **INACT**  On the inactive CC put enable switch UP.

b.  **INACT**  Move thumbwheel to 7 and press RESET.
    *Display should immediately freeze on A1.*

c.  **INACT**  Move thumbwheel to 8 and press RESET.
    *Display should go to a solid A2, then to flashing D2 when process is complete. (This initializes the program store.)*

d.  **INACT**  Move thumbwheel to 9 and press RESET.
    *Display should go to a solid A3, then to flashing D3 when process is complete. (This initializes the data store.)*

e.  **INACT**  Move thumbwheel to 7 and press RESET.
    *Display should immediately freeze.*

f.  **INACT**  Move thumbwheel to 5, but **DO NOT PRESS RESET!**

g.  **INACT**  Put enable switch back DOWN.
Procedure 6
BULLETINS before LOADMATE

1 App Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
Procedure 7
Loadmate NT40

1  Site/ACT  Load the new BCS IMAGE tape on an available tape drive <x>.
   a. > MOUNT <x>  \{lists the image load file\}
   b. Verify the image file on the tape is correct.

2  > LIST T<x> TO <filename>
   where <filename> is the image load file to be loadmated.

3  > LDMATE <filename>

4  Site and App/INACT  Wait for loadmate to complete and the inactive processor to flash A1.
   While waiting for loadmate, SITE may display the patches in store file
   (PATCHER; DISPLAY <patch>) or may copy any new patches to the new
   patch tape (or to disk).

5  App/ACT
   > DEMOUNT T<x>

6  Site  Remove the image tape from the tape drive.
Procedure 8
Login inactive after Loadmate NT40
Login on the inactive processor after loadmate is complete.

1  App/ACT  Type:
   > MCR RTS

2  Allow initialization on the inactive side (flashing A1).

3  LOGOUT of the active side if logged in on the terminal labeled INACT.

4  > MATEIO
   > MATELOG <device>
   where <device> is the name of the terminal labeled INACT.

5  App/INACT
Enter username and password  (mate-side response)
Mate> OPERATOR OPERATOR
or Enter username
Mate> OPERATOR
Enter password
Mate> OPERATOR
Procedure 9
Set date and header message

1  **App/INACT**  Set the current date and site header message on the mate side.

Mate> SETDATE <dd mm yy>  \{set today's date\}

Mate> SETLOGMSG '<text>'
where <text> becomes the office header on the new software load. Using the old header as the model, change the *Office Order* (COEO), *office name*, *Product Code* (or BCS level), and *application date*. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

**Note:** The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the Parmmail.

**Example:**
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
Procedure 10
Download application files (RTP)

1 App/ACT  Download special application files to active side SFDEV.
   If to_BCS 37 and higher the Applicator Package will contain the following files:
   - PARMCHGS
     Download PARMCHGS renaming it as “FEATDATA.”
     Print this file for reference information.
   
   Note: PARMMAIL is also in the Applicator Package for reference.
   - SITEINFO
     Download SITEINFO. This file will be used to update the Inform list
     (next step) for the new software load.

2 Matecopy the SITEINFO file to the inactive, and read (execute) it.

   Note: To allow further calculation of patches for a given office, the site_key
   must be inserted into the inform list to identify that inform list to patadm. This
   is done by applying special patches which will correct the patch inform list.

   a. ACT
      Matecopy SITEINFO to inactive side SFDEV.

   b. INACT
      Read SITEINFO (to execute) on the inactive side.

      Note: When read, SITEINFO will enter patcher, create the “dummy
      patches” in sfdev, apply the patches to update the inform list, and
      erase the patches.
Procedure 11  
Check logs inactive NT40

1 App/INACT  For BCS33 and higher check mate logs to verify processor stability.
   Mate> BCSUPDATE;LOGCHECK
   Mate> QUIT
   Do not continue until all logs have been explained.

2 App/INACT  For BCS32 and lower check mate CC logs.
   Mate> LOGUTIL;OPEN CC;WHILE(BACK)()
   Mate> LEAVE
   Mate> TRAPINFO
   Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

3 App/INACT

   Mate> TRAPINFO CLEAR
Procedure 12
Mate-side memory check

1  **App/ACT**  If from BCS 32 and higher, perform a mate-side memory check.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
</table>
| **If this test fails do not continue-immediately notify the site supervisor.**
| The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side. |

**Note:** Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

a.  > BCSUPDATE:RUNSTEP MATE_MEM_CHECK

**Note:** This displays on the active side the result of the test, “completed” or “not completed.” If it is not completed an error message is also printed on the active side.

b.  Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to “MATE_MEM_CHECK failure” in *Appendix B*.

c.  > QUIT
Procedure 13
Retain PARM values

1  **App**  Obtain a list of the following office parameters for reference.

   > TABLE OFCVAR
   > POS NODEREXCONTROL
   > POS LCDREX_CONTROL
   > QUIT

   > TABLE OFCENG
   > POS GUARANTEED_TERMINAL_CPU_SHARE
   > QUIT

   > TABLE OFCSTD
   > POS DUMP_RESTORE_IN_PROGRESS
   > QUIT
Procedure 14
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

Note: Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

1  App/INACT  If coming from _BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

2  ACT  On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

   > TABLE PADNDEV;LIST ALL
   If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.
   
   Note: MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:
   
   1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.
   
   2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

3  > BCSUPDATE;RUNSTEP VERIFY_DSLIMIT

4  > RESET

5  > RUNSTEP DISABLE_AUTOIMAGE
   
   Note: This step is not valid if the AUTOIMAGE feature is not available.

6  > RUNSTEP SET_OFFICE_TUPLES

7  > RUNSTEP SEND_PATCHES

8  > RUNSTEP APPLY_PATCHES

9  > QUIT

-continued-
Procedure 14
Patch inactive (continued)

10  **Site and App/INACT**  Print the PATCH$FILE and review applied (mate) patches.

   Mate> LISTSF ALL;PRINT PATCH$FILE

   *If you need to DISPLAY any patches that were applied on the inactive side,*
   *these patches can still be accessed from the active side.*

11  Mate> TRAPINFO

   *If trap occurred, do not continue until the trap is explained and action taken*
   *to correct the error.*
Procedure 15
Activate patches inactive

1  App/ACT  Determine which ACT patches are activated in the old load.
   a.  > PATCHEDIT
       *This command shows a list of 'ACT' patches and which ones are
activated (turned on).*
   b.  Review the patch list to determine which patches are currently
activated (ON) on the active side.
       *Normally any ACT patch activated in the old load should be manually
activated in the new load (see next step).*

2  Site and App/INACT  As needed activate ACT patches on the inactive side.
   a.  Mate> PATCHEDIT
   b.  Compare the mate-side patch list with active-side list obtained above.
       Decide with the site if any patches need to be activated (set "ON") at
this time.
       *Passwords will be provided on the 'APF' report for any "feature
patches" in the new BCS load. Give the password to Telco, but do
NOT activate the patch at this time unless already ON in the old load.*
   c.  Mate> PATCHEDIT <patch> ON
       *This activates the patch.*
   d.  Repeat this command for each patch to be activated.
   e.  Also determine from comparing the patch lists if any ACT patches
should be set to "NA" (no audit) state.
   f.  Mate> PATCHEDIT <patch> NA
       *This sets the patch to "NA" state.*
   g.  Repeat this command for each patch to be set to "NA."
Procedure 16
Restart inactive for patches

1. **App** Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.
   
   *Note*: Sequence of restarts is not important.

   **INACT**
   Mate> RESTART <restart type>
   Mate> YES *(for confirmation)*

2. Allow initialization on the inactive side (flashing A1).

3. Login on the inactive side.

4. Repeat above steps for each type of restart required.
Procedure 17
IPL modules

1 App/ACT If from BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

   a. > QUERY <module>
      where <module> is:
      NODESTAT STCSTAT IPMLSTAT
      CARRSTAT JCTRSTAT DCHSTAT

      Repeat QUERY for each module listed.

      Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

   b. If any module is loaded, as indicated by the QUERY command, enter the following:
      > RUN <xxxx> IPL
      where <xxxx> is a loaded module.

      Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.
Procedure 18
SWCTCHK verification

1   App/ACT  If from_BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see Pre-application Report). If not done earlier complete this step.
   a.  Ensure patch EWW08 is applied on the active (from-side) load.
   b.  > SWCTCHK
Procedure 19
MASSTC

1 App  Check status in MASSTC level (TOPS office only).
   a. ACT
      > MASSTC
      > STATUS
   b. If the status is INITIAL, then no action is needed.
   c. INACT If the status is DUPLICATED, then with Telco consent on the
      MATE side enter:
         Mate> ENABLE
      or, if data is obsolete
         Mate> SCRAP
   d. ACT  If the status is SWITCHED, then with Telco consent on the
      ACTIVE side enter:
         > PERM
Procedure 20
BULLETINS before data transfer

1. **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the data transfer (MOVEBCS/TABXFR).
This page purposely left blank.
**MOVEBCS procedure**

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 34 and lower, the MOVEBCS is used to perform the data transfer portion of a BCS application.

**Procedure 1**

**Table DART**

1  App  For to_BCS 30 and 31 only, prepare table DART as follows.

   a.  ACT  >  MATECOPY DRNOW

   b.  INACT  Mate> LISTSF ALL

      Mate> READ DRNOW

      Mate> ERASESF DRNOW

      Mate> DARTEDIT

      Mate> PRINTDART LONG  \{optional list for reference\}

      Mate> QUIT

   **Note:** For additional DARTEDIT command syntax refer to MOVEBCS summary in Appendix A.

2  App  For to_BCS 29 only, prepare table DART as follows.

   a.  ACT  >  MATECOPY DRNOW

   b.  INACT  Mate> RESTTYPE EXTERNAL

      Mate> LISTSF ALL

      Mate> READ DRNOW

      Mate> ERASESF DRNOW
CAUTION
Before beginning read all bulletins concerning changes to office parameters (PARMs).
Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the Parmmail (or Parm Variance Report).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

*Note:* A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

1 Office parameters are already set in the undatafilled BCS image.
   a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the Parm Variance Report.
   b. Normally, if any parms need to be corrected, make the required changes before beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

*Note:* On the mate side use commands "MOVEBCS STOP BEFORE <table name>" and "MOVEBCS STOP AFTER <table name>" to cause the MOVEBCS process to stop at specified tables. The "STOP BEFORE" option is safer because it does not involve pre- or post-activities which may be attached to a particular table. (For example, "MOVEBCS STOP AFTER NNASST" is not possible since the post-activity for NNASST may include a restart.)

When using these options remember to use "STOP CLEAR BEFORE <table name>" or "STOP CLEAR AFTER <table name>" before continuing MOVEBCS. This clears the previous stop points.
Procedure 3
Stop after CLLIMTCE$DIAGDATA

1  App/INACT  For from_BCS 26 and to_BCS 29 type:

    Mate> MOVEBCS STOP AFTER CLLIMTCE$DIAGDATA
Procedure 4
MOVEBCS setup

1  **App**  Set up TRACECI to monitor MOVEBCS summary and error messages on the primary terminal (ACT).
   
a. **ACT**  > TRACECI DEVICE `<device_name>`
   where `<device_name>` is the name of the device labeled INACT.
   Response on the inactive side:
   This device is selected for TRACEing
   
b. **INACT**  Mate> TRACECI TEST 'THIS IS A TEST'
   "THIS IS A TEST" is output on the device selected above.

2  **App/INACT**  Set MOVEBCS to stop at each error with a limit of not more than 100.
   
a. Mate> MOVEBCS LIMIT 25  \*limit of 25 is recommended*
   
b. Mate> MOVEBCS STOPIF 1
Procedure 5
Start MOVEBCS

1. **App** Start the data transfer using MOVEBCS as follows.

   **CAUTION**
   
   MOVEBCS will perform a mate-side memory check. If this test fails do not continue—immediately notify the site supervisor. The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

   a. **INACT** Mate> MOVEBCS;LOGOUT
      **MOVEBCS will perform an automatic restart reload after each of the following tables is transferred:** DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, MOVEBCS will automatically start transferring the next table listed in table DART.

   b. Certain tables will fail with the message "This table is Recursive..." No action is required other than to restart MOVEBCS.
      
      **Note:** This message means the table will be re-datafilled automatically by MOVEBCS (since data for the table depends upon other tables being datafilled first). Recursive tables may include: XLANAME, ESAPXLA, NCOS, THOUGRP, IBNRTE, OFRT, FNMAP, and others.

   c. **ACT** If any table fails to restore properly on the mate side, MOVEBCS will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.
      
      For any table in error investigate the problem by entering on the ACTIVE side:
      
      > DELTA <table> NOFILE (compares old and new tuples)
      
      or
      
      > DELTA <table> SUB <subtable> NOFILE

   d. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first verify a flashing A1 on the inactive processor; then login on the mate side and make the needed changes.

   e. **INACT** Each time you restart the MOVEBCS, also LOGOUT on the mate side (as above).
      
      Mate> MOVEBCS;LOGOUT
      
      **Note:** Avoid unnecessary or prolonged logged-in sessions on the mate side while MOVEBCS is running.
Procedure 6
Copy patches

1 Site/ACT While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

a. Install the new patch tape on a tape drive (x) with a write enable ring.
b. > LISTSF ALL
c. > MOUNT <x>;LIST T<x>
d. > COPY <sfdev_patch> T<x>
   where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
e. Repeat COPY for each patch in SFDEV.
f. > DEMOUNT T<x>
g. > LISTSF ALL
h. List the disk volume where the XPM loads (and patches) normally reside.
i. > COPY <xpm_patch> <pmload_disk>
   where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pmload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
j. Repeat COPY for each XPM patch in SFDEV.
Procedure 7
Table CLRMTCE$DIAGDATA

1 App/INACT  For from_BCS 26 and to_BCS 29: if a stop point was set previously, expect MOVEBCS to stop after table CLRMTCE subtable DIAGDATA is restored to allow the following workaround to be done.

a. After MOVEBCS stops, login on the inactive (mate) side and enter:
   Mate> FIXDIAG

b. CLEAR the stop point that was set AFTER CLRMTCE$DIAGDATA.
   Mate> MOVEBCS STOP CLEAR AFTER CLRMTCE$DIAGDATA

c. Restart MOVEBCS.
   Mate> MOVEBCS;LOGOUT
Procedure 8
MOVEBCS completed

1 MOVEBCS is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored 
during the MOVEBCS. (See procedure "Patch inactive.")

2 ACT and INACT On BOTH the active and inactive sides, change table 
PADNDEV back the way it was before patching the mate side.
Procedure 9
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  (mate-side response)
       Mate> OPERATOR OPERATOR
       or  Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 10
Print reports

1  App  Generate a final data transfer report. This will include both the table exception report and the NTX package delta.

   a.  ACT  Only if RECORD START was not done previously, type the following:

       > RECORD START FROM <terminal_id> ONTO <printer>
       where <terminal_id> is the terminal device labeled INACT, and
       <printer> refers to a printer used to collect the data transfer information.

   b.  INACT

       Mate> MOVEBCS REPORT

   c.  ACT  Only if RECORD START was done in substep a (above), type the following:

       > RECORD STOP FROM <terminal_id> ONTO <printer>
       where <terminal_id> and <printer> are the devices used above.
Procedure 11
Trapinfo inactive

1  App/INACT Type:

Mate> TRAPINFO

*If a trap has occurred, do not continue until the trap is explained.*
This page purposely left blank.
TABXFR procedure

For COMPLETE ONP ONLY (NOT HYBRID)-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 35 and higher, the TABXFR increment is used to perform the data transfer portion of a BCS application.

Procedure 1
Office PARMs with TABXFR

CAUTION
Before beginning read all bulletins concerning changes to office parameters (PARMs).
Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the Parmmail (or Parm Variance Report).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

1 If to_BCS36 and lower-Office parameters are already set in the undatfilled BCS image.
   a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the Parm Variance Report.
   b. Normally, if any parms need to be corrected, make the required changes before beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.
Procedure 1
Office PARMs with TABXFR (continued)

2 If to_BCS37/CSP02 and higher- With the introduction of CSP02 office parameters will be set as part of the TABXFR.

a. Compare (delta) the parm changes to be applied by the FEATDATA file with the ordered parameters indicated in the Parmmail.

   Note: PARMMAIL and PARMCHGS files are in the Applicator Package. All new and changed parm values as indicated in PARMMAIL are also listed in PARMCHGS (and FEATDATA).

b. If any parms need to be changed, edit the FEATDATA file to reflect the corrected parm values. TABXFR will use this file to set the parms.

c. App/ACT Once the FEATDATA file is verified correct, MATECOPY the file to inactive (mate) side SFDEV. This file will be processed after the parm tables restore.
Procedure 2
TABXFR setup

1  **App**  Set up TRACECI to monitor TABXFR summary and error messages on the primary terminal (ACT).

   a. ACT > TRACECI DEVICE <device_name>
      where <device_name> is the name of the device labeled INACT.
      Response on the inactive side:
      This device is selected for TRACEing

   b. INACT Mate> TRACECI TEST 'THIS IS A TEST'
      "THIS IS A TEST" is output on the device selected above.

2  **App/INACT**  Set up and initialize the TABXFR platform used to perform the table transfers.

   a. Mate> TABXFR
      TABXFR:  (system response)

   b. Mate> STOPIF 1
      Table transfer will stop after this number of failures.

   c. Mate> LIMIT 25
      Limits the number of failures allowed on a table.

   d. Mate> SETUP STANDARD
      TABXFR type set to: STANDARD.  (system response)

      **Note:** The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.
Procedure 3
Start TABXFR

1  App  Start the data transfer using TABXFR as follows.

   CAUTION
   TABXFR will perform a mate-side memory check. If this test fails
do not continue-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware
on the inactive side.

a.  INACT  Mate> TABXFR;STARTXFR;LOGOUT
   TABXFR will perform an automatic restart reload after each of the
   following tables is transferred: DATASIZE, NNASST (or CMSHELF),
   and (conditionally) TRKMEM. Following the automatic restart, TABXFR
   will automatically start transferring the next table listed in table DART.

   Note: A list of empty head tables is sent to the inactive side at the
   beginning of TABXFR. The applicator may also see empty sub tables
   that are not on the list being transferred. This is normal and is design
   intent.

b.  ACT  If any table fails to restore properly on the mate side, TABXFR
   will stop (depending on STOPIF and LIMIT) and will identify the
   headtable/subtable position in error.

   For any table in error investigate the problem by entering on the
   ACTIVE side:
   > DELTA <table> NOFILE  {compares old and new tuples}
   or
   > DELTA <table> SUB <subtable> NOFILE

c.  INACT  Whenever it is necessary to login on the inactive (mate) side to
   correct an error, first verify a flashing A1 on the inactive processor;
   then login on the mate side and make the needed changes.

d.  INACT  Continue theTABXFR as follows. Also LOGOUT on the mate
   side (as above).
   Mate> TABXFR;STARTXFR;LOGOUT

   Note: Avoid unnecessary or prolonged logged-in sessions on the mate
   side while TABXFR is running.
Procedure 4
Copy patches

1  Site/ACT  While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

   Note: Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

   a.  Install the new patch tape on a tape drive (x) with a write enable ring.

   b.  > LISTSF ALL

   c.  > MOUNT <x>; LIST T<x>

   d.  > COPY <sfdev_patch> T<x>

      where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.

   e.  Repeat COPY for each patch in SFDEV.

   f.  > DEMOUNT T<x>

   g.  > LISTSF ALL

   h.  List the disk volume where the XPM loads (and patches) normally reside.

   i.  > COPY <xpm_patch> <pmload_disk>

      where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pmload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.

   j.  Repeat COPY for each XPM patch in SFDEV.
Procedure 5
TABXFR completed

1. **App**  TABXFR is finished when you receive the following message.
   
   INACT - completed D/R of office

**Note:** Do not perform the following step if PADNDEV data was manually restored during the TABXFR. (See procedure "Patch inactive.")

2. **ACT and INACT**  On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
Procedure 6
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  {mate-side response}
       Mate> OPERATOR OPERATOR
       or  Enter username
       Mate> OPERATOR
           Enter password
           Mate> OPERATOR
Procedure 7
Print reports TABXFR

1  **App**  Generate a final data transfer report. This will include both the table exception report and (with BCS36 and lower) the NTX package delta.

   a.  **ACT**  Only if RECORD START was *not* done previously, type the following.

      > RECORD START FROM `<terminal_id>` ONTO `<printer>`

      *where* `<terminal_id>` *is the terminal device labeled INACT, and* `<printer>` *refers to a printer used to collect the data transfer information.*

   b.  **INACT**

      Mate> REPORT  
      (still in TABXFR increment)

      Mate> QUIT    
      (quits out of TABXFR)

   c.  **ACT**  Only if RECORD START was done in substep a (above), type the following.

      > RECORD STOP FROM `<terminal_id>` ONTO `<printer>`

      *where* `<terminal_id>` *and* `<printer>` *are the devices used above.*
Procedure 8  
Trapinfo inactive

1  App/INACT  Type:

Mate> TRAPINFO

*If a trap has occurred, do not continue until the trap is explained.*
This page purposely left blank.
PRESWACT procedure
This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1
BULLETINS before PRESWACT

1  App  Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
Procedure 2
Start PRESWACT

1  **App/ACT**  Perform PRESWACT of BCSUPDATE.

   **Note:** Please logout all users on the inactive side while PRESWACT is running.

>  BCSUPDATE
>  PRESWACT

2  Read the following notes, and continue the procedure while PRESWACT is running.

   **Note 1:** PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).

   *As an example:*

   TABLE_DELTA   executing
     :
   Table AMAOPTS *** Checksum incorrect, keys incorrect
     :
   TABLE_DELTA   not complete

   ACT - Error: Inactive table data did not match.
   Correct error condition. Enter Preswact to continue

   *For any table in error, investigate the problem by entering:*
   
   >  DELTA <table> NOFILE     {compares new/old tuples}
   or >  DELTA <table> SUB <subtable> NOFILE

   *To continue, run PRESWACT again by entering:*
   
   >  PRESWACT

   **Note 2:** A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.

   -continued-
Procedure 2
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. As an example:

TABLE_DELTA executing
: Table ATTCONS Checksum incorrect, keys match
: TABLE_DELTA complete
Procedure 3
PRESWACT DIRP and billing

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

a. Site/ACT In table DIRPSSYS determine which disks are being used for parallel DIRP recording.
   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume ($).

c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

d. Erase all closed parallel DIRP files from the disk:
   > CLEANUP FILE <parallel_filename>
   where <parallel_filename> is each file to be erased.

e. Reformat the parallel disk volume:
   > DIRPPFMT <parallel_volume>
   where <parallel_volume> is the original volume name.

f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

g. Site and App/INACT If from_BCS 31, ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

1.1 Disk drive parallel DIRP coming from BCS32 and higher

Note: If from BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

If from BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

CAUTION
Recently recorded parallel data may be overwritten. Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.
• If a single parallel volume is in use, information on the volume will be lost over SWACT.
• If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

a. Site/ACT If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).

b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).

c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-
Procedure 3
PRESWACT DIRP and billing  (continued)

d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1 {standby volume}

b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.

c. Prepare a new standby volume as follows.

> MOUNT <x> FORMAT <volume_id>

where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then select an unused or expired tape for formatting.

> DEMOUNT T<x>

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

d. **Site and App/INACT** If from_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

a. **Site/ACT** If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

   **Note:** DIRP sees DPP/BMC as a tape drive port.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

   > MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA

   This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. Prepare a new standby volume as follows.

   > MOUNT <x> FORMAT <volume_id>

   where <x> is the standby device number, and <volume_id> is the name of the standby volume.

   If prompted enter the first filename, or if system response is:

   "request aborted. Tape not expired (use ERASTAPE)" then enter:

   > ERASTAPE <x>

   where <x> is the standby device number.

   **Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

   System response is:

   ***WARNING, THIS TAPE WILL BE ERASED***

   **CAUTION**

   At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

   If a mistake is made, a real tape could be erased.

   Enter YES to confirm the command.

   > DEMOUNT T<x>

   If ERASTAPE command was used, repeat this substep (d) to rename the volume.

   Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

   -continued-
**Procedure 3**

**PRESWACT DIRP and billing (continued)**

**e. Site and App/INACT** If from BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

---

**CAUTION**

Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

---

**f. Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

**Note:** Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

**g. Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.
```

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN '<poolname> {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

a. Site/ACT Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMINT CREATE FILE AMA
This re-establishes the block header on the DPP.

b. Site and App/ACT If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

c. Site and App/INACT Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

Verify field DEVTYPE in table DIRPPPOOL is DPP (not TAPE).

**CAUTION**
Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

a. **Site/ACT** In table DIRPSSYS or DIRPPPOOL determine which MTDs are being used for parallel DIRP recording.

   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

   **Note:** TAPEX cannot be used for parallel recording.

b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPPOOL by replacing the volume name with nil volume ($). Physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

   **Note:** This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
   where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

-continued-
**Procedure 3**

PRESWACT DIRP and billing (continued)

### 5.1 Tape drive parallel DIRP coming from BCS34 and higher

*Note:* This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

a. **Site/ACT** In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume ($). Then physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>

where `<x>` is the parallel device number, and `<volume_id>` is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

d. **Site and App/INACT** Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

### 6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

a. **Site/ACT** In table DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PAVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPPOOL by replacing the volume name with nil volume ($).

e. Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)" then enter:

> ERASTAPE <x>
where <x> is the parallel device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:
***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

> DEMOUNT T<x>

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

f. Site and App/INACT If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

g. Site and App/INACT If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).

h. Site and App/INACT Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.
Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.
If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname> {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher
In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.
Procedure 4
Data extension

1  App/INACT  For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.

   a.  Log into the inactive side.
   b.  Mate> LISTSF ALL
       *Note:* The file ‘NEWTRKS’ should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.
   c.  Mate> MAPCI NODISP;MTC;TRKS;TTP
   d.  Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)
   e.  Mate> READ NEWTRKS
   f.  Mate> QUIT ALL
Procedure 5
Login inactive

1. **App/INACT**  *Verify a flashing A1 on the inactive processor.*

2. Login on the mate side as follows.
   a. **ACT**
      > MATEIO
      > MATELOG <device>
      where <device> is the name of the terminal labeled INACT.
   b. **INACT**
      Enter username and password  *{mate-side response}*
      Mate> OPERATOR OPERATOR
      or
      Enter username
      Mate> OPERATOR
      Enter password
      Mate> OPERATOR
Procedure 6
Logout DNC

1 Site and App/ACT If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
Procedure 7
Table CRSFMT alarm

1  **App/ACT**  In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

**Note:** If a volume is allocated in DIRPPOOL it is being used.
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SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1
BULLETINS before SWACT

1. App Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
Procedure 2
Before SWACT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

3  Site  Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

4  Site  Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

5  Site  Dump the SPMS register information to a printer (or other device) according to Telco practice.

6  Site  Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

   CAUTION
   If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

   a. Enter the LTPDATA level of MAP.
   b. Query all DTA monitors on the switch by issuing the command,
      > EQUIP DTA QUERY ALL
   c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.
   d. Make note of any connected monitors by looking at the CONNECT field of the query display.

   Use the POST command to post each monitored LEN, and then issue the command,
   > CONNECT <N> RLS
   where <N> is the integer number of the monitor from the first column of the query display.

   Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

   -continued-
Procedure 2
Before SWACT (continued)

   e. Reset all monitor LENs and DS0 channels by issuing the command,
      > EQUIP DTA RESET <N>
      where <N> is the integer number of the monitor from the first column of
      the query display.
      Do this until no equipment is left "Equipped." Repeat substep b as
      necessary to review DTA status.

7 Site  If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is
        a manual action used to test the quality of a CCS7 link.

        CAUTION
        In BCS35 BERT should not be left running during the CC SWACT.
        Otherwise, the link will hang up over the SWACT.
        If BERT is left running over the SWACT, you will have to go into the
        PM level, post the offending LIU7/MSB7, and BSY and RTS it.

        a. To determine if BERT is on: Go into C7LKSET level and post each
           linkset in turn. The link state should not indicate 'BERT'.
        b. To turn off BERT, go into the C7LKSET level and post the linkset. Go
           into C7BERT level and type STOP <linkno>.

8 App  Do not swact during CMC REX test. Failure to comply may result in a
        system restart.

        a. > TABLE OFCENG;POS CMC_REX_SCHEDULED_HR;QUIT
           The parameter will range from 0 to 23: 0 being midnight and 23 being
           2300 hours.
        b. Do not swact the office between the CMC_REX_SCHEDULED_HR
           and 30 minutes after.  
           Example: If CMC_REX_SCHEDULED_HR is set to 0, then do not
           swact between 0000 and 0030 hours.
        c. Verify Telco did complete step 4 above-Disable all polling and
           periodic testing.
Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart reload on the mate side will cause supp/thresh settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1 App/ACT List all special logs on the active side.
   > LOGUTIL
   > LISTREPS SPECIAL

   Example output:
   LINE 138 7 INFO TRMT *thresh= 25*
   PM 189 5 INFO PM SW Information... *supp*

2 App/INACT Restore special logs on the mate side.
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL

   Commands to restore above example:
   Mate> THRESHOLD 25 LINE 138
   Mate> SUPPRESS PM 189

3 App/INACT Verify the correct logs are set up and match the active load.
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL
Procedure 4
Start logs

1  App/ACT  Set up LOGS for the SWACT.

Note: The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a.  > LOGUTIL;STOP
   b.  > DELDEVICE <device>
       where <device> is where logs are to be routed.
   c.  > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d.  > START
       This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.
   e.  > LEAVE
UNJAM the processors in preparation for the CC switch of activity (SWACT).

1. **Site and App/INACT**  Verify the inactive side is flashing A1.

2. **Site/INACT**  On inactive CCC, shelf 51, card location 16 (NT1X48), place the Dact switch to the left (UNJAMMED).

3. **Site/ACT and INACT**  On both sides (same card), also verify the Enab switches are down and the thumbwheels are on 5.
Procedure 6
Establish mate communication NT40

1  **App/ACT**  Establish communication with the mate (inactive) side.
   > MCR RTS
Procedure 7
SWACT

Refer to "CC Warm SWACT Summary" in Appendix A for a description of the CC warm SWACT process. Also refer to Appendix B for a procedure for testing call survivability over a CC warm SWACT and to Appendix C for sample test call scripts.

**Note:** Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

1. **App/ACT** Wait a minimum of 10 minutes after the completion (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

   **CAUTION**
   FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
   Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

2. **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

   **Note:** This step is valid if the NTX470AA (International Common Basic) package is built into the load.

   ```
   > INTLSWCT;DATE;RESTARTSWCT
   (only for INTL offices)
   ```

   -continued-
Procedure 7
SWACT (continued)

3  App/ACT All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a. For BCS36 and higher type:
   > BCSUPDATE;SWACTCI;QUERYSWACT
   System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:
   > DATE;NORESTARTSWACT
   Respond (yes/no) to system prompt using lower-case.
   or else,
   > DATE;RESTARTSWACT

b. For BCS35 and lower type:
   > BCSUPDATE;SWACTCI;DATE;RESTARTSWACT   {for BCS33-BCS35}
   > BCSUPDATE;SWCT;DATE;RESTARTSWCT    {for BCS31 or BCS32}
   > SWCT;DATE;RESTARTSWCT            {for BCS30 and lower}

   System response varies with the BCS level, but the following prompt is a typical example.
   ACTIVE DEFAULT SETTINGS:
   FORCESWACT set ON
   LOADEXECs set ON
   NOMATCH set OFF
   Do you wish to continue?
   Please confirm ("YES" or "NO"):
   ...Starting Warm SWACT now.

4  Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

   CAUTION
   Work quickly to complete the procedures to follow.
   The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 8  
Start POSTSWACT

**CAUTION**  
After a CC warm SWACT do not JAM the inactive CPU RTIF.  
The system requires the JAM status to be clear on both CPUs in order  
to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT  Login, check the date and time, and start POSTSWACT.  
1  Type:  
   <break>

2  ?LOGIN  
Enter username and password  
   {system response}  
   > <username> <password>
   or  
   > <username>  
   > <password>

3  > DATE  
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT  
   POSTSWACT runs all steps required after the CC switch of activity and flags  
   them as complete when they pass. If any error occurs, POSTSWACT will  
   stop and give instructions. If this is the case, follow POSTSWACT  
   instructions to correct the problem, and run POSTSWACT again (type  
   >POSTSWACT) to continue.  
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING  
   and waits until the site verifies the sanity of the current load.
Procedure 9
Recover billing

Site and App/ACT

POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1. > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  {note which volume is ACTIVE}

2. If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3. TAPEX volumes must be manually remounted using the DIRP MNT command.

4. Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. > MOUNT <x> FORMAT <stdby_volume>
      where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is:
      "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      > ERASTAPE <x>
      where <x> is the standby device number.

      Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      System response is:
      
      ***WARNING, THIS TAPE WILL BE ERASED***

      CAUTION
      At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
      If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.
Procedure 9
Recover billing (continued)

d.  > DEMOUNT T<x>
e.  If ERAS TAP E command was used, repeat substeps b and d to rename the volume.
f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.

a.  > MNT <subsystem> <x>  
    {still in DIRP level}
    Example: MNT AMA 3
    Enter YES to confirm the command.
b.  > QUERY AMA  
    {to confirm standby volume is available}
c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP.  
    (This will ensure the RECORD HEADER is correct.)
    * If SMDR recording is on BMC and NO standby volume is available, then
      mount a temporary STD BY TAPE volume.  Rotate the BMC port OUT and
      back IN.  Remove the tape volume after this is done.
    
    Note: Since some SMDR recording applications on BMC collect SMDR
    records based on the customer group ID only, this ensures that any changes
    to the customer group IDs are passed to the BMC upon rotate (and the
    RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.

a.  For BCS31 and lower:
    In table DIRPSSYS position on a DIRP subsystem requiring a parallel
    volume.  Activate the parallel volume by datafilling the volume name.
    Example:
    TABLE DIRPSSYS;POS AMA
    CHA PARVOL T4
    or  CHA PARVOL D010PAMA

b.  For BCS32 and higher:
    In table DIRPSSYS position on a DIRP subsystem requiring a parallel
    volume.  Note the PARLPOOL name for the DIRP subsystem selected.
    Example:
    TABLE DIRPSSYS;POS AMA
    In table DIRPPOOL position on the parallel pool number associated
    with the PARLPOOL from table DIRPSSYS.  Then activate the parallel
    volume by datafilling the volume name.
    -continued-
Procedure 9
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62  (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 10
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW
   Note: If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW
   Note: If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS
   Note: If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID
   Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT
    Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 11
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TTP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 12
Restart inactive POST NT40

Prepare the inactive side for a revert to the old BCS load.

Note: A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1 Site/INACT Locate the NT1X48 card with the Inact LED lit. Move the enab switch up.

2 Site/INACT Perform a restart reload on the inactive processor (old BCS load).
   a. Thumbwheel 3, RESET flashes 33
   b. Thumbwheel 7, NO RESET flashes 77, then initializes
   c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.

3 Site/INACT Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4 Site/INACT Move the Enab switch back down.

5 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 13
DRTIME statistics

1. **App/ACT** Get a hardcopy of DRTIME statistics (if needed).
   
   ```
   > DRTIME PRINT
   DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.
   ```
Procedure 14
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.

CAUTION
If an abort becomes necessary due to critical test failures, revert to the old load using the Revert to the old load procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.
Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1  Site/ACT and INACT  On each CCC, shelf 51, card location 16 (NT1X48), ensure the Enab switches are down, the Dact switches are to the left (unjammed), and the thumbwheels are on 5.

2  App/ACT  > MAPCI;MTC;CC;PS <i>  
   where <i> is the inactive program store.

3  > COPY <m>  
   where <m> is the PS module. Start at zero (0).

4  Repeat substep 3 for each PS module equipped.

5  > QUIT;SYNC NOTRACEPOINT  
   > YES  
   {if BCS31 and higher}  
   {for confirmation}  

   Note: The SYNC NOTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6  > QUIT MAPCI
Procedure 16
Finish POSTSWACT

1. **App/ACT** If necessary run POSTSWACT one more time to completion.
   
   `> BCSUPDATE; POSTSWACT`
   
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2. **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3. **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4. **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5. **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

6. **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7. **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

8. **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9. **Site/ACT** Return PORTS and USER information back to original values.

10. **Site/ACT** Notify DNC end users to LOGIN the DNC.
Procedure 17
Take image NT40

1  Site/ACT  DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

2  After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 18
Start journal file

1 Site/ACT If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being
      used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before REVERT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive NT40 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT  Perform a restart reload on the inactive processor (old BCS load).
   a. Thumbwheel 3, RESET
      flashes 33
   b. Thumbwheel 7, NO RESET
      flashes 77, then initializes
   c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
   d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT  Confirm that the inactive processor is flashing A1.
Procedure 3
Establish mate communication NT40

1  App/ACT  Establish communication with the mate (inactive) side.
    > MCR RTS
Procedure 4
Login inactive

1  App\INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  INACT
       Enter username and password  {mate-side response}
       Mate> OPERATOR OPERATOR
       or
       Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 5
TRACECI close

1  **App/INACT**  If old load (inactive side) is BCS34 or lower, then close out the 
old active MOVEBCS/TABXFR message file.

Mate> TRACECI CLOSE  

*(for BCS34 and lower)*
Procedure 6
Configure DIRP billing

1 Site/App Configure the DIRP billing subsystems for revert SWACT to the old load.

*Note:* For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

a. **ACT** Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

b. **INACT** If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPPOOL or DIRPSSYS.

c. **INACT** If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.

*Note:* In DIRP_REC the parallel volume assignments for DIRPPPOOL should be set to nil ($) for all pools.
Procedure 7
Start logs

1  **App/ACT**  Set up LOGS for the SWACT.

    **Note:** The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a.  > LOGUTIL; STOP
   b.  > DELDEVICE <device>
        where <device> is where logs are to be routed.
   c.  > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d.  > START
        *This starts logs on “this” device. If a different terminal device was selected above, then use >STARTDEV <device>.*
   e.  > LEAVE
Procedure 8
Ensure inactive unjammed

1 Site and App/INACT  Ensure inactive side is unjammed.
Procedure 9
Revert

1 **App/ACT**  Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

**CAUTION**
FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT.
Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

2 **App/ACT** INTERNATIONAL offices switch CC activity (SWACT) as follows.

*Note:* This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT; DATE; RESTARTSWCT

*only for INTL offices*

3 **App/ACT** ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

**CAUTION**
If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

-continued-
Procedure 9
REVERT (continued)

> BCSUPDATE;SWACTCI;DATE;ABORTSWACT  {for BCS33 and higher}

CAUTION
In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC).
Use the NOCHECK option only as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE;SWCT;DATE;ABORTSWCT  {for BCS31 or BCS32}
> SWCT;DATE;RESTARTSWCT  {for BCS30 and lower}

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS:
FORCESWACT set ON
LOADEXECs set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

4 Site/ACT  Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION
Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 10
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password  {system response}
   > <username> <password>
   or > <username>
       > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 11
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1. > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  {note which volume is ACTIVE}

2. If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3. TAPEX volumes must be manually remounted using the DIRP MNT command.

4. Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. > MOUNT <x> FORMAT <stdby_volume>
      where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is:
      "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      > ERASTAPE <x>
      where <x> is the standby device number.
      **Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      System response is:
      ***WARNING, THIS TAPE WILL BE ERASED***

**CAUTION**
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-
Procedure 11
Recover billing (continued)

d.  > DEMOUNT T<x>

e.  If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.

a.  > MNT <subsystem> <x>  {still in DIRP level}

   Example: MNT AMA 3

   Enter YES to confirm the command.

b.  > QUERY AMA  {to confirm standby volume is available}

c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
(This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.

a.  For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b.  For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

   Example:
   TABLE DIRPSSYS;POS AMA

   In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

   -continued-
Procedure 11
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62  *(pool for AMAPOOL)*
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 12
Display DPP settings

App/ACT  Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW
   Note: If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW
   Note: If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS
   Note: If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID
   Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT
   Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 13
INI trunks

**App/ACT** If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TTP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   *where* <x> *is the number of INI trunks in the posted set.*
Procedure 14
Do Test Calls

1. Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

**Note:** Do not enter POSTSWACT again until the processors are in sync.

1  **Site/ACT and INACT**  On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

2  **App/ACT**  > MAPCI;MTC;CC;PS <i>
    
    where <i> is the inactive program store.

3  > COPY <m>
    
    where <m> is the PS module. Start at zero (0).

4  Repeat substep 3 for each PS module equipped.

5  > QUIT;SYNC NOTRACEPOINT
    > YES
    
    {if BCS31 and higher}
    {for confirmation}

    **Note:** The SYNC NOTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6  > QUIT MAPCI
Procedure 16
Finish POSTSWACT

1 App/ACT If necessary run POSTSWACT one more time to completion.
   > BCSUPDATE;POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and
   flag them as completed when they pass. If failures occur, follow given
   instructions to correct the problem, then continue POSTSWACT.

2 Site and App/ACT Copy any new MS patches in store file to the PM loads
   disk volume (or SLM disk).

3 App/ACT Clean up SFDEV by erasing any application-related files (for
   example: DRNOW, FEATDATA, and all patches).

4 Site/ACT Passwords for ADMIN and OPERATOR may have changed. For
   security Telco should change these passwords back to the original.

5 Site/ACT Re-input any data changes made prior to the software update but
   not captured on journal file.

6 Site/ACT Reassign all current PROFILE information (LOGIN or RESTART)
   in SFDEV.

7 Site/ACT Reassign any temporary log ROUTING setup via LOGUTIL.

8 Site/ACT Reassign any changes in the INTEG level of the MAP (for
   example, UPTH, BUFFSEL, FILTER and others).

9 Site/ACT Return PORTS and USER information back to original values.

10 Site/ACT Notify DNC end users to LOGIN the DNC.
Procedure 17
Take image NT40

1  Site/ACT  DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

2  After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

   **Note:** Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 18
Start journal file

1 Site/ACT   If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being
      used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
Procedure 19
More Revert/ABORT steps

1 Site and App/INACT If asked to do so by technical support take an image of the inactive (mate) side load.

2 Site and App/ACT With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3 Site and App Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4 App/ACT On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a. If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   b. If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
Emergency abort procedure

CAUTION

Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before EABORT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive NT40 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT  Perform a restart reload on the inactive processor (old BCS load).
   a. Thumbwheel 3, RESET
      flashes 33
   b. Thumbwheel 7, NO RESET
      flashes 77, then initializes
   c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
   d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT  Confirm that the inactive processor is flashing A1.
Procedure 3
Ensure inactive unjammed

1  Site and App/INACT  Ensure inactive side is unjammed.
<table>
<thead>
<tr>
<th>Step</th>
<th>Site/ACT</th>
<th>Activity</th>
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</thead>
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<td>1</td>
<td>Site/ACT</td>
<td>JAM active side to force a switch of activity (cold swact).</td>
</tr>
<tr>
<td>2</td>
<td>Site/ACT</td>
<td>Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1. <em>At this point the CC switch of activity is over.</em></td>
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<tr>
<td>3</td>
<td>Site and App/ACT</td>
<td>Work quickly to complete the next procedure. The <em>POSTSWACT</em> procedure (to follow) checks that the office is functioning as normal. <em>Note:</em> Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.</td>
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</table>
Procedure 5
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password   (system response)
   > <username> <password>
   or  > <username>
       > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 6  
Recover billing

**Site and App/ACT**  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1. > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  
   *(note which volume is ACTIVE)*

2. If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3. TAPEX volumes must be manually remounted using the DIRP MNT command.

4. Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. > MOUNT <x> FORMAT <stdby_volume>
      *where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.*
      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      > ERASTAPE <x>
      *where <x> is the standby device number.*
      **Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      **System response is:**
      ***WARNING, THIS TAPE WILL BE ERASED***

      **CAUTION**
      **At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.**
      If a mistake is made, a real tape may be erased.

      Enter YES to confirm the command.

   -continued-
Procedure 6
Recover billing (continued)

d.  > DEMOUNT T<x>

e.  If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.
a.  > MNT <subsystem> <x>  {still in DIRP level}

   Example: MNT AMA 3

   Enter YES to confirm the command.

b.  > QUERY AMA  {to confirm standby volume is available}

c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)

   * If SMDR recording is on BMC and NO standby volume is available, then
   mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and
   back IN. Remove the tape volume after this is done.

   Note: Since some SMDR recording applications on BMC collect SMDR
   records based on the customer group ID only, this ensures that any changes
   to the customer group IDs are passed to the BMC upon rotate (and the
   RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.
a.  For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel
   volume. Activate the parallel volume by datafilling the volume name.
   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b.  For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel
   volume. Note the PARLPOOL name for the DIRP subsystem selected.
   Example:
   TABLE DIRPSSYS;POS AMA

   In table DIRPPOOL position on the parallel pool number associated
   with the PARLPOOL from table DIRPSSYS. Then activate the parallel
   volume by datafilling the volume name.
   -continued-
Procedure 6
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 7
Display DPP settings

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1. `> MAPCI NODISP;MTD;IOD;DPP AMA`

2. `> COLLPSW`
   
   *Note:* If different, perform steps 3 and 4; otherwise go to step 5.

3. `> COLLPSW 1 <4_digits> <6_digits>`

4. `> COLLPSW 2 <4_digits> <6_digits>`

5. `> AMATPSW`
   
   *Note:* If different, perform step 6; otherwise, go to step 7.

6. `> AMATPSW <4_digits> <6_digits>`

7. `> AMAHRS`
   
   *Note:* If different, perform step 8; otherwise, go to step 9.

8. `> AMAHRS <start_hour> <end_hour>`

9. `> VALPARM INVALID`
   
   *Note:* If different, perform step 10; otherwise, go to step 11.

10. `> VALPARM INVALID <threshold>`

11. `> ERRMAP ACT`
    
    *Note:* If different, perform steps 12 and 13.

12. `> ERRMAP <alarm_no> <type> <level>`

13. Repeat step 12 for each alarm that is different.
Procedure 8
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 9
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 10
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1  Site/ACT and INACT  On each CCC, shelf 51, card location 16 (NT1X48), ensure the Enab switches are down, the Dact switches are to the left (unjammed), and the thumbwheels are on 5.

2  App/ACT  > MAPCI;MTC;CC;PS <i>
where <i> is the inactive program store.

3  > COPY <m>
where <m> is the PS module. Start at zero (0).

4  Repeat substep 3 for each PS module equipped.

5  > QUIT;SYNC NOTRACEPOINT  {if BCS31 and higher}
   > YES  {for confirmation}

Note: The SYNC NOTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6  > QUIT MAPCI


Procedure 11  
Finish POSTSWACT

1  App/ACT  If necessary run POSTSWACT one more time to completion.

   > BCSUPDATE;POSTSWACT
At this point BCSUPDATE will run any remaining POSTSWACT steps and
flag them as completed when they pass. If failures occur, follow given
instructions to correct the problem, then continue POSTSWACT.

2  Site and App/ACT  Copy any new MS patches in store file to the PM loads
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3  App/ACT  Clean up SFDEV by erasing any application-related files (for
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4  Site/ACT  Passwords for ADMIN and OPERATOR may have changed. For
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5  Site/ACT  Re-input any data changes made prior to the software update but
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6  Site/ACT  Reassign all current PROFILE information (LOGIN or RESTART)
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7  Site/ACT  Reassign any temporary log ROUTING setup via LOGUTIL.

8  Site/ACT  Reassign any changes in the INTEG level of the MAP (for
example, UPTH, BUFFSEL, FILTER and others).

9  Site/ACT  Return PORTS and USER information back to original values.

10 Site/ACT  Notify DNC end users to LOGIN the DNC.
Procedure 12  
Take image NT40

1  Site/ACT  DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

2  After the image is completed, you may set the AUTODUMP ‘RETAIN’ option back to ‘ON’ if desired. The option was set to “OFF” during the ONP.

Note: Setting the AUTODUMP ‘RETAIN’ option to ‘OFF’ during the ONP is design intent. This was done to prevent setting the system recovery route to the ‘OLD’ BCS image that was taken prior to the BCS update.
Procedure 13
Start journal file

1 Site/ACT  If equipped, start journal file and verify started.
   a.  > JF START
   b.  > MAPCI;MTC;IOD;DIRP
   c.  > QUERY JF ALL
       QUERY JF should respond with "AVAIL." If a standby device is being
       used, both active and standby volumes should be marked "AVAIL."
   d.  > QUIT ALL
Procedure 14
More Revert/ABORT steps

1  **Site and App/INACT**  If asked to do so by technical support take an image of the *inactive* (mate) side load.

2  **Site and App/ACT**  With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3  **Site and App**  Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

4  **App/ACT**  On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a.  If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > T ABXFR;CANCEL
      > QUIT ALL
   b.  If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
## Hybrid NT40 MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures before being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1
Take image

1  Site/ACT  Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
Procedure 2  
Route logs NT40

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1  Site/ACT  
   > LOGUTIL  
   > LISTREPS SPECIAL  
   If specific logs are suppressed use  
   > RESUME <log>  
   If logs have threshold set use  
   > THRESHOLD 0 <log>  
   where <log> refers to specific CC, CMC and MISM logs.

2  > LISTROUTE DEVICE <printer>  
   If critical logs are not routed use  
   > ADDREP <printer> <log>  
   > STOPDEV <printer>  
   Verify only critical logs are enabled on the device and are correctly routed.

3  > STARTDEV <printer>  
   > LEAVE
Procedure 3
Processor tests NT40

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

*Note:* Perform the following front-end testing during low traffic periods.

1 **Site** Ensure the CPUs are in SYNCH and the inactive side is NOT jammed.
   
   On each CCC, at shelf 51, card location 16 (NT1X48), verify the *Enab* switches are down, the *NoSync* LEDs are off (in SYNCH), the *Dact* switches are to the left (un jammed), and the thumbwheels are on 5.

2 **ACT** Match the memory from the CC level of the MAP.
   
   > MAPCI; MTC; CC
   > MTCH

3 **INACT** On the inactive side, jam the inactive CPU.
   
   a. Locate the NT1X48 card with the *Inact* LED lit.
   
   b. Move the *Dact* switch to the right (jammed) and the *Enab* switch up.

4 **ACT** Drop SYNCH from the CC level of the MAP.
   
   > DPSYNC
   > YES *(for confirmation)*

5 **INACT** Wait for the inactive CPU to return to flashing A1.

6 Test the stability of the inactive CPU from the NT1X48 card.
   
   a. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 5, DO NOT PRESS RESET. The hex display will flash 55 and initialize (warm restart).
      
      Confirm inactive CPU flashes A1.
   
   b. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 6, DO NOT PRESS RESET. The hex display will flash 66 and initialize (cold restart).
      
      Confirm inactive CPU flashes A1.
   
   c. **INACT** Set the thumbwheel on 3 and press reset, the hex display will flash 33. Within six seconds, move the thumbwheel to 7, DO NOT PRESS RESET. The hex display will flash 77 and initialize (restart reload).
      
      Confirm inactive CPU flashes A1.

-continued-
**Procedure 3**  
**Processor tests NT40 (continued)**

*d. INACT* Set the thumbwheel on 0 and press reset, the hex display will cycle in (hex), from 00 to 16 repeatedly. Once the test has cycled three times, set the thumbwheel to 7 and press reset.

*e. INACT* Set the thumbwheel on 5, DO NOT PRESS RESET. Then put the *Enab* switch down.

---

7 **ACT** Perform a memory retention test from the DS and PS levels of the MAP.

*Note:* This test can take up to 2 hours to complete.

\[
\text{> DS } <i> \text{ where } <i> \text{ is the inactive DATA store.}  \\
\text{> TST MEM RETAIN } #AAAA  \\
\text{> YES (for confirmation)}  \\
\text{> TST MEM RETAIN } #0001  \\
\text{> YES (for confirmation)}  \\
\text{> TST MEM RETAIN } #5555  \\
\text{> YES (for confirmation)}  \\
\text{> QUIT}  \\
\text{> PS } <i> \text{ where } <i> \text{ is the inactive PROGRAM store.}  \\
\text{> TST MEM RETAIN } #AAAA  \\
\text{> YES (for confirmation)}  \\
\text{> TST MEM RETAIN } #0001  \\
\text{> YES (for confirmation)}  \\
\text{> TST MEM RETAIN } #5555  \\
\text{> YES (for confirmation)}  \\
\]

---

8 After completion of the tests check for CC108 or CC109 logs, indicating the test passed or failed. If the test failed, a CC101 log identifies the failed card. Resolve all problems and repeat step 7.

---

9 **ACT** Copy program store.

\[
\text{> COPY } <m> \text{ (still in PS level) where } <m> \text{ is the PS module. Start at 0, and repeat for each PS module equipped.}  \\
\]

-continued-
Procedure 3
Processor tests NT40 (continued)

10 **ACT**  SYNC the CPUs from the CC level of the MAP.
   > QUIT; SYNC
   > YES  *(for confirmation)*

11 After receiving the "Synchronization Successful" message, verify no faults are displayed at the CC level of the MAP (shows all dots and no Xs or fs).

12 **INACT**  On the inactive side release the jam.
   a.  Locate the NT1X48 card with the *Inact* LED lit.
   b.  Move the *Dact* switch to the left (un jammed).

13 **ACT**  Switch activity of the CPUs from the CC level.
   > SWACT

14 Repeat steps 1 through 13 on the newly-inactive CPU.

15 Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

16 **ACT**  Perform REX test from the CC level. Repeat with each CPU initially active.
   > MTCH
   > REXTST RETENTION
   > YES  *(for confirmation)*
   *The CPUs will be out of SYNC during testing. CC activity switches will occur during this time.*

17 **ACT**  After completion of the test, verify the test results:
   > QUERYCC RETENTION
   *The CPUs should be back in SYNC with no REX alarms at the CC level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 15 and 16.*

18 Repeat (with the other CPU active) steps 15 through 17.
Procedure 3
Processor tests NT40 (continued)

19  ACT  Perform an image test from the CCMNT level of the MAP.
    >  CCMNT
    >  IMAGE
    >  QUIT

20  After completion of the test, check for CC logs indicating pass or fail message. If test failed, clear the problem and repeat step 19.

21  ACT > QUIT ALL
Procedure 4
Responsibilities before pre-application checks NT40

1 Site Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

   a. MOUNT and LIST the tape.
   b. From the tape header or first file verify the tape is correct for the target BCS. For a BCS IMAGE tape also verify the image filename. 
      **Verify a tape is good by listing the tape to the end without any errors.**
   c. If any problems are found notify your NT customer service representative immediately.
   d. Keep the tapes on-site for use during the scheduled software update.

2 Site Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

3 Site Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the Peripheral Software Release Document ("Application Procedures" section).

Peripheral modules include all PMs, XPMs, DPP, and MPC.

Note: If a cross-reference file (BCSxxXPM$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

4 Site Monitor front-end stability watching NT40 CC, CMC, and MISM logs through the day of the software delivery.
Procedure 5
Save site files

1  Site/ACT  Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.
   Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application-DO NOT ERASE!
Procedure 6
Peripheral verification NT40

1 Site/ACT If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

2 On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

3 Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the Peripheral Software Release Document.)
Procedure 7
Table ACDGRP

1  App/ACT  Identify any "holes" in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.
   a.    > OMSHOW ACDGRP ACTIVE
   b.    Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)
   c.    If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)
   d.    Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
Procedure 8
Fill in Test Call Scripts

1 Site Fill in and test the Test Call Scripts in Appendix C.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.
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Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

**CAUTION**

Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1
Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in Appendix A. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

**Warning:** TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

1. **Site/ACT** Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

   TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.
   
   - To use the "FROM" and "TO" options see substep a below.
   - To use the "ALL" option see substep b below.

   **Warning:** If a device is not specified when issuing the TABAUDIT ALL command, only a SUMMARY$FILE will be created in Store File and no separate file will be created for individual failed tables.

   -continued-
Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted. To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY$FILE " file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:

Warning: Changes in table STDPRTCT may alter office billing.

a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

> TABAUDIT FROM <start table> [TO <end table>] <device name>

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

> TABLE DART; LIST (output will be the "FROM" table name)
> DOWN 100; LIST 2 (output will be the "TO" table name of the first 100 and the "FROM" table name for the second 100)
> DOWN 100; LIST 2 (repeat until the end of table is reached)
> LEAVE

Perform TABAUDIT on the first 100 tables as shown in the following example:

> TABAUDIT FROM DART TO BGDATA <device name>

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

> TABAUDIT ALL <device name>

-continued-
Procedure 1
Run TABAUDIT (continued)

2 Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

> TABAUDIT ONLY <table name> <device name>

*Continue until all tables have been corrected.*

3 When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
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JFFREEZE procedure

This procedures in this section are required only when the office is scheduled for a Hybrid process software delivery. Site personnel should perform the procedure at 10 days prior to the software delivery date, or when instructed to do so by Northern Telecom.

Whenever possible JFFREEZE should be used to take the "frozen image" and begin the data freeze. Northern Telecom must receive the frozen image by 8 days prior to the software delivery date to allow enough time to complete the dump and restore.

Procedure 1
Stop activities

1. **Site/ACT** Advise all personnel that all activities must stop (including service orders, translations, trunking, and other data modification) until told otherwise.

2. Verify that no hardware changes or retrofits are in progress (such as network and memory extensions).
**Procedure 2**

**Patch verification before frozen image**

The Site is responsible for the following patch verification steps.

1. **Site/ACT**  Ensure any from-side patches recently downloaded to SFDEV are applied *before* dumping the frozen image (Hybrid method). NOTIFY THE SITE SUPERVISOR of any new from-side patches not yet applied.

2. Review a current list of from-side patches needed for the BCS application. This list can be obtained from your patch administrator.

3. Verify all required patches on the list are applied *before* dumping the frozen image (Hybrid method).

4. The front-end and MS patches should be copied to the patch tape (or to disk) and LEFT IN SFDEV.
Procedure 3
Stop journal file for freeze

1  Site/ACT  CLOSE and STOP the Journal File recording.
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b.  > CLOSE JF ACTIVE
       > CLOSE JF ACTIVE
       JF is closed twice to ensure current timestamp on active journal file.
       QUERY again to verify rotation.
   c.  > JF STOP
       Verify stopped.
   d.  > QUIT MAPCI
Procedure 4
Setup for frozen image

1 Site/ACT Ensure user OPERATOR is correctly permitted.
   a. > SHOW USERS
      NAME      PRIO  STACK  NRDEV  LANGUAGE  PRIV
      OPERATOR  4     5000      ENGLISH ALL
   b. If OPERATOR is not permitted as stated above, change with the
      "PERMIT" command.
      If OPERATOR is logged in, logout the user and use the "PERMIT"
      command from another user. Then again login as OPERATOR.
   c. Important: Also change the PASSWORD to "OPERATOR" for the
      image. This is only temporary and can be changed back after the
      frozen image.

2 Site/ACT Delete MAP log device from table LOGDEV to ensure logs are not
   sent to to the MAP terminal.
   > TABLE LOGDEV;POS MAP
   Retain position MAP data for a later step.
   > DELETE
   > QUIT
   Note: This tuple can be added back at the end of this procedure.

3 Site/ACT Verify MAP datafill in table TERMDEV.
   a. > TABLE TERMDEV;LIS
      Retain position MAP data for a later step.
      MAP  0  8  VT100  B1200  CL  1X67BC  NONE  N  NONE  ALL
      System response with a new IOC, 1X61AB.
      or
      MAP  0 20  VT100  B1200  CL  1X67BC  NONE  N  NONE  ALL
      System response with an old IOC, 1X61AA.
   b. Change any fields which do not match. The bold type (fields IOCNO,
      CKTNO, BAUDRT, and INTYP) is a must, other fields are not critical.

      CAUTION
      Do not "<break>/STOP" or "HX" because it will
      cause the table changes to take effect.
      The tuple can be changed back at the end of this procedure.

-continued-
Procedure 4
Setup for frozen image (continued)

4 Verify the MAP device is in service.
   a. > MAPCI;MTC;IOD;LISDEV CONS
   b. Verify MAP position is in service as follows.
      > IOC 0;CARD 2 {with a new IOC, 1X61AB}
      or
      > IOC 0;CARD 5 {with an old IOC, 1X61AA}
      If port 0 (MAP) is not in service (a dot represents in service) then do:
      > BSY 0;RTS 0
   c. > QUIT ALL

5 Verify tuple JF datafill in table DIRPSSYS.
   a. > TABLE DIRPSSYS;POS JF
      Example system response:
      JF Y 2 1 JFPOLL $ CR MJ NA NA 30 30 $ N NA FIRSTACT NNNNNNN 0 NOROTATE BOTH NONE
   b. Retain the original datafill to restore to the new load before the images are dumped in the SWACT/POSTSWACT procedures.
   c. Change the fields which do not match. The bold type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (JFFREEZE automatically daily rotates journal file at approximately 0300 hours.)
   d. > QUIT
Procedure 5
Cleanup journal files

Copy journal files to tape and ERASE them from disk with this procedure.

1 Site/ACT > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
Retain the volume names located under the VOLUME field for step 4 and step 8.

2 > QUIT MAPCI

3 > DSKUT

4 LISTVOL <volume> ALL
where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 6.

5 Repeat step 4 for each volume found in step 1.

6 If the site does not require copying unprocessed journal files, go to step 8; otherwise, continue.

   Put up a tape on MTD 0. Either enter
   > DIRPAUTO JF {steps you through the process}
   or MOUNT the tape and enter
   > DIRPCOPY JF <unprocessed files> <T0>
   where <unprocessed files> refers to JF files that begin with the letter "U" (e.g. U890327133614JF) and which were listed in step 4.

7 Repeat step 6 for each unprocessed journal file.

8 > LISTVOL <volume> ALL
where <volume> refers to the journal file volume(s) noted in step 1. Retain all filenames for step 10.

9 Repeat step 8 for each volume found in step 1.

10 > MAPCI;MTC;IOD;DIRP
   > CLEANUP FILE <filename>
   > YES {for confirmation}
   or
   > ERASEFL <filename> {BCS23 and lower}
where <filename> is all files except DIRP_FILESEG and active files. Active files start with the letter "A" (e.g. A890327133614JF).

-continued-
Procedure 5
Cleanup journal files  (continued)

11 Repeat step 10 for each filename found in step 4 or step 8 above.
Procedure 6
Start JFFREEZE

1 Site/ACT  Start JFFREEZE. To see a complete console session of JFFREEZE, see Using JFFREEZE, Appendix A: Command Summaries.

Note: Verify the normal image disk volume has enough space for a new image (erase the oldest image on the volume if necessary).

a. > JFFREEZE ON
   DO YOU WISH TO CONTINUE?  {system response}
   Please confirm ("YES" or "NO"):

b. > YES
   ENTER THE FREE IOC OR SLM DISK VOLUME TO RECEIVE THE SYSTEM IMAGE FILES(S):

c. > <disk>
   where <disk> is the normal image disk volume.

   JFFREEZE: THE SYSTEM...COMMENCE IN 2 MINUTES
   DO YOU WISH TO PROCEED?
   Please confirm ("YES" or "NO"):

d. > YES
   JFFREEZE image dump commences in 2 minutes...
   Dump START time: yyyy/dd/mm hh:mm:ss.sss ddd..
   JFFREEZE image dump information is output, followed by Journal file information.
Procedure 7
Duplicate image NT40

1  Site/ACT  Make three copies of the frozen image on tape as follows.
   a.  List the disk volume with the frozen image.
       *Retain the filenames for below.*
   b.  Install a blank tape (with a write enable ring) on an MTD.
   c.  > MOUNT <x>  FORMAT FROZEN
   d.  > COPY <filename>  DR_IMG_<yymmdd>  <Tx>
       where <filename> is the name of the image file listed above, and
       <yymmdd> is the year, month and day (e.g. DR_IMG_920918).
   e.  > TAPE <x>  REW
   f.  > LIST <Tx>
   g.  > DEMOUNT <Tx>
       where <filename> is the name of the file listed above, and <yymmdd>
       is the year, month and day (e.g. DR_IMG_921808).

       **Note:** Verify the message “Device error” did not appear during copying
       or listing the tape. If it does, then the tape may be bad.
   h.  Repeat substeps b through g until three image copies are made.
Procedure 8
Resume work

1 Site/ACT Advise change order personnel that service order activity may resume only by following *Journal file rules* procedure (to follow).
Procedure 9
Print table TERMDEV

1. **Site/ACT**  Print a hard copy of table TERMDEV. Set the printout aside for the moment.

   *This printout will be sent to Northern Telecom for use by the Dump and Restore engineer.*
Procedure 10
Send in frozen image

1 Site/ACT  Send two "frozen images" to the appropriate Northern Telecom facility.
   a.   Label the tapes as "Frozen image."
   b.   Send the image tapes to the following address:

   PLEASE CONTACT YOUR NT CUSTOMER SERVICE REPRESENTATIVE FOR THE CORRECT ADDRESS.

   c.   Safely store the remaining tape at the DMS site.
   d.   Also include in the shipment the printout of table TERMDEV that was set aside above.

2 Safely store the remaining tape at the DMS site.
Procedure 11
Original data

1 Site/ACT  If any changes were made above (for the frozen image) to user OPERATOR or to the MAP device, restore the original data if desired as follows.

a. If a permit option was changed for user OPERATOR, change it back if desired.

> SHOW USERS
If OPERATOR is logged in, logout the user and use the "PERMIT" command from another user. Then again login as OPERATOR.

b. The original password for user OPERATOR can also be restored at this time.

c. If MAP tuple was changed in table TERMDEV, restore the original data if desired.

d. If MAP device was deleted in table LOGDEV, restore the original data if desired.
Procedure 12
Journal file rules

Site  FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the frozen image is completed. Please inform control center and craftsperson personnel of the following restrictions.

1  LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.
   Warning: Whenever possible use SERVORD, not table control, to make data changes.

2  Journal file is never to be stopped, even during journal file rotations.
   If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.

3  ACTIVITIES WHICH ARE NOT PERMITTED
   • changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)
     Note: A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.
   • network changes, additions, and deletions (tables NETWORK and NETJUNCT)
   • PM changes, additions, and deletions (all tables ending with 'INV')
   • trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)
   • trunk member changes, additions, and deletions (table TRKMEM)
   • table TRKNAME changes, additions, and deletions
   • IBN customer group changes, additions, and deletions
   • OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDELTAB, and OMSET)
   • DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)
   • table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)
   • use of the RENAMECLLI command
   • use of the DMOPRO command
   • use of the JF STOP command

-continued-
Procedure 12
Journal file rules (continued)

- erasing journal files from disk
- use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.

4 ACTIVITIES WHICH ARE PERMITTED
- all SERVORD commands
- table changes must be made with VERIFY ON and kept on hard copy
- emergency translation changes

5 If JFFREEZE is not activated, CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.
Procedure 13
System restart with JFFREEZE on

Site If BCS29 and lower with JFFREEZE activated and a system restart occurs for some reason, observe the following procedure.

1 ACT Rotate the journal file:
   a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
      Check which JF volume is currently active.
   b. > ROTATE JF
      QUERY again to verify rotation.
   c. > QUIT ALL

2 Print the journal file HISTORY file.
   > JFFREEZE HISTORY

3 Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

4 Verify tuple JF datafill in table DIRPSSYS:
   a. > TABLE DIRPSSYS;POS JF
      Example system response:
      JF Y 2 1 JFPPOOL $ CR MJ NA NA 30 30 TAPE $
      FIRSTACT YYYYYY 3 X24 BOTH NONE
   b. Change all fields which do not match. The bold type (fields RETPD, CREATPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical. (This daily rotates journal file at approximately 0300 hours.)
   c. > QUIT

5 Manually START journal file if not already started.

6 DO NOT STOP JOURNAL FILE. Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

7 Observe Journal file rules procedure from this point on.
Procedure 14
Changing DRAMREC with JFFREEZE on

Site When JFFREEZE is activated and it is necessary to do DRAMREC changes, additions or deletions (that is, ASSIGN or RECORD), observe the following procedure.

1 ACT Rotate the journal file:
   a. > MAPCI;MTID;IOD;DIRP;QUERY JF ALL
      *Check which JF volume is currently active.*
   b. > ROTATE JF
      *QUERY again to verify rotation.*
   c. > QUIT ALL

2 Contact TAS to SUSPEND JFFREEZE.

3 Print the journal file HISTORY file.
   > JFFREEZE HISTORY

4 Copy all journal file records listed in the HISTORY file to tape. Use the DIRPAUTO JF command (if available) or DIRPCOPY JF to copy the files. Keep the tape for backup the night of the BCS update.

5 Contact TAS to STOP JFFREEZE.

6 Verify tuple JF datafill in table DIRPSSYS:
   a. > TABLE DIRPSSYS;POS JF
      *Example system response:*
      
      JF Y 2 1 JFPOOL $ CR MJ NA NA 30 30 TAPE $                    
      FIRSTACT YYYY 3 X24 BOTH NONE
   b. Change all fields which do not match. The **bold** type (fields RETPD, CRETPD, FILEDATE, SHEDDAYS, SHEDBASE, SHEDINCR, ROTACLOS, and AUTOXFER) is a must. Other fields are not critical.
      *This daily rotates journal file at approximately 0300 hours.*
   c. > QUIT

7 Manually START journal file if not already started.

8 Make DRAMREC changes as required.

9 DO NOT STOP JOURNAL FILE. Rotate journal file daily and archive all journal file tapes for use on the night of the BCS update. Keep a chronological record of each journal file for use by the update engineer.

-continued-
Procedure 14
Changing DRAMREC with JFREEZE on (continued)

10 Observe *Journal file rules* procedure from this point on.
Site responsibilities the day of the software delivery

The following steps must be completed by site personnel before the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1
Day zero checklist

1. Site Verify that all problems identified from performing table data checks have all been resolved.

2. Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

3. Verify an image has been taken in the last 24 hours and backed to tape.

4. Ensure you have undertaken your critical test call plan and verified it. (See Appendix C: Test Call Scripts.)

5. Verify SFDEV has been cleared of all Telco/site-created files.

6. Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7. **LIU7 image with feature AQ1102**

   In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs. *This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.*

   **Note:** If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.
Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

1. Site/ACT All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
   - From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.
   - To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.
Procedure 3
Run DATADUMP

1 Site/ACT Run DATADUMP to output important switch information for future reference.

   a. > LOGUTIL; STOPDEV <printer>
       where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
       > LEAVE

   b. > RECORD START ONTO <printer>

   c. > BCSUPDATE; DATADUMP  {for BCS33 and higher}
       When DATADUMP is completed:
       > QUIT

   d. > DRCI; RUNEXEC DATA_DUMP  {for BCS32 and lower}
       When DATADUMP is completed:
       > QUIT

   e. > RECORD STOP ONTO <printer>
Procedure 4
FX voice and data

1  Site  Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

2  Ensure at least two dialup ports are operational—one on each IOC. These should have COMCLASS of ALL.

3  Verify user names to be used during the software update have PRIVCLAS of ALL.
Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a Hybrid process software delivery. The data transfer should already be completed.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the datafilled BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>.”

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.
Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

1. It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in Appendix A (page A-29).

2. If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 6-109).

3. If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 6-131).
Procedure 2
Remote login

1. **App/ACT** Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2. **App/ACT** Login the users and if applicable, set LOGINCONTROL.
   a. <break>
   b. ?LOGIN
      Enter username and password {system response}
      > <username> <password>
   or > <username>
      > <password>
      where username and password can both be found on the Pre-application report.
   c. For BCS33 and higher enter:
      > BCSUPDATE;DEVICE
      > QUIT
   d. For BCS32 and lower enter:
      > LOGUTIL;STOP;STOP {Note the name of this device}
      > LEAVE
      > LOGINCONTROL <device> QUERY
   e. Verify Open Condition Logout is N. If not, retain the original status and enter:
      > LOGINCONTROL <device> OPENFORCEOUT FALSE
      Verify Max Idle Time is Forever. If not, retain original status and enter:
      > LOGINCONTROL <device> MAXIDLETIME FOREVER
      > LOGINCONTROL <device> DISABLEON REMOVE
      <forceout_conditions> {conditions obtained in substep d above}
   f. Repeat this entire step on the other terminal device.
Procedure 3  
Check logs NT40  

1    **App/ACT**  For BCS33 and higher check logs to verify processor stability.
     $>$ BCSUPDATE; LOGCHECK
     $>$ QUIT
     *Do not continue until all logs have been explained.*

2    **App/ACT**  For BCS32 and lower check logs to verify processor stability.
     $>$ LOGUTIL
     $>$ OPEN <log_buffer>; WHILE (BACK) ()
     *where <log_buffer> refers to CC, CMC and MISM logs.*
     $>$ LEAVE
     $>$ TRAPINFO
     *Check for store parity traps, MISM (mismatch), and store checksum logs. Do not continue until all logs have been explained.*
Procedure 4
Stop journal file

1  App/ACT  ROTATE and STOP the Journal File recording.
   a.   > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
        Check which JF volume is currently active.
   b.   > CLOSE JF ACTIVE
        QUERY again to verify rotation.
   c.   > JF STOP
        Verify stopped.
   d.   > QUIT MAPCI
Procedure 5
Drop sync NT40

CAUTION
Observe ANTI-STATIC precautions throughout the NT40 drop sync and initialization procedure.

1 Site  On each CCC, at shelf 51, card location 16 (NT1X48), verify the Enab switches are down, the NoSync LEDs are off (in SYNC), the Dact switches are to the left (un jammed), and the thumbwheels are on 5.

2 App/ACT  Type:
   > MAPCI;MTC;CC

3 App/ACT  Ensure the CPU you want to load with the new BCS load is currently the inactive side.
   For example: If you will be loading CC 0 with the new BCS image, then CC 0 must be made inactive.
   b. If needed switch activity of the CC using SWACT (CC level).
   c. Align the CC and CMC clock on the same side (SYNCLK level).
      For example: CC 0 inactive with clock 0 slaved.

4 Site/INACT  Locate the NT1X48 card on the inactive CPU (with the Inact LED lit).

5 Site/INACT  JAM the inactive CPU by moving the Dact switch to the right.

6 Site and App  From the MAP display confirm the JAM is on.

7 App/ACT  Drop sync from the CC level of the MAP.
   > MAPCI;MTC;CC;DPSYNC
   > YES  {if prompted to disable AUTO PATCHING}
   > YES  {to confirm DPSYNC}

8 Site/INACT  Site must tell the engineer when the inactive CC is flashing A1.

9 App/ACT
   > QUIT MAPCI

-continued-
Procedure 5
Drop sync NT40  (continued)

10 Site  Initialize the inactive CPU as follows.

a. **INACT**  On the inactive CC put enable switch UP.

b. **INACT**  Move thumbwheel to 7 and press RESET.  
   *Display should immediately freeze on A1.*

c. **INACT**  Move thumbwheel to 8 and press RESET.  
   *Display should go to a solid A2, then to flashing D2 when process is complete. (This initializes the program store.)*

d. **INACT**  Move thumbwheel to 9 and press RESET.  
   *Display should go to a solid A3, then to flashing D3 when process is complete. (This initializes the data store.)*

e. **INACT**  Move thumbwheel to 7 and press RESET.  
   *Display should immediately freeze.*

f. **INACT**  Move thumbwheel to 5, but **DO NOT PRESS RESET!**

g. **INACT**  Put enable switch back DOWN.
Procedure 6  
BULLETINS before LOADMATE

1  App  Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
Procedure 7
Loadmate NT40

1 Site/ACT  Load the new BCS IMAGE tape on an available tape drive <x>.
   a. > MOUNT <x>  {lists the image load file}
   b. Verify the image file on the tape is correct.

2 > LIST T<x> TO <filename>
   where <filename> is the image load file to be loadmated.

3 > LDMATE <filename>

4 Site and App/INACT  Wait for loadmate to complete and the inactive processor to flash A1.
   While waiting for loadmate, SITE may display the patches in store file
   (PATCHER; DISPLAY <patch>) or may copy any new patches to the new
   patch tape (or to disk).

5 App/ACT
   > DEMOUNT T<x>

6 Site  Remove the image tape from the tape drive.
Procedure 8
Login inactive after Loadmate NT40
Login on the inactive processor after loadmate is complete.

1  App/ACT  Type:
    > MCR RTS

2  Allow initialization on the inactive side (flashing A1).

3  LOGOUT of the active side if logged in on the terminal labeled INACT.

4  > MATEIO
    > MATELOG <device>
    where <device> is the name of the terminal labeled INACT.

5  App/INACT
Enter username and password  (mate-side response)
Mate> OPERATOR OPERATOR

or Enter username
Mate> OPERATOR
Enter password
Mate> OPERATOR
Procedure 9
Set date and header message

1  App/INACT  Set the current date and site header message on the mate side.

Mate> SETDATE <dd mm yy>  \{set today's date\}

Mate> SETLOGMSG '
where <text> becomes the office header on the new software load. Using the old header as the model, change the Office Order (COEO), office name, Product Code (or BCS level), and application date. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

**Note:** The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the Parmmail.

**Example:**
94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
Procedure 10
Check logs inactive NT40

1 App/INACT For BCS33 and higher check mate logs to verify processor stability.
   Mate> BCSUPDATE;LOGCHECK
   Mate> QUIT
   Do not continue until all logs have been explained.

2 App/INACT For BCS32 and lower check mate CC logs.
   Mate> LOGUTIL;OPEN CC;WHILE(BACK)()
   Mate> LEAVE
   Mate> TRAPINFO
   Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

3 App/INACT
   Mate> TRAPINFO CLEAR
Procedure 11
Mate-side memory check

1  App/ACT  If from BCS 32 and higher, perform a mate-side memory check.

---

**CAUTION**

If this test fails *do not continue*—immediately notify the site supervisor. The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

---

**Note:** Entering the RUNSTEP command below gives a warning that the step is done out of process. This is okay—answer YES to the prompt.

a.  > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

  **Note:** This displays on the active side the result of the test, "completed" or "not completed." If it is not completed an error message is also printed on the active side.

b.  Should this check fail, isolate and replace the faulty memory card on the inactive side. For additional information, turn to "MATE_MEM_CHECK failure" in Appendix B.

c.  > QUIT
Procedure 12
Retain PARM values

1  **App**  Obtain a list of the following office parameters for reference.

> TABLE OFCVAR
> POS NODEREXCONTROL
> POS LCDREX_CONTROL
> QUIT

> TABLE OFCENG
> POS GUARANTEED_TERMINAL_CPU_SHARE
> QUIT

> TABLE OFCSTD
> POS DUMP_RESTORE_IN_PROGRESS
> QUIT
Procedure 13
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

**Note:** Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay—answer YES to the prompt.

1. **App/INACT** If coming from BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

2. **ACT** On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.

   > TABLE PADNDEV; LIST ALL
   If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.

   **Note:** MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

   1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.

   2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

3. > BCSUPDATE; RUNSTEP VERIFY_DSLIMIT

4. > RESET

5. > RUNSTEP DISABLE_AUTOIMAGE

   **Note:** This step is not valid if the AUTOIMAGE feature is not available.

6. > RUNSTEP SET_OFFICE_TUPLES

7. > RUNSTEP SEND_PATCHES

8. > RUNSTEP APPLY_PATCHES

9. > QUIT

-continued-
Procedure 13  
Patch inactive (continued)

10  Site and App/INACT  Print the PATCH$FILE and review applied (mate) patches.

    Mate> LISTSF ALL;PRINT PATCH$FILE
    If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.

11  Mate> TRAPINFO
    If trap occurred, do not continue until the trap is explained and action taken to correct the error.
Procedure 14
Activate patches inactive

1  App/ACT  Determine which ACT patches are activated in the old load.
    a.  > PATCHEDIT
        This command shows a list of 'ACT' patches and which ones are
        activated (turned on).
    b.  Review the patch list to determine which patches are currently
        activated (ON) on the active side.
        Normally any ACT patch activated in the old load should be manually
        activated in the new load (see next step).

2  Site and App/INACT  As needed activate ACT patches on the inactive side.
    a.  Mate> PATCHEDIT
    b.  Compare the mate-side patch list with active-side list obtained above.
        Decide with the site if any patches need to be activated (set "ON") at
        this time.
        Passwords will be provided on the 'APF' report for any "feature
        patches" in the new BCS load. Give the password to Telco, but do
        NOT activate the patch at this time unless already ON in the old load.
    c.  Mate> PATCHEDIT <patch> ON
        This activates the patch.
    d.  Repeat this command for each patch to be activated.
    e.  Also determine from comparing the patch lists if any ACT patches
        should be set to "NA" (no audit) state.
    f.  Mate> PATCHEDIT <patch> NA
        This sets the patch to "NA" state.
    g.  Repeat this command for each patch to be set to "NA."
Procedure 15
Restart inactive for patches

1  **App**  Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

   *Note*: Sequence of restarts is not important.

   **INACT**
   Mate> RESTART <**restart type**>
   Mate> YES  *(for confirmation)*

2  Allow initialization on the inactive side (flashing A1).

3  Login on the inactive side.

4  Repeat above steps for each type of restart required.
Procedure 16
IPL modules

1 App/ACT If from BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

a. > QUERY <module>
   where <module> is:
   NODESTAT STCSTAT IPMLSTAT
   CARRSTAT JCTRSTAT DCHSTAT

   Repeat QUERY for each module listed.

   Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

b. If any module is loaded, as indicated by the QUERY command, enter the following:
   > RUN <xxxx> IPL
   where <xxxx> is a loaded module.

   Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.
Procedure 17
SWCTCHK verification

1  **App/ACT**  If from BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see *Pre-application Report*). If not done earlier complete this step.

   a.  Ensure patch EWW08 is applied on the active (from-side) load.

   b.  > SWCTCHK
Procedure 18  
MASSTC

1 App Check status in MASSTC level (TOPS office only).
   a. ACT
      > MASSTC
      > STATUS
   b. If the status is INITIAL, then no action is needed.
   c. INACT If the status is DUPLICATED, then with Telco consent on the MATE side enter:
      Mate> ENABLE
      or, if data is obsolete
      Mate> SCRAP
   d. ACT If the status is SWITCHED, then with Telco consent on the ACTIVE side enter:
      > PERM
This page purposely left blank.
Journal file restore procedure

For HYBRID method—This section is required to restore the journal file recorded during the DATA FREEZE period.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

CAUTION
Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

CAUTION
In case of emergency situations and if an outage or degradation occurs, call the site supervisor immediately. If not service-affecting, use normal escalation policy.

Procedure 1
Journal file dump

1 Site and App Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME recorded at the beginning of the DATA FREEZE.

2 App For from BCS 28 and higher and if JFREEZE was used, perform Journal file dump with JFREEZE procedure (to follow).

Otherwise, for the manual process perform Manual journal file dump procedure (to follow).
Procedure 2
Journal file dump with JFFREEZE

If from _BCS 28 and higher and if JFFREEZE was used, perform this procedure. Otherwise, perform the *Manual journal file dump* procedure (follows this procedure).

1  **App/ACT** If currently on BCS33 and lower, enter:

   `> QUERY JFDUMPF`

   If the module is already loaded (module information is output) go to step 2 below.

   If the module is *not* loaded ("QUERY--module ‘JFDUMPF’ is not loaded" is output) load the module as follows.

   a.  Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)

   b.  `> TLIST (MOUNT <x>)`  *(BCSTOOLS tape)*

   c.  `> LOAD JFDUMPF PRPTCHEC`

   d.  `> DEMOUNT T<x>`

2  **Site and App**

   `> JFFREEZE HISTORY` *(site retains for their records)*

   Locate the FIRST JOURNAL FILE DISK VOLUME.

   **CAUTION**

   *It is of utmost importance to start with the first journal file volume (containing the first journal files created since the data freeze).*

3  **App**  List the JF disk volume as follows.

   `> DSKUT;LISTVOL <JF_disk> ALL`

   *where* `<JF_disk>` *refers to the disk volume(s) containing journal files identified above in step 2. Be extra sure to list all the volumes with JF.*

4  Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).
Procedure 2
Journal file dump with JFFREEZE (continued)

5.1 Only if coming from BCS33 and higher and going to BCS35 and higher, enter the following command.
(For example, BCS 33-35, 33-36, 34-35, or 34-36)

> JFDUMPF <disk> <from_BCS> <from_BCS>
where <disk> refers to the disk volume (or tape) from step 4.

5.2 Otherwise, for any other BCS enter the following commands.

> RFMT SET <from_BCS> <to_BCS>
> JFDUMPF <disk> <from_BCS> <to_BCS>
where <disk> refers to the disk volume (or tape) from step 4.

6 Verify that all journal files listed in step 3 are dumped, and retain the output filenames for Matebind journal files procedure (to follow).

7 > LISTSF ALL
Verify that DMOLIST was output from step 5, and retain the list for Matebind journal files procedure (to follow).
Procedure 3
Manual journal file dump

If from BCS 27 and lower, or if JFFREEZE was not used, perform this procedure. Otherwise, perform the JF dump with JFFREEZE procedure (precedes this procedure).

1 **App/ACT** If currently on BCS33 and lower, enter:

> QUERY JFDUMP

If the module is already loaded (module information is output) go to step 2 below.

If the module is not loaded ("QUERY--module 'JFDUMP' is not loaded" is output) load the module as follows.

a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)

b. > TLIST (MOUNT <x>)

(c) > LOAD JFDUMP PRPTCHEC

d. > DEMOUNT T<x>

2 **Site and App** Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME.

**CAUTION**
It is of utmost importance to start with the first journal file volume (containing the first journal files created since the data freeze).

a. **App** If journal files are on TAPE, list the JF tape as follows.

Put up the tape without a write enable ring.

> MOUNT <x>

> LIST T<x>  {journal file tape}

b. **App** If journal files are on DISK, list the JF disk volume as follows.

> DSKUT;LISTVOL <JF_disk> ALL

where <JF_disk> refers to the disk volume(s) containing journal files. Be extra sure to list all the volumes with JF.

3 Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).

-continued-
Procedure 3
Manual journal file dump  (continued)

4.1 Only if coming from BCS33 and higher and going to BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

Note: In the following step the applicator may utilize a file to dump multiple journal files.

> JFDUMP <jfin> <jfout> <device> <from_BCS> <from_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ', then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999' (Canada only). <device> refers to the recording device on which to dump journal file (disk, tape, or SFDEV).

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 33 35' dumps file U880405000090JF to file JFA onto disk D000SCRATCH formatting from BCS33 to BCS35 and higher.

Retain the output filenames for Matebind journal files procedure (to follow).

4.2 Otherwise, for any other BCS enter the following commands.

(for example, BCS 32-35, 33-33, 33-34, or 34-34)

> RFMT SET <from_BCS> <to_BCS>

Note: In the following step the applicator may utilize a file to dump multiple journal files.

> JFDUMP <jfin> <jfout> <device> <from_BCS> <to_BCS>
where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ', then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999' (Canada only). <device> refers to the recording device on which to dump journal file (disk, tape, or SFDEV).

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 29 32' dumps file U880405000090JF to file JFA onto disk D000SCRATCH formatting from BCS29 to BCS32.

Retain the output filenames for Matebind journal files procedure (to follow).

5 Repeat step 4 for each journal file listed from step 2 above.

---

**CAUTION**

Review the time stamps of the reformatted JF to confirm the entire data freeze period is accounted for.

-JF active during the entire data freeze with no significant interval without journal file

---

-continued-
Procedure 3
Manual journal file dump (continued)

6  > DEMOUNT T<x>  

{only if JF was recorded on tape}

7 Site If journal file was recorded on tape, remove the previous journal file
tape and replace the write enable ring. Install the next tape without a write
enable ring.

CAUTION
Install each journal file tape in the order they were created.

8 Site and App For each journal file tape, MOUNT and LIST the tape and
repeat steps 4 through 7 above.
Procedure 4
Matebind journal files

1  **App/ACT**  Matebind the reformatted journal files.
   
   a.  **ACT**  List the device used for the journal file dump from the jf dump steps (previous procedure).
   
   b.  > MATEIO
   
   c.  > MATEBIND `<jffile>` `<jffile>`
       *where `<jffile>` refers to all reformatted JF filenames created in the JF dump steps.*
   
   d.  Repeat MATEBIND for each filename created in the JF dump steps.
   
   e.  > MATEBIND DMOLIST DMOLIST
       
       **Note:** The site is responsible to input all DMOs from the DMOLIST. (These are DMOs which were input since datafreeze was suspended.)
   
   f.  **INACT**
       Mate> MATEIO
Procedure 5
Restore journal files

1 App  Restore the journal files to the inactive side. If to_BCS 30 and higher perform substep a below. If to_BCS 29 and lower perform substep b.

Note: In the following steps, <jffile> refers to all the reformatted JF filenames created previously in the journal file dump procedure.

| CAUTION |
| Restore all journal files in the same order they were created. |

a. For to_BCS 30 and higher enter:

   ACT
   > TRACECI ME

   Note: This command allows you to monitor the results of the RESTAB command on the ACT terminal.

   INACT
   Mate> RESTAB <jffile> <from_BCS>
   Correct all errors which may occur.

   Repeat RESTAB for each filename created in the journal file dump.

b. For to_BCS 29 and lower enter:

   INACT
   Mate> DMOPRO <jffile>
   Correct all errors which may occur.

   Repeat DMOPRO for each filename created in the journal file dump.
PRESWACT procedure
This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1
BULLETINS before PRESWACT

1. **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
Procedure 2
Start PRESWACT

1 App/ACT Perform PRESWACT of BCSUPDATE.
   Note: Please logout all users on the inactive side while PRESWACT is running.
   > BCSUPDATE
   > PRESWACT

2 Read the following notes, and continue the procedure while PRESWACT is running.
   Note 1: PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).
   As an example:

   TABLE_DELTA executing
   :
   Table AMAOPTS *** Checksum incorrect, keys incorrect :
   TABLE_DELTA not complete
   ACT - Error: Inactive table data did not match.
   Correct error condition. Enter Preswact to continue
   For any table in error, investigate the problem by entering:
   > DELTA <table> NOFILE {compares new/old tuples}
   or  > DELTA <table> SUB <subtable> NOFILE
   To continue, run PRESWACT again by entering:
   > PRESWACT

   Note 2: A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.
   -continued-
Procedure 2
Start PRESWACT (continued)

Note 3: PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. As an example:

    TABLE_DELTA executing
    : Table ATTCONS Checksum incorrect, keys match
    : TABLE_DELTA complete
Procedure 3
PRESWACT DIRP and billing

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

Note: Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

1.0 Disk drive parallel DIRP coming from BCS31 and lower

a. Site/ACT In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

b. For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume ($).

c. Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

d. Erase all closed parallel DIRP files from the disk:

   > CLEANUP FILE <parallel_filename>
   where <parallel_filename> is each file to be erased.

e. Reformat the parallel disk volume:

   > DIRPPFMT <parallel_volume>
   where <parallel_volume> is the original volume name.

f. If to_BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

g. Site and App/INACT If from_BCS 31, ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

1.1 Disk drive parallel DIRP coming from BCS32 and higher

Note: If from BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

If from BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

--- CAUTION ---

Recently recorded parallel data may be overwritten.
Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

• If a single parallel volume is in use, information on the volume will be lost over SWACT.

• If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

a. Site/ACT If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).

b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).

c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-
Procedure 3  
PRESWACT DIRP and billing (continued)

d. **Site and App/INACT** If from BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

3 Tape drive PRIMARY billing

a. **Site/ACT** If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1  
{standby volume}

b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.

c. Prepare a new standby volume as follows.

> MOUNT <x> FORMAT <volume_id>

where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

> DEMOUNT T<x>

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

d. **Site and App/INACT** If from BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower
a. Site/ACT If on DPP or BMC, from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

*Note:* DIRP sees DPP/BMC as a tape drive port.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. Prepare a new standby volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

> ERASTAPE <x>
where <x> is the standby device number.

*Note:* On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

System response is:
***WARNING, THIS TAPE WILL BE ERASED***

---

**CAUTION**

At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

> DEMOUNT T<x>

If ERASTAPE command was used, repeat this substep (d) to rename the volume.

*Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.*

-continued-
e. **Site and App/INACT** If from_BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

```
Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
```

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

**CAUTION**

Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

f. **Site and App/ACT** If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

**Note:** Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

g. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.
```

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN '<<poolname> {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

a. Site/ACT Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

b. Site and App/ACT If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

c. Site and App/INACT Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

CAUTION
Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

a. Site/ACT In table DIRPSSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

Note: TAPEX cannot be used for parallel recording.

b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume ($). Physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

Note: This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.
Procedure 3
PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

a. Site/ACT In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume ($). Then physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

d. Site and App/INACT Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.

- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

a. Site/ACT In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

\[ \text{MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA} \]
\[ \text{This re-establishes the block header on the DPP.} \]

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume ($).

e. Prepare each new parallel volume as follows.

\[ \text{MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA} \]
\[ \text{This re-establishes the block header on the DPP.} \]

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

\[ \text{ERASTAPE <x>} \]
\[ \text{where <x> is the parallel device number.} \]

**Note:** On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:

\[ ***\text{WARNING, THIS TAPE WILL BE ERASED}*** \]

**CAUTION**
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.

If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

\[ \text{DEMOUNT T<x>} \]

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-
Procedure 3
PRESWACT DIRP and billing (continued)

f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).

h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

```
Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.
```

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

```
Mate> EDIT DIRP_REC
Mate> DOWN '<poolname> {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC
```

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.
Procedure 4
Data extension

1  **App/INACT**  For a DATA EXTENSION only-Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.

   a. Log into the inactive side.

   b. **Mate> LISTSF ALL**

      **Note:** The file ‘NEWTRKS’ should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.

   c. **Mate> MAPCI NODISP;MTC;TRKS;TTP**

   d. **Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)**

   e. **Mate> READ NEWTRKS**

   f. **Mate> QUIT ALL**
Procedure 5
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a. ACT
      > MATEIO
      > MATELOG <device>
      where <device> is the name of the terminal labeled INACT.
   b. INACT
      Enter username and password  (mate-side response)
      Mate> OPERATOR OPERATOR
      or
      Enter username
      Mate> OPERATOR
      Enter password
      Mate> OPERATOR
Procedure 6
Logout DNC

1 Site and App/ACT  If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
Procedure 7
Table CRSFMT alarm

1 **App/ACT** In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

**Note:** If a volume is allocated in DIRPPOOL it is being used.
SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1
BULLETINS before SWACT

1. App Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
Procedure 2
Before SWACT

1 Site  Do not proceed until both the Telco and NT on-line support agree.

2 Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

3 Site  Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

4 Site  Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

5 Site  Dump the SPMS register information to a printer (or other device) according to Telco practice.

6 Site  Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

**CAUTION**
If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

   a. Enter the LTPDATA level of MAP.
   b. Query all DTA monitors on the switch by issuing the command,
      
      > EQUIP DTA QUERY ALL
   c. If the DMS responds with “No DTA equipment reserved on switch” then no further action is needed.
   d. Make note of any connected monitors by looking at the CONNECT field of the query display.
      Use the POST command to post each monitored LEN, and then issue the command,
      
      > CONNECT <N> RLS
      where <N> is the integer number of the monitor from the first column of the query display.
      Do this for each connected monitor. Repeat substep b as necessary to review DTA status.
Procedure 2
Before SWACT (continued)

e. Reset all monitor LENs and DS0 channels by issuing the command,
   > EQUIP DTA RESET <N>
   where <N> is the integer number of the monitor from the first column of
   the query display.
   
   Do this until no equipment is left "Equipped." Repeat substep b as
   necessary to review DTA status.

7 Site  If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is
        a manual action used to test the quality of a CCS7 link.

        CAUTION
        In BCS35 BERT should not be left running during the CC SWACT.
        Otherwise, the link will hang up over the SWACT.
        If BERT is left running over the SWACT, you will have to go into the
        PM level, post the offending LIU7/MSB7, and BSY and RTS it.

    a. To determine if BERT is on: Go into C7LKSET level and post each
       linkset in turn. The link state should not indicate 'BERT'.
    b. To turn off BERT, go into the C7LKSET level and post the linkset. Go
       into C7BERT level and type STOP <linkno>.

8 App  Do not swact during CMC REX test. Failure to comply may result in a
        system restart.
    a. > TABLE OFCENG; POS CMC_REX_SCHEDULED_HR; QUIT
       The parameter will range from 0 to 23: 0 being midnight and 23 being
       2300 hours.
    b. Do not swact the office between the CMC_REX_SCHEDULED_HR
       and 30 minutes after.
       Example: If CMC_REX_SCHEDULED_HR is set to 0, then do not
       swact between 0000 and 0030 hours.
    c. Verify Telco did complete step 4 above-Disable all polling and
       periodic testing.
Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

Note: A restart reload on the mate side will cause supp/thresh settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1  App/ACT  List all special logs on the active side.
   > LOGUTIL
   > LISTREPS SPECIAL

   Example output:
   LINE 138  7 INFO TRMT *thresh= 25*
   PM 189  5 INFO PM SW Information... *supp*

2  App/INACT  Restore special logs on the mate side.
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL

   Commands to restore above example:
   Mate> THRESHOLD 25 LINE 138
   Mate> SUPPRESS PM 189

3  App/INACT  Verify the correct logs are set up and match the active load.
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL
Procedure 4
Start logs

1  **App/ACT**  Set up LOGS for the SWACT.

*Note:* The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

a.  > LOGUTIL;STOP

b.  > DELDEVICE <device>
    *where <device> is where logs are to be routed.*

c.  > ADDREP <device> SWCT  *(also add SWNR if on BCS30 and lower)*

d.  > START
    *This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.*

e.  > LEAVE
Procedure 5
Release JAM NT40

UNJAM the processors in preparation for the CC switch of activity (SWACT).

1  Site and App/INACT  Verify the inactive side is flashing A1.

2  Site/INACT  On inactive CCC, shelf 51, card location 16 (NT1X48), place the 
Dact switch to the left (UNJAMMED).

3  Site/ACT and INACT  On both sides (same card), also verify the Enab 
switches are down and the thumbwheels are on 5.
Procedure 6
Establish mate communication NT40

1  **App/ACT** Establish communication with the mate (inactive) side.

> MCR RTS
Procedure 7
SWACT

Refer to "CC Warm SWACT Summary" in Appendix A for a description of the CC warm SWACT process. Also refer to Appendix B for a procedure for testing call survivability over a CC warm SWACT and to Appendix C for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

1  App/ACT Wait a minimum of 10 minutes after the completion (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

   CAUTION
   FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
   Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

   CAUTION
   After a CC warm SWACT do not JAM the inactive CPU RTIF.
   The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

2  App/ACT INTERNATIONAL offices switch CC activity (SWACT) as follows.
   All others go to step 3.
   Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

   > INTLSWCT;DATE;RESTARTSWCT (only for INTL offices)

   -continued-
Procedure 7
SWACT (continued)

3  **App/ACT**  All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

a.  For BCS36 and higher type:

> BCSUPDATE;SWACTCI;QUERYSWACT

*System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:*

> DATE;NORESTARTSWACT

*Respond (yes/no) to system prompt using lower-case.*

*or else,*

> DATE;RESTARTSWACT

b.  For BCS35 and lower type:

> BCSUPDATE;SWACTCI;DATE;RESTARTSWACT  *(for BCS33-BCS35)*

> BCSUPDATE;SWCT;DATE;RESTARTSWCT  *(for BCS31 or BCS32)*

> SWCT;DATE;RESTARTSWCT  *(for BCS30 and lower)*

*System response varies with the BCS level, but the following prompt is a typical example.*

ACTIVE DEFAULT SETTINGS:
FORCESWACT set ON
LOADEXECs set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.

4  **Site/ACT**  Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

---

**CAUTION**

*Work quickly to complete the procedures to follow.*
The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 8
Start POSTSWACT

**CAUTION**

After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order
to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT Login, check the date and time, and start POSTSWACT.

1 Type:
   <break>

2 ?LOGIN
   Enter username and password {system response}
   > <username> <password>
   or > <username>
       > <password>

3 > DATE
   Verify the date and time are correct.

4 Reestablish recording onto devices (console session) as required.

5 > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 9
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  \{note which volume is ACTIVE\}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT <x> FORMAT <stdby_volume>
       where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

       Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is:
       "request aborted. Tape not expired (use ERASTAPE)"
       then enter:
       > ERASTAPE <x>
       where <x> is the standby device number.

       Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
       System response is:

       ***WARNING, THIS TAPE WILL BE ERASED***

        CAUTION
        At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
        If a mistake is made, a real tape may be erased.

        Enter YES to confirm the command.

-continued-
Procedure 9
Recover billing (continued)

d. > DEMOUNT T<x>

e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f. Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.

a. > MNT <subsystem> <x>  \(\text{still in DIRP level}\)

Example: MNT AMA 3

Enter YES to confirm the command.

b. > QUERY AMA  \(\text{to confirm standby volume is available}\)

c. Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

**Note:** Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.

a. For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b. For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

   Example:
   TABLE DIRPSSYS;POS AMA

   In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

   -continued-
Procedure 9
Recover billing (continued)

Examples:
TABLE DIRPOOL;POS 62  *(pool for AMAPOOL)*
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 10
Display DPP settings

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1. `> MAPCI NODISP;MT;IOD;DPP AMA`

2. `> COLLPSW`
   
   **Note:** If different, perform steps 3 and 4; otherwise go to step 5.

3. `> COLLPSW 1 <4_digits> <6_digits>

4. `> COLLPSW 2 <4_digits> <6_digits>

5. `> AMATPSW`
   
   **Note:** If different, perform step 6; otherwise, go to step 7.

6. `> AMATPSW <4_digits> <6_digits>

7. `> AMAHRS`
   
   **Note:** If different, perform step 8; otherwise, go to step 9.

8. `> AMAHRS <start_hour> <end_hour>

9. `> VALPARM INVALID`
   
   **Note:** If different, perform step 10; otherwise, go to step 11.

10. `> VALPARM INVALID <threshold>

11. `> ERRMAP ACT`
    
    **Note:** If different, perform steps 12 and 13.

12. `> ERRMAP <alarm_no> <type> <level>

13. Repeat step 12 for each alarm that is different.
**Procedure 11**

**INI trunks**

**App/ACT** If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1. `> MAPCI;MTC;TRKS;TTP`

2. `> POST A INI`

3. `> REPEAT <x> (FRLS;RTS;NEXT)`
   
   *where <x> is the number of INI trunks in the posted set.*
Procedure 12
Restart inactive POST NT40

Prepare the inactive side for a revert to the old BCS load.

*Note:* A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1. **Site/INACT** Locate the NT1X48 card with the *Inact* LED lit. Move the *enab* switch up.

2. **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
   a. Thumbwheel 3, RESET *flashes 33*
   b. Thumbwheel 7, NO RESET *flashes 77, then initializes*
   c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.

3. **Site/INACT** Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4. **Site/INACT** Move the *Enab* switch back down.

5. **App/INACT** Confirm that the inactive processor is flashing A1.
Procedure 13
DRTIME statistics

1  App/ACT  Get a hardcopy of DRTIME statistics (if needed).
   > DRTIME PRINT
   DRTIME provides statistics on the BCS application. If requested, the
   information should be forwarded to the appropriate Northern Telecom
   department.
Procedure 14
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.

CAUTION
If an abort becomes necessary due to critical test failures, revert to the old load using the Revert to the old load procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.
Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

Note: Do not enter POSTSWACT again until the processors are in sync.

1  Site/ACT and INACT  On each CCC, shelf 51, card location 16 (NT1X48), ensure the Enab switches are down, the Dact switches are to the left (unjammed), and the thumbwheels are on 5.

2  App/ACT > MAPCI;MTC;CC;PS <i>
   where <i> is the inactive program store.

3  > COPY <m>
   where <m> is the PS module. Start at zero (0).

4  Repeat substep 3 for each PS module equipped.

5  > QUIT;SYNC NOTRACEPOINT  {if BCS31 and higher}
   > YES  {for confirmation}

   Note: The SYNC NOTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6  > QUIT MAPCI
Procedure 16
Finish POSTSWACT

1 **App/ACT** If necessary run POSTSWACT one more time to completion.
   
   > BCSUPDATE; POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2 **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3 **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4 **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5 **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

6 **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7 **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

8 **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9 **Site/ACT** Return PORTS and USER information back to original values.

10 **Site/ACT** Notify DNC end users to LOGIN the DNC.

11 **Site/ACT** For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (Site Preparation section), change data for position JF in table DIRPSSYS back to the original data.
Procedure 17
Take image NT40

1 Site/ACT DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

2 After the image is completed, you may set the AUTODUMP ‘RETAIN’ option back to 'ON' if desired. The option was set to "OFF" during the ONP.

*Note:* Setting the AUTODUMP ‘RETAIN’ option to ‘OFF’ during the ONP is design intent. This was done to prevent setting the system recovery route to the ‘OLD’ BCS image that was taken prior to the BCS update.
Procedure 18
Start journal file

1 Site/ACT If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
Revert to old load procedure

This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before REVERT

1. **Site** Do not proceed until both the Telco and NT on-line support agree.

2. **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive NT40 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT Perform a restart reload on the inactive processor (old BCS load).
   a. Thumbwheel 3, RESET
      flashes 33
   b. Thumbwheel 7, NO RESET
      flashes 77, then initializes
   c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
   d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 3
Establish mate communication NT40

1. App/ACT Establish communication with the mate (inactive) side.
   > MCR RTS
Procedure 4
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a. ACT
      > MATEIO
      > MATELOG <device>
      where <device> is the name of the terminal labeled INACT.
   b. INACT
      Enter username and password  \{(mate-side response)\}
      Mate> OPERATOR  OPERATOR
      or
      Enter username
      Mate> OPERATOR
      Enter password
      Mate> OPERATOR
Procedure 5
TRACECI close

1  App/INACT  If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

   Mate> TRACECI CLOSE  
   
   {for BCS34 and lower}
Procedure 6
Configure DIRP billing

1 Site/App Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

a. ACT Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.
   Disk volumes will rotate and recover automatically after SWACT.
   Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

b. INACT If reverting to BCS31 or higher:
   Ensure datafill is correct on the mate side for tables DIRPPPOOL or DIRPSSYS.

c. INACT If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.
   Note: In DIRP_REC the parallel volume assignments for DIRPPPOOL should be set to nil ($) for all pools.
Procedure 7
Start logs

1  App/ACT  Set up LOGS for the SWACT.

   Note: The purpose of this step is to turn on logs at the terminal designated
   as the "ACT" device. Normally, logs will have been routed also to a printer at
   the start of the session.

   a.  > LOGUTIL;STOP
   b.  > DELDEVICE <device>
       where <device> is where logs are to be routed.
   c.  > ADDRFILE <device> SWCT  (also add SWNR if on BCS30 and lower)
   d.  > START
       This starts logs on "this" device. If a different terminal device was
       selected above, then use >STARTDEV <device>.
   e.  > LEAVE
Procedure 8
Ensure inactive unjammed

1 Site and App/INACT Ensure inactive side is unjammed.
Procedure 9
Revert

1  **App/ACT**  Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

   **CAUTION**
   FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT. Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

2  **App/ACT**  INTERNATIONAL offices switch CC activity (SWACT) as follows.

   *Note:* This step is valid if the NTX470AA (International Common Basic) package is built into the load.

   > INTLSWCT;DATE;RESTARTSWCT  \{only for INTL offices\}

3  **App/ACT**  ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

   **CAUTION**
   *If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.*

   If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

   If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be **unloaded from the active side** in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

   -continued-
Procedure 9
REVERT (continued)

> BCSUPDATE;SWACTCI;DATE;ABORTSWACT   {for BCS33 and higher}

CAUTION
In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC). Use the NOCHECK option only as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE;SWCT;DATE;ABORTSWCT   {for BCS31 or BCS32}
> SWCT;DATE;RESTARTSWCT   {for BCS30 and lower}

System response varies with the BCS level, but the following prompt is a typical example.

ACTIVE DEFAULT SETTINGS:
FORCESWACT set ON
LOADEXECs set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):

...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

CAUTION
Work quickly to complete the procedures to follow. The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 10
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password  (system response)
   > <username> <password>
   or  > <username>
       > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
Procedure 11
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1
> MAPCI;MTC;IOD;DIRP
> QUERY AMA ALL {note which volume is ACTIVE}

2 If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3 TAPEX volumes must be manually remounted using the DIRP MNT command.

4 Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. > MOUNT <x> FORMAT <stdby_volume>
      where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is:
      "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      > ERASTAPE <x>
      where <x> is the standby device number.

      Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      System response is:
      ***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-
Procedure 11
Recover billing (continued)

d.  > DEMOUNT T<x>

e.  If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f.  Repeat this entire step for each standby billing subsystem.

5  Activate standby devices.

a.  > MNT <subsystem> <x> {still in DIRP level}

Example: MNT AMA 3

Enter YES to confirm the command.

b.  > QUERY AMA {to confirm standby volume is available}

c.  Repeat this step for each billing subsystem.

6  If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7  Bring up parallel devices (as required) using the preformatted volumes.

a.  For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b.  For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

   Example:
   TABLE DIRPSSYS;POS AMA

   In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

   -continued-
Procedure 11
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62  (pool for AMAPOOL)
CHA VOLUME23 T4
or  CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 12
Display DPP settings

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1 > MAPCI NODISP;MT;IOD;DPP AMA

2 > COLLPSW
   *Note:* If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLPSW 1 <4_digits> <6_digits>

4 > COLLPSW 2 <4_digits> <6_digits>

5 > AMATPSW
   *Note:* If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS
   *Note:* If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALPARM INVALID
   *Note:* If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT
   *Note:* If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 13
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 14
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 15
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

*Note:* Do not enter POSTSWACT again until the processors are in sync.

1. **Site/ACT and INACT** On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (unjammed), and the thumbwheels are on 5.

2. **App/ACT** > MAPCI;MTC;CC;PS <i>
   *where* <i> is the inactive program store.*

3. > COPY <m>
   *where* <m> is the PS module. *Start at zero (0).*

4. Repeat substep 3 for each PS module equipped.

5. > QUIT;SYNC NOTRACEPOINT
   > YES
   *(if BCS31 and higher)*
   *(for confirmation)*

   *Note:* The SYNC NOTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6. > QUIT MAPCI
Procedure 16
Finish POSTSWACT

1  App/ACT  If necessary run POSTSWACT one more time to completion.
   > BCSUPDATE;POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and
   flag them as completed when they pass.  If failures occur, follow given
   instructions to correct the problem, then continue POSTSWACT.

2  Site and App/ACT  Copy any new MS patches in store file to the PM loads
   disk volume (or SLM disk).

3  App/ACT  Clean up SFDEV by erasing any application-related files (for
   example: DRNOW, FEATDATA, and all patches).

4  Site/ACT  Passwords for ADMIN and OPERATOR may have changed.  For
   security Telco should change these passwords back to the original.

5  Site/ACT  Re-input any data changes made prior to the software update but
   not captured on journal file.

6  Site/ACT  Reassign all current PROFILE information (LOGIN or RESTART)
   in SFDEV.

7  Site/ACT  Reassign any temporary log ROUTING setup via LOGUTIL.

8  Site/ACT  Reassign any changes in the INTEG level of the MAP (for
   example, UPTH, BUFFSEL, FILTER and others).

9  Site/ACT  Return PORTS and USER information back to original values.

10 Site/ACT  Notify DNC end users to LOGIN the DNC.

11 Site/ACT  For Hybrid and if table DIRPSSYS was changed during the
   "JFFREEZE procedure" (Site Preparation section), change data for position
   JF in table DIRPSSYS back to the original data.
Procedure 17
Take image NT40

1 Site/ACT DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 18  
Start journal file

1  Site/ACT  If equipped, start journal file and verify started.
   a.  > JF START
   b.  > MAPCI;MTC;IOD;DIRP
   c.  > QUERY JF ALL
       QUERY JF should respond with "AVAIL." If a standby device is being
       used, both active and standby volumes should be marked "AVAIL."
   d.  > QUIT ALL
Procedure 19
More Revert/ABORT steps

1 **Site and App/INACT** If asked to do so by technical support take an image of the *inactive* (mate) side load.

2 **Site and App/ACT** With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3 **Site and App** Following an ABORT, rescheduling of the software update must be negotiated. Refer to *Procedure for rescheduling aborted applications*.

4 **App/ACT** On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   
   a. If old load is BCS35 and higher:
      
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   
   b. If old load is BCS34 and lower:
      
      > BCSUPDATE;RESET
      > QUIT ALL
Emergency abort procedure

CAUTION
Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before EABORT

1 Site  Do not proceed until both the Telco and NT on-line support agree.

2 Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive NT40 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT Perform a restart reload on the inactive processor (old BCS load).
   a. Thumbwheel 3, RESET flashes 33
   b. Thumbwheel 7, NO RESET flashes 77, then initializes
   c. When the inactive processor starts to initialize, set thumbwheel back on 5, NO RESET.
   d. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 3
Ensure inactive unjammed

1  Site and App/INACT  Ensure inactive side is unjammed.
Procedure 4
Cold SWACT NT40

1. Site/ACT  JAM active side to force a switch of activity (cold swact).

2. Site/ACT  Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1. At this point the CC switch of activity is over.

3. Site and App/ACT  Work quickly to complete the next procedure. The POSTSWACT procedure (to follow) checks that the office is functioning as normal.

   Note: Be sure to notify appropriate levels of support of the ABORT before putting the switch back in SYNC.
Procedure 5
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password  {system response}
   > <username> <password>
   or  > <username>
       > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site verifies the sanity of the current load.
Procedure 6
Recover billing

Site and App/ACT  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL {note which volume is ACTIVE}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.

   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.

   b.  > MOUNT <x> FORMAT <stdby_volume>
   where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.

   Example: MOUNT 3 FORMAT DPPAMA

   c.  Enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)"
   then enter:

   > ERASTAPE <x>
   where <x> is the standby device number.

   Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators. System response is:

   ***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-
Procedure 6
Recover billing (continued)

d.  > DEMOUNT T<x>

e.  If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f.  Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

a.  > MNT <subsystem> <x>  {still in DIRP level}
    Example: MNT AMA 3
    Enter YES to confirm the command.

b.  > QUERY AMA  {to confirm standby volume is available}

c.  Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

a.  For BCS31 and lower:
    In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.
    Example:
    TABLE DIRPSSYS;POS AMA
    CHA PARVOL T4
    or CHA PARVOL D010PAMA

b.  For BCS32 and higher:
    In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.
    Example:
    TABLE DIRPSSYS;POS AMA

    In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.
    -continued-
Procedure 6
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAFCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 7
Display DPP settings

App/ACT Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1 > MAPCI NODISP;MTC;IOD;DPP AMA

2 > COLLP SW 
   Note: If different, perform steps 3 and 4; otherwise go to step 5.

3 > COLLP SW 1 <4_digits> <6_digits>

4 > COLLP SW 2 <4_digits> <6_digits>

5 > AMATPSW 
   Note: If different, perform step 6; otherwise, go to step 7.

6 > AMATPSW <4_digits> <6_digits>

7 > AMAHRS 
   Note: If different, perform step 8; otherwise, go to step 9.

8 > AMAHRS <start_hour> <end_hour>

9 > VALP ARM INVALID 
   Note: If different, perform step 10; otherwise, go to step 11.

10 > VALP ARM INVALID <threshold>

11 > ERRMAP ACT 
   Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 8
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTM;TRKS;TPP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)

where <x> is the number of INI trunks in the posted set.
Procedure 9  
Do Test Calls

1  **Site/ACT** Perform TEST CALLS that were identified ahead-of-time from *Appendix C: Test Call Scripts.*
Procedure 10
After testing is complete SYNC NT40

POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

**Note:** Do not enter POSTSWACT again until the processors are in sync.

1. **Site/ACT and INACT** On each CCC, shelf 51, card location 16 (NT1X48), ensure the *Enab* switches are down, the *Dact* switches are to the left (un jammed), and the thumbwheels are on 5.

2. **App/ACT** > MAPCI;MTC;CC;PS <i>
   where <i> is the inactive program store.

3. > COPY <m>
   where <m> is the PS module. Start at zero (0).

4. Repeat substep 3 for each PS module equipped.

5. > QUIT;SYNC NOTRACEPOINT
   > YES
   **Note:** The SYNC NOTRACEPOINT command should be used in BCS31 and higher (patch is required if BCS31 or 32). If lower than BCS31 then use SYNC command as usual.

6. > QUIT MAPCI
### Procedure 11
**Finish POSTSWACT**

1. **App/ACT**  If necessary run POSTSWACT one more time to completion.
   
   ```
   > BCSUPDATE; POSTSWACT
   ```
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2. **Site and App/ACT**  Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3. **App/ACT**  Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4. **Site/ACT**  Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5. **Site/ACT**  Re-input any data changes made prior to the software update but not captured on journal file.

6. **Site/ACT**  Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7. **Site/ACT**  Reassign any temporary log ROUTING setup via LOGUTIL.

8. **Site/ACT**  Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9. **Site/ACT**  Return PORTS and USER information back to original values.

10. **Site/ACT**  Notify DNC end users to LOGIN the DNC.

11. **Site/ACT**  For Hybrid and if table DIRPSSYS was changed during the "JFFREEZE procedure" (Site Preparation section), change data for position JF in table DIRPSSYS back to the original data.
Procedure 12
Take image NT40

1 Site/ACT DUMP AN IMAGE of the new BCS load for backup-one NT40 IMAGE to disk and backup image copied to tape.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 13
Start journal file

1 Site/ACT If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
Procedure 14
More Revert/ABORT steps

1  Site and App/INACT  If asked to do so by technical support take an image of the inactive (mate) side load.

2  Site and App/ACT  With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3  Site and App  Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4  App/ACT  On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a.  If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   b.  If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
Two Night Process SNODE MOP

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Site preparation procedure

Begin this section when the First Shipment of tapes and documentation arrives at the office. Site must complete the following procedures before being contacted by Northern Telecom for the pre-application checks (or Preliminary Precheck). In order to qualify the office for a software upgrade the series of prechecks must be successfully completed.

Procedure 1
Take image

1  Site/ACT  Before beginning the front-end testing (processor tests), DUMP AN OFFICE IMAGE for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge, or one NT40 image to disk and copied to tape.
Procedure 2  
Route logs SNODE

This procedure ensures that specific logs are routed to an active log device and are not suppressed.

1  Site/ACT
   > LOGUTIL
   > LISTREPS SPECIAL

   If specific logs are suppressed use
   > RESUME <log>

   If logs have threshold set use
   > THRESHOLD 0 <log>
   where <log> refers to specific CM, MS, SLM, and MM logs.

2  > LISTROUTE DEVICE <printer>

   If critical logs are not routed use
   > ADDREP <printer> <log>
   > STOPDEV <printer>

   Verify only critical logs are enabled on the device and are correctly routed.

3  > STARTDEV <printer>
   > LEAVE
Procedure 3  
Processor tests SNODE

To ensure front-end stability Site should complete the following tests before being contacted for the pre-application checks.

**Note:** Perform the following front-end testing during low traffic periods.

1. **Site** Ensure the CPUs are in SYNC and the inactive side is NOT jammed.

2. **ACT** Match the memory from the Memory level of the MAP.
   ```
   > MAPCI;MTC;CM;MEMORY
   > MATCH ALL
   > QUIT
   ```

3. **INACT** From the inactive RTIF (remote terminal interface), jam the inactive CPU.
   ```
   RTIF> \JAM
   RTIF> YES  
   ```
   *(for confirmation)*

4. **ACT** Drop SYNC from the CM level of the MAP.
   ```
   > DPSYNC
   > YES
   ```
   *(for confirmation)*

5. **INACT** Wait for the inactive CPU to return to flashing A1.

6. **INACT** Test the CM stability with each of the following restarts on ONLY the inactive RTIF.
   - **a.** RTIF> \RESTART WARM
     ```
     RTIF> YES
     ```
     *(for confirmation)*
     *Wait for a flashing A1.*
   - **b.** RTIF> \RESTART COLD
     ```
     RTIF> YES
     ```
     *(for confirmation)*
     *Wait for a flashing A1.*
   - **c.** RTIF> \RESTART RELOAD
     ```
     RTIF> YES
     ```
     *(for confirmation)*
     *Wait for a flashing A1.*

-continued-
Procedure 3  
Processor tests SNODE (continued)

7  **ACT**  Test the memory cards from the Memory level of the MAP.
   > MEMORY;TST ALL  
   > QUIT

8  After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

9  **ACT**  SYNC the CPUs from the CM level of the MAP.
   > SYNC

10 After receiving the "Synchronization Successful" message, verify no faults are displayed at the CM or Memory levels of the MAP (shows all dots and no Xs or fs).

11 **INACT**  At the inactive RTIF release the jam.
   RTIF> \RELEASE JAM

12  **ACT**  Switch activity of the CPUs from the CM level.
   > SWACT

13 **INACT**  Repeat steps 1 through 12 on the newly-inactive CPU.

14 Verify the CPUs remain in SYNC and the inactive side is NOT jammed.

15  **ACT**  Match the memory from the Memory level of the MAP.
   > MEMORY;MATCH ALL  
   > QUIT

16  **ACT**  Perform a REX test long from the CM level.
   > REXTST LONG  
   > YES  {for confirmation}
  CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states will change. The SuperNode will be out of SYNC for at least 60 minutes.

-continued-
Procedure 3
Processor tests SNODE (continued)

17 ACT After completion of the test, verify the test results:
> QUERYCM REXRESULT
The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header. If the test failed, contact the site supervisor to resolve any problems and repeat steps 16 and 17.

18 Repeat (with the other CPU active) steps 16 and 17.

19 ACT Perform an image test from the CMMNT level of the MAP.
> CMMNT
> IMAGE
> QUIT

20 After completion of the test, check any logs indicating pass or fail. If above test failed, clear the problem and repeat the test.

Note: If on BCS 26-28 and patch BKR24C<xx> is present and activated (PATCHEDIT shows it ON), then skip over the rest of this procedure and go to the next procedure.

21 ACT Busy the Slave MS from the MS level of the MAP.
> MS;BSY <x>
where <x> refers to the Slave MS (look under Clock field).

22 ACT Test the MS from the MS level.
> TST <x>

23 After completion of the test the results of the test are displayed. If the test failed, resolve any problems and repeat the test.

24 ACT Return the busied MS to service.
> RTS <x>

25 Wait 5 minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MS should be inservice.

-continued-
Procedure 3
Processor tests SNODE (continued)

26  ACT  Switch MS clock mastership.
    > SWMAST

27  Test the other MS by repeating steps 21 through 26.

28  ACT > QUIT ALL
Procedure 4
Responsibilities before pre-application checks SN

1  Site  Site is encouraged to verify all new software load and patch tapes received in a shipment.

Note: The following steps do not apply to a TAS NONRES tape which is used only by NT technical support to provide access to certain non-resident software tools.

a. INSERT (or MOUNT) and LIST each tape.

b. From the tape header or first file verify the header matches the tape label and the tape is correct for the to_BCS. For a BCS IMAGE tape also verify the image filename is correct.

Verify a tape is good by listing the tape to the end without any errors.

c. If any problems are found notify your NT customer service representative immediately.

d. Keep the tapes on-site for use during the scheduled software update.

2  Site  Review the D190 document (office feature record) to ensure the software content meets the expected requirements.

Note: Offices receiving feature package NTX218, EADAS, ensure table OMACC has only 25 entries. If table OMACC has more than 25 entries, the site will have to delete the extraneous entries so the five new EADAS Operation Measurement tuples will fit.

CAUTION
For MS preloading it is recommended that the MS be loaded using the new BCS IMAGE tape, and NOT the PM load tape. The MS load provided on the IMAGE tape contains a more current patch set.

Richardson customers may require loading of the MS prior to the arrival of the IMAGE tape. Contact Richardson BCS Applications for MS loading procedures.

If problems are encountered during loading, contact the appropriate TAS group for assistance.
The recommended procedure for MS preloading is found in section Updating loads in the Message Switch of this MOP. Wait to upgrade the MS until the new BCS IMAGE tape arrives on site.

3  Site  Load and patch ALL PERIPHERAL MODULES with the to_BCS software loads according to the Peripheral Software Release Document ("Application Procedures" section).

-continued-
Procedure 4
Responsibilities before pre-application checks SN  (continued)

Peripheral modules include all PMs, XPMs, DPP, MPC, and the various application processors associated with a DMS-SCP/STP/SSP such as the ENET, LPP (including EIUs, LIUs and LIMs) and the FP.

Note: If a cross-reference file (BCSxxXPM$XREF) is at the beginning of the XPM patch tape, use it to identify patches applicable to each XPM load.

4 Site  Monitor front-end stability watching SuperNode CM, MM, and MS logs through the day of the software delivery.
Procedure 5
Save site files

1 Site/ACT  Copy all Telco/site-created files in store file (SFDEV) onto a labeled scratch tape. These files can be manually restored to SFDEV after the BCS application.

   Any patches and files downloaded to SFDEV need to remain in SFDEV for the BCS application. DO NOT ERASE!
Procedure 6
Peripheral verification SNODE

1  **Site/ACT**  If the office is equipped with DDUs, erase all unwanted files. Then ensure the peripheral loads and peripheral patches for the to_BCS are on the same disk.

2  On the DDU used for primary billing collection (such as AMA SMDR OCC CDR), perform routine maintenance on the disk to ensure it is functioning properly. If excessive "bad blocks" are present, reformat the disk.

3  Ensure peripherals (including ENET and DPPs) are loaded and patched with the to_BCS software. (Refer to the Peripheral Software Release Document.)

  **Note:** Procedures for preloading the MSs are in section *Updating loads in the Message Switch* of this MOP.
Procedure 7
Table ACDGRP

1  **App/ACT**  Identify any “holes” in table ACDGRP and fill them with dummy tuples. Otherwise, you may be unable to retrieve MIS reports from some ACDGRPs.

   a.  > OMSHOW ACDGRP ACTIVE

   b.  Look for nonconsecutive keys. (example: 0 2 3 5 6 has 1 and 4 missing.)

   c.  If any missing tuples, have Translations personnel datafill with dummy tuples. (This prevents the renumbering of key indexes during the BCS update.)

   d.  Also provide datafill in table DNROUTE for each corresponding dummy tuple added in table ACDGRP.
Procedure 8
Fill in Test Call Scripts

1 Site Fill in and test the Test Call Scripts in Appendix C.

This is to provide a thorough test plan exercise for testing the new BCS load. You will be asked to make your test calls after switching activity to the new BCS.
Data consistency check procedure

Procedure 1 is for offices on BCS34 and higher.

Procedure 2 is for offices on BCS33 and lower.

CAUTION
Review Software Delivery Bulletins and any current Warning Bulletins concerning TABAUDIT before using it.

Procedure 1
Run TABAUDIT (BCS34 and higher)

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found. At the insertion minus 10 days pre-check, NT engineers will review the results. The data consistency checks must be successfully completed including any needed data corrections in order for the scheduled application to be completed on schedule.

For all offices on BCS 34 and higher, perform the following steps. These steps are used to verify table data integrity using TABAUDIT.

A complete tutorial of TABAUDIT is provided in Appendix A. This includes information on TABAUDIT enhancements (BCS36) which provide automated scheduling capability and facilitate data capture.

Warning: TABAUDIT can take up to 10 hours to run. The length of time will vary from site to site depending on the number and size of tables.

1 Site/ACT Verify table data using TABAUDIT. Send output to a recording device (e.g. D000SCRATCH). Make note of the device used, since the files will be reviewed by NT prior to BCS application.

TABAUDIT may be set-up to run all the tables using the "ALL" option or to run a range of tables using the "FROM" and "TO" options. TABAUDIT can only be run from only one terminal at a time.

• To use the "FROM" and "TO" options see substep a below.
• To use the "ALL" option see substep b below.

Warning: If a device is not specified when issuing the TABAUDIT ALL command, only a SUMMARY$FILE will be created in Store File and no separate file will be created for individual failed tables.

-continued-
Procedure 1
Run TABAUDIT (continued)

If necessary, TABAUDIT may be stopped and restarted. To stop TABAUDIT at anytime, use break HX. When restarting TABAUDIT, determine the last table verified by reviewing the "SUMMARY$FILE" file in SFDEV. The last table verified can also be determined by listing table DART and reviewing the "CHKDATE" and "CHKTIME" fields for the most recently verified table.

Some tables will output information or warning messages as though they are being changed. However, no changes will be made since TABAUDIT does not execute any write procedures.

For example, when TABAUDIT is performed on table DATASIZE the following message is output for every tuple checked:

A restart is needed for this change to take effect. Check the NTP as to which is appropriate warm or cold.

Or for example, when STDPRTCT is checked, the additional output is:

Warning: Changes in table STDPRTCT may alter office billing.

a. Until the amount of time required to verify all tables is known for a particular site it is recommended to perform the verification on a range of tables using the "FROM" and "TO" options and information found in table DART.

> TABAUDIT FROM <start table> [TO <end table>] <device name>

For example, to obtain table names in increments of 100, enter Table DART, list, go down 100 and list two. Record or print the table names. Continue this until the end of table DART is reached.

> TABLE DART; LIST (output will be the "FROM" table name)
> DOWN 100; LIST 2 (output will be the "TO" table name of the first 100 and the "FROM" table name for the second 100)
> DOWN 100; LIST 2 (repeat until the end of table is reached)
> LEAVE

Perform TABAUDIT on the first 100 tables as shown in the following example:

> TABAUDIT FROM DART TO BGDATA <device name>

When complete, perform TABAUDIT on the next 100. Repeat until all tables have been verified.

b. Use the TABAUDIT ALL command to perform the data verification function on all tables listed in table DART using just one command.

> TABAUDIT ALL <device name>
Procedure 1
Run TABAUDIT (continued)

2 Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT ONLY and specify the corrected table.

> TABAUDIT ONLY <table name> <device name>
Continue until all tables have been corrected.

3 When all tables have been corrected, if time permits, perform a TABAUDIT on all the tables again by range or by use of the "ALL" command. This is to ensure that no changes performed in step 2 have adversely affected other tables.
**Procedure 2**  
**Run CHECKTAB (BCS33 and lower)**

Perform this procedure at 15 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

For offices on BCS 33 and lower that are scheduled for a complete One Night Process (not Hybrid), please refer to your Site Notification Package (or contact the NT Customer Service Representative) for the appropriate procedure concerning the use of CHECKTAB.
Updating loads in the Message Switch

Begin this section as soon as the new BCS IMAGE tape arrives on site (normally two to three days before the software delivery).

Procedure 1 is to copy the new CM and MS loads onto a SLM disk. This is for all offices, and is required in order to load the MS and to enable loading the mate CM from SLM disk.

Procedure 2 is only for offices on BCS34 and higher. Procedure 2 is to preload the MSs with the new MS load. (For offices on BCS33 and lower, the MSs will be loaded by the BCS Applicator on the night of the software delivery.)

Note: When scheduled for a BCS-n to BCS-n application (for example, BCS34 to BCS34) Telco may choose to NOT preload MSs as long as the present MS load is patched current.

Procedure 1

Restore CM and MS loads

Restore (that is, copy ) the new CM and MS loads onto a SLM disk.

1. **Site/ACT** List the SLM tape cartridge with the new BCS IMAGE files (both _MS and _CM loads).
   a. Place the cartridge into the SLM tape drive on the same side as the inactive CPU.
   b. > DISKUT
   c. > IT <tape_device>
      *Inserts the tape into the inactive-side SLM, for example: IT S00T or IT S01T*
   d. > LF <tape_device>
      *for example, LF S00T or LF S01T. May take up to one hour to list.*
   e. Verify the MS and CM load files are the correct ones to use.
      *To help understand the image filenames, you may use CI command DISPMS <filename> which displays the image header information. (Refer to Appx. A for more details of this command.)*
Procedure 1
Restore CM and MS loads (continued)

2 Select a SLM disk volume onto which to restore the new BCS IMAGE.
   - The volume selected should not be on the same SLM with active DIRP billing.
   - The volume should not be the same volume normally used to take images. (This is so that AUTOIMAGE won't fail for lack of disk space.)

   If there is a problem completing this step, please contact the next level of support.

3 Restore both the CM load and the appropriate MS load onto the selected SLM disk volume.
   a. > RE FILE <disk_volume><tape_device><filename_CM>
      Restores the CM load onto the SLM, for example:
      RE FILE S01DIMG0 S01T LD101015ND36_CM
   b. > RE FILE <disk_volume><tape_device><filename_MS>
      Restores the MS load onto the SLM, for example:
      RE FILE S01DIMG0 S01T LD101015MS36CR_MS
   c. > ET <tape_device>
      Ejects the SLM tape, for example:
      ET S01T
   d. > QUIT
Procedure 2
Preload both MSs

As of BCS34, backward-compatibility is supported in the Message Switch (MS). This means, if the office is on BCS34 or higher, then it is possible to PRELOAD both MSs with the new MS load before the CM is upgraded to the new BCS.

CAUTION
Do not attempt to upgrade the Message Switch at this time unless the office is currently on BCS34 or higher.
Failure to heed this caution could result in degradation of the switch since the MS load is not backward compatible until the office is on BCS34.

CAUTION
If the office is on BCS34 or higher, both MSs must be loaded with the MS load provided on the BCS IMAGE tape prior to starting the BCS application.
The following procedure assumes the proper MS load was successfully copied to a SLM disk volume.

Note: The BCS IMAGE provided is patched current. If any new patches are required, these will be downloaded to SFDEV and applied on the night of the BCS application.

1 Site/ACT List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM loads) were previously restored (copied).
   a.  > DISKUT
       > LF SOOD<volume> {or SO1D<volume>}
       where <volume> is the SLM disk volume with the BCS IMAGE.
   b.  Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new BCS IMAGE tape.
       To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information.
       (Refer to Appx. A for more details of this command.)

2 At the MS level of the MAP, determine which MS contains the SLAVE clock.
   (Look for "slave" under the CLOCK field.)
   > MAPCI;MTC;MS

-continued-
Procedure 2
Preload both MSs (continued)

3  > BSY <MS#>  \{the MS with the slave clock\}

4  > LOADMS <MS#> <filename>  
   where <filename> is the name of the _MS load file listed above in step 1.  
   > YES  \{for confirmation\}

5  When prompted, perform an out-of-service test on the MS just loaded.  
   > TST <MS#>  \{on the OOS MS\}  
   Ensure the test passes with no faults. Determine the cause for any failure, fix  
   the fault, and repeat the test.

   CAUTION
   Do not proceed unless NO faults are reported.
   Replace cards if necessary and repeat the test. Contact site supervisor  
   if the test fails repeatedly.

6  > RTS <MS#>  \{not OOBAND!\}

7  Wait 5 minutes to ensure the clocks are stable and to allow the hardware  
   audit to run. Both MSs should be inservice.  

   Note: The MS load on the CM image tape is patched as current as possible. 
   Copies of all MS patches that were applied to this load will be in mate  
   SFDEV when the CM image is loaded for the BCS application. Once the CM  
   load is made active (by the SWACT) the MATCHALL MS (PATCHER) will  
   function as intended.

8  Switch MS clock mastership.  
   > SWMAST

9  Monitor MS logs for 10 minutes to ensure stability.

10 Repeat steps 3 through 9 to update the load in the other MS.

11  > QUIT MAPCI
Site responsibilities the day of the software delivery

The following steps must be completed by site personnel before the software delivery engineer contacts the site for the scheduled software delivery.

Procedure 1
Day zero checklist

1. Site  Verify that all problems identified from performing table data checks have all been resolved.

2. Verify that the front-end processors have been in sync for the past 24 hours and the last REX test has passed.

3. Verify an image has been taken in the last 24 hours and backed to tape.

4. Ensure you have undertaken your critical test call plan and verified it. (See Appendix C: Test Call Scripts.)

5. Verify SFDEV has been cleared of all Telco/site-created files.

6. Verify all to_BCS patches have been downloaded to site and are present in SFDEV.

7. LIU7 image with feature AQ1102

   In preparation for the ONP, assuming that the LIU7s have had their software loads upgraded, dump an image of an INSV LIU7. There should be no changes to the tables C7GTT, C7GTTYPE, C7NETSSN, or C7DCIS6 between the time this image is dumped and when the ONP occurs. This is to utilize feature AQ1102, which allows faster recovery of LIU7s under certain circumstances. Please refer to the feature description for details of the possible recovery scenarios.

   Note: If an image with up-to-date data is not available, then data sync of an LIU7 following the CC Warm SWACT may take considerable time if table C7GTT is very large.
Procedure 2
Patch verification

The Site is responsible for the following patch verification step.

1  Site/ACT  All patches downloaded to SFDEV after the final office review should be copied to tape (or to disk) and LEFT IN SFDEV.
   • From-side patches that are process-related (affecting ONP tools) will be applied by the BCS Applicator on the night of the BCS application.
   • To-side front-end and MS patches in SFDEV will be automatically applied to the new BCS load on the night of the BCS application.
Procedure 3
Run DATADUMP

1 Site/ACT Run DATADUMP to output important switch information for future reference.
   
a. > LOGUTIL;STOPDEV <printer>
   where <printer> is an available printer to be used for recording. This makes sure the logs are stopped on the device.
   > LEAVE
   
b. > RECORD START ONTO <printer>
   
c. > BCSUPDATE;DATADUMP {for BCS33 and higher}
   When DATADUMP is completed:
   > QUIT
   
d. > DRCI;RUNEXEC DATA_DUMP {for BCS32 and lower}
   When DATADUMP is completed:
   > QUIT
   
e. > RECORD STOP ONTO <printer>
Procedure 4
FX voice and data

1 Site  Ensure there will be uninterrupted communication with the software delivery engineer during the software delivery. (Provide FX voice and data lines.)

2 Ensure at least two dialup ports are operational-one on each IOC. These should have COMCLASS of ALL.

3 Verify user names to be used during the software update have PRIVCLAS of ALL.
First Night

Preliminary phase procedure

This section details both SITE and BCS applicator (App) activities required for a Two Night Process software delivery.

The actual software delivery begins when the software delivery engineer puts the switch into simplex mode (drops sync) and loads the inactive CPU with the new BCS software load.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

Note: Telco may elect to monitor the application process by recording onto printers. This can impact the software delivery time. Site may start recording by issuing the following command for two printers, one for each of the dialup ports to be used by the applicator: "RECORD START FROM <terminal_id> ONTO <printer>.”

CAUTION

Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.
Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

1. If the MOVEBCS process must be halted or interrupted, use the MOVEBCS HALT option. Refer to "Interrupt MOVEBCS" in Appendix A (page A-19).

2. If the TABXFR process must be halted or interrupted, use the HALT option. Refer to "Interrupt TABXFR" in Appendix A (page A-24).

3. It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to "PRESWACT Abort" in Appendix A (page A-29).

4. If a controlled REVERT is required after the switch of activity (SWACT) refer to "Revert to old load procedure" (page 7-147).

5. If an emergency ABORT is required after the switch of activity (SWACT) refer to "Emergency Abort procedure" (page 7-173).
Procedure 2
Remote login

1  **App/ACT**  Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2  **App/ACT**  Login the users and if applicable, set LOGINCONTROL.

   a.  <break>

   b.  ?LOGIN
       Enter username and password  
       > <username>  <password>  
       or > <username>
       > <password>
       *where username and password can both be found on the Pre-application report.*

   c.  For BCS33 and higher enter:
       > BCSUPDATE;DEVICE
       > QUIT

   d.  For BCS32 and lower enter:
       > LOGUTIL;STOP;STOP  
       > LEAVE
       > LOGINCONTROL <device> QUERY

   e.  Verify *Open Condition Logout* is N. If not, retain the original status and enter:
       > LOGINCONTROL <device> OPENFORCEOUT FALSE
       *Verify Max Idle Time is Forever.* If not, retain original status and enter:
       > LOGINCONTROL <device> MAXIDLETIME FOREVER
       > LOGINCONTROL <device> DISABLEON REMOVE
       > forceout_conditions

   f.  Repeat this entire step on the other terminal device.
Procedure 3
Check logs SNODE

1  **App/ACT**  For BCS33 and higher check logs to verify processor stability.
   > BCSUPDATE; LOGCHECK
   > QUIT
   *Do not continue until all logs have been explained.*

2  **App/ACT**  For BCS32 and lower check logs to verify processor stability.
   > LOGUTIL
   > OPEN <log_buffer>; WHILE (BACK) ()
   *where* <log_buffer> *refers to CM, MS, SLM and MM logs.*
   > LEAVE
   > TRAPINFO
   *Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained.*
Procedure 4
Stop journal file

1 App/ACT  ROTATE and STOP the Journal File recording.
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
   b.  > CLOSE JF ACTIVE
       QUERY again to verify rotation.
   c.  > JF STOP
       Verify stopped.
   d.  > QUIT MAPCI
Procedure 5
Ensure MSs loaded

As of BCS34, backward-compatibility is supported in the Message Switch. This means, if the office is on BCS34 or higher, then it is possible to PRELOAD both MSs with the new MS load before the CM is upgraded to the new BCS.

1  App/ACT  If the office is on BCS34 or higher, then ensure both MSs are loaded with the new MS load that was provided on the new BCS IMAGE tape.
Procedure 6
Drop sync SNODE

1  App/ACT  Type:
   > MAPCI;MTC;CM

2  App/ACT  Ensure the CM you want to load with the new BCS load is inactive and the corresponding MS and SLM components are used. For example: if the new BCS image resides on SLM disk 0, then CM 0 should be the inactive side, and the MS 0 clock should be the slave clock.
   a.  Determine where the new BCS image resides (normally SLM disk 0).
   b.  If needed to align the CM with the SLM, you may switch activity of the CM using SWACT (CM level).
   c.  If needed to align the MS clock with the CM, you may switch MS clock mastership using SWMAST (MS level). If you do, wait five minutes to continue.

3  Site/INACT  From the inactive RTIF enter:
   RTIF> \JAM
   RTIF> YES  (for confirmation)

4  App/ACT  
   > DPSYNC  {from CM level}
   > YES  {if prompted to disable AUTO PATCHING}
   > YES  {to confirm DPSYNC}

5  Site/INACT  Site must tell the engineer when the inactive CM is flashing A1.

6  App/ACT
   > QUIT MAPCI
Procedure 7
BULLETINS before LOADMATE

1  **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning LOADMATE.
Procedure 8
Loadmate SNODE

1. **App/ACT** List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM load files) were previously restored (copied).
   a. > DISKUT
      > LF SOOD<volume>{or SO1D<volume>}
      where <volume> is the SLM disk volume with the BCS IMAGE.
   b. Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.  
      *To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information.*  
      *(Refer to Appx. A for details of this command.)*

2. **App/ACT** If the _CM image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. *(Otherwise, go on to with the next step to load from disk.)*

   **CAUTION**
   The _MS file will have to be restored to the SLM disk in order to load the MS *(during PRESWACT if not already done).*
   However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the _MS file to SLM disk.

   Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.
   > LDMATE DIRECT TAPE 2  *(loads 2nd file on the tape)*

   -continued-
Procedure 8
Loadmate SNODE (continued)

3 App/ACT If BCS28 and higher, loadmate using the SLM disk as follows.
   a. Ensure no DIRP files are opened on the SLM disk with the image.
      > DIRP;QUERY <subsystem> ALL
      where <subsystem> is AMA, OM, JF, or DLOG.
      If any opened files, close the files (or rotate the information to the
      active side).

      **CAUTION**
      LDMATE DIRECT (below) will fail if there are any opened files
      on the SLM device with the image.
      "DIRECT LOADMATE OPERATION FAILED: File System
      operations must be halted before initiating loadmate."

      b. > LDMATE DIRECT DISK <filename_CM>
      If you get the above message, either close the opened file(s), or else
      loadmate using the VIAMS option as follows.
      > LDMATE VIAMS <filename_CM>

4 App/ACT If BCS27 loadmate using the SLM disk as follows.
   a. Activate patch SSY05C27.
      > PATCHEDIT SSY05C27 ON
   
   b. > LDMATE <filename_CM>

5 App/ACT If BCS26 loadmate using the SLM disk as follows.
   > LDMATE <filename_CM>

6 Site and App/INACT Wait for loadmate to complete and the inactive
   processor to flash A1.
   While waiting for loadmate, SITE may display the patches in store file
   (PATCHER; DISPLAY <patch>) or may copy any new patches to the new
   patch tape (or to disk).
Procedure 9
Login inactive after Loadmate SNODE
Login on the inactive processor after loadmate is complete.

1  App/ACT  Type:
   > MATELINK RTS

2  Allow initialization on the inactive side (flashing A1).

3  LOGOUT of the active side if logged in on the terminal labeled INACT.

4   > MATEIO
    > MATELOG <device>
    *where <device> is the name of the terminal labeled INACT.*

5  App/INACT

   Enter username and password *(mate-side response)*
   Mate> OPERATOR OPERATOR

   or Enter username
   Mate> OPERATOR
   Enter password
   Mate> OPERATOR
Procedure 10
Set date and header message

1  **App/INACT**  Set the current date and site header message on the mate side.

Mate> SETDATE <dd mm yy>  
(set today's date)

Mate> SETLOGMSG '<text>'  
where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order** (COEO), **office name**, **Product Code** (or BCS level), and application date. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

**Note:** The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the Parmmail.

**Example:**

94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
Procedure 11
Download application files (RTP)

1  **App/ACT**  Download special application files to active side SFDEV.
   If to_BCS 37 and higher the Applicator Package will contain the following files:
   - **PARMCHGS**
     Download PARMCHGS renaming it as “FEATDATA.”
     Print this file for reference information.
   - **SITEINFO**
     Download SITEINFO. This file will be used to update the Inform list
     (next step) for the new software load.

   **Note:** PARMMAIL is also in the Applicator Package for reference.

2  Matecopy the SITEINFO file to the inactive, and read (execute) it.
   **Note:** To allow further calculation of patches for a given office, the site_key
   must be inserted into the inform list to identify that inform list to patadm. This
   is done by applying special patches which will correct the patch inform list.
   a.  **ACT**
       Matecopy SITEINFO to inactive side SFDEV.
   b.  **INACT**
       Read SITEINFO (to execute) on the inactive side.
       **Note:** When read, SITEINFO will enter patcher, create the “dummy
       patches” in sfdev, apply the patches to update the inform list, and
       erase the patches.
Procedure 12
Check logs inactive SNODE

1  App/INACT  For to_BCS 33 and higher check mate logs to verify processor stability.
   Mate>  BCSUPDATE;LOGCHECK
   Mate>  QUIT
   Do not continue until all logs have been explained.

2  App/INACT  For to_BCS 32 and lower check mate CM logs.
   Mate>  LOGUTIL;OPEN CM;WHILE(BACK) ()
   Mate>  LEAVE
   Mate>  TRAPINFO
   Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

3  App/INACT
   Mate>  TRAPINFO CLEAR
Procedure 13
Mate-side memory check

1 App/ACT If from_BCS 32 and higher, perform a mate-side memory check.

**CAUTION**
If this test fails do not continue-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware
on the inactive side.

*Note:* Entering the RUNSTEP command below gives a warning that the step
is done out of process. This is okay-answer YES to the prompt.

   a. > BCSUPDATE;RUNSTEP MATE_MEM_CHECK

   *Note:* This displays on the active side the result of the test,
   “completed” or “not completed.” If it is not completed an error message
   is also printed on the active side.

   b. Should this check fail, isolate and replace the faulty memory card on
   the inactive side. For additional information, turn to
   “MATE_MEM_CHECK failure” in Appendix B.

   c. > QUIT
Procedure 14
Retain PARM values

1. **App** Obtain a list of the following office parameters for reference.

   > TABLE OFCVAR
   > POS NODEREXCONTROL
   > POS LCDREX_CONTROL
   > QUIT

   > TABLE OFCENG
   > POS GUARANTEED TERMINAL_CPU_SHARE
   > QUIT

   > TABLE OFCSTD
   > POS DUMP_RESTORE_IN_PROGRESS
   > QUIT
Procedure 15
Patch inactive

PATCH the inactive processor by following this procedure. (Mate patching can instead be done manually if desired.)

Note: Entering the RUNSTEP commands below gives a warning that the step is done out of process. This is okay-answer YES to the prompt.

1. **App/INACT** If coming from BCS 31 and lower, on the mate side turn on access to WTAB using TASTOOL procedure.

2. **ACT** On the active side, ensure table PADNDEV points to the device (typically SFDEV) containing the patches that were downloaded for the to_BCS.
   
   > TABLE PADNDEV;LIST ALL
   
   If there are devices in this table that do not contain to_BCS patches, make a note of the tuples and DELETE them.

   Note: MOVEBCS or TABXFR will attempt mate patching again (until this is patched out). After MOVEBCS/TABXFR does this, you will need to restore the original data in table PADNDEV. There are two ways of doing this:

   1. In procedure "MOVEBCS/TABXFR setup"-Set a stop point in MOVEBCS/TABXFR to stop before table PADNDEV is moved. (At that point the patching will be completed.) Then when it stops edit the table on the active side and allow the data transfer to continue.
   
   2. In procedure "MOVEBCS/TABXFR completed"-Allow MOVEBCS/TABXFR to run to completion as usual. Then edit table PADNDEV on both the active and inactive sides.

3. > BCSUPDATE;RUNSTEP VERIFY_DSLIMIT

4. > RESET

5. > RUNSTEP DISABLE_AUTOIMAGE

   Note: This step is not valid if the AUTOIMAGE feature is not available.

6. > RUNSTEP SET_OFFICE_TUPLES

7. > RUNSTEP SEND_PATCHES

8. > RUNSTEP APPLY_PATCHES

9. > QUIT

-continued-
Procedure 15
Patch inactive  (continued)

10  **Site and App/INACT**  Print the PATCH$FILE and review applied (mate) patches.

    Mate> LISTSF ALL;PRINT PATCH$FILE
    *If you need to DISPLAY any patches that were applied on the inactive side, these patches can still be accessed from the active side.*

11  Mate> TRAPINFO
    *If trap occurred, do not continue until the trap is explained and action taken to correct the error.*
Procedure 16
Activate patches inactive

1  App/ACT  Determine which ACT patches are activated in the old load.
   a. > PATCHEDIT
      This command shows a list of 'ACT' patches and which ones are
      activated (turned on).
   b. Review the patch list to determine which patches are currently
      activated (ON) on the active side.
      Normally any ACT patch activated in the old load should be manually
      activated in the new load (see next step).

2  Site and App/INACT  As needed activate ACT patches on the inactive side.
   a. Mate> PATCHEDIT
   b. Compare the mate-side patch list with active-side list obtained above.
      Decide with the site if any patches need to be activated (set "ON") at
      this time.
      Passwords will be provided on the 'APF' report for any "feature
      patches" in the new BCS load. Give the password to Telco, but do
      NOT activate the patch at this time unless already ON in the old load.
   c. Mate> PATCHEDIT <patch> ON
      This activates the patch.
   d. Repeat this command for each patch to be activated.
   e. Also determine from comparing the patch lists if any ACT patches
      should be set to "NA" (no audit) state.
   f. Mate> PATCHEDIT <patch> NA
      This sets the patch to "NA" state.
   g. Repeat this command for each patch to be set to "NA."
Procedure 17
Restart inactive for patches

1  **App**  Perform each of three types of restarts (warm, cold, and reload) on the inactive side to satisfy the requirements of any patch(s) needing a restart.

   *Note:* Sequence of restarts is not important.

   **INACT**
   
   Mate> RESTART <**restart type**>
   Mate> YES  *(for confirmation)*

2  Allow initialization on the inactive side (flashing A1).

3  Login on the inactive side.

4  Repeat above steps for each type of restart required.
Procedure 18
IPL modules

1 App/ACT  If from BCS 30 and lower, to avoid problems using STATUSCHECK, STATUSUPDATE, and RESTARTSWCT because of device/hardware irregularities, do the following.

   a.  > QUERY <module>
       where <module> is:
           NODESTAT STCSTAT IPMLSTAT
           CARRSTAT JCTRSTAT DCHSTAT
       Repeat QUERY for each module listed.

       Note: OPMSTAT, CCS6STAT, RCUSTAT, and CSCSTAT are also status modules, but do not require this procedure. The counts for these modules are set to their maximum values.

   b.  If any module is loaded, as indicated by the QUERY command, enter the following:

       > RUN <xxxx> IPL
       where <xxxx> is a loaded module.

       Note: Three or four SWERRS will be generated for each module entered in this step. The SWERRS are expected and indicate that procedures and counts for the hardware are being updated.
Procedure 19
SWCTCHK verification

1  App/ACT  If from BCS 29 and lower, verify Pre-application Engineering has entered the SWCTCHK command (see Pre-application Report). If not done earlier complete this step.
   a.  Ensure patch EWW08 is applied on the active (from-side) load.
   b.  > SWCTCHK
Procedure 20
MASSTC

1    App  Check status in MASSTC level (TOPS office only).

   a.    ACT
          > MASSTC
          > STATUS

   b.    If the status is INITIAL, then no action is needed.

   c.    INACT  If the status is DUPLICATED, then with Telco consent on the
           MATE side enter:
                   Mate> ENABLE
           or, if data is obsolete
                   Mate> SCRAP

   d.    ACT  If the status is SWITCHED, then with Telco consent on the
           ACTIVE side enter:
                   > PERM
Procedure 21
BULLETINS before data transfer

1  **App**  Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the data transfer (MOVEBCS/TABXFR).
MOVEBCS procedure

For Two Night Process-This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 34 and lower, the MOVEBCS is used to perform the data transfer portion of a BCS application.

 Procedure 1
Table DART

1 App For to_BCS 30 and 31 only, prepare table DART as follows.
   a. ACT > MATECOPY DRNOW
   b. INACT Mate> LISTSF ALL
      Mate> READ DRNOW
      Mate> ERASESF DRNOW
      Mate> DARTEDIT
      Mate> PRINTDART LONG {optional list for reference}
      Mate> QUIT
   
   Note: For additional DARTEDIT command syntax refer to MOVEBCS summary in Appendix A.

2 App For to_BCS 29 only, prepare table DART as follows.
   a. ACT > MATECOPY DRNOW
   b. INACT Mate> RESTTYPE EXTERNAL
      Mate> LISTSF ALL
      Mate> READ DRNOW
      Mate> ERASESF DRNOW
Procedure 2
Office PARMs

CAUTION
Before beginning read all bulletins concerning changes to office parameters (PARMs).
Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.

PARAMETERS RULE-If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the Parmmail (or Parm Variance Report).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

Note: A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

1 Office parameters are already set in the undatafilled BCS image.
   a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the Parm Variance Report.
   b. Normally, if any parms need to be corrected, make the required changes before beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

Note: On the mate side use commands "MOVEBCS STOP BEFORE <table name>" and "MOVEBCS STOP AFTER <table name>" to cause the MOVEBCS process to stop at specified tables. The "STOP BEFORE" option is safer because it does not involve pre- or post-activities which may be attached to a particular table. (For example, "MOVEBCS STOP AFTER NNASST" is not possible since the post-activity for NNASST may include a restart.)

When using these options remember to use "STOP CLEAR BEFORE <table name>" or "STOP CLEAR AFTER <table name>" before continuing MOVEBCS. This clears the previous stop points.
Procedure 3
Stop after CLLIMTCE$DIAGDATA

1  App/INACT  For from_BCS 26 and to_BCS 29 type:

    Mate> MOVEBCS STOP AFTER CLLIMTCE$DIAGDATA
Procedure 4
MOVEBCS setup

1 App Set up TRACECI to monitor MOVEBCS summary and error messages on the primary terminal (ACT).
   a. ACT > TRACECI DEVICE <device_name>
      where <device_name> is the name of the device labeled INACT.
      Response on the inactive side:
      This device is selected for TRACEing
   b. INACT Mate> TRACECI TEST 'THIS IS A TEST'
      "THIS IS A TEST" is output on the device selected above.

2 App/INACT Set MOVEBCS to stop at each error with a limit of not more than 100.
   a. Mate> MOVEBCS LIMIT 25  {limit of 25 is recommended}
   b. Mate> MOVEBCS STOPIF 1
Procedure 5
Start MOVEBCS

1. **App** Start the data transfer using MOVEBCS as follows.

   **CAUTION**
   MOVEBCS will perform a mate-side memory check. If this test fails do not continue-immediately notify the site supervisor.
The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

   a. **INACT** Mate> MOVEBCS;LOGOUT
      
      *MOVEBCS will perform an automatic restart reload after each of the following tables is transferred: DATASIZE, NNASST (or CMSHELF), and (conditionally) TRKMEM. Following the automatic restart, MOVEBCS will automatically start transferring the next table listed in table DART.*

   b. Certain tables will fail with the message "This table is Recursive..." No action is required other than to restart MOVEBCS.

      **Note:** This message means the table will be re-datafilled automatically by MOVEBCS (since data for the table depends upon other tables being datafilled first). Recursive tables may include: XLANAME, ESAPXLA, NCOS, THOUGRP, IBNRE, OFRT, FNMAP, and others.

   c. **ACT** If any table fails to restore properly on the mate side, MOVEBCS will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

      For any table in error investigate the problem by entering on the ACTIVE side:
      
      > DELTA <table> NOFILE {compares old and new tuples}

      or

      > DELTA <table> SUB <subtable> NOFILE

   d. **INACT** Whenever it is necessary to login on the inactive (mate) side to correct an error, first verify a flashing A1 on the inactive processor; then login on the mate side and make the needed changes.

   e. **INACT** Each time you restart the MOVEBCS, also LOGOUT on the mate side (as above).

      Mate> MOVEBCS;LOGOUT

      **Note:** Avoid unnecessary or prolonged logged-in sessions on the mate side while MOVEBCS is running.
Procedure 6
Copy patches

1 Site/ACT While the data transfer is running and as time allows, on the active
side copy patches in store file to the new patch tape (or to disk) and XPM
patches to disk.

Note: Following are steps to copy individual patches to tape or disk. You
may instead create a file to automatically copy these patches.

a. Install the new patch tape on a tape drive (x) with a write enable ring.
b. > LISTSF ALL
c. > MOUNT <x>; LIST T<x>
d. > COPY <sfdev_patch> T<x>
   where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
e. Repeat COPY for each patch in SFDEV.
f. > DEMOUNT T<x>
g. > LISTSF ALL
h. List the disk volume where the XPM loads (and patches) normally
   reside.
i. > COPY <xpm_patch> <pmload_disk>
   where <xpm_patch> refers to XPM patches in SFDEV (format
   aaannXyy$PATCH: aaa is alphabetic, nn is numeric, and yy is the
   BCS number), and where <pmload_disk> is the XPM disk volume
   listed above. Do not perform if there are no XPM patches in SFDEV, if
   there are no XPMs or if there are no disks.
j. Repeat COPY for each XPM patch in SFDEV.
Procedure 7
Table CLLIMTCE$DIAGDATA

1  App/INACT  For from_BCS 26 and to_BCS 29: if a stop point was set previously, expect MOVEBCS to stop after table CLLIMTCE subtable DIAGDATA is restored to allow the following workaround to be done.

a.  After MOVEBCS stops, login on the inactive (mate) side and enter:
    Mate> FIXDIAG

b.  CLEAR the stop point that was set AFTER CLLIMTCE$DIAGDATA.
    Mate> MOVEBCS STOP CLEAR AFTER CLLIMTCE$DIAGDATA

c.  Restart MOVEBCS.
    Mate> MOVEBCS;LOGOUT
Procedure 8
MOVEBCS completed

1 MOVEBCS is finished when you receive the following message.

   INACT - completed D/R of office

*Note:* Do not perform the following step if PADNDEV data was manually restored during the MOVEBCS. (See procedure "Patch inactive.")

2 **ACT and INACT** On BOTH the active and inactive sides, change table PADNDEV back the way it was before patching the mate side.
Procedure 9
Login inactive

1  App/INACT  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.

   a.  ACT

      > MATEIO

      > MATELOG <device>

      where <device> is the name of the terminal labeled INACT.

   b.  INACT

      Enter username and password  
      Mate> OPERATOR OPERATOR  

      or  
      Enter username  
      Mate> OPERATOR  

      Enter password  
      Mate> OPERATOR
Procedure 10
Print reports

1 App Generate a final data transfer report. This will include both the table exception report and the NTX package delta.

a. ACT Only if RECORD START was not done previously, type the following.
   > RECORD START FROM <terminal_id> ONTO <printer>
   where <terminal_id> is the terminal device labeled INACT, and <printer> refers to a printer used to collect the data transfer information.

b. INACT
   Mate> MOVEBCS REPORT

c. ACT Only if RECORD START was done in substep a (above), type the following.
   > RECORD STOP FROM <terminal_id> ONTO <printer>
   where <terminal_id> and <printer> are the devices used above.
Procedure 11  
Trapinfo inactive

1  App/INACT  Type:

Mate> TRAPINFO

*If a trap has occurred, do not continue until the trap is explained.*
Procedure 12
Take MATE IMAGE

1  App/ACT Determine which SLM volume to use to dump the image.
   Note: Ensure adequate disk space is available.

2  App/ACT From the active side enter MATEIO, and MATEBIND the SLM
    volume you have chosen. See the example below.
    > MATEIO
    > MATEBIND S00DIMAGE S00DIMAGE  {example}

3  App/INACT From the inactive side enter MATEIO, and DUMP the inactive
    (Mate) image. See the example below.
    Mate> MATEIO
    Mate> DUMP IMAGE S00DIMAGE ACTIVE RETAIN NODE CM  {example}
If time allows LDMATE the mate image to verify it. Approximate LDMATE
    time will be 10 to 15 minutes.
Procedure 13
Stop after MOVEBCS

1 ACT Stop the application and return OFFICE PARAMETERS to their pre-application value.
   a. OVERRIDE certain POSTSWACT steps as follows.
      > BCSUPDATE
      > STATUS POSTSWACT
      * This will list all POSTSWACT steps.
      > OVERRIDE <procedure_name>
      OVERRIDE each POSTSWACT step listed above except for the following steps:
      * RESET_OFFICE_TUPLES
      * ENABLE_AUTO_IMAGE
      * RESUME_ATT
   b. Run POSTSWACT as follows.
      > POSTSWACT
      * This will execute ONLY the three exceptions above.
   c. RESET both PRESWACT and POSTSWACT with:
      > RESET
   d. In table OFCSTD manually set DUMP_RESTORE_IN_PROGRESS bool to 'N'.
Procedure 14
Data freeze

1  App/ACT  Inform Telco personnel that a DATA FREEZE period begins and will remain in effect until the SDE dials back in to complete the software delivery. ONLY LIMITED DATA CHANGES WILL BE ALLOWED. See Journal file rules below.

2  Site/ACT  Start journal file and verify started.
   a.  > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
       Check which JF volume is currently active.
       Note: QUERY should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   b.  > CLOSE JF ACTIVE
       > CLOSE JF ACTIVE
       JF is closed twice to ensure current timestamp on active journal file.
       QUERY again to verify rotation.
   c.  > JF START
   d.  > JF STATUS
       Verify JF started.
   e.  > QUIT MAPCI
Procedure 15
SYNC

Perform this procedure after completing the MATE IMAGE and resetting office parameters.

1 Site and App/INACT  Verify the inactive side is flashing A1.

2 Site/INACT  From the inactive RTIF enter:

   RTIF> \RELEASE JAM

3 App/ACT  From the active side put the processors in sync as follows.

   a. > MATEIO

   b. > MATERESET
      > YES  (for confirmation)

   c. > MAPCI;MTC;CM;SYNC
      > YES  (for confirmation)

   Note: The switch is now in data freeze.
Procedure 16
Journal file rules

Site  FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the mate image is completed and the journal file is started. Please inform control center and craftsperson personnel of the following restrictions.

1  LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.
   
   Warning: Whenever possible use SERVORD, not table control, to make data changes.

2  Journal file is never to be stopped, even during journal file rotations.
   If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.

3  ACTIVITIES WHICH ARE NOT PERMITTED
   • changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)
      
      Note: A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.
   • network changes, additions, and deletions (tables NETWORK and NETJUNCT)
   • PM changes, additions, and deletions (all tables ending with 'INV')
   • trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)
   • trunk member changes, additions, and deletions (table TRKMEM)
   • table TRKNAME changes, additions, and deletions
   • IBN customer group changes, additions, and deletions
   • OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCGRP, OMACCFLD, OMACCKEY, OMDELTA, and OMSET)
   • DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)
   • table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)
   • use of the RENAMECLLI command
   • use of the DMOPRO command
   • use of the JF STOP command

-continued-
Procedure 16
Journal file rules (continued)

- erasing journal files from disk
- use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.

4 ACTIVITIES WHICH ARE PERMITTED

- all SERVORD commands
- table changes must be made with VERIFY ON and kept on hard copy
- emergency translation changes

5 CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.
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TABXFR procedure

For Two Night Process—This section details steps required to move the data from the old BCS load to the new BCS load.

For from_BCS 35 and higher, the TABXFR increment is used to perform the data transfer portion of a BCS application.

Procedure 1
Office PARMs with TABXFR

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before beginning read all bulletins concerning changes to office parameters (PARMs). Some office PARM values, if not already built into the new load, will have to be set during the data transfer. This could involve setting stop points in the MOVEBCS/TABXFR prior to starting.</td>
</tr>
</tbody>
</table>

PARAMETERS RULE—If any office PARMs are found to be different between the old and new software loads, then follow this rule:

- Use the requested PARM value from the Parmmail (or Parm Variance Report).
- If there is no requested or reformatted PARM value, use the value that is currently in the switch (old load).

*Note:* A reformatted value is indicated on the Parmmail as the polling value with "R" beside it.

1. **If to_BCS36 and lower**—Office parameters are already set in the undatafilled BCS image.
   a. Compare (delta) the parm values in the inactive side with the ordered parameters indicated in the Parm Variance Report.
   b. Normally, if any parms need to be corrected, make the required changes before beginning the data transfer. Make the parm corrections by changing the appropriate office tables on the inactive side.

-continued-
Procedure 1
Office PARMs with TABXFR (continued)

2 If to_BCS37/CSP02 and higher- With the introduction of CSP02 office parameters will be set as part of the TABXFR.
   a. Compare (delta) the parm changes to be applied by the FEATDATA file with the ordered parameters indicated in the Parmmail.

   **Note:** PARMMAIL and PARMCHGS files are in the Applicator Package. All new and changed parm values as indicated in PARMMAIL are also listed in PARMCHGS (and FEATDATA).

   b. If any parms need to be changed, edit the FEATDATA file to reflect the corrected parm values. TABXFR will use this file to set the parms.

   c. App/ACT Once the FEATDATA file is verified correct, MATECOPY the file to inactive (mate) side SFDEV. This file will be processed after the parm tables restore.
Procedure 2
TABXFR setup

1  **App**  Set up TRACeci to monitor TABXFR summary and error messages on the primary terminal (ACT).
   a.  **ACT**  >  TRACeci DEVICE <device_name>
      where <device_name> is the name of the device labeled INACT.
      Response on the inactive side:
      This device is selected for TRACeing
   b.  **INACT**  Mate> TRACeci TEST 'THIS IS A TEST'
      "THIS IS A TEST" is output on the device selected above.

2  **App/INACT**  Set up and initialize the TABXFR platform used to perform the table transfers.
   a.  **Mate**  >  TABXFR
      TABXFR:  (system response)
   b.  **Mate**  >  STOPIF 1
      Table transfer will stop after this number of failures.
   c.  **Mate**  >  LIMIT 25
      Limits the number of failures allowed on a table.
   d.  **Mate**  >  SETUP STANDARD
      TABXFR type set to: STANDARD.  (system response)

**Note:** The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.
Procedure 3
Start TABXFR

1  **App**  Start the data transfer using TABXFR as follows.

   **CAUTION**
   TABXFR will perform a mate-side memory check. If this test fails *do not continue*—immediately notify the site supervisor.
   The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side.

   **a. INACT**  
   Mate> TABXFR;STARTXFR;LOGOUT
   *TABXFR will perform an automatic restart reload after each of the following tables is transferred: Datasize, NNASST (or CMSHELF), and (conditionnally) TRKMEM. Following the automatic restart, TABXFR will automatically start transferring the next table listed in table DART.*

   *Note:* A list of empty head tables is sent to the inactive side at the beginning of TABXFR. The applicator may also see empty sub tables that are not on the list being transferred. This is normal and is design intent.

   **b. ACT**  
   If any table fails to restore properly on the mate side, TABXFR will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error.

   For any table in error investigate the problem by entering on the ACTIVE side:

   > DELTA `<table> NOFILE  \(\text{compares old and new tuples}\)
   or
   > DELTA `<table> SUB `<subtable> NOFILE

   **c. INACT**  
   Whenever it is necessary to login on the inactive (mate) side to correct an error, first *verify a flashing A1* on the inactive processor; then login on the mate side and make the needed changes.

   **d. INACT**  
   Continue the TABXFR as follows. Also LOGOUT on the mate side (as above).

   Mate> TABXFR;STARTXFR;LOGOUT

   *Note:* Avoid unnecessary or prolonged logged-in sessions on the mate side while TABXFR is running.
Procedure 4
Copy patches

1  **Site/ACT**  While the data transfer is running and as time allows, on the active side copy patches in store file to the new patch tape (or to disk) and XPM patches to disk.

**Note:** Following are steps to copy individual patches to tape or disk. You may instead create a file to automatically copy these patches.

a.  Install the new patch tape on a tape drive (x) with a write enable ring.
b.  > LISTSF ALL
c.  > MOUNT <x>; LIST T<x>
d.  > COPY <sfdev_patch> T<x>
   where <sfdev_patch> refers to patches in SFDEV listed in step 1.b.
e.  Repeat COPY for each patch in SFDEV.
f.  > DEMOUNT T<x>
g.  > LISTSF ALL
h.  List the disk volume where the XPM loads (and patches) normally reside.
i.  > COPY <xpm_patch> <pmload_disk>
   where <xpm_patch> refers to XPM patches in SFDEV (format aaannXyy$PATCH: aaa is alphabetic, nn is numeric, and yy is the BCS number), and where <pmload_disk> is the XPM disk volume listed above. Do not perform if there are no XPM patches in SFDEV, if there are no XPMs or if there are no disks.
j.  Repeat COPY for each XPM patch in SFDEV.
Procedure 5
TABXFR completed

1 App  TABXFR is finished when you receive the following message.

INACT - completed D/R of office

Note: Do not perform the following step if PADNDEV data was manually restored

during the TABXFR. (See procedure "Patch inactive.")

2 ACT and INACT  On BOTH the active and inactive sides, change table
PADNDEV back the way it was before patching the mate side.
Procedure 6
Login inactive

1  App/INACT  *Verify a flashing A1* on the inactive processor.

2  Login on the mate side as follows.
   a.  ACT
       > MATEIO
       > MATELOG <device>
       *where <device> is the name of the terminal labeled INACT.*
   b.  INACT
       Enter username and password  
       {mate-side response}
       Mate> OPERATOR OPERATOR
       or  Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 7
Print reports TABXFR

1  **App**  Generate a final data transfer report. This will include both the table exception report and (with BCS36 and lower) the NTX package delta.

   a.  **ACT**  Only if RECORD START was *not* done previously, type the following.

         > RECORD START FROM \(<terminal_id>\) ONTO \(<printer>\)

   where \(<terminal_id>\) is the terminal device labeled INACT, and
   \(<printer>\) refers to a printer used to collect the data transfer information.

   b.  **INACT**

          Mate> REPORT  \(\text{still in TABXFR increment}\)

          Mate> QUIT \(\text{quits out of TABXFR}\)

   c.  **ACT**  Only if RECORD START was done in substep a (above), type the following.

         > RECORD STOP FROM \(<terminal_id>\) ONTO \(<printer>\)

   where \(<terminal_id>\) and \(<printer>\) are the devices used above.
Procedure 8
Trapinfo inactive

1. App/INACT  Type:

Mate> TRAPINFO
*If a trap has occurred, do not continue until the trap is explained.*
Procedure 9  
Take MATE IMAGE

1  App/ACT  Determine which SLM volume to use to dump the image.  
   Note: Ensure adequate disk space is available.

2  App/ACT  From the active side enter MATEIO, and MATEBIND the SLM  
   volume you have chosen. See the example below.  
   > MATEIO  
   > MATEBIND S00DIMAGE S00DIMAGE  
   {example}

3  App/INACT  From the inactive side enter MATEIO, and DUMP the inactive  
   (Mate) image. See the example below.  
   Mate> MATEIO  
   Mate> DUMP IMAGE S00DIMAGE ACTIVE RETAIN NODE CM  
   {example}  
   If time allows LDMATE the mate image to verify it. Approximate LDMATE  
   time will be 10 to 15 minutes.
Procedure 10
Stop after TABXFR

1  ACT  Stop the application and return OFFICE PARAMETERS to their pre-
application value.
   > BCSUPDATE; ABORT_PRESWACT
   Resets DUMP_RESTORE_IN_PROGRESS bool in OFCSTD to 'N'
   > TABXFR; CANCEL
   Enables PATCHER and turns back on AUTODUMP and AUTOPATCH
   > QUIT ALL
Procedure 11
Data freeze

1 App/ACT  Inform Telco personnel that a DATA FREEZE period begins and will remain in effect until the SDE dials back in to complete the software delivery. ONLY LIMITED DATA CHANGES WILL BE ALLOWED. See Journal file rules below.

2 Site/ACT  Start journal file and verify started.
   a. > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
      Check which JF volume is currently active.
      Note: QUERY should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   b. > CLOSE JF ACTIVE
      > CLOSE JF ACTIVE
      JF is closed twice to ensure current timestamp on active journal file. QUERY again to verify rotation.
   c. > JF START
   d. > JF STATUS
      Verify JF started.
   e. > QUIT MAPCI
Procedure 12
SYNC

1  App/ACT  After completing the MATE IMAGE and resetting office parameters, then put the processors in sync as follows.
   a.  > MATEIO
   b.  > MATERESET
       > YES  (for confirmation)
   c.  > MAPCT;MTC;CM;SYNC  
       > YES  (for confirmation)

   Note: The switch is now in data freeze.
**Procedure 13**

**Journal file rules**

**Site**  FOLLOW THESE RULES through the entire data freeze period (normally up to the night of the BCS application). The data freeze begins once the mate image is completed and the journal file is started. Please inform control center and craftsperson personnel of the following restrictions.

1. LIMIT SERVORD ACTIVITY and TABLE CHANGES during the data freeze.

   **Warning:** Whenever possible use SERVORD, not table control, to make data changes.

2. Journal file is never to be stopped, even during journal file rotations.  

   *If the AUTOIMAGE feature is used to take regular office images, the journal file starts and stops automatically as the image is dumped. This is the only exception to the rule.*

3. **ACTIVITIES WHICH ARE NOT PERMITTED**

   - changes to "restricted tables" (including tables C7LKSET, C7RTESET, and C7LINKSET)
     
     **Note:** A list of all the RESTRICTED TABLES can be seen by listing entries in table FREEZTAB.

   - network changes, additions, and deletions (tables NETWORK and NETJUNCT)

   - PM changes, additions, and deletions (all tables ending with 'INV')

   - trunk group changes, additions, and deletions (tables TRKGRP and TRKSGRP)

   - trunk member changes, additions, and deletions (table TRKMEM)

   - table TRKNAME changes, additions, and deletions

   - IBN customer group changes, additions, and deletions

   - OM and EADAS changes, additions, and deletions (tables OMACCTAB, OMCLASS, OMACCCGRP, OMACCFLD, OMACCKEY, OMDELTAB, and OMSET)

   - DRAMREC changes, additions, and deletions (that is, ASSIGN and RECORD)

   - table changes, additions, and deletions from store files, and using OVERRIDE (OVE) or VERIFY OFF (VER OFF)

   - use of the RENAMECLI command

   - use of the DMOPRO command

   - use of the JF STOP command

   -continued-
Procedure 13
Journal file rules (continued)

- erasing journal files from disk
- use of DIRP CLEANUP command. This could change 'R' journal files to 'P' status, and these may not be processed when JFDUMPF step is done. If file space is required then cleanup only non-journal files.

4 ACTIVITIES WHICH ARE PERMITTED
- all SERVORD commands
- table changes must be made with VERIFY ON and kept on hard copy
- emergency translation changes

5 CLOSE and ROTATE journal files daily (whenever the number of records exceeds 1000). KEEP THE FILENAMES IN CHRONOLOGICAL ORDER IN A JOURNAL FILE LOGBOOK.
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Second Night

Journal file restore procedure

For Two Night Process—This section is required to restore the journal file recorded during the DATA FREEZE period.

Two dialup ports are required, one for the active side processor (label it ACT) and one for the inactive side processor (label it INACT). Remember to acquire a soft copy of the console sessions for both terminals.

CAUTION
Ensure no hardware changes or retrofits are in progress. This includes network or memory extensions and peripheral additions/deletions. These activities are prohibited during the BCS application. Such hardware must be made INB (installation busy), and any further software changes must cease.

CAUTION
In case of emergency situations
and if an outage or degradation occurs, call the site supervisor immediately. If not service-affecting, use normal escalation policy.

Procedure 1
Interrupt/ABORT process

Both SITE and Applicator should be familiar with each of the following steps before continuing with the procedures in this section.

If problems develop during the software delivery, resort to one of the following actions.

1  It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented, but before the switch of activity. Refer to “PRESWACT Abort” in Appendix A (page A-29).

2  If a controlled REVERT is required after the switch of activity (SWACT) refer to “Revert to old load procedure” (page 7-147).

3  If an emergency ABORT is required after the switch of activity (SWACT) refer to “Emergency Abort procedure” (page 7-173).
Procedure 2
Remote login

1  App/ACT  Contact the control center (if required) and the site on the voice phone and connect to both dialups. Verify one dialup port is on IOC0 and the other is on IOC1.

2  App/ACT  Login the users and if applicable, set LOGINCONTROL.
   a.  <break>
   b.  ?LOGIN
       Enter username and password  (system response)
       > <username> <password>
       or > <username>
       > <password>
       where username and password can both be found on the Pre-application report.
   c.  For BCS33 and higher enter:
       > BCSUPDATE;DEVICE
       > QUIT
   d.  For BCS32 and lower enter:
       > LOGUTIL;STOP;STOP  (Note the name of this device)
       > LEAVE
       > LOGINCONTROL <device> QUERY
   e.  Verify Open Condition Logout is N. If not, retain the original status and enter:
       > LOGINCONTROL <device> OPENFORCEOUT FALSE
       Verify Max Idle Time is Forever. If not, retain original status and enter:
       > LOGINCONTROL <device> MAXIDLETIME FOREVER
       > LOGINCONTROL <device> DISABLEON REMOVE
       <forceout_conditions>  (conditions obtained in substep d above)
   f.  Repeat this entire step on the other terminal device.
Procedure 3
Check logs SNODE

1  App/ACT  For BCS33 and higher check logs to verify processor stability.
   > BCSUPDATE; LOGCHECK
   > QUIT
   Do not continue until all logs have been explained.

2  App/ACT  For BCS32 and lower check logs to verify processor stability.
   > LOGUTIL
   > OPEN <log_buffer>; WHILE (BACK) ()
   where <log_buffer> refers to CM, MS, SLM and MM logs.
   > LEAVE
   > TRAPINFO
   Check for store parity traps, MM (mismatch), and store checksum logs. Do
   not continue until all logs have been explained.
Procedure 4
Stop journal file

1 App/ACT  ROTATE and STOP the Journal File recording.
   a.   > MAPCI;MTC;IOD;DIRP;QUERY JF ALL
        Check which JF volume is currently active.
   b.   > CLOSE JF ACTIVE
        QUERY again to verify rotation.
   c.   > JF STOP
        Verify stopped.
   d.   > QUIT MAPCI
Procedure 5
Drop sync SNODE

1  App/ACT  Type:
   > MAPCI; MTC; CM

2  App/ACT  Ensure the CM you want to load with the new BCS load is *inactive*
   and the corresponding MS and SLM components are used.
   *For example: if the new BCS image resides on SLM disk 0, then CM 0
   should be the inactive side, and the MS 0 clock should be the slave clock.*
   a.  Determine where the new BCS image resides (normally SLM disk 0).
   b.  If needed to align the CM with the SLM, you may switch activity of the
   CM using SWACT (CM level).
   c.  If needed to align the MS clock with the CM, you may switch MS clock
   mastership using SWMAST (MS level). If you do, wait five minutes to
   continue.

3  Site/INACT  From the inactive RTIF enter:
   RTIF> \JAM
   RTIF> YES  *(for confirmation)*

4  App/ACT  
   > DPSYNC  *(from CM level)*
   > YES  *(if prompted to disable AUTO PATCHING)*
   > YES  *(to confirm DPSYNC)*

5  Site/INACT  Site must tell the engineer when the inactive CM is flashing A1.

6  App/ACT
   > QUIT MAPCI
Procedure 6
Loadmate SNODE

1. **App/ACT**  List the SLM disk volume onto which the new BCS IMAGE files (both _MS and _CM load files) were previously restored (copied).
   
a.  > DISKUT
    > LF SOOD<volume>  
    {or SO1D<volume>}
    where <volume> is the SLM disk volume with the BCS IMAGE.

b.  Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files that were provided on the new BCS IMAGE tape.
   To help understand the image filenames, you may use the DISPMS <filename> command which displays the image header information.  
   (Refer to Appx. A for details of this command.)

2. **App/ACT**  If the _CM image file was not previously restored to the SLM disk, you can instead loadmate from SLM tape as follows. (Otherwise, go on to with the next step to load from disk.)

   **CAUTION**
   The _MS file will have to be restored to the SLM disk in order to load the MS (during PRESWACT if not already done).
   However, since loadmate can be done using SLM disk or tape, you may wait until loadmate is done to restore the _MS file to SLM disk.

   Insert the new BCS IMAGE cartridge into the SLM tape drive corresponding to the inactive CM.
   > LDMATE DIRECT TAPE 2  
   {loads 2nd file on the tape}
Procedure 6
Loadmate SNODE (continued)

3  App/ACT  If BCS28 and higher, loadmate using the SLM disk as follows.
   a.  Ensure no DIRP files are opened on the SLM disk with the image.
      > DIRP;QUERY <subsystem> ALL
      where <subsystem> is AMA, OM, JF, or DLOG.
      If any opened files, close the files (or rotate the information to the active side).

   CAUTION
   LDMATE DIRECT (below) will fail if there are any opened files on the SLM device with the image.
   "DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate."

   b.  > LDMATE DIRECT DISK <filename_CM>
       If you get the above message, either close the opened file(s), or else loadmate using the VIAMS option as follows.
       > LDMATE VIAMS <filename_CM>

4  App/ACT  If BCS27 loadmate using the SLM disk as follows.
   a.  Activate patch SSY05C27.
      > PATCHEDIT SSY05C27 ON
   b.  > LDMATE <filename_CM>

5  App/ACT  If BCS26 loadmate using the SLM disk as follows.
   > LDMATE <filename_CM>

6  Site and App/INACT  Wait for loadmate to complete and the inactive processor to flash A1.
   While waiting for loadmate, SITE may display the patches in store file (PATCHER; DISPLAY <patch>) or may copy any new patches to the new patch tape (or to disk).
Procedure 7
Login inactive after Loadmate SNODE

Login on the inactive processor after loadmate is complete.

1  **App/ACT**  Type:
   > MATELINK RTS

2  Allow initialization on the inactive side (flashing A1).

3  LOGOUT of the active side if logged in on the terminal labeled INACT.

4  > MATEIO
   > MATELOG <device>
   where <device> is the name of the terminal labeled INACT.

5  **App/INACT**
   Enter username and password    (mate-side response)
   Mate> OPERATOR OPERATOR
   
or  Enter username
   Mate> OPERATOR
   Enter password
   Mate> OPERATOR
Procedure 8
Set date and header message

1. **App/NACT** Set the current date and site header message on the mate side.

   Mate> SETDATE <dd mm yy>  
   Mate> SETLOGMSG '<text>'
   where <text> becomes the office header on the new software load. Using the old header as the model, change the **Office Order** (COEO), **office name**, **Product Code** (or BCS level), and **application date**. Ensure all symbols at the beginning and end of the header message remain the same (including spaces).

   **Note:** The "Order/Suborder" (Office Order) and "To Product/Version" (Product Code/BCS) can be found in the Parmmail.

   **Example:**
   94/04/12 00:41 *** H01234 OFFICE LEC00002 120494 ***
Procedure 9
Check logs inactive SNODE

1 App/INACT  For BCS33 and higher check mate logs to verify processor stability.

    Mate> BCSUPDATE;LOGCHECK
    Mate> QUIT

    Do not continue until all logs have been explained.

2 App/INACT  For BCS32 and lower check mate CM logs.

    Mate> LOGUTIL;OPEN CM;WHILE(BACK)()
    Mate> LEAVE
    Mate> TRAPINFO

    Check for store parity traps. Do not continue until all logs have been explained. Traps from active side (FOOTPRINT) may also be shown.

3 App/INACT

    Mate> TRAPINFO CLEAR
Procedure 10  
Manual journal file dump  

1  App/ACT  If currently on BCS33 and lower, enter:  
   > QUERY JFDUMP  
   
   If the module is already loaded (module information is output) go to step 2 below.  
   
   If the module is not loaded ("QUERY--module 'JFDUMP' is not loaded" is output) load the module as follows.  
   a. Have site install the appropriate BCSTOOLS tape on a tape drive. Ask for the tape via the identification label (see "Administrative" block on the Pre-application report.)  
   b. > TLIST (MOUNT <x>)  
   c. > LOAD JFDUMP PRPTCHEC  
   d. > DEMOUNT T<x>  

2  Site and App  Locate the FIRST JOURNAL FILE TAPE or JF DISK VOLUME.  

   CAUTION  
   It is of utmost importance to start with the first journal file volume (containing the first journal files created since the data freeze).  

   a.  App  If journal files are on TAPE, list the JF tape as follows.  
       Put up the tape without a write enable ring.  
       > MOUNT <x>  
       > LIST T<x>  
   b.  App  If journal files are on DISK, list the JF disk volume as follows.  
       > DSKUT;LISTVOL <JF_disk> ALL  
   where <JF_disk> refers to the disk volume(s) containing journal files.  
   Be extra sure to list all the volumes with JF.  

3  Locate a scratch DISK volume for the journal file dump (or else have site install a scratch tape with a write enable ring, and MOUNT FORMAT).  

   -continued-
4.1 Only if coming from BCS33 and higher and going to BCS35 and higher, enter the following command.

(for example, BCS 33-35, 33-36, 34-35, or 34-36)

**Note:** In the following step the applicator may utilize a file to dump multiple journal files.

> JFDUMP <jfin> <jfout> <device> <from_BCS> <from_BCS>

where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ', then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999' (Canada only). <device> refers to the recording device on which to dump journal file (disk, tape, or SFDEV).

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 33 33' dumps file U880405000090JF to file JFA onto disk D000SCRATCH formatting from BCS33 to BCS35 and higher.

Retain the output filenames for **Matebind journal files** procedure (to follow).

4.2 Otherwise, for any other BCS enter the following commands.

(for example, BCS 32-35, 33-33, 33-34, or 34-34)

> RFMT SET <from_BCS> <to_BCS>

**Note:** In the following step the applicator may utilize a file to dump multiple journal files.

> JFDUMP <jfin> <jfout> <device> <from_BCS> <to_BCS>

where <jfin> refers to the journal file name. For <jfout> use 'JFA' thru 'JFZ', then use 'JFAA' thru 'JFZZ' (except Canada) -or use 'JF$100 thru JF$999' (Canada only). <device> refers to the recording device on which to dump journal file (disk, tape, or SFDEV).

As an example: 'JFDUMP U880405000090JF JFA D000SCRATCH 29 32' dumps file U880405000090JF to file JFA onto disk D000SCRATCH formatting from BCS29 to BCS32.

Retain the output filenames for **Matebind journal files** procedure (to follow).

5 Repeat step 4 for each journal file listed from step 2 above.

---

**CAUTION**

Review the time stamps of the reformatted JF to confirm the entire data freeze period is accounted for.

-JF active during the entire data freeze with no significant interval without journal file

---
Procedure 10
Manual journal file dump (continued)

6  > DEMOUNT T<x>  
{only if JF was recorded on tape}

7  Site  If journal file was recorded on tape, remove the previous journal file tape and replace the write enable ring. Install the next tape without a write enable ring.

CAUTION
Install each journal file tape in the order they were created.

8  Site and App  For each journal file tape, MOUNT and LIST the tape and repeat steps 4 through 7 above.
Procedure 11  
Matebind journal files

1  App/ACT  Matebind the reformatted journal files.
   a. ACT  List the device used for the journal file dump from the jf dump steps (previous procedure).
   b. > MATEIO
   c. > MATEBIND <jffile> <jffile>
      where <jffile> refers to all reformatted JF filenames created in the JF dump steps.
   d. Repeat MATEBIND for each filename created in the JF dump steps.
   e. > MATEBIND DMOLIST DMOLIST
      Note: The site is responsible to input all DMOs from the DMOLIST. (These are DMOs which were input since datafreeze was suspended.)
   f. INACT
      MATE> MATEIO
Procedure 12
Restore journal files

1  **App**  Restore the journal files to the inactive side. If to_BCS 30 and higher perform substep a below. If to_BCS 29 and lower perform substep b.

**Note:** In the following steps, `<jffile>` refers to all the reformatted JF filenames created previously in the *journal file dump* procedure.

```
CAUTION
Restore all journal files in the same order they were created.
```

a.  For to_BCS 30 and higher enter:

```
ACT
> TRACECI DEVICE <device_name>
where `<device_name>` is the name of the device labeled INACT.
```

**Note:** This command allows you to monitor the results of the RESTAB command on the INACT terminal.

```
INACT
Mate> RESTAB <jffile> <from_BCS>
Correct all errors which may occur.
```

Repeat RESTAB for each filename created in the journal file dump.

b.  For to_BCS 29 and lower enter:

```
INACT
Mate> DMOPRO <jffile>
Correct all errors which may occur.
```

Repeat DMOPRO for each filename created in the journal file dump.
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PRESWACT procedure

This section details steps required to prepare for the CC activity switch to the new software load.

Procedure 1
BULLETINS before PRESWACT

1  App  Verify and perform all software delivery bulletins and workarounds that are required prior to beginning PRESWACT.
Procedure 2
Unload module JCTRSTAT

If this is an ENET office, perform this procedure. Note carefully the from and to BCS qualifiers.

1 App/ACT If an ENET office is going from BCS31 to BCS34RTS, the module JCTRSTAT will have to be unloaded on the ACTIVE side of the switch before starting PRESWACT.

> UNLOAD JCTRSTAT

System response: The module will be unloaded from the switch.

Note: This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.
Procedure 3
Start PRESWACT

1  **App/ACT**  Perform PRESWACT of BCSUPDATE.
   
   **Note:** Please logout all users on the inactive side while PRESWACT is running.
   
   > BCSUPDATE
   > PRESWACT

2  Read the following notes, and continue the procedure while PRESWACT is running.

   **Note 1:** PRESWACT runs all steps required before the CC switch of activity and flags them as completed when they pass. If any error occurs, PRESWACT will stop and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact the site supervisor if necessary).
   
   *As an example:*
   
   TABLE_DELTA            executing
   :
   Table AMAOPTS *** Checksum incorrect, keys incorrect
   :
   TABLE_DELTA            not complete
   
   ACT - Error: Inactive table data did not match.
   Correct error condition. Enter Preswact to continue

   **For any table in error, investigate the problem by entering:**
   
   > DELTA <table> NOFILE  \(\text{\{compares new/old tuples\}}\)
   or  > DELTA <table> SUB <subtable> NOFILE

   **To continue, run PRESWACT again by entering:**
   
   > PRESWACT

   **Note 2:** A hardware conversion (such as LTC/LTCI) scheduled concurrently with the BCS upgrade will require certain table changes, additions or deletions. PRESWACT step TABLE_DELTA will detect a mismatch between the old and new data, and will stop, indicating an error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.
   
   -continued-
Procedure 3
Start PRESWACT (continued)

**Note 3:** PRESWACT step TABLE_DELTA may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different in the old and new BCS loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences. 
*As an example:*

```
TABLE_DELTA      executing
:                
Table ATTCONS Checksum incorrect, keys match
:                
TABLE_DELTA     complete
```
Procedure 4
Override module JCTRSTAT

PRESWACT may STOP with the message "Failed SWACT_MODULE _CHECK." If you see this message and it is indicating that JCTRSTAT is the only module missing on the inactive side and if this is an ENET office, perform this procedure. If any other module is reported to be missing from the inactive side please investigate before taking any action. Note carefully the from and to BCS qualifiers.

1 **App/ACT** If an ENET office is going from BCS32 thru 34RTM to BCS34RTS or higher, PRESWACT step SWACT_MODULE_CHECK will have to be overridden as follows.

> BCSUPDATE;SWACTCI;MODCHECK OVERRIDE  {for BCS33 and higher}
> BCSUPDATE;SWCT;MODCHECK OVERRIDE  {for BCS32}

**System response:** The user will be prompted to override module JCTRSTAT.

**Note:** This is necessary due to a change in the software packaging of JNET and ENET code which occurred between BCS34RTM and BCS34RTS.
Procedure 5  
**PRESWACT DIRP and billing**

Site and software delivery engineer should work together to prepare both PRIMARY and PARALLEL DIRP billing subsystems for the CC switch of activity (SWACT). This procedure gives the steps to accomplish this preparation.

*Note:* Site can begin doing this procedure while the Applicator continues with other PRESWACT procedures.

### 1.0 Disk drive parallel DIRP coming from BCS31 and lower

**a. Site/ACT** In table DIRPSSYS determine which disks are being used for parallel DIRP recording.

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPPOOL.

**b.** For a parallel volume that is on DISK, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS by replacing the volume name with nil volume ($).  

**c.** Copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.

**d.** Erase all closed parallel DIRP files from the disk:

```sh
> CLEANUP FILE <parallel_filename>
```

where `<parallel_filename>` is each file to be erased.

**e.** Reformat the parallel disk volume:

```sh
> DIRPPFMT <parallel_volume>
```

where `<parallel_volume>` is the original volume name.

**f.** If to BCS 32 and higher, rename the first file on the reformatted parallel volume (created by the "dirppfmt" command). Using the "renamefl" command, change the file name from "DIRPPARALLEL" to "B000000000000" (12 zeros).

**g. Site and App/INACT** If from BCS 31, ensure that parallel disk volumes are in table DIRPPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPPOOL on the inactive side before SWACT.
Procedure 5
PRESWACT DIRP and billing (continued)

1.1 Disk drive parallel DIRP coming from BCS32 and higher

Note: If from BCS 32 and higher, Site no longer has to take down parallel billing if on disk.

Site and App/INACT Ensure that parallel disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

If from BCS 33 and lower, PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

DIRP will recover parallel recording to disk on the newly-active side after SWACT.

CAUTION
Recently recorded parallel data may be overwritten.
Site should copy the parallel files to tape to prevent loss of parallel data if that is Telco policy.
• If a single parallel volume is in use, information on the volume will be lost over SWACT.
• If more than one parallel volume is allocated to DIRP, DIRP will start recording after SWACT on the volume with the oldest time stamp. Hence information on that volume will be lost over SWACT.

2 Disk drive PRIMARY billing

a. Site/ACT If on disk (DDU), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR).

b. If required by Telco policy copy unprocessed DIRP files to back-up tape (using DIRPAUTO or DIRPCOPY commands).

c. Verify that table DIRPHOLD contains no unprocessed billing files (if DIRPAUTO was used above).

-continued-
Procedure 5  
PRESWACT DIRP and billing (continued)

d. **Site and App/INACT**  If from_BCS 32 and higher, ensure that regular disk volumes are in table DIRPPOOL on the inactive side. This allows the disk to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

---

3 Tape drive PRIMARY billing

a. **Site/ACT**  If on tape (MTD), from the DIRP level ROTATE any active billing subsystem (such as AMA SMDR OCC CDR), CLOSE the standby file, and DMNT the standby volume.

Example:

```plaintext
> ROTATE AMA
> CLOSE AMA STDBY 1
> DMNT AMA T1

{standby volume}
```

b. Remove the demounted standby tape from the tape drive, and put up a new tape to be used as the next DIRP volume.

c. Prepare a new standby volume as follows.

```plaintext
> MOUNT <x> FORMAT <volume_id>
where <x> is the standby device number, and <volume_id> is the name of the standby volume.

If prompted enter the first filename, or if system response is:
"request aborted. Tape not expired (use ERASTAPE)"
then select an unused or expired tape for formatting.

> DEMOUNT T<x>

Leave the standby volume at load point and ON LINE. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

d. **Site and App/INACT**  If from_BCS 32 and higher, ensure that regular tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

If from_BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

---

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

4.0 DPP/BMC PRIMARY billing coming from BCS31 and lower

a. **Site/ACT** If on DPP or BMC, from the DIRP level Rotate any active billing subsystem (such as AMA SMDR OCC CDR), close the standby file, and DMNT the standby volume.

   *Note:* DIRP sees DPP/BMC as a tape drive port.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

   > MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
   
   This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. Prepare a new standby volume as follows.

   > MOUNT <x> FORMAT <volume_id>
   
   where <x> is the standby device number, and <volume_id> is the name of the standby volume.

   If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

   > ERASTAPE <x>
   
   where <x> is the standby device number.

   *Note:* On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.

   System response is:
   
   ***WARNING, THIS TAPE WILL BE ERASED***

   **CAUTION**
   
   At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
   
   If a mistake is made, a real tape could be erased.

   Enter YES to confirm the command.

   > DEMOUNT T<x>

   If ERASTAPE command was used, repeat this substep (d) to rename the volume.

   Leave the standby volume demounted. Immediately following SWACT, it will become the ACTIVE volume of the appropriate subsystem.

   -continued-
Procedure 5
PRESWACT DIRP and billing (continued)

e. Site and App/INACT If from BCS 31, ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.

If going to BCS32 and higher CHANGE field DEVTYPE in table DIRPPOOL to DPP (not TAPE).

CAUTION
Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

f. Site and App/ACT If SMDR recording is on BMC (datafilled as TAPE in table DIRPSSYS/DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY volume. In table DIRPSSYS/DIRPPOOL add the TAPE device as a standby BMC. Also add the device in DIRP_REC (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

g. Site and App/INACT Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

Mate> LISTSF ALL
Mate> PRINT DIRP_REC
If necessary, edit DIRP_REC to make corrections.
-continued-
Procedure 5  
PRESWACT DIRP and billing (continued)

If going to BCS32 and higher, delete the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN '<poolname>'
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

4.1 DPP/BMC PRIMARY billing coming from BCS32 and higher

a. Site/ACT  Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

b. Site and App/ACT  If SMDR recording is on BMC (datafilled as TAPE in table DIRPPOOL) and NO standby volume is available for BMC, then mount a temporary STDBY TAPE volume. In table DIRPPOOL add the TAPE device as a standby BMC. Also add the device on the inactive side (see the following substep). Leave the STDBY TAPE demounted. DO NOT ROTATE the BMC. This volume will be used to rotate the BMC port OUT and back IN during POSTSWACT.

Note: Some SMDR recording applications on BMC collect SMDR records based on customer group ID only, and it is necessary to rotate the BMC tape port IN during POSTSWACT to ensure that any changes to the customer group IDs are passed to the BMC upon rotate (to ensure the RECORD HEADER is correct).

c. Site and App/INACT  Ensure that regular DPP/BMC volumes are in table DIRPPOOL on the inactive side. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

Mate> TABLE DIRPPOOL;POS <pool_#>
where <pool_#> is the number for DPP AMA pool.
-continued-
Verify field DEVTYPE in table DIRPPOOL is DPP (not TAPE).

**CAUTION**
Starting in BCS32 in a pool of DPP or BMC volumes, field DEVTYPE in table DIRPPOOL should be DPP (not TAPE). Otherwise, if datafilled as TAPE you will have to recover the volume manually after SWACT.

If from BCS 34 and higher, PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

5.0 Tape drive parallel DIRP coming from BCS33 and lower

a. **Site/ACT** In table DIRPSSYS or DIRPPOOL determine which MTDs are being used for parallel DIRP recording.

   The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

   **Note:** TAPEX cannot be used for parallel recording.

b. For a parallel volume that is on TAPE, CLOSE the parallel file and DMNT the volume from the DIRP level. Remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume ($). Physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

   **Note:** This substep can also be done after the CC switch of activity (during POSTSWACT) if the tape drive is needed for other purposes.

Prepare each new parallel volume as follows.

   > **MOUNT** <x> **FORMAT** <volume_id>

   *where* <x> *is the parallel device number, and* <volume_id> *is the name of the parallel volume.*

   > **DEMOUNT** T<x>

   Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

5.1 Tape drive parallel DIRP coming from BCS34 and higher

Note: This step can be used to automatically recover parallel volumes after the SWACT. Alternatively, you can do the previous step if you wish to wait until after the SWACT to format the new parallel volumes.

a. Site/ACT In table DIRPPOOL determine which MTDs are being used for parallel DIRP recording. PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

b. For a parallel volume that is on TAPE, demount all EXCEPT the current parallel volume from table DIRPPOOL by replacing the volume name in DIRPPOOL with nil volume ($). Then physically remove the tape from the drive.

c. Replace these tapes with freshly formatted, empty tapes.

Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

> DEMOUNT T<x>

Leave the tape at load point and ON LINE so it can be activated as the new PARALLEL device after SWACT.

d. Site and App/INACT Ensure that parallel tape volumes are in table DIRPPOOL on the inactive side. This allows the tape to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

PRESWACT step DIRPPOOL_CHECK displays the datafill for table DIRPPOOL on the inactive side.

- If a single parallel volume is used for recording, the volume will be dropped over SWACT.
- If multiple tape volumes are in use for parallel recording, the volume in use before the SWACT will be dropped from DIRP and a freshly-formatted, empty volume will be used for recording.

6.0 DPP/BMC parallel DIRP coming from BCS33 and lower

In BCS32 or BCS33 DIRP no longer supports parallel AMA recording on a DPP or BMC volume, UNLESS device type TAPE is used in table DIRPPOOL (in which case you must manually recover the DPP after SWACT).

a. Site/ACT In table DIRPSSYS or DIRPPOOL identify which DPP/BMC(s) is being used for parallel DIRP recording.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

The result of PRESWACT step CHECK_DIRP_PARVOLS displays the parallel DIRP devices in table DIRPSSYS or DIRPPOOL.

b. Perform this step to close the last file on the DPP and open a new one. Telco may POLL the DPP if desired when this is complete.

> MAPCI;MTC;IOD;DPP AMA;IDXMAINT CREATE FILE AMA
This re-establishes the block header on the DPP.

c. Display current DPP settings to hardcopy (retain for POSTSWACT).

d. For a parallel volume that is on DPP or BMC, from the DIRP level CLOSE the parallel file and DMNT the volume. Then remove the volume from table DIRPSSYS or DIRPPOOL by replacing the volume name with nil volume ($).

e. Prepare each new parallel volume as follows.

> MOUNT <x> FORMAT <volume_id>
where <x> is the parallel device number, and <volume_id> is the name of the parallel volume.

If prompted enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)" then enter:

> ERASTAPE <x>
where <x> is the parallel device number.

Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect data collected by the DPP/BMC. It only resets DMS indicators.

System response is:
***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape could be erased.

Enter YES to confirm the command.

> DEMOUNT T<x>

If ERASTAPE command was used, repeat this substep (e) to rename the volume.

Leave the billing volume in this state so it can be activated as the new PARALLEL volume following SWACT.

-continued-
Procedure 5
PRESWACT DIRP and billing (continued)

f. **Site and App/INACT** If to_BCS 32 and higher, ensure that parallel DPP/BMC volumes are in table DIRPPOOL on the inactive side. This allows the DPP/BMC to be recovered by DIRP after SWACT. If necessary manually datafill the volume names in DIRPPOOL on the inactive side before SWACT.

g. **Site and App/INACT** If to_BCS 32 and higher, for the parallel DPP tuple in table DIRPPOOL change field DEVTYPE to TAPE (not DPP).

h. **Site and App/INACT** Verify the DIRP_REC file on the inactive side is correct for the SWACT to the new BCS load.

Mate> LISTSF ALL
Mate> PRINT DIRP_REC
*If necessary, edit DIRP_REC to make corrections.*

If going to BCS32 and higher, *delete* the DPP tuple in the DIRP_REC file as follows. (This prevents incorrect data from being added to table DIRPPOOL as part of the POSTSWACT procedures.)

Mate> EDIT DIRP_REC
Mate> DOWN '<poolname> {name of the pool using the DPP}
Mate> DELETE
Mate> ERASESF DIRP_REC
Mate> FILE SFDEV DIRP_REC

6.1 DPP/BMC parallel DIRP coming from BCS34 and higher

In BCS34 and higher DIRP no longer supports parallel AMA recording on a DPP or BMC volume. Table control prohibits the filling of devtype DPP in a parallel pool.
Procedure 6
Data extension

1  **App/INACT**  For a DATA EXTENSION only: Once PRESWACT step MATE_RESTART_RELOAD (or step MATE_RESTART prior to BCS35) has completed, perform the following workaround. This allows the new trunks to remain in the INB state after SWACT.

a. Log into the inactive side.

b. Mate> LISTSF ALL

   **Note:** The file ‘NEWTRKS’ should be in storefile. This file is created by Loadbuild to identify all the trunks added for the Data Extension.

c. Mate> MAPCI NODISP;MTC;TRKS;TTP

d. Mate> COMMAND PTBI (POST T @1 @2;FRLS;BSY INB)

e. Mate> READ NEWTRKS

f. Mate> QUIT ALL
Procedure 7
MS_CHECK failure

PRESWACT may STOP with the message “Failed MS_CHECK for inactive CM load.” *Only when you see this message*, load the MS corresponding to the inactive CPU using this procedure. PRESWACT will stop at this point if the MS load version does not match the BCS level of the inactive CM.

*Note:* The MS_CHECK is a check against the inactive CM and the MSs. Its purpose is to ensure the BCS version for each MS will be matched with the new BCS.

1. **App/INACT** Logout on the inactive side (if logged in).

2. **ACT** Type:
   > MATELINK BSY

3. > DISKUT
   > LF $00D <volume>  
   > LF $01D <volume>
   *where* <volume> *is the SLM disk volume with the _MS load file.*

4. At the MS level of the MAP, note which MS corresponds to the inactive CPU. Both MSs should be inservice.
   > MAPCI;MTC;MS

5. Make the MS CLOCK corresponding to the inactive CM the SLAVE clock. If necessary, switch MS clock mastership with:
   > SWMAST
   *{only if needed to switch clocks}*

6. If you switched mastership, wait 5 minutes to ensure the clocks are stable and to allow a hardware audit to run.

7. At the MS level of the MAP, busy the MS that corresponds to the inactive CM (and with the slave clock).
   > BSY <MS#>

8. > LOADMS <MS#> <filename>
   *where* <filename> *is the name of the _MS load file listed above in step 3.*
   > YES
   *{for confirmation}*

-continued-
Procedure 7
MS_CHECK failure (continued)

9  > TST <MS#> VIAMATE
   Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

   **CAUTION**
   **Do not proceed unless NO faults are reported.**
   Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.

10 Monitor MS logs for 5 minutes to ensure stability.

11 Continue PRESWACT.
   > QUIT MAPCI
   > PRESWACT  *(still in BCSUPDATE)*
Procedure 8
STATUSCHECK if MS loaded in PRESWACT

1  App/ACT  After PRESWACT is completed and only if one MS was loaded during PRESWACT (BCS33 and lower), run a STATUSCHECK (to enable the matelink).

   Note: STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

   a.  > BCSUPDATE;SWACTCI;STATUSCHECK    {for BCS33 and higher}
   > BCSUPDATE;SWCT;STATUSCHECK            {for BCS31 or BCS32}
   > SWCT;STATUSCHECK                      {for BCS30 and lower}

   b.  Ensure the STATUSCHECK passes (with both sides matching).
   If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
Procedure 9  
Login inactive

1  **App/INACT**  *Verify a flashing A1* on the inactive processor.

2  Login on the mate side as follows.

   a.  **ACT**

      > MATEIO

      > MATELOG <device>

      *where* <device> *is the name of the terminal labeled INACT.*

   b.  **INACT**

      Enter username and password  
      Mate> OPERATOR OPERATOR  
      *(mate-side response)*

      or  
      Enter username  
      Mate> OPERATOR  

      Enter password  
      Mate> OPERATOR
Procedure 10
Logout DNC

1 Site and App/ACT  If DNC is in use (feature package NTX560), have Telco confirm that all DNC end users have been contacted and are logged out.
 Procedure 11
 Table CRSFMT alarm

1 App/ACT  In table CRSFMT, field ALARM, if any entry is set to 'Y', then the device must also be allocated in table DIRPPOOL. Otherwise, set it to 'N'.

Note: If a volume is allocated in DIRPPOOL it is being used.
SWACT and POSTSWACT procedure

This section details steps required to perform a CC switch of activity (SWACT), test the new load, and complete the software delivery process.

Procedure 1
BULLETINS before SWACT

1. **App** Verify and perform all software delivery bulletins and workarounds that are required prior to beginning the SWACT.
Procedure 2
Before SWACT

1 Site Do not proceed until both the Telco and NT on-line support agree.

2 Site Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.

3 Site Ensure no further activity is performed on the DPP, including DPP polling or disk backup. Inform the downstream processing center.

4 Site Disable all polling and periodic testing. There is to be no activity on the SuperNode CM, MS, and CLOCK or NT40 CC and CMC until cleared by the software delivery engineer. Failure to comply may result in a system restart.

5 Site Dump the SPMS register information to a printer (or other device) according to Telco practice.

6 Site Disconnect any ISDN Digital Test Access (DTA) monitors. (Reference NTP 297-2421-300.)

CAUTION
If DTA monitor is left connected over the SWACT, it will not be possible to reconnect it without first reloading the PM from CC data.

a. Enter the LTPDATA level of MAP.

b. Query all DTA monitors on the switch by issuing the command,

   > EQUIP DTA QUERY ALL

c. If the DMS responds with "No DTA equipment reserved on switch" then no further action is needed.

d. Make note of any connected monitors by looking at the CONNECT field of the query display.

   Use the POST command to post each monitored LEN, and then issue the command,

   > CONNECT <N> RLS

   where <N> is the integer number of the monitor from the first column of the query display.

   Do this for each connected monitor. Repeat substep b as necessary to review DTA status.

   -continued-
Procedure 2
Before SWACT (continued)

e. Reset all monitor LENs and DS0 channels by issuing the command,

```text
> EQUIP DTA RESET <N>
```

where `<N>` is the integer number of the monitor from the first column of the query display.

Do this until no equipment is left "Equipped." Repeat substep b as necessary to review DTA status.

7 Site If BCS35, ensure Bit Error Rate Tester (BERT) is not running. BERT is a manual action used to test the quality of a CCS7 link.

---

**CAUTION**

In BCS35 BERT should not be left running during the CC SWACT. Otherwise, the link will hang up over the SWACT.

If BERT is left running over the SWACT, you will have to go into the PM level, post the offending LIU7/MSB7, and BSY and RTS it.

---

a. To determine if BERT is on: Go into C7LKSET level and post each linkset in turn. The link state should not indicate 'BERT'.

b. To turn off BERT, go into the C7LKSET level and post the linkset. Go into C7BERT level and type STOP <linkno>. 

---
Procedure 3
Restore special logs

Special logs (suppressed logs or logs with a threshold) are set up in LOGUTIL on a per-site basis. These do not get restored to the new load. This procedure manually restores any special logs on the new load.

*Note:* A restart reload on the mate side will cause supp/thresh settings to be lost. If a mate restart occurs before the switch of activity, verify the settings are present and, if not, repeat this procedure.

1. **App/ACT** List all special logs on the active side.
   
   > LOGUTIL
   > LISTREPS SPECIAL

   **Example output:**
   
   ```
   LINE 138 7 INFO TRMT *thresh= 25*
   PM 189 5 INFO PM SW Information... *supp*
   ```

2. **App/INACT** Restore special logs on the mate side.
   
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL

   **Commands to restore above example:**
   
   ```
   Mate> THRESHOLD 25 LINE 138
   Mate> SUPPRESS PM 189
   ```

3. **App/INACT** Verify the correct logs are set up and match the active load.
   
   Mate> LOGUTIL
   Mate> LISTREPS SPECIAL
Procedure 4
Start logs

1  **App/ACT**  Set up LOGS for the SWACT.

**Note:** The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a.  > LOGUTIL;STOP
   b.  > DELDEVICE <device>
       where <device> is where logs are to be routed.
   c.  > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d.  > START
       *This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.*
   e.  > LEAVE
Procedure 5
Release JAM SNODE

UNJAM the processors in preparation for the CC switch of activity (SWACT).

1  Site and App/INACT  Verify the inactive side is flashing A1.

2  Site/INACT  From the inactive RTIF enter:

   RTIF> \RELEASE JAM
Procedure 6
Perform TST <MS#> VIAMATE

CAUTION
This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.
Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the RESTARTSWACT or RESTARTSWCT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

1 App/ACT QUERYMS to verify the Message Switch loads. Complete this step only if either MS load version does not match the BCS level of the inactive CM.
   > MAPCI;MTC;MS
   > QUERYMS
   If MS loads are not identical, ensure the MS with the incompatible load is ManB, then continue.
   > MATELINK BSY (if not done, mate side will restart when matelink RTS’d)
   > TST <MS#> VIAMATE (on the ManB MS)
   Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
Do not proceed unless NO faults are reported.
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.
Procedure 7
Establish mate communication SNODE

1  App/ACT Establish communication with the mate (inactive) side.

   Note: STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.

   a. > BCSUPDATE; SWACTCI; STATUSCHECK {for BCS33 and higher}
   > BCSUPDATE; SWCT; STATUSCHECK {for BCS31 or BCS32}
   > SWCT; STATUSCHECK {for BCS30 and lower}

   b. Ensure the STATUSCHECK passes (with both sides matching).
   *If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*
Procedure 8
SWACT

Refer to "CC Warm SWACT Summary" in Appendix A for a description of the CC warm SWACT process. Also refer to Appendix B for a procedure for testing call survivability over a CC warm SWACT and to Appendix C for sample test call scripts.

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

1 App/ACT Wait a minimum of 10 minutes after the completion (flashing A1) of the last RESTART on the inactive side before entering the appropriate switch of activity (SWACT) command (below).

CAUTION
FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a controlled SWACT.
Remember, a STATU'SCHECK or MATELINK RTS FORCE can each cause a mate restart.

CAUTION
After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order to recover successfully. Recovery is indicated with a SWCT 101 log.

2 App/ACT INTERNATIONAL offices switch CC activity (SWACT) as follows. All others go to step 3.

Note: This step is valid if the NTX470AA (International Common Basic) package is built into the load.

> INTLSWCT;DATE;RESTARTSWCT (only for INTL offices)

-continued-
3  **App/ACT**  All other offices switch CC activity (SWACT) with CC warm SWACT as follows.

   a.  For BCS36 and higher type:

      > BCSUPDATE;SWACTCI;QUERYSWACT
      System prompt will tell you which SWACT command to use, either NORESTARTSWACT or RESTARTSWACT:

      > DATE;NORESTARTSWACT
      Respond (yes/no) to system prompt using lower-case.

      or else,

      > DATE;RESTARTSWACT

   b.  For BCS35 and lower type:

      > BCSUPDATE;SWACTCI;DATE;RESTARTSWACT  *(for BCS33-BCS35)*
      > BCSUPDATE;SWCT;DATE;RESTARTSWCT  *(for BCS31 or BCS32)*
      > SWCT;DATE;RESTARTSWCT  *(for BCS30 and lower)*

      System response varies with the BCS level, but the following prompt is a typical example.

      ACTIVE DEFAULT SETTINGS:
      FORCESWACT set ON
      LOADEXECs set ON
      NOMATCH set OFF
      Do you wish to continue?
      Please confirm ("YES" or "NO"):
      ...Starting Warm SWACT now.

4  **Site/ACT**  Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

---

**CAUTION**

Work quickly to complete the procedures to follow. The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 9
Start POSTSWACT

CAUTION
After a CC warm SWACT do not JAM the inactive CPU RTIF.
The system requires the JAM status to be clear on both CPUs in order
to recover successfully. Recovery is indicated with a SWCT 101 log.

App/ACT Login, check the date and time, and start POSTSWACT.
1 Type:
    <break>

2 ?LOGIN
   Enter username and password
   {system response}
   > <username> <password>
   or > <username>
   > <password>

3 > DATE
   Verify the date and time are correct.

4 Reestablish recording onto devices (console session) as required.

5 > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 10
SYSBSY Message Switch

1  **App/ACT**  If a Message Switch is SYSBSY, make it ManB.
   a.  > MAPCI;MTC;MS
   b.  > BSY <MS#>  \{for the sysbsy MS\}
   c.  > QUIT MAPCI
Procedure 11
Recover billing

Site and App/ACT POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  \(\text{note which volume is ACTIVE}\)

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a. If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b. > MOUNT \(<x>\) FORMAT \(<\text{stdby}\_\text{volume}>\)
      where \(<x>\) is the standby device number, and \(<\text{stdby}\_\text{volume}>\) is the name of the standby volume.

      Example: MOUNT 3 FORMAT DPPAMA
   c. Enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)"
      then enter:
      > ERASTAPE \(<x>\)
      where \(<x>\) is the standby device number.

      \textbf{Note:} On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
      \textit{System response is:}
      
      \textbf{***WARNING, THIS TAPE WILL BE ERASED***}

\begin{center}
\begin{tabular}{|l|}
\hline
\textbf{CAUTION} \\
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape. \\
If a mistake is made, a real tape may be erased. \\
\hline
\end{tabular}
\end{center}

Enter YES to confirm the command.

-continued-
Procedure 11
Recover billing (continued)

d. > DEMOUNT T<x>

e. If ERASTAPE command was used, repeat substeps b and d to rename
   the volume.

f. Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

a. > MNT subsystem>x {still in DIRP level}
   Example: MNT AMA 3
   Enter YES to confirm the command.

b. > QUERY AMA {to confirm standby volume is available}

c. Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)
   * If SMDR recording is on BMC and NO standby volume is available, then
     mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and
     back IN. Remove the tape volume after this is done.

   Note: Since some SMDR recording applications on BMC collect SMDR
   records based on the customer group ID only, this ensures that any changes
   to the customer group IDs are passed to the BMC upon rotate (and the
   RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

a. For BCS31 and lower:
   In table DIRPSSYS position on a DIRP subsystem requiring a parallel
   volume. Activate the parallel volume by datafilling the volume name.
   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b. For BCS32 and higher:
   In table DIRPSSYS position on a DIRP subsystem requiring a parallel
   volume. Note the PARLPOOL name for the DIRP subsystem selected.
   Example:
   TABLE DIRPSSYS;POS AMA
   In table DIRPPOOL position on the parallel pool number associated
   with the PARLPOOL from table DIRPSSYS. Then activate the parallel
   volume by datafilling the volume name.

-continued-
Procedure 11
Recover billing (continued)

Examples:
TABLE DIRPPOOL; POS 62 \textit{(pool for AMAPOOL)}
CHA VOLUME23 T4
\textit{or} CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 12
Display DPP settings

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the `PRESWACT DIRP and billing` procedure.

1. `> MAPCI NODISP;MTC;IOD;DPP AMA`

2. `> COLLPSW`
   *Note:* If different, perform steps 3 and 4; otherwise go to step 5.

3. `> COLLPSW 1 <4_digits> <6_digits>`

4. `> COLLPSW 2 <4_digits> <6_digits>`

5. `> AMATPSW`
   *Note:* If different, perform step 6; otherwise, go to step 7.

6. `> AMATPSW <4_digits> <6_digits>`

7. `> AMAHRS`
   *Note:* If different, perform step 8; otherwise, go to step 9.

8. `> AMAHRS <start_hour> <end_hour>`

9. `> VALPARM INVALID`
   *Note:* If different, perform step 10; otherwise, go to step 11.

10. `> VALPARM INVALID <threshold>`

11. `> ERRMAP ACT`
    *Note:* If different, perform steps 12 and 13.

12. `> ERRMAP <alarm_no> <type> <level>`

13. Repeat step 12 for each alarm that is different.
Procedure 13
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)

where <x> is the number of INI trunks in the posted set.
Procedure 14
Restart inactive POST SNODE

Prepare the inactive side for a revert to the old BCS load.

*Note:* A restart on the inactive side is done at this time in order to save time in the event that a revert to the old load should become necessary.

1. **Site/INACT** From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR TESTING TO COMPLETE.

2. **Site/INACT** From the inactive RTIF perform a restart reload on the inactive side.
   
   RTIF> \RESTART RELOAD
   
   RTIF> YES *(for confirmation)*

3. **Site/INACT** Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

4. **App/INACT** Confirm that the inactive processor is flashing A1.
Procedure 15
DRTIME statistics

1. **App/ACT** Get a hardcopy of DRTIME statistics (if needed).

   > DRTIME PRINT
   
   *DRTIME provides statistics on the BCS application. If requested, the information should be forwarded to the appropriate Northern Telecom department.*
Procedure 16
Do Test Calls

1  Site/ACT  Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.

CAUTION
If an abort becomes necessary due to critical test failures, revert to the old load using the Revert to the old load procedure; otherwise, continue.

Note: Verify AMAB logs in conjunction with certain AMA test calls.
Procedure 17
After testing is complete SYNC SNODE

1 App/ACT POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. After SITE accepts the current load, then put the processors in sync as follows.

**Note:** Do not enter POSTSWACT again until the processors are in sync.

a. > MAPCI;MTC;CM;SYNC
   > YES {for confirmation}

b. > QUIT MAPCI

c. > POSTSWACT {still in BCSUPDATE}
**Procedure 18**  
**POST_MS_CHECK failure**  

**ACT**  
POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) *Only if you see this message,* load the MS reported to have an incompatible load with the compatible MS load as follows.

1. > DISKUT  
   > LF S00D<volume>  
     where <volume> is the SLM disk volume with the correct _MS load file.

2. > MAPCI;MTC;MS

3. > LOADMS <MS#> <filename>  
   where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.  
   > YES  
     {for confirmation}

4. > TST <MS#>  
   {not VIAMATE}  
   Ensure the test passes with no faults.

5. > RTS <MS#>  
   {not OOBAND!}

6. > QUIT MAPCI
Procedure 19
Finish POSTSWACT

1  App/ACT  If necessary run POSTSWACT one more time to completion.
   > BCSUPDATE; POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and
   flag them as completed when they pass. If failures occur, follow given
   instructions to correct the problem, then continue POSTSWACT.

2  Site and App/ACT  Copy any new MS patches in store file to the PM loads
   disk volume (or SLM disk).

3  App/ACT  Clean up SFDEV by erasing any application-related files (for
   example: DRNOW, FEATDATA, and all patches).

4  Site/ACT  Passwords for ADMIN and OPERATOR may have changed. For
   security Telco should change these passwords back to the original.

5  Site/ACT  Re-input any data changes made prior to the software update but
   not captured on journal file.

6  Site/ACT  Reassign all current PROFILE information (LOGIN or RESTART)
   in SFDEV.

7  Site/ACT  Reassign any temporary log ROUTING setup via LOGUTIL.

8  Site/ACT  Reassign any changes in the INTEG level of the MAP (for
   example, UPTH, BUFFSEL, FILTER and others).

9  Site/ACT  Return PORTS and USER information back to original values.

10 Site/ACT  Notify DNC end users to LOGIN the DNC.
Procedure 20
Take image SNODE

1 Site/ACT DUMP AN IMAGE of the new BCS load for backup-one
SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape
cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option
back to 'ON' if desired. The option was set to "OFF" during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is
design intent. This was done to prevent setting the system recovery route to
the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 21  
Start journal file

1 Site/ACT If equipped, start journal file and verify started.
   a. > JF START
   b. > MAPCI;MTC;IOD;DIRP
   c. > QUERY JF ALL
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d. > QUIT ALL
This page purposely left blank.
Revert to old load procedure
This section details steps required to revert to the old BCS load.

Perform the following procedure if a controlled REVERT is required after the CC switch of activity (SWACT).

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

Procedure 1
Before REVERT

1  Site  Do not proceed until both the Telco and NT on-line support agree.

2  Site  Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive SNODE 2

CAUTION
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 Site/INACT Perform a restart reload on the inactive processor (old BCS load).
   a. From the CM MAP level, ensure the inactive processor is not under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
   b. From the inactive RTIF perform a restart reload on the inactive processor (old load).

       RTIF> \RESTART RELOAD
       RTIF> YES {for confirmation}

   c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 App/INACT Confirm that the inactive processor is flashing A1.
Procedure 3
Establish mate communication SNODE

1. **App/ACT** Establish communication with the mate (inactive) side.
   
a. > BCSUPDATE;SWACTCI;STATUSCHECK  \{for BCS33 and higher\}
   > BCSUPDATE;SWCT;STATUSCHECK  \{for BCS31 or BCS32\}
   > SWCT;STATUSCHECK  \{for BCS30 and lower\}

b. Ensure the STATUSCHECK passes (with both sides matching).
   *If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline. Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.*

   **Note:** STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF). If the inactive side does restart, it should initialize and come back to a flashing A1.
Procedure 4
Login inactive

1  **App/INACT**  Verify a flashing A1 on the inactive processor.

2  Login on the mate side as follows.
   a.  **ACT**
       > MATEIO
       > MATELOG <device>
       where <device> is the name of the terminal labeled INACT.
   b.  **INACT**
       Enter username and password
       Mate> OPERATOR OPERATOR
       (mate-side response)
       or  Enter username
       Mate> OPERATOR
       Enter password
       Mate> OPERATOR
Procedure 5  
TRACECI close

1  **App/INACT** If old load (inactive side) is BCS34 or lower, then close out the old active MOVEBCS/TABXFR message file.

    Mate> TRACECI CLOSE  
    *(for BCS34 and lower)*
Procedure 6
Configure DIRP billing

1 Site/App  Configure the DIRP billing subsystems for revert SWACT to the old load.

Note: For details for completing the following refer to "PRESWACT DIRP and billing" procedure.

a. ACT  Take down billing tapes and format new standby volumes in DIRP. Leave these demounted, they will become the active volumes after SWACT.

Disk volumes will rotate and recover automatically after SWACT.

Parallel volumes on tape (or DPP/BMC) can be recovered manually after SWACT.

b. INACT  If reverting to BCS31 or higher:

Ensure datafill is correct on the mate side for tables DIRPPPOOL or DIRPSSYS.

c. INACT  If DIRP_REC file is present in mate SFDEV, ensure each entry in DIRP_REC is correct for the revert SWACT.

Note: In DIRP_REC the parallel volume assignments for DIRPPPOOL should be set to nil ($) for all pools.
Procedure 7
Start logs

1   **App/ACT**  Set up LOGS for the SWACT.

   **Note:** The purpose of this step is to turn on logs at the terminal designated as the "ACT" device. Normally, logs will have been routed also to a printer at the start of the session.

   a.   > LOGUTIL; STOP
   b.   > DELDEVICE <device>
        *where* <device> *is where logs are to be routed.*
   c.   > ADDREP <device> SWCT  {also add SWNR if on BCS30 and lower}
   d.   > START
        *This starts logs on "this" device. If a different terminal device was selected above, then use >STARTDEV <device>.*
   e.   > LEAVE
Procedure 8
Ensure inactive unjammed

1 Site and App/INACT  Ensure inactive side is unjammed.
Procedure 9
Perform TST <MS#> VIAMATE for Revert

CAUTION
This procedure, if applicable, must be completed successfully within 15 minutes of the SWACT.
Failure to execute a fault-free TST <MS#> VIAMATE may result in PM clocking faults after the SWACT and possibly eventual failure of PMs (i.e., SYSB PMs).

Note: When the ABORTSWACT command is entered, if more than 15 minutes has passed since completing TST <MS#> VIAMATE you will be instructed to repeat the TST <MS#> VIAMATE command.

1 \textbf{App/ACT} Test the ManB Message Switch to ensure the MS clocks are in sync. \textbf{Complete this step only if one MS load is incompatible with the BCS level of the inactive CM (for example, when reverting to BCS33 or lower)}.

\texttt{MAPCI;MTG;MS} \textit{Ensure that the MS corresponding to the inactive CPU is ManB.}

\texttt{MATELINK BSY} \textit{(If not done, mate side will restart when matelink RTS’d)}

\texttt{TST <MS#> VIAMATE} \textit{(on the ManB MS)}
Wait for the test to pass before continuing. Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.

CAUTION
\textbf{Do not proceed unless NO faults are reported.}
Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.
Procedure 10  
Establish mate communication SNODE

1  App/ACT  Establish communication with the mate (inactive ) side.  
   Note: STATUSCHECK may cause a restart on the inactive side (watch the inactive RTIF).  If the inactive side does restart, it should initialize and come back to a flashing A1.  

   a.  > BCSUPDATE;SWACTCI;STATUSCHECK  {for BCS33 and higher}  
       > BCSUPDATE;SWCT;STATUSCHECK  {for BCS31 or BCS32}  
       > SWCT;STATUSCHECK  {for BCS30 and lower}  

   b.  Ensure the STATUSCHECK passes (with both sides matching).  
      If STATUSCHECK fails, investigate and correct any mismatches and any devices not okay or offline.  Once all problems have been corrected, rerun STATUSCHECK and ensure it passes.
Procedure 11
Revert

1  **App/ACT**  Wait a MINIMUM of 10 minutes after the COMPLETION (flashing A1) of the last restart on the inactive side before entering the ABORT-SWACT, ABORTSWCT, or RESTARTSWCT command.

**CAUTION**

FAILURE TO WAIT AT LEAST 10 MINUTES may result in the office doing a restart reload instead of a CC warmSWACT. Remember, a STATUSCHECK or MATELINK RTS FORCE can each cause a mate restart.

2  **App/ACT**  INTERNATIONAL offices switch CC activity (SWACT) as follows.

   *Note:* This step is valid if the NTX470AA (International Common Basic) package is built into the load.

   > INTLSWCT;DATE;RESTARTSWCT  

   *only for INTL offices*

3  **App/ACT**  ALL OTHER offices switch CC activity (SWACT) with CC warm-SWACT as follows.

   **CAUTION**

   If a SWACT application module exists on the new, active side, but is missing from the old, inactive side, the revert SWACT may fail.

   If reverting to BCS32 and higher, any SWACT applications missing from the inactive side will automatically be overridden.

   If reverting to BCS31 and lower, SWACT will fail for any SWACT applications missing from the inactive side. In this case, any SWACT application missing from the inactive side must be *unloaded from the active side* in order for the revert-back to succeed. If you are unloading a module in a load prior to BCS30, use the SWCTCHK command before performing the revert-back.

   -continued-
Procedure 11
REVERT (continued)

> BCSUPDATE;SWACTCI;DATE;ABORTSWACT {for BCS33 and higher}

**CAUTION**
In BCS34 and higher the ABORTSWACT command has an option called NOCHECK which will allow the CC warm SWACT to continue even if there are bad devices on the active side (such as a CBSY LTC).
Use the NOCHECK option *only* as a last resort and with special care taken to ensure office integrity.

> BCSUPDATE;SWCT;DATE;ABORTSWCT {for BCS31 or BCS32}
> SWCT;DATE;RESTARTSWCT {for BCS30 and lower}

*System response varies with the BCS level, but the following prompt is a typical example.*

ACTIVE DEFAULT SETTINGS:
FORCESWACT set ON
LOADEXECs set ON
NOMATCH set OFF
Do you wish to continue?
Please confirm ("YES" or "NO"):
...Starting Warm SWACT now.

4 Site/ACT Monitor the SWACT, and tell the software delivery engineer when the active processor is again flashing A1.

**CAUTION**
Work quickly to complete the procedures to follow.
The POSTSWACT steps will verify that the office is functioning normally with the new software load.
Procedure 12
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password   (system response)
   > <username> <password>
   or > <username>
       > <password>

3  > DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  > BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   >POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 13
SYSBSY Message Switch

1 **App/ACT** If a Message Switch is SYSBSY, make it ManB.
   a. \( > \) MAPCI;MTC;MS
   b. \( > \) BSY <MS#> \( \{ \text{for the sysbsy MS} \} \)
   c. \( > \) QUIT MAPCI
Procedure 14
Recover billing

Site and App/ACT  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
    > QUERY AMA ALL  (note which volume is ACTIVE)

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT <x> FORMAT <stdby_volume>
       where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
       Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is:
       "request aborted. Tape not expired (use ERASTAPE)"
       then enter:
       > ERASTAPE <x>
       where <x> is the standby device number.

       Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
       System response is:
       ***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.

-continued-
Procedure 14
Recover billing (continued)

d. > DEMOUNT T<x>

e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f. Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

a. > MNT <subsystem> <x> {still in DIRP level}

   Example: MNT AMA 3

   Enter YES to confirm the command.

b. > QUERY AMA {to confirm standby volume is available}

c. Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP.
   (This will ensure the RECORD HEADER is correct.)

   * If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

   Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

a. For BCS31 and lower:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

   Example:
   TABLE DIRPSSYS;POS AMA
   CHA PARVOL T4
   or CHA PARVOL D010PAMA

b. For BCS32 and higher:

   In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

   Example:
   TABLE DIRPSSYS;POS AMA

   In table DIRPPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.
   -continued-
Procedure 14
Recover billing (continued)

Examples:
TABLE DIRPPOOL;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 15
Display DPP settings

**App/ACT** Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the *PRESWACT DIRP and billing* procedure.

1. `> MAPCI NODISP;MTC;IOD;DPP AMA`

2. `> COLLPSW`
   
   *Note:* If different, perform steps 3 and 4; otherwise go to step 5.

3. `> COLLPSW 1 <4_digits> <6_digits>`

4. `> COLLPSW 2 <4_digits> <6_digits>`

5. `> AMATPSW`
   
   *Note:* If different, perform step 6; otherwise, go to step 7.

6. `> AMATPSW <4_digits> <6_digits>`

7. `> AMAHRS`
   
   *Note:* If different, perform step 8; otherwise, go to step 9.

8. `> AMAHRS <start_hour> <end_hour>`

9. `> VALPARM INVALID`
   
   *Note:* If different, perform step 10; otherwise, go to step 11.

10. `> VALPARM INVALID <threshold>`

11. `> ERRMAP ACT`
    
    *Note:* If different, perform steps 12 and 13.

12. `> ERRMAP <alarm_no> <type> <level>`

13. Repeat step 12 for each alarm that is different.
Procedure 16
INI trunks

App/ACT If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)

   where <x> is the number of INI trunks in the posted set.
Procedure 17
Do Test Calls

1  Site/ACT  Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 18
After testing is complete SYNC SNODE

1  **App/ACT**  POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

   **Note:** Do not enter POSTSWACT again until the processors are in sync.

a.  > MAPCI;MTC;CM;SYNC  
    > YES  
    {for confirmation}

b.  > QUIT MAPCI  

   c.  > POSTSWACT  
    {still in BCSUPDATE}
Procedure 19
POST_MS_CHECK failure

App/ACT  POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) Only if you see this message, load the MS reported to have an incompatible load with the compatible MS load as follows.

1  > DISKUT
   > LF S0OD<volume>                          {or S01D <volume>}
   where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>
   where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.
   > YES                                  {for confirmation}

4  > TST <MS#>                                {not VIAMATE}
   Ensure the test passes with no faults.

5  > RTS <MS#>                                {not OOBAND!}

6  > QUIT MAPCI
Procedure 20  
Finish POSTSWACT

1. **App/ACT** If necessary run POSTSWACT one more time to completion. 
   > BCSUPDATE; POSTSWACT 
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2. **Site and App/ACT** Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3. **App/ACT** Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4. **Site/ACT** Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5. **Site/ACT** Re-input any data changes made prior to the software update but not captured on journal file.

6. **Site/ACT** Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7. **Site/ACT** Reassign any temporary log ROUTING setup via LOGUTIL.

8. **Site/ACT** Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9. **Site/ACT** Return PORTS and USER information back to original values.

10. **Site/ACT** Notify DNC end users to LOGIN the DNC.
Procedure 21
Take image SNODE

1 Site/ACT DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2 After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 22  
Start journal file

1 Site/ACT  If equipped, start journal file and verify started.
   a.  > JF START  
   b.  > MAPCI;MTC;IOD;DIRP  
   c.  > QUERY JF ALL  
      QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."  
   d.  > QUIT ALL
Procedure 23
More Revert/ABORT steps

1  Site and App/INACT  If asked to do so by technical support take an image of the inactive (mate) side load.

2  Site and App/ACT  With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3  Site and App  Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4  App/ACT  On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a.  If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   b.  If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
Emergency abort procedure

**CAUTION**
Perform the following steps only if a decision has been reached to activate the old load without regard to preserving stable call processing.

Remember, the CPU with the new BCS load is now active. You will be going back to the old BCS load which is now inactive.

**Procedure 1**
**Before EABORT**

1. **Site** Do not proceed until both the Telco and NT on-line support agree.

2. **Site** Contact high profile customers and customers with essential services (that is, police and emergency bureaus, hospitals, and radio stations) to verify they are not in emergency call processing mode.
Procedure 2
Restart inactive SNODE 2

**CAUTION**
Do NOT perform step 1 (below) if a restart reload on the inactive side was already done and the inactive processor is flashing A1.

1 **Site/INACT** Perform a restart reload on the inactive processor (old BCS load).
   
   a. From the CM MAP level, ensure the inactive processor is *not* under test (ut). If it is, WAIT FOR THE TESTING TO COMPLETE.
   
   b. From the inactive RTIF perform a restart reload on the inactive processor (old load).
      
      ```
      RTIF> \RESTART RELOAD
      RTIF> YES
      ```
      
      *for confirmation*
   
   c. Allow initialization on the inactive side. Inform the Applicator when the inactive processor is flashing A1.

2 **App/INACT** Confirm that the inactive processor is flashing A1.
Procedure 3
Ensure inactive unjammed

1 Site and App/INACT Ensure inactive side is unjammed.
Procedure 4
Cold SWACT SNODE

1 Site/ACT JAM active side to force a switch of activity (cold swact).
   RTIF> \OVERRIDE
   RTIF> \JAM
   RTIF> YES {for confirmation}

2 Site/ACT Monitor the SWACT, and tell the software delivery engineer when
the active processor is again flashing A1. 
   At this point the CC switch of activity is over.

3 Site and App/ACT Work quickly to complete the next procedure. The
POSTSWACT procedure (to follow) checks that the office is functioning as
normal.
   Note: Be sure to notify appropriate levels of support of the ABORT before
putting the switch back in SYNC.
Procedure 5
Start POSTSWACT

App/ACT  Login, check the date and time, and start POSTSWACT.

1  Type:
   <break>

2  ?LOGIN
   Enter username and password  \{system response\}
   \> <username> <password>
   or \> <username>
   \> <password>

3  \> DATE
   Verify the date and time are correct.

4  Reestablish recording onto devices (console session) as required.

5  \> BCSUPDATE;POSTSWACT
   POSTSWACT runs all steps required after the CC switch of activity and flags
   them as complete when they pass. If any error occurs, POSTSWACT will
   stop and give instructions. If this is the case, follow POSTSWACT
   instructions to correct the problem, and run POSTSWACT again (type
   \>POSTSWACT) to continue.
   If no problems are encountered, POSTSWACT stops after BEGIN_TESTING
   and waits until the site verifies the sanity of the current load.
Procedure 6
SYSBSY Message Switch

1 App/ACT If a Message Switch is SYSBSY, make it ManB.
   a. > MAPCI;MTC;MS
   b. > BSY <MS#> \{(for the sysbsy MS)\}
   c. > QUIT MAPCI
Procedure 7
Recover billing

Site and App/ACT  POSTSWACT recovers PRIMARY (regular) billing subsystems (such as AMA SMDR OCC CDR). Confirm that affected DIRP subsystems were successfully activated. If billing is on tape (MTD) or DPP/BMC, manually assign the STANDBY volumes. Then site may manually bring up PARALLEL subsystem as required.

1  > MAPCI;MTC;IOD;DIRP
   > QUERY AMA ALL  \{note which volume is ACTIVE\}

2  If DPP or BMC, call downstream processing to POLL billing data. (Polling is optional. It may also be done after test calls are completed.)

3  TAPEX volumes must be manually remounted using the DIRP MNT command.

4  Assign standby billing devices for TAPE and DPP/BMC.
   a.  If tape (MTD), take down the STANDBY tape and put up a fresh tape to be used as the new standby volume.
   b.  > MOUNT <x> FORMAT <stdby_volume>
        where <x> is the standby device number, and <stdby_volume> is the name of the standby volume.
        Example: MOUNT 3 FORMAT DPPAMA
   c.  Enter the first filename, or if system response is: "request aborted. Tape not expired (use ERASTAPE)"
        then enter:
        > ERASTAPE <x>
        where <x> is the standby device number.
        Note: On a DPP/BMC it is safe to use the ERASTAPE command, since this does NOT actually erase any billing files. The command will not affect the collected data; it only resets DMS indicators.
        System response is:
        ***WARNING, THIS TAPE WILL BE ERASED***

CAUTION
At this point again confirm the device is a port to a DPP or BMC, and NOT an unexpired billing tape.
If a mistake is made, a real tape may be erased.

Enter YES to confirm the command.
-continued-
Procedure 7
Recover billing (continued)

d. > DEMOUNT T<x>

e. If ERASTAPE command was used, repeat substeps b and d to rename the volume.

f. Repeat this entire step for each standby billing subsystem.

5 Activate standby devices.

a. > MNT <subsystem> <x> {still in DIRP level}

Example: MNT AMA 3

Enter YES to confirm the command.

b. > QUERY AMA {to confirm standby volume is available}

c. Repeat this step for each billing subsystem.

6 If using SMDR rotate the SMDR volume from the DIRP level of the MAP. (This will ensure the RECORD HEADER is correct.)

* If SMDR recording is on BMC and NO standby volume is available, then mount a temporary STDBY TAPE volume. Rotate the BMC port OUT and back IN. Remove the tape volume after this is done.

Note: Since some SMDR recording applications on BMC collect SMDR records based on the customer group ID only, this ensures that any changes to the customer group IDs are passed to the BMC upon rotate (and the RECORD HEADER is correct).

7 Bring up parallel devices (as required) using the preformatted volumes.

a. For BCS31 and lower:

In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Activate the parallel volume by datafilling the volume name.

Example:
TABLE DIRPSSYS;POS AMA
CHA PARVOL T4
or CHA PARVOL D010PAMA

b. For BCS32 and higher:

In table DIRPSSYS position on a DIRP subsystem requiring a parallel volume. Note the PARLPOOL name for the DIRP subsystem selected.

Example:
TABLE DIRPSSYS;POS AMA

In table DIRPPOOL position on the parallel pool number associated with the PARLPOOL from table DIRPSSYS. Then activate the parallel volume by datafilling the volume name.

-continued-
Procedure 7
Recover billing (continued)

Examples:
TABLE DIRFPOOL;POS 62 (pool for AMAPOOL)
CHA VOLUME23 T4
or CHA VOLUME23 D010PAMA

c. Repeat substep a or b for each parallel volume to be activated.
d. > QUIT MAPCI

8 Ensure all regular and parallel devices are working for all available billing subsystems in DIRP.
Procedure 8
Display DPP settings

App/ACT  Perform this procedure only if there are problems with DPP billing. Display current DPP settings to hardcopy and compare with the data obtained during the PRESWACT DIRP and billing procedure.

1  > MAPCI NODISP;MTC;IOD;DPP AMA

2  > COLLPSW

   Note: If different, perform steps 3 and 4; otherwise go to step 5.

3  > COLLPSW 1 <4_digits> <6_digits>

4  > COLLPSW 2 <4_digits> <6_digits>

5  > AMATPSW

   Note: If different, perform step 6; otherwise, go to step 7.

6  > AMATPSW <4_digits> <6_digits>

7  > AMAHRS

   Note: If different, perform step 8; otherwise, go to step 9.

8  > AMAHRS <start_hour> <end_hour>

9  > VALPARM INVALID

   Note: If different, perform step 10; otherwise, go to step 11.

10 > VALPARM INVALID <threshold>

11 > ERRMAP ACT

   Note: If different, perform steps 12 and 13.

12 > ERRMAP <alarm_no> <type> <level>

13 Repeat step 12 for each alarm that is different.
Procedure 9
INI trunks

App/ACT  If on BCS31 and lower: to ensure INI trunks are returned to the correct state after SWACT, post all INI trunks, perform a force release, and return each to service as follows.

1  > MAPCI;MTC;TRKS;TP

2  > POST A INI

3  > REPEAT <x> (FRLS;RTS;NEXT)
   where <x> is the number of INI trunks in the posted set.
Procedure 10
Do Test Calls

1 Site/ACT Perform TEST CALLS that were identified ahead-of-time from Appendix C: Test Call Scripts.
Procedure 11  
After testing is complete SYNC SNODE

1  App/ACT POSTSWACT will STOP at step BEGIN_TESTING to allow site to complete testing. *After SITE accepts the current load*, then put the processors in sync as follows.

*Note:* Do not enter POSTSWACT again until the processors are in sync.

a.  > MAPCI;/MTC;/CM;/SYNC
    > YES  
    *(for confirmation)*

b.  > QUIT MAPCI

c.  > POSTSWACT  
    *(still in BCSUPDATE)*
Procedure 12
POST_MS_CHECK failure

App/ACT  POSTSWACT may STOP with the message "Failed POST_MS_CHECK for active CM load: #." (Both MS loads will be displayed.) Only if you see this message, load the MS reported to have an incompatible load with the compatible MS load as follows.

1  > DISKUT
   > LF S00D<volume>  
   > {or S01D <volume>} 
   where <volume> is the SLM disk volume with the correct _MS load file.

2  > MAPCI;MTC;MS

3  > LOADMS <MS#> <filename>  
   where <MS#> is the MS to be loaded, and <filename> is the name of the _MS load file listed above in step 1.  
   > YES  
   {for confirmation}

4  > TST <MS#>  
   {not VIAMATE}  
   Ensure the test passes with no faults.

5  > RTS <MS#>  
   {not OOBAND!}

6  > QUIT MAPCI
Procedure 13
Finish POSTSWACT

1 App/ACT If necessary run POSTSWACT one more time to completion.
   > BCSUPDATE; POSTSWACT
   At this point BCSUPDATE will run any remaining POSTSWACT steps and flag them as completed when they pass. If failures occur, follow given instructions to correct the problem, then continue POSTSWACT.

2 Site and App/ACT Copy any new MS patches in store file to the PM loads disk volume (or SLM disk).

3 App/ACT Clean up SFDEV by erasing any application-related files (for example: DRNOW, FEATDATA, and all patches).

4 Site/ACT Passwords for ADMIN and OPERATOR may have changed. For security Telco should change these passwords back to the original.

5 Site/ACT Re-input any data changes made prior to the software update but not captured on journal file.

6 Site/ACT Reassign all current PROFILE information (LOGIN or RESTART) in SFDEV.

7 Site/ACT Reassign any temporary log ROUTING setup via LOGUTIL.

8 Site/ACT Reassign any changes in the INTEG level of the MAP (for example, UPTH, BUFFSEL, FILTER and others).

9 Site/ACT Return PORTS and USER information back to original values.

10 Site/ACT Notify DNC end users to LOGIN the DNC.
Procedure 14
Take image SNODE

1  Site/ACT  DUMP AN IMAGE of the new BCS load for backup-one SuperNode image to SLM disk 1 (or to tape) and backup image to SLM tape cartridge.

2  After the image is completed, you may set the AUTODUMP 'RETAIN' option back to 'ON' if desired. The option was set to "OFF" during the ONP.

Note: Setting the AUTODUMP 'RETAIN' option to 'OFF' during the ONP is design intent. This was done to prevent setting the system recovery route to the 'OLD' BCS image that was taken prior to the BCS update.
Procedure 15
Start journal file

1  Site/ACT  If equipped, start journal file and verify started.
   a.  > JF START
   b.  > MAPCI;MTC;IOD;DIRP
   c.  > QUERY JF ALL
       QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL."
   d.  > QUIT ALL
Procedure 16
More Revert/ABORT steps

1 Site and App/INACT If asked to do so by technical support take an image of the inactive (mate) side load.

2 Site and App/ACT With journal file running, initiate a DATA FREEZE period enforcing JF data modification restrictions until the beginning of the rescheduled software update.

3 Site and App Following an ABORT, rescheduling of the software update must be negotiated. Refer to Procedure for rescheduling aborted applications.

4 App/ACT On the ACTIVE side perform the following steps to restore the active side to its original configuration.
   a. If old load is BCS35 and higher:
      > BCSUPDATE;ABORT_PRESWACT
      > TABXFR;CANCEL
      > QUIT ALL
   b. If old load is BCS34 and lower:
      > BCSUPDATE;RESET
      > QUIT ALL
Appendix A: Command Summaries

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Using TABAUDIT

Checking tables for data inconsistencies prior to a software delivery is necessary to ensure that all tables are free of data problems and each table has valid data. This is accomplished by running TABAUDIT. This feature provides the ability to verify table data integrity on a DMS switch. The Table Auditor will be initialized and run by using the TABAUDIT CI command. TABAUDIT will be run with the DMS switch in sync. TABAUDIT will only allow one session to be active at any one time.

This BCS34 feature replaces the existing data verification tool, CHECKTAB. TABAUDIT, like CHECKTAB, will be used to identify data inconsistencies in the tables in the DMS switch. The checker will run with the switch in sync as a CI process.

CAUTION
Review Software Delivery Bulletins and all current Warning Bulletins concerning TABAUDIT before using it.

How TABAUDIT operates

TABAUDIT will verify DMS tables by performing a series of checks on the tables and on the data in the tables. Following is a list of the types of checks that will be performed on each table:

- Generic table checks,
- Syntax checks,
- Table specific checks, including routing checks

The generic table integrity checks consist of verifying that each table has a top and a bottom and that no tuples exist beyond these boundaries. Tables are also checked to ensure that no infinite tuple loops exist.

Syntax checks are done on a per tuple basis. Each field in a tuple is checked against its data dictionary definition in order to ensure data validity. These checks are modified to use the logical tuple definition and not the custflds representation.

The routing checks are only performed on tuples that reference routing tables. This type of check verifies the tuple being referenced in the routing tables.

Table specific checks are done on a per tuple basis. This type of check verifies the tuple’s data for valid data options, and is implemented via verify procedures in table control software.
TABAUDIT help

> HELP TABAUDIT
TABAUDIT Command

------------
The TABAUDIT options are:

ONLY  - Checks a single table. The output can be redirected to a specific device and filename.

ALL   - Checks all tables listed in table DART. The output can be redirected to a specific device.

FROM  - Checks all tables following and including a given table listed in table DART. The output can be redirected to a specific device. The FROM command can also be followed by a TO option to specify where TABAUDIT should stop checking. The table following the TO option will be included in the check.

The default output device is the screen and the default filename is the table name concatenated with the string $FILE. If the ALL or FROM option is chosen, TABAUDIT creates a SUMMARY$FILE that lists the results of the tables it has checked.

The results can be sent to SFDEV, disk, or tape. The summary file will always be sent first to SFDEV and then later copied to the user specified device and not erased from SFDEV.

eg1: TABAUDIT ONLY ofcstd
eg2: TABAUDIT ONLY ofcstd sfdev temp
eg3: TABAUDIT ALL sfdev
eg4: TABAUDIT FROM ofcstd d000scratch
eg5: TABAUDIT FROM custab TO ofcstd sfdev

WARNING: Only one TABAUDIT should be running with the ALL or FROM option.

Parms: <Function> {ONLY <Table Name> STRING
[<Device Name> DEVICE name]
[<File Name> STRING],
ALL [<Device Name> DEVICE name],
FROM <Start table Name> {{(otherwise)
[<TO <End Table Name> STRING]]
[<Device Name> DEVICE name]}

TABAUDIT examples

> TABAUDIT ALL D000SCRATCH
Starting DMS Data Verification...
DATA VERIFICATION COMPLETED.

> LIST D000SCRATCH
SUMMARY$FILE
CCTR$FILE  (NOTE: This table failed the data check)

> PRINT SUMMARY$FILE
Tbl DART  : tuples checked  859,  passed 859,  failed  0.
•
•
Tbl DDU    : tuples checked    5,  passed   5,  failed  0.
•
•
Tbl CCTR   : tuples checked    15,  passed   14,  failed  1.

> PRINT CCTR$FILE
TABLE CCTR: New Table Control.
DATA IN ASSOCIATED ROUTING TABLE NOT PRESENT
---ERROR: Data does not verify.
 POSITION:  55
Completed tuple checking.
SUMMARY: Tbl CCTR: tuples checked 15, passed 14, failed 1.

**TABAUDIT enhancements**

In BCS36 features were introduced to facilitate TABAUDIT’s usage by:

- automating TABAUDIT based on a scheduled time table.
- implementing a report facility that will
  - report tables that have not been checked.
  - report the time and date of the last check performed on a table.
  - report table specific data errors including routing errors.
  - report syntax errors.
  - report generic table integrity errors such as false tops, bottoms and holes in tables.
- linking TABAUDIT and TABXFR in order to identify data issues before data move is started.
- adding a PRECHECK step that verifies that all tables in DART have been verified.

**TABAUDIT help (BCS36)**

TABAUDIT:
> HELP
The TABAUDIT increment is used to setup a standard
session of TABAUDIT.

The increment consists of the following subcommands:

INCLUDE EXCLUDE STATUS REPORT CLEAR EXECUTE
AUTO QUIT HELP INFO

From within the TABAUDIT increment type:

   HELP <subcommand>
for further help on subcommand.

Note: The AUTO subcommand is used to enter the
AUTOTABAUDIT increment.

> HELP AUTO
AUTO command
Command to enter the AUTOTABAUDIT level of TABAUDIT.
Note: Only one user may occupy this level at a time.

eg1:  AUTO

All TABAUDIT commands entered fromTo BCSUPDATEAUTOTABAUDIT.
Use the TIMEFRAME
command to schedule the verification of tables.

Automated TABAUDIT
This BCS36 feature provides an automated TABAUDIT process. Once the
initial parameters are entered, automated TABAUDIT has the ability to
check data integrity without external guidance. The results of the data checks
are maintained, and can later be displayed via a report utility.

Automated TABAUDIT does not generate reports for each table as the table
is being verified the way TABAUDIT does. Instead, all report data may be
accessed via the report utility. TABAUDIT, in addition to generating reports
as tables are verified, is altered so that such data may be accessed in the same
manner as automated TABAUDIT’s data, via the report utility.

The parameters required to initiate the automated tabaudit are entered via the
CI increment TABAUDIT. The original TABAUDIT command is moved
into the TABAUDIT command increment. A second level containing the
automated TABAUDIT commands is accessible from within the
TABAUDIT increment.
The automation of TABAUDIT via a schedule provides the user with the ability to set a time frame within which TABAUDIT should be running. The schedule that governs TABAUDIT’s execution is based on a 24 hour clock cycle. TABAUDIT activates daily to verify tables’ data integrity during a specified time frame until all data is verified. The user may also specify the date on which the TABAUDIT is to be started and stopped by the scheduler.

Automated TABAUDIT is setup from within the CI increment, TABAUDIT, which allows the user to specify tables to be verified, when the verification is to take place, the type of data integrity report\(^1\), and the report’s destination. The following lists the various functions added by this feature via the TABAUDIT increment to facilitate the use of TABAUDIT:

- Schedule the verification of a single table in DART.
- Schedule the verification of a range of tables in DART.
- Schedule the verification of all tables in DART.
- Generate a data integrity report for all tables in DART.
- Generate a data integrity report for all verified tables.
- Generate a list of tables that have not been checked by TABAUDIT.
- Generate a data integrity report for a single table.
- Display the status of the scheduler.
- Activate or deactivate the scheduler.
- Clear scheduling information.
- Have the ability to specify select tables to be included in a table range
- Have the ability to specify select tables not to be checked.

Automated TABAUDIT uses table DART for the order in which to verify tables’ data integrity. Table DART, if not previously sorted, is sorted using the dump and restore ordering in advance of any data integrity checks.

Automated TABAUDIT may be in one of two states:

- Active: The scheduler is executing TABAUDIT during specified time frames.
- Inactive: The scheduler is not executing TABAUDIT, and execution of TABAUDIT is not scheduled.

\(^1\)A data integrity report consists of the results of the three types of checks mentioned under “How TABAUDIT operates” above.
For standard tabaudit the STATUS command displays the range of tables included and excluded. The ALL option can be used to display all tables included and excluded.

The STATUS command displays the current parameters being used by the automated TABAUDIT process. The parameters that are displayed consist of: all included table ranges and their indices, the start time, the start date, the stop time, the stop date, whether or not automated TABAUDIT is currently active, and current table. If the ALL option is used, the parameters that are displayed consist of: the all included and excluded tables and their indices, the start time, the start date, the stop time, the stop date, whether or not automated TABAUDIT is currently active, and current table.

When activating TABAUDIT, the current information the TABAUDIT session is working with is displayed. The user is asked to confirm the data. If data is missing, the user is told what data is missing. If for some reason a session of tabaudit can not obtain the resources it requires, the user is notified that the tabaudit session was terminated, and for what reason.

When QUITing out of a standard tabaudit session, the user loses that session’s parameters. When QUITing out of an automated tabaudit session, the user is placed back in the standard tabaudit increment, and as long as the automated session is active, the session parameters are preserved.

All data that automated TABAUDIT captures is stored in protected store. This includes table statistics (time, date and error counts), and the keys of tuples containing errors.

Automated TABAUDIT has a couple of restrictions. Sessions of automated TABAUDIT and TABAUDIT can be running at the same time, however; only one session can be verifying a specific table at a time. Two sessions of automated TABAUDIT can not be both running at any given instant. Furthermore, once an automated tabaudit session is active, no changes can be made to the session’s parameters without first terminating the session.

**Examples:**
The following commands will enter the TABAUDIT increment at the AUTO level, set the time frame within which TABAUDIT is to execute, and specify the range of tables to verify the number of verification cycles to perform.

```
> TABAUDIT
TABAUDIT:

> AUTO
Automated Tabaudit:

This level of the Tabaudit CI is used to setup a
scheduled session of Tabaudit. The TIMEFRAME command is used to specify the time frame within which the verification of tables is to be performed.

AUTOTABAUDIT :

> TIMEFRAME 1:00 30:06:92 5:00 05:07:92
Is the following schedule correct?

Automated Tabaudit is to execute from 1:00 to 5:00 between the following dates:

Start date: 1992/06/30
Stop date: 1992/07/05

Please confirm ("YES", "Y", "NO", or "N"):
> Y

> INCLUDE FROM LTCINV TO KSETFEAT

> EXECUTE

+-------------------------------------------------------------------------+
<p>| |
|                                                                         |
|                        AUTOMATED TABAUDIT STATUS                        |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Timeframe</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Start                 Stop</td>
</tr>
<tr>
<td>Date                  Date</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1992/06/30  1992/07/05</td>
</tr>
</tbody>
</table>
+-------------------------------------------------------------------------+

Current time           : 1992/06/23  16:32:05
Automated Tabaudit     : Inactive

The following tables are INCLUDED

From table LTCINV (52)           to table KSETFEAT (420)

The following tables are EXCLUDED

From table DART (0)              to table XLIUMAP (51)
From table DNINV (421)           to table CNMDBTST (1115)
Please confirm ("YES", "Y", "NO" or "N"):
> Y

Automated Tabaudit has been activated.

**Reporting utility**
The report utility is initiated by the CI command, REPORT command in the TABAUDIT directory. This command has five options:

- CHECKED
- NOTCHECKED
- ALL
- INCLUDED
- ERRORS
- &lt;table_name&gt;

The report utility’s CHECKED function generates a list of all tables that have been checked, the time and date of the last check, as well as the number of each type of error encountered. At the end of the report, the total number of errors encountered and the amount of time TABAUDIT required to perform the checks are displayed.

The report utility’s NOTCHECKED function generates a list of all tables that have not been verified.

If the ALL function is specified, a full report of all tables in table DART is generated indicating whether the table has been checked, the table has been checked and passed verification, or the table has been checked, but an error has been encountered. The number of errors, the error types, and time and date of data verification are indicated. For every table, each failed tuple’s key is listed. The output may be directed to a specific device. In addition, at the end of the report, the total number of errors and the total amount of time TABAUDIT was executing are displayed.

The INCLUDED function generates a report of all tables in a specified includes list. The report details whether or not a table has been checked, and whether or not it passed all checks. If a check failed, the number of each type of error, time and date of the check as well as the failed tuples key are displayed. In addition, at the end of the report the total number of errors encountered in the tables in the includes list, as well as the total amount of time TABAUDIT was executing are displayed.

The ERRORS function is identical to the ALL function except reports are generated only for those tables known to have errors.
If a table name is specified, a report of that table’s data integrity is generated. The number of errors, the error types, and time and date of data verification will be indicated. The key of each tuple that failed is displayed.

**TABXFR linking**

If all data issues have not been resolved and rechecked by TABAUDIT before a data move is attempted, a warning is displayed. The types of warnings are:

- WARNING - ## tables have not been verified by TABAUDIT.
- WARNING - ## errors encountered by TABAUDIT.
- WARNING - ## tables not checked by TABAUDIT within the last 30 days.

*Note:* ## represents an integer.

Refer to the report utility to determine which tables cause the warnings above.

**PRECHECK step**

A precheck step is used to ensure that any tables that have not been checked, or any errors that have not been fixed are brought to the applicators attention. The number of all tables that did not pass TABAUDIT’s checks is displayed via the following warning messages:

- WARNING - ## tables not checked by TABAUDIT.
- WARNING - ## errors encountered by TABAUDIT.
- WARNING - ## tables not checked by TABAUDIT within the last 30 days.

*Note:* ## represents an integer.

Refer to the reporting utility to determine which tables cause the above warnings.
Using CHECKTAB

Checking tables for data inconsistencies prior to a software delivery is necessary to ensure that critical tables are free of data problems and each table has valid data. This is accomplished by running CHECKTAB. If CHECKTAB is not appropriate for certain tables, then the TABCHK utility can also be used. A newer development, TABAUDIT, is used with BCS34 and higher.

CHECKTAB does extensive table checking and identifies most types of table errors and data-fill problems. TABCHK checking, while not as extensive as CHECKTAB, checks for table errors such as false tops, false bottoms, and other consistency problems.

CHECKTAB performs table checks by reading and writing (without any data changes) every tuple in a specified table. If the read or write fails, the tuple position is output. This allows the user to identify the exact tuple in question. Normal table editor comments and warnings are displayed when errors are detected during the CHECKTAB operation.

**CAUTION**

Telco personnel normally should not attempt to run CHECKTAB without specific instructions.
Review Software Delivery Bulletins and all current Warning Bulletins concerning CHECKTAB before using it.

How CHECKTAB operates

CHECKTAB, will verify DMS tables by performing a series of checks on the tables and on the data in the tables.

- If patch ALR09 (BCS26 through BCS30) or patch ALR10 (BCS28 and BCS30) are in the switch and applied, checktab will run only a list of approved tables (or a permit list).
  - If the switch is INACTIVE and OUT_OF_SYNC this checktab can be used to check any table in the office.
  - If the switch is IN_SYNC or on the ACTIVE side, it will only check the tables contained in the CHECKTAB_PERMIT_LIST

Notice that a relatively small number of table are in the permit list. The permit list is used only when in_sync or on the active side.

- If patch ALR09/ALR10 is not in the switch, checktab will run on all tables except those listed in an exception list (not shown).

CHECKTAB help

> HELP CHECKTAB
Table Tuple Consistency CHECKTAB Command
----------------------------------------

The CHECKTAB options are:

- EXCEPTIONS - Displays a list of the checktab exceptions.
  (BCS31 and higher)
- ONLY - Checks a single table. The output can be redirected to a specific device and filename.
- ALL - Checks all tables listed in table DART. The output can be redirected to a specific device.
- FROM - Checks all tables following and including a given table listed in table DART. The output can be redirected to a specific device.

The FROM command can also be followed by a TO option to specify where CHECKTAB should stop checking. The table following the TO option will be included in the check.

The default output device is the screen and the default filename is the table name concatenated with the string $FILE. If the ALL or FROM option is chosen, CHECKTAB creates a SUMMARY$FILE that lists the results of the tables it has checked.

The results can be sent to SFDEV, disk, or tape. The summary file will always be sent first to SFDEV and then later copied to the user specified device and not erased from SFDEV.

eg1: CHECKTAB ONLY ofcstd
eg2: CHECKTAB ONLY ofcstd sfdev temp
eg3: CHECKTAB ALL sfdev
eg4: CHECKTAB FROM ofcstd d010temp
eg5: CHECKTAB FROM custab TO ofcstd sfdev

WARNING: Only one CHECKTAB should be running with the ALL or FROM option.

Parms: <Function> {ONLY <Table Name> STRING
  [<Device Name> DEVICE name]
  [<File Name> STRING],
  ALL [<Device Name> DEVICE name],
  FROM <Start table Name> {{otherwise}
  [{TO <End Table Name> STRING}]}
  [<Device Name> DEVICE name]}
CHECKTAB examples

> CHECKTAB ALL D000SCRATCH

> LIST D000SCRATCH
OFRT$FILE
HNPACONT$FILE
SUMMARY$FILE

> PRINT SUMMARY$FILE
Tbl CUSTAB : tuples checked 615, passed 615, failed 0.
Tbl CUSFLDS : tuples checked 905, passed 905, failed 0.
  Tbl OFRT : tuples checked 88, passed 87, failed 1.
Tbl RTEREF : tuples checked 88, passed 87, failed 1.
  Tbl HNPACONT : tuples checked 7, passed 7, failed 0.
---ERROR: Table HNPACONT has subtable problems. Check console file.
  Tbl ACDMISSP : tuples checked 3, passed 3, failed 0.

In this SUMMARY$FILE, table OFRT has 1 failed tuple and table HNPACONT has no errors; however, one its subtable does.

> PRINT OFRT$FILE
TABLE OFRT: Old Table Control.
*WARNING* No trunk member is present in TABLE TRKMEM yet
INVALID TABLE ROUTE IN T-ROUTE AT:3
---ERROR: Tuple is invalid.
  POSITION 61
Completed tuple checking.
SUMMARY: Tbl OFRT: tuples checked 88, passed 87, failed 1.

Position 61 has an invalid T-ROUTE in table OFRT. Correct the error by adding in a new OFRT tuple for the invalid T_ROUTE or remove the invalid T_ROUTE. The warning message is a reminder to remove the T_ROUTE pointing to the CLLI with no trunk members.

> CHECKTAB ONLY OFRT
NOTE: No device specified. Output will go to default device.
TABLE OFRT: Old Table Control.
*WARNING* No trunk member is present in TABLE TRKMEM yet
Completed tuple checking.
SUMMARY: Tbl OFRT: tuples checked 88, passed 88, failed 0.

Table OFRT is corrected.
> PRINT HNPACONT$FILE
TABLE HNPACONT: Old Table Control.
  POSITION 613
  SUBTABLE RTEREF
INVALID TABLE ROUTE IN T-ROUTE AT:0
---ERROR: Tuple is invalid.
  POSITION 1
Completed tuple checking.
  SUMMARY: Tbl RTEREF: tuples checked 9, passed 8, failed 1.
  SUBTABLE HNPACODE
Completed tuple checking.
  SUMMARY: Tbl HNPACODE: tuples checked 6, passed 6, failed 0.
  SUBTABLE ATTRIB
Completed tuple checking.
  SUMMARY: Tbl ATTRIB: tuples checked 0, passed 0, failed 0.

Correct the error and run 'CHECKTAB ONLY HNPACONT'.

> CHECKTAB ONLY HNPACONT
NOTE: No device specified. Output will go to default device.
TABLE HNPACONT: Old Table Control.
  POSITION 613
  SUBTABLE RTEREF
Completed tuple checking.
  SUMMARY: Tbl RTEREF: tuples checked 9, passed 9, failed 0.
  SUBTABLE HNPACODE
Completed tuple checking.
  SUMMARY: Tbl HNPACODE: tuples checked 6, passed 6, failed 0.
  SUBTABLE ATTRIB
Completed tuple checking.
  SUMMARY: Tbl ATTRIB: tuples checked 0, passed 0, failed 0.

Table HNPACONT is corrected.
Using JFFREEZE

The JFFREEZE feature was designed to (1) ensure the "Frozen image" for Hybrid (Local) dump and restores is dumped correctly, and (2) to enforce the office data freeze by inhibiting illegal data modifications.

While JFFREEZE is active, journal file activity is recorded in the JF HISTORY file. JFFREEZE automatically rotates journal files daily (at 0300 hours) and keeps a record of all JFfilenames. To see the HISTORY file type:

> JFFREEZE HISTORY

**JFFREEZE examples**

> JFFREEZE ON

**DATA FREEZE ACTIVATION**

-----------------------

ONCE ACTIVE, ON-LINE TECHNICAL SUPPORT WILL BE REQUIRED TO TURN JFFREEZE OFF.

THE SYSTEM IMAGE FOR DUMP AND RESTORE MUST BE TAKEN AT THIS TIME.

DO YOU WISH TO CONTINUE?
Please confirm ("YES" or "NO"):
> YES

JFFREEZE ACTIVATION CONTINUING....

SYSTEM IMAGE FOR DUMP AND RESTORE
-----------------------------

ENTER THE FREE IOC OR SLM DISK VOLUME TO RECEIVE THE SYSTEM IMAGE FILE(S):

> D000IMG2

JFFREEZE: THE SYSTEM IMAGE DUMP WILL COMMENCE IN 2 MINUTES
DO YOU WISH TO PROCEED?
Please confirm ("YES" or "NO"):
> YES

JFFREEZE image dump commences in 2 minutes...

Dump START time: 1989/06/14 18:20:06.416 WED

CC: Old AUTOLOAD ROUTE:THUMBWHEEL CODE C CMC 0 IOC 0 MTD 1
CC: New AUTOLOAD ROUTE:THUMBWHEEL CODE A CMC 0 IOC 0 DDU 0
CC: Dumping RAM.
CC:
CC: Dumping Data Store.
CC:
CC: Dumping Program Store.
CC: Dumping Entry Record.
CC: Checking RAM.
CC:
CC: Checking Data Store.
CC:
CC: Checking Program Store.
CC: Checking Entry Record.
CC: Successful DUMP and CHECK.
CC: 25709 blocks with 49 corrections.
CC: SETBOOT for CC failed, autoload route NOT updated.
Dump Completed Successfully.

Dump END time: 1989/06/14 19:01:11.496 WED..
JFFREEZE image dump completed

JOURNAL FILE
-------------

TABLE DIRPSSYS:

FROM ANOTHER TERMINAL, CHANGE AND VERIFY THE FOLLOWING DATA IN THE JF TUPLE:

<table>
<thead>
<tr>
<th>SSYSNAME</th>
<th>RETPD</th>
<th>CRETPD</th>
<th>FILEDATE</th>
<th>SHEDDAYS</th>
<th>ROTACLOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>JF</td>
<td>30</td>
<td>30</td>
<td>FIRSTACT</td>
<td>NNNNNNN</td>
<td>BOTH</td>
</tr>
</tbody>
</table>

READY TO CONTINUE?

Please confirm ("YES" or "NO"):

Note: Verify the fields listed above and verify AUTOXFER is set to 'NONE' in table DIRPSSYS.

> YES

THE JOURNAL FILE WILL BE STARTED/ROTATED NOW.

JFFREEZE WILL AUTOROTATE THE JOURNAL FILE NIGHTLY AT APPROXIMATELY 3:00 AM
** JFFREEZE IS NOW ACTIVE - DATA FREEZE IN EFFECT **

*******************************************************************************
**                            **
** JFFREEZE IS NOW ACTIVE - DATA FREEZE IN EFFECT **
**                            **
*******************************************************************************
DISPMS command

(The following applies only to SuperNode on BCS34 or higher and, when patched, on BCS31-33.)

DISPMS is a CI command which displays the image header information containing the load type, BCS number and edition code. The main purpose of the DISPMS command is to verify the type of an MS load prior to LOADMS.

**Using DISPMS to display load file information**

1. List the device containing the load file(s) to be displayed.
2. > DISPMS <filename>
   where <filename> is either the MS or CM load file listed above.
3. Information displayed can be:
   - MS-S BCS 34 CR (a standard JNET MS load)
   - MS-E BCS 34 CR (an ENET MS load)
   - MS-I BCS 34 CR (an SCP-II MS load)
   - MS-N BCS 34 CR (a SNSE MS load)
MOVEBCS summary

In BCS34 and lower the MOVEBCS command is used to dump and restore tables. This is also known as the "data transfer." This command is normally entered on the inactive (mate) side.

Procedure 1
Interrupt MOVEBCS

During the data transfer the user can stop the MOVEBCS process two different ways: HALT is to be used most of the time; whereas, LIMIT 0 can be used to stop the data transfer of a long table.

1  App/INACT To halt MOVEBCS, on the inactive (mate) side enter:
   Mate> MOVEBCS HALT
   MOVEBCS process will halt after the current table is completely moved. This will not interrupt tables in the process of being moved.

2  To stop MOVEBCS during the data transfer of a long table do:
   a.  Mate> MOVEBCS LIMIT 0
       Wait for a system response indicating completion before continuing.

       CAUTION
       DO NOT raise the LIMIT unless MOVEBCS is stopped.
       However, it is acceptable to lower the LIMIT while the process is running.

   b.  After MOVEBCS has stopped you may reset the LIMIT as previous.
       The table that was interrupted will run again:
       Mate> MOVEBCS LIMIT <as desired>

3  You may RESTART the data transfer using the FROM option. Start from the last table successfully completed.
   To restart MOVEBCS, on the inactive terminal enter:
   Mate> MOVEBCS FROM <table>

   -continued-
Procedure 1
Interrupt MOVEBCS (continued)

4 ACT You may, instead, ABORT (stop and reschedule) the application by
doing these steps.

a. OVERRIDE all POSTSWACT steps (STATUS POSTSWACT will list the
steps) with the exception of the following steps:
   • RESET_OFFICE_TUPLES
   • ENABLE_AUTO_IMAGE
   • RESUME_ATT

b. Run POSTSWACT. This will execute ONLY the steps listed above.
c. RESET both PRESWACT and POSTSWACT with:
   > BCSUPDATE;RESET

MOVEBCS and MOVEBCSR syntax

MOVEBCSR <options> - Use this command to dump tables on the NT40 to
a magnetic tape by reading table DART.

Note: For from_BCS 27-31 only, use the SEQDART command before
using MOVEBCSR. SEQDART sequentially orders the table names in
table DART to allow an efficient restore process on the SuperNode.

Where <options> can be:

<TAPE number> STRING

<RESTORE_BCS number> {0 to 99}

[<FUNCTION> {ONLY <table> STRING,
   FROM <table> STRING}]

MOVEBCS <options> - <Without options> starts the data transfer process.
   It starts after the last completed table or at the
   beginning if no tables have been completed.

Where <options> can be:

FROM <table> - Starts the data transfer from the specified table.

ONLY <table> - Performs a data transfer on the specified table
      only.
STOPIF - Sets the number of failures allowed for a table. If this threshold is reached then the data move stops at the end of the table. (Range is 0 to 4294967296.)

LIMIT - Sets the number of failures allowed for a table. If this threshold is reached then the data transfer stops (whether the table has completed or not). (Range is 0 to 4294967296.)

STATUS - Displays information about the status of the data transfer.

HALT - Stops the data transfer after the current table is completed.

STOP <stop_options>

Where <stop_options> can be:

BEFORE <table> - Stops MOVEBCS before given table.

AFTER <table> - Stops MOVEBCS after given table.

CLEAR BEFORE <table> - Clears the stop before given table.

CLEAR AFTER <table> - Clears the stop after given table.

QUERY - Lists all STOPs.

REPORT - Generates a final data transfer report. This will include a table exception report and an NTX package delta.

XREPORT - Creates a table exception report only.

NTXDELTA - Performs a delta of the NTX packages on the old and new loads.

QUIT - EXIT the BCSUPDATE increment.

**DARTEDIT syntax**

DARTEDIT - Enters the DARTEDIT increment to enable the following commands.

PRINTDART <mode>

Where <mode> can be:
SHORT     - Prints a compact listing of tables in DART.  
            (default)
LONG      - Lists tables in DART in a single column format.

Examples:

> PRINTDART SHORT
Table DART:
  000 N DART 001 N OKPARMS 002 E DATASIZE 003 N SYSDATA 004 E OCCNAME
  005 E OCCINFO 006 E HNPACONT 007 N OFCSTD 008 N OFCOPT
  009 OFCENG 010 E CRSFMT 011 E CLLI 012 E NNASST 013 E SITE
  014 E CMSHELF...

> PRINTDART LONG
Table DART:
  000 N DART
  001 N OKPARMS
  002 E DATA SIZE
  003 N SYSDATA
  004 ED OCCNAME
  005 E OCCINFO...

SORTDART  <mode>

Where <mode> can be:

SHORT     - Prints a compact listing of tables in DART alphabetically. (default)
LONG      - Lists tables in DART alphabetically in a single column format.

FIND  <table>     - Finds the table(s) starting with...

Example:

> FIND TERMDEV
  041 E TERMDEV

DELTA syntax

This command may be used to display the differences (delta) between a given table on the active and inactive sides.

DELTA  <table> <delta level> <file option>

Where <table> is the name of the table to be checked. For a sub-table use for the table name:

[<table> SUB <subtable>]}
<delta level> can be:

COUNT - Checks the number of tuples in both tables.
KEYS - Does a checksum on the keys of the tuples.
CHECKSUM - Does a checksum on the tuples (default).

And <file option> can be:

FILE - Sends results to a file on SFDEV called DELTASREPORT (default).
NOFILE - Displays the terminal without creating a file.

**Example:**

> DELTA OFCENG NOFILE

Table OFCENG
**OLD  AMA_EBCDIC_CONVERT N
**OLD  CUSTOMER_GROUP_IBNGRP_OM_COUNT 288
**NEW  CUSTOMER_GROUP_IBNGRP_OM_COUNT 32
TABXFR summary

In BCS35 and higher the TABXFR increment is used to dump and restore tables. This is also known as the "data transfer."

Procedure 2
Interrupt TABXFR

During the data transfer the user can stop the TABXFR process two different ways: HALT is to be used most of the time; whereas, HALT NOW can be used to stop the data transfer of a long table.

Note: For the ACTREST platform the following commands are the same, except on the active side.

1  App/INACT  To halt TABXFR, on the inactive terminal enter:

   Mate > HALT                   {must be in TABXFR increment}
   TABXFR process will halt after the current table is completely moved. This will not interrupt tables in the process of being moved.

2  To stop TABXFR during the data transfer of a long table type:

   Mate > HALT NOW               {in TABXFR}
   TABXFR process will halt immediately, even in the middle of the table.

3  Restart the data transfer using the FROM option. Start from the last table successfully completed.

   To restart TABXFR, on the inactive terminal enter:

   Mate > STARTXFR FROM <table>  {still in TABXFR}

4  ACT  You may, instead, ABORT (stop and reschedule) the application by typing on the ACTIVE side:

   > BCSUPDATE;ABORT_PRESWACT
   > TABXFR;CANCEL
   > QUIT ALL

TABXFR syntax

TABXFR - Enters the TABXFR increment to enable the following commands.

TABXFR subcommands are as follow:

SETUP <options> - Set up and initialize the type of platform used to perform the data transfer.
Where <options> can be:

**STANDARD** - Standard split switch application.

**DUMPONLY** - Setup to perform the dump part of the dump and restore. This is for dumping data to tape.

**ACTREST** - Perform the restore part of the dump and restore (data transfer). This restores data from tape to the active side (i.e. restore to split cm mode).

**THIRDPRO** - Third processor-assisted data transfer.

**STOPIF** - Sets the number of failures allowed for a table. If this threshold is reached then the data transfer stops at the end of the table. (Range is 0 to 4294967296.)

**LIMIT** - Sets the number of failures allowed for a table. If this threshold is reached then the data transfer stops (whether the table has completed or not). (Range is 0 to 4294967296.)

**STATUS** - Displays information about the setup and status of the data transfer.

**STARTXFR** - Starts the data transfer process. It starts after the last completed table or at the beginning if no tables have been completed.

**XFRFROM <table>** - Starts a data transfer from the specified table.

**XFRONLY <table>** - Performs a data transfer on the specified table only.

**DUMP** - Performs just the dump portion of the data transfer. (Only available after issuing the SETUP DUMPONLY command.)

**RMOUNT** - Mounts the device to be used for the active restore.

**RDEMount** - Demounts the device being used for the active restore.

**RCOPY** - Copies a file from the restore device to SFDEV.
DATASYNC - Manipulates the Data Synchronization. (Only available after issuing the SETUP THIRDPRO command.)

HALT - Stops the data transfer after the current table is completed.

HALT NOW - Causes the data transfer to halt immediately, after the current tuple.

CLEAR - Clears the specified table. This only works with tables that have a transfer type of PHYSICAL in table DART.

STOPXFR <stop_options>

Where <stop_options> can be:

BEFORE <table> - Stops TABXFR before given table.

AFTER <table> - Stops TABXFR after given table.

CLEAR BEFORE <table> - Clears the stop before given table.

CLEAR AFTER <table> - Clear the stop after given table.

QUERY - Lists all STOPs.

CANCEL - Cancels the data transfer. Entered on active side after any type of ABORT. Turns on AUTODUMP and AUTOPATCH.

REPORT - Generates a final data transfer report. This will include a table exception report and (with BCS36 and lower) an NTX package delta.

XREPORT - Creates a table exception report only.

NTXDELTA - Performs a delta of the NTX packages on the old and new loads (with BCS36 and lower).

QUIT - EXIT the TABXFR increment.
**BCSUPDATE summary**

The BCSUPDATE increment enables the commands for the BCS application.

BCSUPDATE level commands do the actual work of applying the new BCS load. (BCSUPDATE includes the application functions formerly performed either manually or by the SWAP or AutoApply processes.)

*Note:* If the BCSUPDATE will not immediately follow the data transfer (MOVEBCS/TABXFR), then verify JFFREEZE is activated or journal file rules are being followed to insure all data on the journal files will be restored correctly when the BCSUPDATE is continued.

**BCSUPDATE increments**

The primary increments of BCSUPDATE that assist in switching activity from one BCS load to another and in recovering from the activity switch are:

- **PRECHECK** (BCS37 and higher)
- **PRECHECK FIRST** (BCS33 through BCS36)
- **PRECHECK FINAL** (BCS33 through BCS36)
- **PRESWACT**
- **SWACTCI** (BCS33 and higher)
- **SWCT** (BCS31 and BCS32)
- **POSTSWACT**

The PRESWACT interrupt/abort process is described in this section. This is followed by descriptions of PRECHECK FIRST and PRECHECK FINAL steps, PRESWACT STEPS, and POSTSWACT steps. (SWACT commands are described in the next section, *CC Warm SWACT summary*.)

The following processes or increments are available within BCSUPDATE:

- **PRECHECK** - A series of pre-application checks (prechecks) used to ensure an office is ready for the software upgrade.

- **PRESWACT** - Perform the BCS application by invoking the application driver. The command may be used repeatedly.

- **STATUS** - Display the current status of the BCS application. It displays what critical steps have been completed (and the execution time), those still
needed, and whether or not the system is ready to perform the switch of activity.

RESET - Reset all completed procedures to their initial state of NEEDED so BCSUPDATE can be re-executed.

SWCT - Enable CC Warm SWACT commands. In BCS31 this command became available only as an increment of BCSUPDATE.

SWACTCI - Same as SWCT. This changed to SWACTCI in BCS33.

Note: Commands for switching activity are available as increments of the SWACTCI/SWCT level. Refer to the next section, CC Warm SWACT summary, for details of SWACT commands.

POSTSWACT - Recovery functions following the SWACT.

OVERRIDE - Set a failed PRESWACT or POSTSWACT procedure to COMPLETED. This should be used with caution. Only those steps that have been investigated and pose no threat to the current application should be set completed by this command.

DATADUMP - Display office information (implemented in BCS31).

RUNSTEP - Execute individual PRESWACT steps. Starting in BCS34 this also works for POSTSWACT steps. CAUTION! Also see next command.

ABORT_PRESWACT - (BCS35 and higher) Used to abort PRESWACT or to recover after a RUNSTEP is used to run one of the preswact steps. Both PRESWACT and RUNSTEP will set the DUMP_RESTORE_IN_PROGRESS bool in OFCSTD to 'Y'. After a RUNSTEP (if done out-of-process) the applicator must run ABORT_PRESWACT to reset the bool to 'N'.

QUIT - EXIT the BCSUPDATE level.
**Procedure 3**  
**PRESWACT Abort**

App  It may be necessary to STOP (and reschedule) the application after PRESWACT (or MOVEBCS/TABXFR) has been implemented, but before the switch of activity. If this is the case perform the following steps to restore the active side to its original configuration.

1 **ACT** For BCS 35 and higher type this command:

   > BCSUPDATE;ABORT_PRESWACT

2 **ACT** For BCS 34 and lower do these steps.
   a. OVERRIDE all POSTSWACT steps (STATUS POSTSWACT will list the steps) with the exception of the following steps:
      - RESET_OFFICE_TUPLES
      - ENABLE_AUTO_IMAGE
      - RESUME_ATT
   b. Run POSTSWACT. This will execute ONLY the steps listed above.
   c. RESET both PRESWACT and POSTSWACT with:

      > BCSUPDATE;RESET

**PRECHECK steps**

To ensure that an office is ready for a software upgrade, a series of pre-application checks (or prechecks) must be completed (see Site Preparation Reference Guide for RTP or ). These checks are typically done at two points prior to the application date. The checks may also be performed by Northern Telecom through the execution of separate checklists. For BCS33 and higher many of these checks that were previously manually verified can be done in advance by the site personnel using the PRECHECK command.

The PRECHECK command (by itself) is valid for BCS 37 and higher. The PRECHECK FIRST and PRECHECK FINAL commands are valid if the current load is BCS33 through BCS36. If you are coming from BCS32 or lower these steps must be manually performed by the BCS Applications Engineer.

The PRECHECK command, within the BCSUPDATE increment, will execute the following steps.

*Note:* Unless otherwise noted, each of these steps are also run during the execution of either the PRECHECK FIRST and PRECHECK FINAL commands.
Step Name
=========

DISPLAY_DEVICE_AND_USER - Display information on the IOC device and username the PRESWACT is being run on. This includes the COMCLASS, PRIVCLASS, PRIORITY, LOGINCONTROL, STACKSIZE, PRIVCLASS, etc. This information can also be displayed through the use of the DEVICE command in the BCSUPDATE level.

TABLE_Counts - Display the counts of some of the larger system tables (LENLINES, IBNLINES, KSETLINE, TRKMEM, etc). This information will help determine how long the MOVEBCS/TABXFR will take. This step will be run only during PRECHECK FIRST.

CHECK_MEMORY - Determine the amount of physical and logical memory, and verify that the amounts are equal. The amounts will be displayed in 1M equivalents so they can be compared to the NT-determined required memory specifications.

DISPLAY_TOPS_ENVIRONMENT - This step will display the value of TOPS_OC_ENVIRONMENT from table OFCENG. If the parameter is not found, a message will be displayed stating that this is not a TOPS office. This step will be run only during PRECHECK FIRST.

CHECK_DSLIMIT - The step will check table DSLIMIT to ensure that there is enough space in SFDEV to complete the precheck, dump and restore, and the application. If this amount is not available, a message will be displayed stating this.

CHECK_CRSFMT_AND_CRSMAP - This step will check table CRSFMT and CRSMAP to ensure SMDR data is not being sent to the AMA stream.
if the AMA format is BCFMT. This arrangement should not be used except for those sites that handle their data in a special way. If this datafill arrangement is present, a message will be displayed.

**E911SRDB_CHECK** - This step will check the data dictionary range for DIGIT and SERVING_NUMBERING_PLAN_AREA. If these ranges do not line up there will be difficulties transferring the data.

**CHECK_LTCINV** - This step will check table LTCINV to ensure that field OPTATTR is datafilled with "CCS7" only when a DTC is running CCS7 traffic i.e. if the load name for the DTC (see LOAD field) begins with "DC7".

**CHECK_LCMINV** - This step will check table LCMINV to ensure that field MEMSIZE is set to "256K" when using an XLCM load and set to "64K" when using an LCM load. If this condition is not met, a message will be displayed.

**DISPLAY_SLMDEVICE** - This step will determine and display of the office is equipped with a SLM I or SLM II type drive This step will be run only during PRECHECK FIRST.

**DISPLAY_PEC_INFO** - This step will display the PEC and release numbers for both the CM and MS. This information is used to verify that hardware is at the correct level. The correct levels are given in the Baseline report. This step will be run only during the PRECHECK FIRST.

**DEVICE_CHECK** - This step will display any SYSB or MANB devices. Devices in either of
these states can cause delays on the night of the application.

DISPLAY_DNC_USERS - Display all DNC/MPC users and their status.

CHECK_LOGS - This step will verify the front-end stability by checking traps and critical system logs. The log output is in the following order: TRAP, INIT, SWER, NET and PM. The step will then scan the CC, CMC and MISM CM, MS, SLM and MM log buffers for indications of stability problems.

DISPLAY_PERIPHERAL_LOAD_NAMES - This step will display the name and load name of loadable peripherals. This step will be run only during PRECHECK FIRST.

DISPLAY_MPC_LOAD_NAMES - This step will display the load names for each equipped MPC. This step will be run only during PRECHECK FIRST.

DISPLAY_ST_LOAD_NAMES - This step will display load names for each of the equipped ST (Signalling Terminal) devices, including DCH's. This step will be run only during PRECHECK FIRST.

C7LINK_CHECK - Check table C7LINK for a mixture of MSB7-based and LPP-based CCS7 links. A mixture is not supported over a BCS Application and the datafill should be changed to show either all MSB7-based or all LPP-based CCS7 links.
PRESWACT steps

The following steps are executed in sequence to setup the environment for the swact. This is not a complete list of processes run by PRESWACT; the steps will be different depending on the BCS level and on certain features being present in the office.

Step Name
=========

CMIC_LINKHITS_CHECK, Cmwswact
On the active CPU;
Verify that neither of the MC links have experienced more than 3 link hits. Counters are cleared every 24 hours.

VERIFY_ACTIVE_DSLIMIT, Applutil
On the active CPU;
Check to see that there is at least 100K of available SFDEV. If not, add 100K to the STOREFS tuple in DSLIMIT.

DISABLE_AUTOIMAGE, Adumpctl
On the active CPU;
Stop any Auto Image that may be running or is scheduled to run during the application. Will be rescheduled in POSTSWACT by ENABLE_AUTOIMAGE.

VERIFY_DSLIMIT, Applutil
On the inactive CPU;
Check to see that there is at least 100K of available SFDEV. If not, add 100K to the STOREFS tuple in DSLIMIT.

TRACE_ON, Applutil
On the active CPU;
Turn TRACECI ON for upcoming transfer of dynamic tables.

DISABLE_PATCH_AUDIT_ACT Palarmim
On the active CPU;
Disable the patch audit during the One Night Process.

SET_OFFICE_TUPLES, Applutil
On the active CPU;
Set the parm values of NODEREXCONTROL and LCDREX_CONTROL so that REX tests are effectively turned off during PRESWACT. Store the old values in REX$FILE and send to inactive CPU. Original values restored in POSTSWACT RESET_OFFICE_TUPLES.

SET_CPU_SHARE, Applutil
On the active CPU;
Set GUARANTEED TERMINAL_CPU_SHARE to 16 for PRESWACT.
Original values restored in POSTSWACT RESET_OFFICE_TUPLES.

SET_MATE_TUPLES,      Applutil
On the inactive CPU;
Turn DUMP_RESTORE_IN_PROGRESS on.
Check that the REX$FILE arrived. It contains the original
tuple values for the office parms NODEREXCONTROL and
LCDREX_CONTROL.
Store the original values in protected store and turn off
the REX parms.
Set GUARANTEED_TERMINAL_CPU_SHARE to 16 for PRESWACT.
Original values restored in POSTSWACT RESET_OFFICE_TUPLES.

DTDETECT_TRANSFER,    Appldigt
On the active CPU;
Check if the digitone detection feature is active and send
the result over to the inactive CPU so that the bool can be
stored. This will be used in POSTSWACT to return the bool
DTDETECT_IN_USE to its original value.

SEND_PATCHES,         Applutil
On the active CPU;
Scans SFDEV and all devices listed in table PADNDEV for
patch files matching the inactive side's BCS number and
sends the patch files to the inactive side's SFDEV.

APPLY_PATCHES,        Applutil
On the inactive CPU;
Applies the patch files on the INACTIVE.

MATE_RESTART_COLD,    Applutil
On the inactive CPU;
send a message to the inactive CPU to perform a COLD
RESTART, wait up to 10 mins for it to return A1.

MATE_RESTART_WARM,    Applutil
On the inactive CPU;
send a message to the inactive CPU to perform a WARM
RESTART, wait up to 10 mins for it to return A1.

VERIFY_DUMP_RESTORE,  Applutil
On the inactive CPU;
Check table DART to ensure that all tables have been
transferred successfully by the MOVEBCS process.
Otherwise, the step fails and the names of all tables that
have not been completed are sent to SFDEV file TABSTATES.
SWACT_MODULE_CHECK, Modchkui
On the active and inactive;
Checks for the existance of specified SWACT modules.

FRAME_RELAY_BILL Frbswact
On the active CPU;
Stop collection of billing data from the FRIU's and send
collected billing data to AMA. This step is the first
PRESWACT step that kicks off a process, is marked as
EXECUTING and then proceeds to the next step.

DISABLE_PATCH_AUDIT_INACT Palarmim
On the inactive CPU;
Disable the patch audit during the One Night Process.
Enabled during POSTSWACT step ENABLE_PATCH_AUDIT_POSTSWACT.

HALT_ACTIVE_ALT, Applatt
On the active CPU;
Halt Automatic Line Testing as this may cause some lines' states to be incorrectly transferred during the step DUMP_LINE_STATES.

HALT_ACTIVE_ATT, Applatt
On the active CPU;
Halt Automatic Trunk Testing as it may cause some trunks' states to be incorrectly transferred during the step TRANSFER_TRUNK_STATES.

HALT_ATT, Applatt
On the inactive CPU;
Halt Automatic Trunk Testing as it may cause some trunks' states to be incorrectly set during the TRUNK_RESTORE step.

CSC_LINK_CHECK, Csccheck
On the active CPU;
Checks all CSC's in the office to ensure that it is using its dedicated HDLC link. If any are found in this state then the step fails and the suspect CSC's are displayed.

STATUSUPDATE, Staupdui
On the active CPU;
Check all nodes in the office to ensure that none are SYSBSY or MANBUSY. Tell the inactive which are OK and to have them MANBUSY'd.

IXPM_STATUSUPDATE, Intswcti
On the active CPU;
Special STATUSUPDATE for International XPMs.

FOCUS_MAINT_XFER,  Applfm
On the active CPU;
Transfers line and trunk trouble info to the INACTIVE
so that Focused Maintenance info is not lost during SWACT.

DUMP_TOPSMP_STATES  Ympmtch1
On the active CPU;
Dump the appropriate TOPS (TMS) position states into files
TOPSMP$INB and TOPSMP$MB. Positions in the TRAINING state
are not allowed during applications so the step will fail
with warnings to that effect. Send the files to the
inactive.
RESTORE_INB_TOPSMP and RESTORE_MB_TOPSMP handles these
files.

RESTORE_INB_TOPSMP,  Ympmtch1
On the inactive;
RTS's all positions, puts all positions that appear in both
INB$TOPSMP and MB$TOPSMP into the INB state.
The MB positions will be set to MB during POSTSWACT.

CORRECT_DRWR_STATES,  Drwrmtch
On the active CPU;
Transfer the line drawer states to the INACTIVE and
match the inactive's drawer states to the active.

TRANSFER_TRUNK_STATES,  Trkmatch
On the active CPU;
Create files for trunk states, INB, MB and RES and send them
to the INACTIVE. RESTORE_INB is done during PRESWACT but
TRUNK_RESTORE for MB and RES trunks must wait till POSTSWACT
because they would come up idle after the restart.

RESTORE_INB,  Trkmatch
On the inactive CPU;
Manbusy INB trunks (really ALL trunks after initial
datafill) then use INB$TRKS file to set the INB trunks back
to INB.
The MATE_RESTART will set all MB trunks to CBSY.
Also, puts the MB and RES trunks INB so that they will not
be available to call processing after SWACT.

TRANSFER_PDTC_HG  Hgpdtc
On the active CPU;
Put the states of all Handler Groups for each PDTC into
RESTORE_PDTC_HG

On the inactive CPU;
Matecopy the PDTC$HGSTATE file from the active to the
inactive and use it to restore the PDTCs' Handler Group
states on the inactive.

DUMP_LINE_STATES,

On the active CPU;
Go over every line in the office and put those in the states
INB, MB, CUT or HAZ into the files INB$LNS, MB$LNS, CUT$LNS
and HAZ$LNS respectively. Send the files to the inactive
CPU.

SYSTEM_DATE_XFR,

On the active CPU;
Send the system date over to the inactive CPU.
Normally done in SWACT but required in INTL applications
for metering info before SWACT.

RESTORE_LINE_STATES,

On the inactive side;
Use the $LNS files to restore the INB, CUT and HAZ lines
to their proper state. MB lines are made INB so that they
can't go CPB after SWACT.
RESTORE_MB_LINES in POSTWSWACT uses the MB$LNS file to set
the proper lines from INB to MB after the SWACT.

ATTCONS_MATCH;

On the inactive CPU;
Set the state field in table ATTCONS for every Attendant
Console to match the active side's state.

OVERLAP_CHECK;

On the inactive CPU;
Make sure that OVERLAP OUTPULSING is turned off in new
Equal Access offices as it is incompatible with the Equal
Access overlap outpulsing.

TOPS_SEND_DB

On the active CPU;
Shut the Booked Call database down to prevent changes.
Send the data from the TOPS Booked Call database to the one
on the inactive CPU.
The SWACT will automatically start up the database.
TABLE_DELTA,                   Deltalst
On the active CPU;
Perform a table delta on each of the tables in the hard-
coded list found in DELTALST.

SEND_ITOPS_DB,                 Iymemedi
On the active CPU;
Shut the Booked Call database down to prevent changes.
Send the data from the ITOPS Booked Call database to the one
on the inactive CPU.
The SWACT will automatically start up the database.

SEND_OOC_DB,                   Zmemedti
On the active CPU;
Shut the Booked Call database down to prevent changes.
Send the data from the OOC Booked Call database to the one
on the inactive CPU.
The SWACT will automatically start up the database.

SET_SWCT_AMA                   Swctama
On the active CPU;
Set the SWCT_AMA_PREBILLING bool to TRUE so that the SWACT
prebilling feature gets run during SWACT.
This allows for partial billing of active calls during
SWACT.

RESET_METERS,                  Intswcti
On the inactive CPU;
International offices use software registers to bill calls.
Reset the line and trunk software meters to the unallocated
DSSAVE store pattern. The meters will be transferred later.

MATE_RESTART_RELOAD            Applutil
On the inactive CPU;
send a message to the inactive CPU to perform a RELOAD
RESTART, wait up to 10 mins for it to return A1.

STATUSCHECK,                   Stachkui
On the active CPU;
send messages to the inactive CPU, getting the status for
all nodes in the office. Ensure that the states match the
active side and that all states are either OK, OFFLINE or
UNEQUIPPED.

VERIFY_STORE,                   Applutil
On the inactive CPU;
Verify that the available Data Store is at least 5% of the
total Data Store.

PRELOAD_EXECS, Prldexui
On the active CPU;
Load the XPMs with the BCS+n EXEC line-ups. The pointers
to the EXEC lineups will be switched from old to new during
the WARMSWACT process.

USR_VERSION_DUMP Sasvmdnr
On the active CPU;
This step dumps the Software Application System's Version
Management data into SFDEV file USR$VRSN. The file is then
sent to the inactive for restore during POSTSWACT.

UNMASK_CUSTFLDS, Applmask
On the active CPU;
Add tuples to table CUSTFLDS that will allow hidden fields
for the dynamic tables to be transferred.

MATE_UNMASK_CUSTFLDS, Applmask
On the inactive CPU;
Add tuples to table CUSTFLDS that will allow hidden fields
for the dynamic tables to be transferred.

TRANSFER_CFW, Appldtab
TRANSFER_CFX,
TRANSFER_SCALLTAB,
TRANSFER_IBNISC,
TRANSFER_CELLFEAT,
TRANSFER_ACSCALL,
TRANSFER_RCFCLI,
TRANSFER_ATTCONS,
TRANSFER_SLELIST,
TRANSFER_KSETQCK.
Move the data for dynamic tables as close to SWACT as
possible. There may have been quite a delay beween the
MOVEBCS and SWACT and some customers may have changed
data during this time. Done in the above order.

MASK_CUSTFLDS, Applmask
On the active CPU;
Deleted the previously added CUSTFLDS tuples.

MATE_MASK_CUSTFLDS, Applmask
On the inactive CPU;
Deleted the previously added CUSTFLDS tuples.
TRACE_OFF, Applutil
On the active CPU;
Halt TRACECI output that was needed for transferring
dynamic table data.

MATE_TRACE_OFF, Applutil
On the active CPU;
Halt TRACECI output that was needed for transferring
dynamic table data.

PM_EXEC_DELTA, Prldimp
On the active CPU;
Builds a table of PM node numbers and their EXEC lineups,
send it to the inactive where a comparison is made between
it and a similar table built on the inactive side.

CHECK_DISK_VOLS, Applddu
On the active CPU;
Scan the volumes on all ONLINE disk drives and check that
any open files are critical files. List all non-critical
files that are open and tell the user to close them.

DUMP_DIRPPOOL, Appldirp
On the active CPU;
Procedure to dump table DIRPPOOL into file DIRP_INAC.
The file is sent to the inactive side's SFDEV for use by
subsequent DIRP steps.

CHECK_DIRP_PARVOLS, Appldirp
On the active CPU;
Loop over the tuples in DIRPPOOL and for those whose
POOLTYPE is PARALLEL check that all 24 volumes are NIL. If
not, type out the volume names and the DIRPSSYS subsystem
using them.

CHECK_DIRPPOOL, Appldirp
On the active CPU;
1) Display active side datafill. Advise the user to close
regular TAPEX and parallel/regular TAPES.
2) Display inactive side datafill. Advise the craftsperson
to mount any TAPE volumes (parallel/regular) that they
want recovered after the SWACT. Advise also to adjust
datafill for DISK or DPP volumes if desired.

CHECK_DIRPSSYS, Appldirp
On the inactive CPU;
Check that all resident DIRP subsystems have associated
entries in table DIRPSSYS. If not, check table DIRPPOOL to see that both a REGULAR and PARALLEL pool for the subsystem exist. If not, add them. Then add the DIRPSSYS entry for the subsystem.

**UPDATE_METERS**, Intswcti
On the active CPU;
International local calls are billed via the pegging of software registers called meters. This procedure transfers that information to the soon-to-be-active CPU.

**SNIX_HSDF_TRANSFER**, Hsdfen
Transfer critical SNIXVOLS tuples to the inactive.

**WAKE_UP_CALLS**, Intswcti
On the active CPU;
International offices also have customer data associated with wakeup calls. This procedure transfers that information to the soon-to-be-active CPU.

**SRDB_INFO_TRANSFER**, Srdbmem
On the active CPU;
Transfer the E911 Selective Routing Database to the inactive CPU.

**OCNC_INFO_XFER**, Yocncinf
On the active CPU;
Transfer Night Closedown information to the inactive so that operator calls are routed properly after SWACT. This info includes; CLOSE TIME, OPEN TIME, HOST, MODE STATE and QUEUE SET.

**SEND_AUTOLD**, Applald
On the active CPU;
Transfer the AUTLOAD ROUTE information to the inactive CPU. This determines what device the CPU will choose if it decides to re-boot itself.

**STOP_BILL_SERVER**, Appleioc
On the active CPU;
Some DMS250 offices have a special node for billing purposes. This procedure shuts the billing server down during SWACT.

**TRANSFER_LCM_DATA**,  
Transfer data for each LCM over to the mate side.
MS_CHECK,                            Applms
On the active CPU;
Verify that one of the MS units is loaded with a BCS+n compatible load. Load versions for both units is displayed. A message that contains the inactive CM load version is also displayed with the result of the comparison (passed/failed).

MATE_MEM_CHECK,                    Matemchk
On the inactive CPU;
Test the memory before allowing SWACT.
PRESWACT will wait 30 minutes for a response.

POSTSWACT steps
The following steps are executed in sequence to clean up the environment after the Swact. This is not a complete list of processes run by POSTSWACT; the steps will be different depending on the BCS level and on certain features being present in the office.

Step Name
========

DIRP_RECOVERY         - Reads DIRP_REC file to recover AMA.
HARDWARE_CHECK       - Scans all hardware that is addressed by STATUSUPDATE/STATUSCHECK to ensure no hardware is MANB, SYSB or CBSY.
DIRP_AUDIT           - Audits all DIRP subsystems to clear alarms.
CHECK_BILL_SERVER    - Sets internal bool, used to track whether or not bill server was active, to false.
CLEAR_INVALID_REGS   - Performs the equivalent of a CLRINVREG of the REGISTER level.
6X45_PECS            - Performs the equivalent of the PECS6X45 CI command.
MATCH_ALL_UPD        - Performs the equivalent of a MATCHALL UPDATE from the PATCHER level.
SLU_INSTALL          - Performs the equivalent of a SLUINSTALL on these tables: TRA250I1, TRA125I1, TRA125I2, and
ENG640I1.

RESTORE_DTDTECT - Restart DTDTECT if it was started in the old load.

RESUME_ATT - Resumes scheduled ATT testing.

BEGIN_TESTING - Informs site that testing should begin. POSTSWACT should stop after this step.

RESET_OFFICE_TUPLES - Resets the following office parameters to their original values:
NODEREXCONTROL
GUARANTEED_TERMINAL_CPU_SHARE

RESET_SMDR - Resets office parameter SMDR_LOG_RPT to original value.

RESET_SWCT_AMA - Resets office parameter SWCT_AMA_PREBILLING to original value

RESET_AMA_RPT - Resets office parameter SPECIAL_AMA_REPORT to original value

RESET_AMAB - Resets tuple AMAOPTS of table AMAOPTS to original value.

ENABLE_AUTOIMAGE - Re-enables Auto Image feature.

DISPLAY_SWACT_TIME - Displays the total CC Warm Swact time in minutes and seconds.

TRUNK_RESTORE - Sets trunks which were MB or RES back to their original states.

RESTORE_MB_LINES - Uses MB$LNS to set lines which were MB back to MB.

RTS_INI_TRUNKS - RTSs all trunks which are INI after the SWACT.

RESTORE_MB_TOPSMP - Sets TOPSMP which were MB before the SWACT back to MB.

DEVICE_SCAN - Scans all DDUs to make sure they are up and lists all DDU volumes
and SFDEV to find all patches.

SLM_DISK_SCAN - Same as DEVICE_SCAN except scans SLM disk volumes.

CLEANUP_SFDEV_FILES - Erases the files used by the ONP process and also erase patches from SFDEV.
CC Warm SWACT summary
SWitch of ACTivity (SWACT) is a generic term referring to a process by which activity is switched between two processors. CC warm SWACT is a SWACT where special software is executed to ensure the degradation in service provided by a switch is minimized when switching activity between the CPUs in the core of the switch (e.g., CM in Supernode).

Note: Only "simple" 2-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) will survive a CC warm SWACT. Survival means that the call is kept up until the next signaling message is received (hopefully, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature). See Appendix B for sample call scripts and a procedure for testing call survivability over a CC warm SWACT.

The three parts in this section are divided as follows:

1. Explanation of CC warm SWACT and its major steps
2. Explanation of CC warm SWACT commands
3. Explanation of CC warm SWACT logs

CC Warm SWACT Steps
CC warm SWACT is a method by which a new software load can be efficiently activated in a DMS-100F switch. It ensures a controlled activity switch while minimizing degradation of service to the subscriber. To achieve this goal the process performs the following steps.

- Precheck to ensure the environment is right for the intent (e.g., switch is out of sync and inactive side is not jammed)
- Establish communication between the two CPUs
- Obtain required semi-dynamic data from the active CPU and transfer it to the inactive CPU
- Setup and allocate required resources to transfer dynamic data (e.g., originating and terminating party of calls being supported)
- Stop call processing. Freeze everything so nothing can change while activity is being switched
- Obtain and transfer all dynamic data
- SWitch ACTivity from the active CPU to the inactive CPU
- Perform additional checking to ensure sanity of new CPU and initiate recovery
- Insert the dynamic data that was transferred before the SWACT
- Resume call processing
- Cleanup and deallocate any resources used to execute the CC warm SWACT

### CC warm SWACT Commands

The commands required to perform/monitor/report a CC warm SWACT are as follows.

**SWCT** (BCS32 or lower)-directory where all commands for CC warm SWACT may be found. User must be in the BCSUPDATE directory to go to this directory in BCS31 and BCS32, i.e., BCSUPDATE;SWCT

System Response: Prompt changes to SWCT:

**SWACTCL** (BCS33 and higher)-same as SWCT but was changed in BCS33 to distinguish CC warm SWACT from XPM SWACT.

System Response: Prompt changes to SWACTCL.

**QUIT**-gracefully exits SWCT/SWACTCL CI increment.

System Response: Prompt returns to previous state.

**FORCESWCT/FORCESWACT**-displays, enables or disables the ability for the newly active CPU to switch activity back to the previously active CPU if an abnormal condition exists (more than 10% of PMs on the newly active side are not OK). FORCESWCT for BCS32 or lower. FORCESWACT for BCS33 and higher.

Optional parameter:

- no parameter queries the status of FORCESWCT/FORCESWACT (IN EFFECT or NOT IN EFFECT is displayed).
- ON forces activity to stay on the newly active CPU even if an abnormal condition exists. This is the default setting.
- OFF allows activity to switch back if the abnormal condition exists. This should not be used unless the user definitely does not want to stay on the newly active CPU to correct problems, etc.

System Response: Log is produced when ON/OFF optional parameter is used (SWCT104).

**LOADEXECs**-displays, enables or disables the exec loading process which occurs after a CC warm SWACT to download new execs to the PMs for call processing. This command has been obsoleted in BCS35 or greater.
Optional parameter:

- no parameter queries the status of LOADEXECS (ENABLED or DISABLED is displayed).
- ON enables exec loading. This is the default setting and is required when performing a CC warm SWACT between different BCSs, i.e., BCSn -> BCSn+, BCSn+ -> BCSn.
- OFF disables exec loading after CC warm SWACT. This should not be used unless the user definitely understands the implications of not downloading execs to PMs after a CC warm SWACT.

System Response: Log is produced when ON/OFF optional parameter is used (SWCT104).

**DISP/DISPLAY**-displays information regarding CC warm SWACT. DISP in BCS30 or lower. DISPLAY in BCS31 and higher.

Optional parameter:

- BADNODES will display all hardware devices whose status is NOT OK or OFFLINE on the active side of the switch.
- MISMATCH displays mismatches found from comparing device statuses between the active side and the inactive side of the switch.
- SWCTTIME (SWACTTIME in BCS35 and higher) displays all times collected for CC warm SWACT (SWCT101 time, EXECTIME, RECVTIME).
- ALARM has been obsoleted in BCS33 and beyond.

System Response: Information is displayed to terminal.

**QUERYSWACT**-this command checks the office configuration to determine which CC warm SWACT command (RESTARTSWACT or NORESTARTSWACT) should be used.

System Response: If the office supports NORESTARTSWACT the response is as follows:

'NORESTARTSWACT is recommended for initiating a CC Warm SWACT. Further checking will be done when SWACT is invoked.'

otherwise the following message is displayed:

'RESTARTSWACT must be used for initiating a CC Warm SWACT.'
NORESTARTSWACT—this command executes the CC warm SWACT process and performs all of the necessary prechecks to activate the CC warm SWACT. PRESWACT steps of BCSUPDATE must all be executed successfully before a NORESTARTSWACT will be allowed. This command is valid only in BCS36 and greater.

Optional parameter:

- NOMATCH will disable the matching of device statuses between the active and inactive sides of the switch. WARNING: Do not use this option unless there is no other choice. Device statuses after the CC warm SWACT are not guaranteed hence several devices may be out of service after the CC warm SWACT.

System Response: The steps being executed as part of the CC warm SWACT will be displayed to the terminal and logs will be generated (SWCT102). SWACT will occur. If a NORESTARTSWACT cannot be executed in this office the following message will be displayed:

'RESTARTSWACT should be used instead of NORESTARTSWACT. NORESTARTSWACT command aborted.'

RESTARTSWCT/RESTARTSWACT—this command executes the CC warm SWACT process and performs all of the necessary prechecks to activate the CC warm SWACT. In BCS31 and greater the PRESWACT steps of BCSUPDATE must all be executed successfully before a RESTARTSWCT/RESTARTSWACT will be allowed. RESTARTSWCT in BCS32 and lower. RESTARTSWACT in BCS33 and higher.

Optional parameter:

- NOMATCH will disable the matching of device statuses between the active and inactive sides of the switch. WARNING: Do not use this option unless there is no other choice. Device statuses after the CC warm SWACT are not guaranteed hence several devices may be out of service after the CC warm SWACT.

System Response: The steps being executed as part of the CC warm SWACT will be displayed to the terminal and logs will be generated (SWCT102). SWACT will occur followed by a COLD restart. If a NORESTARTSWACT is supported by this office the following message will be displayed which requires a YES/NO response from the user:

'NORESTARTSWACT should be used instead of RESTARTSWACT. Do you wish to continue with RESTARTSWACT?'
**ABORTSWCT/ABORTSWACT** - this command executes the CC warm SWACT process and performs all of the necessary prechecks to activate the CC warm SWACT. In BCS31 and lower the RESTARTSWCT command should be used in place of this command. This command does not require PRESWACT to be performed before execution. This command should only be used when aborting a BCS application. ABORTSWCT in BCS32 and lower. ABORTSWACT in BCS33 and higher.

Optional parameter:

- **NOMATCH** will disable the matching of device statuses between the active and inactive sides of the switch. WARNING: Do not use this option unless there is no other choice. Device statuses after the CC warm SWACT are not guaranteed hence several devices may be out of service after the CC warm SWACT.

- **NOCHECK** will override the requirement for all devices to be OK before a CC warm SWACT. Therefore a device can be CBSY for instance and the CC warm SWACT will still be allowed. Available in BCS34 and higher. WARNING: Use this option only as a last choice after exploring other choices.

System Response: The steps being executed as part of the CC warm SWACT will be displayed to the terminal and logs will be generated (SWCT102). SWACT will occur followed by COLD restart.

**STATUSCHECK** - this command matches statuses for devices between the active and inactive side of the switch. It verifies that the STATUSUPDATE step executed in PRESWACT was successful.

System Response: A SWCT109 log is generated for each type of device that has passed the STATUSCHECK process. A SWCT110 log is generated for each type of device that has failed the STATUSCHECK process. Each device of the failed type that mismatches is displayed to the terminal.

**MODCHECK** - this command checks for necessary CC warm SWACT application modules on the inactive side and outputs any modules which are missing. Missing modules will cause the CC warm SWACT to fail and therefore must be investigated or overridden via the OVERRIDE option to MODCHECK. This command is valid in BCS32 and beyond.

Optional parameter:

- no parameter invokes checking for all CC warm SWACT application modules.
• OVERRIDE will disable the checking for requested missing modules and hence disable the functions performed by those CC warm SWACT applications.

• RESET will enable the checking for requested missing modules and hence enable the functions performed by those CC warm SWACT applications.

System Response: SWCT113 log will be output if MODCHECK is successful. SWCT114 log will be output if MODCHECK fails. SWCT115 log will be for every missing module. SWCT116 log will be output for every module for which the OVERRIDE/RESET options are used.

RESUMEPM—should not be used. This is a very dangerous command and should only be used by qualified personnel.

System Response: Some PMs may go SYSB. Do not use this command.

RESTOREEXECS—this command will load execs to any or all PM types.

CAUTION
This command should only be used in emergency situations by qualified personnel.

Non optional parameter:

• <PM_TYPE> {TM, LM, DCM, RLM, XPM, ALL}

System Response: PM type(s) chosen will have execs loaded. No response to terminal.

CC warm SWACT Logs

SWCT101—Information log only. This log does not indicate a service affecting problem. Displays the WARM SWACT time.

SWCT102—Information log only. This log does not indicate a service affecting problem. Indicates which CC warm SWACT step successfully completed.

SWCT103—Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates which CC warm SWACT step failed.
SWCT104-Information log only. This log does not indicate a service affecting problem. Indicates a condition or state of the CC warm SWACT process.

SWCT105-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates why a CC warm SWACT step failed.

SWCT106-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates the underlying problem of why a CC warm SWACT step failed.

SWCT107-Information log only. This log does not indicate a service affecting problem. Indicates that exec loading occurred successfully to the reported PM type. This log has been obsoleted in BCS35 and beyond.

SWCT108-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that exec loading failed to the reported PM type. This log has been obsoleted in BCS35 and beyond.

SWCT109-Information log only. This log does not indicate a service affecting problem. Indicates that a STATUSCHECK application passed.

SWCT110-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that a STATUSCHECK application failed.

SWCT111-Information log only. This log does not indicate a service affecting problem. Indicates that the PRELOAD_EXECS step of PRESWACT completed successfully.

SWCT112-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that PRELOAD_EXECS failed for an XPM, one log will be reported for every XPM that failed.

SWCT113-Information log only. This log does not indicate a service affecting problem. Indicates that the MODCHECK command passed successfully.

SWCT114-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates that the MODCHECK command failed.
**SWCT115**-Trouble log. This log indicates a service affecting problem and must be investigated in order for the CC warm SWACT to complete successfully. Indicates which modules are missing on the inactive side according to the MODCHECK command, one log will reported for every missing module.

**SWCT116**-Information log only. This log does not indicate a service affecting problem. Indicates that a module has been OVERRIDDEN/RESET for checking by the MODCHECK command.

**SWCT117**-Information log only. This log does not indicate a service affecting problem. Displays information about the CC warm SWACT process.
Appendix B: Supplementary Procedures

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Procedure B-1
Loading the BCSTOOLS

At some time before the application date the BCSTOOLS may need to be loaded. Although many ONP modules are resident in the DMS load, to ensure the correct software tools are available for the BCS update, perform the following steps.

CAUTION
The BCS Tools tape is no longer required for applications going to BCS35 or higher when coming from a dump side of BCS33 or higher when patch GDB18 has been applied.

Everything needed that used to be on the tools tape will be resident in the switch or will be provided in store file at loadbuild. A BCS32 version of GDB18 does not yet exist, therefore, all application going from BCS32 to 35 will still require the tools tape.

Warning: CC/CM REX tests should not be scheduled to run while loading/unloading modules or files. Either disable the rex test, or take precautions to avoid performing this procedure while the rex test is running.

1. App/ACT Ensure the logged in user has PRIVCLAS of ALL.

2. Ensure the terminal being used has COMCLASS of ALL.

3. Clean up SFDEV on the ACTIVE side and verify a sufficient amount of store is available for SFDEV (minimum 5 VAST AREAS available and 30,000 spare in table DSLIMIT).

4. > RECORD START ONTO <printer> {or slave a printer to the terminal}

5. > QUERY DRCI {to verify module is present}

-continued-
CAUTION
Because DRCI is resident in BCS33 and higher, you are no longer required to unload and load the module (steps 6 and 8 below).

6  Only if from_BCS 32 and lower, unload module DRCI (if present).
   > UNLOAD DRCI
   Enter YES to confirm the message, "Module DRCI belongs to Package DRCISUB."
   > QUERY DRCI {to verify unloaded}

7  Put up the new BCSTOOLS tape.
   > MOUNT <x>;TLIST T<x> {x is the MTD number}

8  If from_BCS 32 and lower, load module DRCI if it was unloaded above.
   > LOAD DRCI
   > QUERY DRCI {to verify loaded}

9  > COPY DATA_DUMP SFDEV {only needed if to_BCS 31 or lower}

10 > COPY ONPMODS SFDEV

11 > LISTSF ALL {to verify execs are in storefile}

12 > PRIORITY ON

13 > DRCI

14 > RUNEXEC ONPMODS
   Answer "YES" if asked, 'Do you wish to load One Night D/R application modules?'
   Answer "OK" to prompt, 'Enter OK after the BCS TOOLS tape has been listed.'
Procedure B-1
Loading the BCSTOOLS (continued)

15 The unloading/loading process will run to completion.
    Note: In some instances MOD158 logs may be generated periodically. These logs are the expected result of feature AL2236, and can occur for each module loaded by the ONPMODS process.

16 > DEMOUNT T<x>

17 > DRCI QUIT

18 If from_BCS 26-29, ensure patch EWW08 is applied on the from_BCS load, then enter:
    > SWCTCHK {ensure test passes}

19 > RECORD STOP ONTO <printer> {if RECORD was started above}
Procedure B-2
MATE_MEM_CHECK failure (PRESWACT)

This procedure may be used to correct an error condition that may possibly be seen during a software delivery.

FROM BCS: 32 TO BCS: All

CONDITION: If you receive an error message as the result of the PRESWACT Runstep MATE_MEM_CHECK, then isolate the faulty memory card on the inactive (mate) side as follows.

CAUTION
Failure of this test is grounds for an immediate RESCHEDULE.
Its purpose is to prevent a SWACT to faulty hardware on the inactive side.

ACTION for NT40:

1. From the inactive-side terminal (via mateio) check for a CC102 log with a reason text of "CHECKSUM PARITY ON DATA STORE." The offending card will be identified in the log.

2. Also, the MAPCI status (inactive) will be updated with the offending memory card marked "f".
   > MAPCI;MTC;CC;DS
   or
   > MAPCI;MTC;CC;PS

ACTION for SuperNode:

1. Go into LOGUTIL and extract any traps which may have occurred. You are interested in traps of reason ECC error, or SRAM parity. You may also see FIR INTERRUPT PENDING.

2. To determine which card the failure is on, you will have to decode the SRAM Status Register field, found on the line following the "Peripheral interrupt mask" line. The value of this register depends upon the kind of 9X13 card equipped. If the CPU board is a 9X13Hx pt 9X13Gx, and the value is NOT D180, then the CPU board is at fault. For all other CPU boards, if the value is NOT 0000, then the CPU board is at fault.

-continued-
Procedure B-2
MATE_MEM_CHECK failure (continued)

3 If this does not isolate the error to the CPU board, then the “Matcher address” field has to be decoded.

4 If the address specified is in the 40000-BFFFFF range, then the CPU board is at fault.

5 If the address specified is in the 400000-1FFFFF range, then the problem is on a memory card and can be decoded by the TRNSL command in the memory map level:
   > MAPCI NODISP;MTC;CM;MEMORY
   > TRNSL ADDRESS #<page> #<offset>

6 If the memory which is faulty is a spare module, then there is no way to determine which card is at fault, but it will be one of the memory modules marked as spare. You can determine which cards have spare modules by typing, in the memory level:
   > TRNSL CARD <cpu_number> ALL
Procedure B-3
AFT MOP

This procedure may be used to PREVENT an error condition that may possibly be seen during a software delivery.

FROM BCS: 29 TO BCS: 34

CONDITION: The following workaround is only specific to AFT running on TCP or SIPC.

ACTION:

1. After MOVEBCS:
   Delete AFT datafills from RASLAPPL and GASINFO tables on the INACTIVE (new) side. Make sure to keep a copy of the datafills because it needs to be re-entered later on.
   To delete AFT datafill, perform STOPAFT on AFT sessions:
   a. Type AFT to get in AFTCI level.
   b. STOPAFT <aft_session>
      where <aft_session> is the NETCON id in RASLAPPL table.
   c. Remove tuples from GASINFO first.
   d. Then remove tuples from RASLAPPL table.

2. Pre-SWACT:
   On the old side, perform the following steps.
   a. Type AFT to get in AFTCI level.
   b. Perform STOPAFT command. This ensures that AFT will not attempt to transfer any new files.
   c. Rotate DIRP volumes for CDR and OM. The purpose of rotating the volumes is to avoid re-transferring of a big file since AFT does not have information that would enable it to start from the last transferred block prior to SWACT.

-continued-
Procedure B-3
AFT MOP (continued)

d. Wait until the current transfers (CDR and OM) are completed.
   - Perform QUERYAFT to check that both CDR and OM files have been transferred. This means the rotated CDR and OM files should disappear from the QUERYAFT display and QUERYAFT should show that AFT is at the IDLING state. AFT log should also indicate that file transfer has been completed.
   - If AFT is at IDLING state but the rotated file is still in the QUERYAFT display, it means there has been a Partial File Transfer (PFT). What one should do is to STARTAFT <aft_session>. Then do QUERYAFT. Wait until the AFT state changes to anything other than IDLING (takes about one minute in BCS33, about 15 seconds in BC34), then do STOPAFT <aft_session>.

3 Post-SWACT:

a. Check DIRP status:
   - MAPCI;MTC;IOD;DIRP
   - QUERY <subsystem>

b. Make sure active and standby volumes are mounted.

c. Since there is an issue over the timing of DIRP files (rotated during SWACT), wait until all 'U' files appear in table DIRPHOLD. AFT should not be datafilled until those files appear in the table. This will guarantee that files are not transferred out of order. The number of 'U' files appearing in table DIRPHOLD per stream should be equal to the number of files datafilled in table DIRPSSYS, field NUMFILES (assuming the same DIRP volumes were used before and after SWACT).

d. Re-datafill AFT into RASLAPPL and GASINFO tables.

   Note: Do not perform STARTAFT manually. AFT should start up itself automatically after it is datafilled.

e. QUERYAFT <aft_session> will display a file directory with AFT status in about 5 minutes. File transfer will start in about another one minute. Then, AFT should be in SENDING state soon if everything proceeds normally. AFT, SST logs should be collected if AFT is having a problem resuming transfer activity.
Procedure B-4
Converting one PM to another

During a BCS application it is possible to change the key field LTCNAME from an LGC to an LTC. This would be done during the data transfer to eliminate having to delete and re-add the peripheral. Telco then is responsible to change the FRAMENAME, LOADNAME, and EXEC LINEUP information to meet their needs. This procedure should be used to accomplish this.

Do the following after the CC SWACT when you have converted one PM type to another PM type (for example, an LGC to LTC conversion).

1. **Telco/ACT** Busy the inactive unit of the peripheral to be reloaded.

2. Make appropriate changes in table LTCINV for the FRAMENAME, LOADNAME, and EXECs for the peripheral being modified.

3. Load, patch, and rts unit x nodasync on the inactive unit.

4. Perform a cold swact to the newly loaded side.

5. Busy the newly inactive unit.

6. Set the patch set against that unit, load and perform a regular rts.

7. Repeat steps 1-6 for any remaining peripherals to be modified.
Procedure B-5
CSC static data

All Cell Site Contollers (CSCs) need to have static data updated manually after the CC SWACT.

1. Site/ACT  Bsy the inactive side on the CSC.
2. RTS the inactive side of the CSC.
3. WARMSWACT OFF.
4. Perform a swact on the CSC (whicRecover echo cancellerthe inactive side on the CSC.
5. RTS the inactive side of the CSC.
6. Once both units of the CSC are in-service, do WARMSWACT ON.
Procedure B-6
Recover echo canceller modules (ECMs)

For to_BCS 34 with feature package NTXK97AA (DMS300 EC Control): as soon as you log into the switch following the CC SWACT check table ECHINV, if the table is not empty do the following.

*Note:* For to_BCS 35 and 36 the ECMs will be set SYSB over the CC SWACT but will be automatically recovered within 5 minutes. Echo cancellation on existing calls will not be affected, but new calls will not have cancellation applied until they recover InSv. You may set them InSv manually if required (see below command) but you will terminate echo cancellation on existing calls.

1. **App/ACT** > MAPCI;MTC;EXT;EQUIP

2. > POST ALL ECHOCAN

3. > BSY ALL; RTS ALL
Procedure B-7
MATE IMAGE capture

For SuperNode only the following procedure for dumping an inactive (mate) image may be useful in an abort situation or whenever an image of the inactive CM is required.

When dumping a mate image of a DATAFER'ed load it is important to realize that the image you are taking will have all peripherals in an OFFL state; therefore, this image is not BOOTABLE as it will not have the minimum configuration of at least one IOC and one TERMDEV in an "IN-SERVICE" state. To avoid this problem we will be RTS'ing the minimum configuration manually.

SuperNode only

1 App/ACT On the ACTIVE side ensure that patch MAP01 has been applied if the office is at BCS 26, 27 or 28.

2 ACT Determine which SLM volume to use to dump the image.
   > MATELINK RTS;MCR RTS (if necessary)
   > DISKUT
   > LF S00DIMAGE
   Lists the volume on which you wish to put the image

3 ACT From the active side enter MATEIO, and MATEBIND the SLM volume you have chosen. See the example below.
   > MATEIO
   > MATEBIND JJ S00DIMAGE  
   {example}

4 ACT > MATELOG <device_name>

5 INACT On the Mate side LOGIN as OPERATOR ORERATOR.

6 INACT Mate> MAPCI;MTC;IOD;IOC 0;BSY IOC
   Mate MAPCI will not display.

7 INACT On the Mate side BSY and RTS the same location that the MAP is datafilled on the active side (example: CARD 2 PORT 0;BSY 0;RTS 0).
   The RTS will fail, but this is expected.

-continued-
Procedure B-7
MATE IMAGE capture (continued)

8    INACT
Mate> QUIT MAPCI
Mate> PRINT MATEIODIR
    You should see the file JJ in MATEIODIR.

9    INACT  From the inactive side enter MATEIO, and DUMP the inactive (Mate) image. See the example below.
Mate> MATEIO
Mate> DUMP IMAGE JJ ACTIVE RETAIN NODE CM    {example}
    This command will give a couple of messages about not being able to translate the IOC devices-ignore the messages.

10   ACT  When image is complete, backup the file to tape. You will only have a CM load.
Testing call survivability over a CC warm SWACT

This section provides sample call scripts and a procedure for testing call survivability over a CC warm SWACT. These are provided as guidelines for the testing of calls being supported over the CC warm SWACT.

Sample call scripts for testing call survivability over a CC warm SWACT

1. Verify ISDN calls:
   line (KSET-Disp M5317T) -> trunk -> line (KSET-Disp M5209T)
   (e.g., 968-xxxx ---> 6-456-xxxx)
   line (PPHONE-Disp M5317T) -> trunk -> line (1FR-Disp Maestral)
   (e.g., 968-xxxx ---> 9-969-xxxx)
   line (KSET-Disp M5317T) -> trunk -> line (PPHONE-Meridan Bus.)
   (e.g., 968-xxxx ---> 9-1-819-456-xxxx)
   line (KSET-Disp M5317T) -> line (KSET-PSET)
   (e.g., 968-xxxx ---> 968-xxxx)
   line (BRAMFT set) -> line (BRAFS set)
   (e.g., 968-xxxx ---> 968-xxxx)
   line (1FR) -> line (BRAKS set)
   (e.g., 968-xxxx ---> 968-xxxx)

2. Verify regular POTS calls:
   line (PPHONE) -> trunk -> line (1FR)
   (e.g., 969-xxxx ---> 9-1-514-970-xxxx)
   line (1FR) -> line (1FR)
   (e.g., 969-xxxx ---> 969-xxxx)

3. Verify CMS calls:
   line (1FR) -> line (1FR)
   (e.g., 969-xxxx ---> 969-xxxx)

4. Verify use of different trunk types:
   line (1FR) -> PTS trunk -> line (1FR)
   (e.g., 968-xxxx ---> 9-969-xxxx)
   line (1FR) -> ISUP trunk (all variants supported by office)
   -> line (KSET-Disp M5209T)
   (e.g., 968-xxxx ---> 6-456-xxxx)
5. Verify use of different PM types:
line (LM) -> line (RLM)
(e.g., 969-xxxx ---> 969-xxxx)
line (LCM) -> line (RLCM)
(e.g., 969-xxxx ---> 969-xxxx)

Procedure for testing call survivability over a CC warm SWACT

1. Ensure that the best possible mix of the above call scripts are used for the following procedure.

2. Establish call.
   Just before the CC warm SWACT perform the following:
   On the originating set:
   • Take handset off hook and dial the desired number
   • Wait for terminating set to pick up
   • Ensure that a voice path has been established by blowing into phone on originating set and listening for the blowing on the terminating set
   On the terminating set:
   • Wait for ringing
   • Take handset off hook
   • Ensure that a voice path has been established by blowing into phone on terminating set and listening for the blowing on the originating set
   Leave both handsets off hook

   Note: Only stable (in a talking state-not in transition like dialing or feature activation mode) two port calls are maintained over CC warm SWACT. Any call which involves a feature/extension data block or service circuit will not be maintained (e.g., call waiting, call forwarding, conference call).

3. Testing call
   Right after the new CPU takes activity (i.e., during the restart or recovery sequence on the newly active CPU) perform the following:
   On the originating set:
   • Ensure that a voice path has been maintained by blowing into phone on originating set and listening for the blowing on the terminating set
   On the terminating set:
   • Ensure that a voice path has been maintained by blowing into phone on terminating set and listening for the blowing on the originating set
Leave both handsets offhook.

As soon as you are able to log into the switch (i.e., once A1 is flashing) perform the following sequence:

On the originating set:
- Ensure that a voice path has been maintained by blowing into phone on originating set and listening for the blowing on the terminating set

On the terminating set:
- Ensure that a voice path has been maintained by blowing into phone on terminating set and listening for the blowing on the originating set

Leave both handsets offhook

Once the SWCT101 log is issued (i.e., SWACT is done and dial tone has been re-established) perform the following sequence:

On the originating set:
- Ensure that a voice path has been maintained by blowing into phone on originating set and listening for the blowing on the terminating set

On the terminating set:
- Ensure that a voice path has been maintained by blowing into phone on terminating set and listening for the blowing on the originating set

Place both handsets on hook (i.e., terminate call).

Note: Any activation of a feature on a call maintained over CC warm SWACT will cause the call to be dropped (e.g., a call maintained over CC warm SWACT cannot activate a conference call, cannot activate call forwarding, cannot come out of hands-free mode, cannot be put on hold etc. without causing the call to be torn down).

4. Ensure call processing
Re-establish call as described in Step 1.

If at any time during this procedure any of the following conditions exist: one-way speech path, no dial tone, no speech path, constant ringing, no ringing, crosstalk, busy signal-perform the following actions:

a. Check hardware involved for faults (e.g., check set, line card, ring generator, etc.).

b. Post line or trunk at MAP position and confirm proper state or transition of state is set (e.g., if supposed to be in talking mode ensure both the originating and terminating set show CPB, when you put handset on hook the state should change from CPB to IDL).

c. Obtain a QDN for both the originating and terminating set.

d. Obtain a TRAVER for the call between the originating and terminating set.

e. Collect SWCT, ENET, NET, NETM, ENCP, PM, TRK and LINE logs from both sides of the switch (i.e., both active and inactive CPU).
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Appendix C:
Test Call Scripts

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NTX250 Datapath-Basic, C-9, C-67
NTX832 DMS-STP Basic, C-37
NTX833 STP Operations, C-37
BCS testing procedure

The purpose of this section is to provide a test plan for the verification of the new software release. The tests are sequenced to ensure switch sanity and call processing stability.

The test plan consists of generic tests to be "datafilled" by the Telco/carrier site as applicable for the particular site (calling number, called number, and test results). Space is provided for the site to add additional tests as required.

Immediately following the SWACT the site should initiate testing based on the guidelines provided.

The Critical call processing tests section provides detailed call scripts for critical testing. Again, these are generic tests that should be tailored to a particular office.

Following that, AMA verification tests (either NT or BellCore formats) and Metering verification tests should be executed for the appropriate sites.

When executing the Critical feature tests it is the responsibility of the Telco/Carrier to ensure that service to high profile customers (for example: 911, police, fire, hospitals, and radio stations) is fully restored.

The testing can be carried out in the following sequence:

- Critical call processing tests section is to be completed in the first 30 minutes.
- AMA verification tests section is to be initiated immediately after and in conjunction with Critical call processing tests. This section is comprised of three subsections:
  - Standard AMA tests using NT billing record formats
  - Standard AMA tests using BellCore AMA formats
  - Metering verification tests section
- Critical feature tests section is to be completed by 06:00 hours.
- Non-Critical tests section is to be completed by 09:00 hours.
## Critical call processing tests
### DMS-100 critical call processing tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check for dial tone on all LM's</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify all EAS outgoing routes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify CAMA route for ANI 1&amp;2 party</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify local tandem routes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify '0' minus route</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify '0' plus route</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify '0' plus route using DTMF for ACCS features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Verify '0' plus route using DP for operator access (no ACCS features)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Verify DDO route</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Verify directory assistance (DA) route</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify ONI 1-7, 1-10 digits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DMS-100 critical call processing tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Verify critical PBX routes (i.e. hospitals, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Verify service CODE routes (i.e. 511, 911 etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Verify all switcher announcements, 60T, 120T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Verify TOLL COMP (DTS) route</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Verify INC EAS routes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Verify IFR intra-office call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>RLM tests:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) EAS outgoing (one route)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) '0' plus/minus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) CAMA ANI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) IFR INTRA RLM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Verify operator intercept route</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-200 critical call processing tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify all incoming and outgoing intertoll routes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify all toll COMP(DTS) routes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify all machine announcements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify incoming CAMA routes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify ONI and ANIFAIL CAMA calls go to CAMA positions and complete</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NTP 297-1001-303   Release 04.01   September 1994
## AOSS critical call processing test
(Auxiliary Operator Services System)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Return an AOSS position to service (BSY, RTS, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify a DMODEM is attached to the data trunk of the position (AOSSPOSDATA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify login to an AOSSPOS with a valid operator no</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>From a MF AOSS DA ANI type trunk place a 411 ANI call to AOSS (seizure - KP - 0 - 7D ANISPILL - ST)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify call arrival tone display of 411, and correct booknumber at AOSS position. Enter a requested number and key 'POS RLS'.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>From an AOSS POS DA ONI type trunk place a 411 ONI call to AOSS seizure only)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AOSS critical call processing test (continued)
<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Verify call arrival tone, display of 411, and CLG# header. Enter a requested number and 'POS RLS'. Verify call is not released until a valid calling number is entered.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Datapath critical call processing test (NTX250 Datapath-Basic)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DiaLED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>At a data unit, press DN &amp; verify:</td>
<td>NOTE: Ensure that baud rate switches on both data units are set to 9600 asynchronous</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) audible beep is returned when key is pressed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) DN lamp on solid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) dial tone is returned</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Press Volume/UP &amp; Volume/DOWN keys &amp; verify volume increases and decreases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Key in digits corresponding to the directory number of another data unit. Verify dial tone breaks and audible beep returned whenever a key is pressed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify audible ringing/warbling is returned to both originating and terminating data units</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Datapath critical call processing test (continued)
5 Verify while ring- 
ing/warbling is 
taking place:
   a) originator’s DN 
lamp is on solid 
b) terminator’s DN 
lamp is flashing 
c) NET CONNECT 
lamps on both 
data units flash

6 Press terminating 
DN key and verify:
   a) ring/warble ceases 
on both data units 
b) both DN lamps 
are on solid 
c) both NET CONNECT 
lamps on solid 
d) a 2-way data path 
exists between 
data units (eg., 
send data from 
data terminal on 
one DU to another 
data terminal on 
the other DU) 
e) line state at LTP 
indicates CPB

Datapath critical call processing test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE DIGITS DIALED OR CLLI</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
</table>

7 Press terminator’s 
RLS key and verify:
   a) line state 
returns to idle 
b) 2-way data path 
no longer exists
c) both data units return to original idle state (eg., DTR and POWER/SYNC lit)

8 Repeat steps 1 to 7, only RLS from originator

9 Repeat steps 1 to 8, only set up call in opposite direction

10 On a data unit set the AUTO ANSWER switch to AUTO

Datapath critical call processing test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Terminate a call at that data unit and verify:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) it warbles momentarily</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) DN lamp is lit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) warbling ceases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) call is automatically answered, NET CONNECT lamp is lit solid, and 2-way data path exists</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Repeat last two steps for several SYNCHRONOUS and ASYNCHRONOUS baud rate settings</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13 If BERT (Bit Error Rate Test) equipment is available, verify that acceptable error rate is obtained (e.g., 10 exp-7)
## Equal Access critical call processing test (NTX186 Equal Access End Office)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify local tandem routes to the IC's point of presence are operational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify direct ATC routes to the IC's point of presence are operational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Complete a 10XXX-0 call to the appropriate IC operator route</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Complete a 10XXX-0 -7 digit intralata intrastate call (if intralata calls are allowed to complete)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Complete a 10XXX-0 -7 digit interlata intrastate call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Complete a 10XXX-0 -10 digit interlata intrastate call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Complete a 10XXX-0 -10 digit interlata interstate call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Complete a 10XXX-01 - international call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Gateway critical call processing tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify all (idle) incoming and outgoing R1 trunks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify all (idle) incoming and outgoing N5 trunks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify all (idle) incoming and outgoing N6 trunks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ensure all tones, group alarms and announcements function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify proper link management functions on N6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify proper trunk states and trunk recovery on call processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify proper trunk states and trunk recovery on CCITT #6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ensure calls may be processed from R1 to N5, N5 to R1 and R1 to R1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Ensure calls may be processed from N5 to N5 (transit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEST NO</td>
<td>TEST DESCRIPTION</td>
<td>FROM: LINE TYPE OR CLLI</td>
<td>DIGITS DIALED /REMARKS</td>
<td>TEST RESULT</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------</td>
<td>--------------------------</td>
<td>------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Ensure calls may be processed from N6 to N5, N6 to R1, N5 to N6, R1 to N6, and N6 to N6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify warm restart effect on trunk states</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ie. trunks in CP, speech, idle, setup, takedown stages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Verify cold restart effect on trunk states</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ie. trunks in CP, speech, idle, setup, takedown stages</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-TOPS critical call processing tests
*(Traffic Operator Position System, NTX030 TOPS Call Processing Features)*

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE</th>
<th>DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Return 1 position to service (i.e. INB, MB, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify DMODEM is attached to data trunk of position</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Return all HOBIC devices to service (HOBIC, AQ, VQ and record)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify each device has DMODEM attached</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>From MF combined TOPS trunk, place 1-ANI call (KP-NPA-NNX-7D-ST2P-KP-0-7D ANI SPILL - ST)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify call terminates OK and speech path is good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>From MF combined TOPS trunk, place 0-ANI call (KP-NPA-NNX-7D-ST3P-KP-0-7D ANI SPILL - ST)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DMS-TOPS critical call processing tests (continued)
8  Call appears as 0-call. Wait for call to terminate & key 'RLS FWD' & 'START'.
Outgoing portion drops and re-output pulses.

9  Verify call can be handled & floated by operator. Verify call terminates OK.

10 From MF combined TOPS trunk, place 0-ONI call (KP-ST3P-KP-1-ST).

11 Call appears as 0-call. Verify call can be handled properly by the operator and terminates OK.

12 Repeat step 10 & 11 from dedicated non-coin trunk.

13 From MF combined TOPS trunk, place 1-HOTEL call (KP-NPA-NNX-7D-ST2P-KP-6-7D ANI SPILL-ST).

Datapath critical call processing test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Call appears as 1-hotel call. Verify</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
it be handled properly by the operator and terminates OK. 
On completion of call, HOBIC devices should record it.

15 Repeat steps 13 & 14 from a dedicated hotel trunk.

16 From MF combined TOPS trunk, place 0-COIN call (KP-NPA-NNX-7D STP-KP-0-7D ANI SPILL-ST)

17 Call appears as 0-coin pre call. Verify it is handled properly by the operator and terminates OK.

18 Do flash recall from originator. Verify call comes back as 'RCL'. Key 'POS RLS'. Wait 3 mins. & ensure call arrives NFY 3.

19 Repeat step 17 & 18 from dedicated coin trunk.

Datapath critical call processing test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>From the FM TTY, enable a transfer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
21 Verify that:
   a) IC screen is updated to include transfer format
   b) FM CRT screen is updated to include transfer format
   c) FM TTY position status summary is updated to include transfer format (key P)

22 Key 'L' from T0 TTY. Verify a message is received at the TTY showing the logged in operators
## DMS-250 critical call processing test

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI DIGITS DIALED</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify all service CCTS IDLE/INI STATE (ANNS, RCVRDGT, RCVRMF, RCVRATD, TTT, TTU, T102T)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify all (IDLE) customer trunks (ONAL, ONAT, EANT) NO &quot;PMB,CFL&quot; states</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify all (IDLE) network trunks (IMT, DAL, DAL-TIE) NO &quot;PMB,CFL&quot; states</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Confirm EANT OFFNET call processing (ORIG 7D, 10D W/ANS)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Confirm EANT ONNET call processing (ORIG 7D, 10D W/ANS)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Confirm (ONAL,DAL) OFFNET call processing (7D, 10D W/ANS)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Confirm (ONAL,DAL) ONNET call processing (7D, 10D W/ANS)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Confirm IMT,ONAT W/ &quot;SAT&quot; call processing (ORIG W/SAT _ Y)</td>
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</tr>
<tr>
<td>9</td>
<td>Verify OCC billing record incrementing (DIRP: QUERY OCC)</td>
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</tr>
</tbody>
</table>
### DMS-250 critical call processing test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Ensure all tones, group alarms, and ANNMENTS operational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify 6/7 digit AUTHCODE W/ACCSCRN (note CDR results)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Verify speed number calls can process (7D, 10D - CDR REF)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Confirm IDDD call originations and terminations W/ANS 7D, 10D ON/OFFNET</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>*** TOPS REQMT *** Verify call routing I) ORIG ANI CALLS II) ORIG ONI CALLS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>*** TOPS REQMT *** Verify TOPS calls can be completed (7D,10D ON/OFFNET)</td>
<td></td>
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</tbody>
</table>
# DMS-MTX critical call processing test

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION FROM: TRUNK TYPE OR CLLI</th>
<th>DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify all service CCTS IDLE/INI state (ANNS, RCVRS - DGT, MF, ATD, TTT, TTU, T102T)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify all cell sites (INSV) no SYSB/MANB states</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>*** MACPI-TTP level: set 'C'/'P' trks that are &quot;IDL&quot; to &quot;INB&quot; status (these must be &quot;SZD&quot; state otherwise)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify all RCU(S) (INSV) CCH, LCR, TAU and VCHS. no SYSB/MANB states</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify all (IDLE) customer trunks ( MTX and ZONE ) no &quot;PMB,CFL&quot; states</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Confirm MTX-BASIC call processing land to mobile mobile to land mobile to mobile (ORIG 7D,10D W/ANS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify AMA billing record incrementing (DIRP; QUERY AMA)</td>
<td></td>
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</tbody>
</table>

**DMS-MTX critical call processing test (continued)**
<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: TRUNK TYPE OR CLLI</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Insure all tones, group alarms, and announcements are operational.</td>
<td></td>
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</tbody>
</table>
## DMS-100 International critical call processing tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Check for dial tone on all lcm's</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify Local Metered Call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify National Metered Call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify Intern. Metered Call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify DIR. DIAL Queue (03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify DIR. DIAL Immed. (09)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify directory assistance (DA) route (01)</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>Verify critical PBX routes hospitals (77)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Verify critical PBX routes fire (00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Verify service code routes Repair (02)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify all switcher announcements, 60T, 120T</td>
<td></td>
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</tr>
<tr>
<td>12</td>
<td>Verify toll comp</td>
<td></td>
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</tbody>
</table>
route

DMS-100 International critical call processing tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Verify inc routes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Verify IFR intraoffice call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Check PS and DS</td>
<td></td>
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</tbody>
</table>
AMA verification tests

Automatic Messaging Accounting (AMA) verification tests provide test calls to ensure all aspects of the AMA feature function correctly.

Beginning with BCS 29 and higher BCSs, offices can be configured for AMA recording in the Bell Communications Research (BellCore) format. The Northern Telecom (NT) AMA format is used in many offices. Two versions of AMA verification tests are provided depending on the AMA format (NT AMA format or BellCore AMA format) used in the office. For more information on the two formats refer to:

- NTP 297-1001-128 (BellCore AMA format)
- NTP 297-1001-119 (NT AMA format)

Regardless of which format is used in the office the AMA verification tests for both AMA formats consists of the following:

- Series of test calls (call scripts) is made.
- An AMA program is used to dump the AMA tape or disk file containing the records for the test calls.
- The dumped AMA information is compared for each test call made.
- If the dumped AMA information is correct for each test call, the AMA feature is functioning properly.

Standard AMA tests using NT billing record formats

For the NT billing format a total of 30 call scripts have been established as a standard package. However, the Telco may add or delete call scripts based on job requirements and feature availability.

Before beginning the tests each call script should be filled with the calling and called telephone numbers plus the ANI spill when different from the calling number.

After the call scripts are completed, the AMA tape is printed using a non-resident program called AMADUMP. The AMA tape data entries are then compared.

Using the AMADUMP program, the following AMA tape entries should be verified for each call script (see NTP 297-1001-119 for a detailed explanation):

1. Entry code
2. Information Digits
3. Service Feature Code
4. Event Information Digit
5. Answer Time (day and time)
6. Conversation Time
7. Called Number
8. Calling Number
The following NOTES are provided for the following call scripts to indicate call set-up configuration, optional tests, etc.

(1) This test is considered optional and to be executed at the Telco's discretion.

(2) This test call is to originate from a NEE TTS 59B (BLUE BOX) or equivalent connected to a analog incoming Cama trunk.

(3) This test call is to originate from any end office. To provide this it is suggested end office telephone lines be provided at the DMS toll office.

(4) Call a telephone number that will not provide an answer condition.

(5) Request directory assistance operator to disconnect first.

(6) Obtain a special billing number from the traffic department.

(7) SWAPS - system wide area paging system

(8) Refer to the traffic equipment circular for a Multi Voice Com calling number and ANI id.

(9) The 'call attempt feature' is turned on by table OFCPARM position NO_ANS_CALLS_ON_TAPE set to 'Y'.

**Standard AMA tests using NT billing record formats**

<table>
<thead>
<tr>
<th>TEST NO INFORMATION</th>
<th>Entry Code</th>
<th>Info Digit</th>
<th>ServFeat</th>
<th>Event Info</th>
<th>CAMASusp</th>
<th>CallDuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STATION PAID DDD</td>
<td>(Note 3)</td>
<td>00 20 00 00 no 15 sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ani, origin. disconnect</td>
<td>1-<em><strong>-</strong></em>-____</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Called Number</td>
<td><strong><strong>-</strong></strong>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calling Number</td>
<td><strong><strong>-</strong></strong>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 STATION PAID DDD</td>
<td>(Note 3)</td>
<td>00 20 00 01 no 20 sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ani, termin. disconnect</td>
<td>1-<em><strong>-</strong></em>-___</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Called Number</td>
<td><strong><strong>-</strong></strong>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calling Number</td>
<td><strong><strong>-</strong></strong>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 INWATS</td>
<td>(Note 3)</td>
<td>00 20 00 00 no 60 sec</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ani, origin. disconnect</td>
<td>1-800-<em><strong>-</strong></em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Called Number</td>
<td><strong><strong>-</strong></strong>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calling Number</td>
<td><strong><strong>-</strong></strong>_</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>
### Standard AMA tests using NT billing record formats (continued)

<table>
<thead>
<tr>
<th>TEST CALL NO</th>
<th>INFORMATION</th>
<th>Entry Code Digit</th>
<th>Info Digit</th>
<th>Serv Event</th>
<th>CAMA Call Digit</th>
<th>Call Digit</th>
<th>Dura-</th>
</tr>
</thead>
</table>

4. SWAPS (Note 1,3)
- ani, origin. disconnect 00 20 00 00 no 10 sec
- Called Number 1-____-____-
- Calling Number ____-

5. TWX (Note 1,2)
- ani, origin. disconnect 08 20 00 00 no 15 sec
- Called Number kp-610-____-____-st
- Calling Number kp-0-____-____-st

6. SWAPS (Note 1,3)
- ori, termin. disconnect 00 24 00 01 no 12 sec
- Called Number 1-____-____-
- Calling Number ____-

7. OUTWATS (Note 3)
- ani, termin. disconnect 11 2 0 01 no 10 sec
- Called Number 1-____-____-
- Calling Number ____-

8. OUTWATS (Note 1,2)
- ani fail, origin. disconnect 11 25 00 00 no 25 sec
- Called Number kp-____-____-____-st
- Calling Number kp-2-____-____-st

9. MULTI VOICE COM (Note 1,2,8)
- ani, origin. disconnect 15 20 00 00 no 10 sec
- Called Number kp-____-____-____-st
- Calling Number kp-0-____-____-st

10. MULTI VOICE COM (Note 1,2,8)
- ani fail, origin. disconnect 15 25 00 00 no 15 sec
- Called Number kp-____-____-____-st
- Calling Number kp-2-____-____-st

11. MULTI VOICE COM (Note 2)
- ori, origin. disconnect 15 24 00 00 no 10 sec
- Called Number kp-____-____-____-st
Standard AMA tests using NT billing record formats (continued)

<table>
<thead>
<tr>
<th>TEST CALL NO</th>
<th>INFORMATION</th>
<th>Entry Code</th>
<th>Info Digit</th>
<th>Serv Digit</th>
<th>Event Digit</th>
<th>CAMA</th>
<th>Call Digit</th>
<th>Call Digit</th>
<th>Call Digit</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 STATION PAID DDD</td>
<td>(Note 2)</td>
<td>ani/service observed</td>
<td>00</td>
<td>30</td>
<td>00</td>
<td>no</td>
<td>10 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>origin. disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Called Number</td>
<td>kp-<em><strong>-</strong></em>__-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calling Number</td>
<td>kp-3-____-_____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 STATION PAID DDD</td>
<td>(Note 2)</td>
<td>ani fail/service observed</td>
<td>00</td>
<td>31</td>
<td>00</td>
<td>no</td>
<td>30 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>origin. disconnect</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Called Number</td>
<td>kp-<em><strong>-</strong></em>__-st</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Calling Number</td>
<td>kp-5-____-_____-st</td>
<td></td>
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<td></td>
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<tr>
<td>14 STATION PAID DDD</td>
<td>(Note 2)</td>
<td>oni/service observed</td>
<td>00</td>
<td>34</td>
<td>00</td>
<td>no</td>
<td>25 sec</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>origin. disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Called Number</td>
<td>kp-<em><strong>-</strong></em>__-st</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Calling Number</td>
<td>kp-4-____-_____-st</td>
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<tr>
<td>15 STATION PAID DDD</td>
<td>(Note 3,4,9)</td>
<td>ani, origin. disconnect</td>
<td>00</td>
<td>20</td>
<td>00</td>
<td>no</td>
<td>15 sec</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>call attempt feat ‘on’</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Called Number</td>
<td>1-__<strong>-</strong>____</td>
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<td></td>
<td>Calling Number</td>
<td><strong><strong>-</strong></strong>__</td>
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<tr>
<td>16 STATION PAID DDD</td>
<td>(Note 3)</td>
<td>ani, origin. disconnect</td>
<td>00</td>
<td>20</td>
<td>00</td>
<td>no</td>
<td>15 sec</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Call Number</td>
<td>1-555-1212</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number</td>
<td><strong><strong>-</strong></strong>__</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>17 STATION PAID DDD</td>
<td>(Note 3,5)</td>
<td>ani, termin. disconnect</td>
<td>00</td>
<td>20</td>
<td>00</td>
<td>01</td>
<td>no</td>
<td>15 sec</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Call Number</td>
<td>1-____-555-1212</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number</td>
<td><strong><strong>-</strong></strong>__</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 STATION PAID DDD</td>
<td>(Note 1,2)</td>
<td>ani fail, origin. disconnect</td>
<td>00</td>
<td>25</td>
<td>00</td>
<td>no</td>
<td>yes</td>
<td>10 sec</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Call Number</td>
<td>kp-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
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### Standard AMA tests using NT billing record formats (continued)

<table>
<thead>
<tr>
<th>TEST CALL NO</th>
<th>INFORMATION</th>
<th>Entry Code Digit</th>
<th>Info Digit</th>
<th>Serv Digit</th>
<th>Event Digit</th>
<th>CAMA Digit</th>
<th>Call Digit</th>
<th>Durat Digit</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 STATION PAID DDD</td>
<td>(Note 1,2) oni, origin. disconnect</td>
<td>00 24 00 00 yes</td>
<td>10 sec</td>
<td>Called Number 1-<strong><strong>-</strong></strong>-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 STATION PAID DDD</td>
<td>(Note 1,2) ani, blue box fraud/ans/</td>
<td>00 20 00 04 no</td>
<td>20 sec</td>
<td>orig. disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Called Number kp-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number kp-0-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 STATION PAID DDD</td>
<td>(Note 1,2) ani, blue box fraud/ans/</td>
<td>00 20 00 05 no</td>
<td>25 sec</td>
<td>term. disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Called Number kp-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number kp-0-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 STATION PAID DDD</td>
<td>(Note 1,2) ani, blue box fraud/</td>
<td>00 20 00 06 no</td>
<td>30 sec</td>
<td>no ans/orig. disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Called Number kp-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number kp-0-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 STATION PAID DDD</td>
<td>(Note 1,2) ani, blue box fraud/</td>
<td>00 20 00 07 no</td>
<td>25 sec</td>
<td>no ans/term. disconnect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Called Number kp-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number kp-0-<strong><strong>-</strong></strong>-____-st</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 INWATS</td>
<td>(Note 3) oni, origin. disconnect</td>
<td>00 24 00 00 no</td>
<td>35 sec</td>
<td>Called Number 1-800-<strong><strong>-</strong></strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calling Number <strong><strong>-</strong></strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 STATION PAID DDD</td>
<td>(Note 3,6) oni, orig. disc. special</td>
<td>00 24 00 00 no</td>
<td>40 sec</td>
<td>billing no.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Standard AMA tests using NT billing record formats (continued)

<table>
<thead>
<tr>
<th>TEST CALL NO</th>
<th>INFORMATION</th>
<th>Entry Code Digit</th>
<th>Info Digit</th>
<th>Serv Event</th>
<th>CAMA Call Digit</th>
<th>Duration</th>
<th>Called Number</th>
<th>Calling Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>INWATS</td>
<td>00 34 00 00</td>
<td>no 30 sec</td>
<td></td>
<td></td>
<td></td>
<td>kp-<strong><strong>-</strong></strong>-____-st</td>
<td>kp-4-<strong><strong>-</strong></strong>-st</td>
</tr>
<tr>
<td>27</td>
<td>INWATS</td>
<td>15 30 00 00</td>
<td>no 20 sec</td>
<td></td>
<td></td>
<td></td>
<td>kp-<strong><strong>-</strong></strong>-____-st</td>
<td>kp-3-<strong><strong>-</strong></strong>-st</td>
</tr>
<tr>
<td>28</td>
<td>STATION PAID DDD</td>
<td>00 20 00 00</td>
<td>no 180 sec</td>
<td></td>
<td></td>
<td></td>
<td>1-<strong><strong>-</strong></strong>-<strong><strong>-</strong></strong></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>STATION PAID DDD</td>
<td>00 20 00 00</td>
<td>no 300 sec</td>
<td></td>
<td></td>
<td></td>
<td>1-<strong><strong>-</strong></strong>-<strong><strong>-</strong></strong></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>STATION PAID DDD</td>
<td>00 20 00 00</td>
<td>no 1 sec</td>
<td></td>
<td></td>
<td></td>
<td>1-<strong><strong>-</strong></strong>-<strong><strong>-</strong></strong></td>
<td></td>
</tr>
</tbody>
</table>
## Standard AMA tests using BellCore AMA format

**(NTX098 BellCore CAMA Format/NTX159 BellCore LAMA Format)**

The BellCore AMA format identifies each type of call by a call code. Each call code uses a number of different structure codes depending upon the attributes of the call. The Standard AMA tests using BellCore AMA format table consists of 21 different call tests. Each call test is identified by a call code. Use this set of call scripts for the office if configured for the BellCore AMA format. The telephone company may add or delete call scripts based on job requirements and feature availability.

After the call scripts are completed, the AMA tape may be printed by using a non-resident program called AMADUMP. The AMA tape data entries are then compared. (See NTP 297-1001-128 for a detailed explanation.)

Reference: NTP 297-1001-128 (BellCore AMA format)

### Standard AMA tests using BellCore AMA format

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>CALL INFORMATION</th>
<th>Call Code</th>
<th>Call Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani, origin. disconnect</td>
</tr>
<tr>
<td>2</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani, termin. disconnect</td>
</tr>
<tr>
<td>3</td>
<td>inwats</td>
<td>008</td>
<td>ani, origin. disconnect</td>
</tr>
<tr>
<td>4</td>
<td>outwats</td>
<td>068</td>
<td>ani, termin. disconnect</td>
</tr>
<tr>
<td>5</td>
<td>outwats</td>
<td>068</td>
<td>ani fail, origin. disconnect</td>
</tr>
<tr>
<td>6</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani/service observed, origin. disconnect</td>
</tr>
<tr>
<td>7</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani fail/service observed, origin. disconnect</td>
</tr>
<tr>
<td>8</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani/service observed, origin. disconnect</td>
</tr>
</tbody>
</table>
### Standard AMA tests using BellCore AMA format (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>CALL INFORMATION</th>
<th>Call Code</th>
<th>Call Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani, origin. disconnect, unanswered call recording</td>
</tr>
<tr>
<td>10</td>
<td>directory assistance 555-1212</td>
<td>033</td>
<td>ani, originating disconnect</td>
</tr>
<tr>
<td>11</td>
<td>station paid directory assistance NPA-555-1212</td>
<td>006</td>
<td>ani, termin. disconnect</td>
</tr>
<tr>
<td>12</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani fail, origin. disconnect</td>
</tr>
<tr>
<td>13</td>
<td>station paid ddd</td>
<td>006</td>
<td>oni, origin. disconnect</td>
</tr>
<tr>
<td>14</td>
<td>inwats</td>
<td>008</td>
<td>oni, origin. disconnect</td>
</tr>
<tr>
<td>15</td>
<td>station paid ddd</td>
<td>006</td>
<td>oni, originating disconnect, special billing number</td>
</tr>
<tr>
<td>16</td>
<td>inwats origin. disconnect</td>
<td>008</td>
<td>oni, service observed,</td>
</tr>
<tr>
<td>17</td>
<td>outwats origin. disconnect</td>
<td>068</td>
<td>ani, service observed,</td>
</tr>
<tr>
<td>18</td>
<td>station paid ddd</td>
<td>006</td>
<td>ani, origin. disconnect, duration_1 second</td>
</tr>
<tr>
<td>19</td>
<td>multi-unit message rate</td>
<td>001</td>
<td>detailed billing, timed, origin. disconnect</td>
</tr>
<tr>
<td>20</td>
<td>multi-unit message rate</td>
<td>001</td>
<td>detailed billing, timed, termin. disconnect</td>
</tr>
</tbody>
</table>
### Standard AMA tests using BellCore AMA format (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>CALL INFORMATION</th>
<th>Call Code</th>
<th>Call Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>multi-unit message rate</td>
<td>002</td>
<td>bulk billing, timed, origin. disconnect</td>
</tr>
<tr>
<td>22</td>
<td>multi-unit message rate</td>
<td>002</td>
<td>bulk billing, timed, termin. disconnect</td>
</tr>
<tr>
<td>23</td>
<td>multi-unit message rate</td>
<td>003</td>
<td>detailed billing, untimed, origin. disconnect</td>
</tr>
<tr>
<td>24</td>
<td>multi-unit message rate</td>
<td>003</td>
<td>detailed billing, untimed, termin. disconnect</td>
</tr>
<tr>
<td>25</td>
<td>multi-unit message rate</td>
<td>004</td>
<td>bulk billing, untimed, origin. disconnect</td>
</tr>
<tr>
<td>26</td>
<td>multi-unit message rate</td>
<td>004</td>
<td>bulk billing, untimed, termin. disconnect</td>
</tr>
<tr>
<td>27</td>
<td>directory assistance 411</td>
<td>009</td>
<td>ani, origin. disconnect</td>
</tr>
</tbody>
</table>
Metering verification tests

The metering Verification test section provides test calls to ensure all aspects of the metering feature function correctly.

These call scripts have been established as a recommended standard package. However, the Telco may add or delete call scripts based on job requirements and feature availability.

Before beginning the tests each call script should be filled with the calling and metering information.

After the call scripts are completed, the Billing tape is printed using a non-resident program. The Billing tape data entries are then compared.

Verify basic call processing on LCM with BCS21 LCM load.

Here are two test cases for simple metering verification:

1. LINE TO LINE METERING
   a. Select a line with an SPM.
   b. At map post the line, then enter COUNTS and note meter value.
   c. Determine the current tariff rate for a LOCAL line to line call.
   d. Make a line to line call from the line with SPM.
   e. Leave the call up for a sufficient length of time for meter pulses to be sent.
   f. Terminate the call and record new meter count.
   g. Verify the meter count is correct for the current tariff and that the SPM value agrees with the meter count to within one pulse.

2. LOCAL COIN - BASIC CALL
   a. Verify the coin line has a LCC _ COIN.
   b. Verify metering assigned (QDN -> SPM option).
   c. Go off hook; verify dial tone, red light on.
   d. Attempt to dial; verify ignored.
   e. Deposit coin; dial tone not interrupted.
   f. Make a local call; verify ringing.
   g. Answer call; verify coin collect, red light off.
   h. Verify additional meter pulses, credits used.
   i. Three loud tones; last credit starts.
   j. Verify additional coins accepted.
   k. Verify call is cut-off when last credit expires.
DMS-STP verification tests

These tests are recommended to be run at the following times:

- Prior to loading peripherals with the new BCS level loads.
- After loading peripherals with the new BCS level loads.
- After swact to the new BCS level load on the STP, while the STP is still OUT-OF-SYNC.

Figure 1
STP Y is getting the software upgrade

STP X          STP Y

STP X          STP Y

SSP A          SSP B

ISUP

LINKSET 1

LINKSET 2

LINKSET 3

LINKSET 4

LINKSET 5

SCP
STP verification test cases
(NTX832 DMS-SP Basic/NTX833 STP Operations)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify ROUTING, DATABASE services, and CLASS features functionality. (Reference Figure 1.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Inhibit all links in LINKSET 1 (from SSP A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) At STP Y verify that route to SSP A via STP X is marked TFP (TFP = transfer prohibited)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) At SSP B verify that route to SSP A via STP X is marked TFR (TFR = transfer restricted)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) Perform DATABASE QUERY from SSP A to SCP (e800, accs, etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) Place several calls from SSP A to SSP B and verify that calls complete (isup)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f) Place calls from SSP A to SSP B via ACB/AR and verify that calls complete (ACB = automatic call back, AR = automatic recall)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>g) Place calls from SSP B to SSP A and verify that calls complete (isup)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>h) Place calls from SSP B to SSP A via ACB/AR and verify that calls complete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Uninhibit all links in LINKSET 1 (from SSP A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>j) Inhibit all links in LINKSET 2 (from SSP A)</td>
<td></td>
</tr>
</tbody>
</table>

STP verification test cases (continued)
k) At STP X verify that route to SSP A via STP Y is marked TFP

l) At SSP B verify that route to SSP A via STP Y is marked TFR

m) Perform DATABASE QUERY from SSP A to SCP (e800, accs, etc.)

n) Place several calls from SSP A to SSP B via ACB/AR and verify that calls complete

o) Place calls from SSP B to SSP A via ACB/AR and verify that calls complete

p) Uninhibit all links in LINKSET 2

2 Verify LINKSETS

a) Perform INSV test on a link in a linkset

b) Inhibit the link
c) BSY the link
d) Deact the link
e) Perform LIU7 maintenance test on associated LIU7 (see test 3)
f) RTS the link
h) ACT the link
g) Uninhibit the link
h) Perform INSV test on the link

i) Go to test 4

STP verification test cases (continued)
3 Verify LIU7
   a) Perform INSV test on the LIU7 AFTER THE ASSOCIATED LINK IS OUT-OF-SERVICE:
   b) BSY the LIU7
   c) Perform out-of-service test on the LIU7
   d) Reload the LIU7
   e) PMRESET the LIU7
   f) Perform out-of-service test on the LIU7
   g) RTS the LIU7
   h) Perform INSV test on the LIU7
   i) Return the associated link to service. (Go to test 2f)

4 Verify FBUS
   a) Perform INSV test on an FBUS
   b) Perform INSV test on a TAP
   c) BSY the TAP
   d) Perform out-of-service test on the TAP
   e) Ensure the associated LIU7 is ISTB due to MANB TAP
   f) RTS the TAP
   g) Perform INSV test on the TAP
   h) Ensure the associated LIU7s are inservice

### STP verification test cases (continued)

<table>
<thead>
<tr>
<th>TEST</th>
<th>TEST DESCRIPTION</th>
<th>TEST RESULT</th>
</tr>
</thead>
</table>

ONP/Hybrid Software Delivery Procedures
5 Verify LIM
   a) Perform INSV test on the LIM
   b) Bsy one unit of the LIM
   c) Perform out-of-service test on the unit
   d) Reload the unit
   e) PMRESET the unit
   f) RTS the unit
   g) Perform INSV test on the unit

6 Verify EIU for MDR7
   a) Take the associated MDR7 instance out-of-service
   b) Perform INSV test on the EIU
   c) Bsy the EIU
   d) Perform out-of-service test on the EIU
   e) Reload the EIU
   f) PMRESET the EIU
   g) Perform out-of-service test on the EIU
   h) RTS the EIU
   i) Perform INSV test on the EIU
   j) Return the associated MDR7 instance to service

STP verification test cases (continued)
7 Verify SEAS feature functionality
   a) Check the connection by verifying the MPCs (Multi-Protocol-Controller) are ENBLD (post both MPCs associated with SEAS)
   b) Verify PVCs (Permanent Virtual Circuits) are INSV (PVC MAP level)
   c) Check that X.25 levels (OSI layers 1, 2 and 3) are established by verifying the PVCs (Permanent Virtual Circuits) are INSV (PVC MAP level)
   d) Check the SEAS application by verifying that SEAS is INSV (SEAS MAP level)
   e) Make sure the application-application connections are established by verifying all PVCs are INSV (PVC level of SEAS)
## Critical feature tests
### DMS-100 critical feature tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify ground start</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify hunting - (MLH,DNH)(option CIR, LIN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify stop hunt (SHU)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify bridge night number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify COIN - CC, CR on IAO and EAS calls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify coin control TROL- CC, CR ON operator call (0 - -)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify 2FR - IAO, EAS revertive (TIP &amp; RING)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Verify multiparty - IAO, EAS REVER TIVE (TIP &amp; RING)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Verify 4FR ANI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Verify 1MR - PEG routes, NON PEG routes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify one alternate route,</td>
<td></td>
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</tr>
</tbody>
</table>
### DMS-100 critical feature tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Verify PS/PD line routes correctly to LKOUT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Verify OM routing and reporting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Verify each LCC can originate and terminate with Digitone and Digipulse™</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>RLM tests repeat tests 1, 5, 6, 7, 12 and 14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Verify DTDETECT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Verify access to all map levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Verify special billing (SPB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Verify service orders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Verify table editor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-200 critical feature tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify one alternate route routes correctly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify OM routing and reporting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify access to all map levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify table editor basic commands</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## AOSS critical feature test

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From an OIC type AOSS trunk place a 411 ANI call. (KP- OIC-ST - KP - 0 - 7D ANISPILL - ST)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify call arrival tone, display of 411 and correct booknumber at position. Enter a requested number. Verify call can be released without entering a CLG# by keying ‘NC’ (No Charge) &amp; ‘POS RLS’.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>From an intertoll trunk (originating within home NPA) place a 555-1212 call to AOSS. Verify call comes to position identified as ‘HOM’. Enter a CLG# and ‘POS RLS’.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>From an intertoll trunk (originating within foreign NPA) place a 555-1212 call to AOSS. Verify call comes to position identified as ‘FOR’. POS RLS.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify ability of AOSS calls to queue for an available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AOSS critical feature test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>RTS an AOSS TRAFFIC OFFICE TTY (TADS) key 'L'. Verify a message is received at the TTY showing the logged in operators.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify AMA for all calls above.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>RTS T.O. TTY, FM CRT, FM TTY, Assistant and Incharge positions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>From an AOSS DA ANI type trunk place a 411 call to AOSS (seizure - KP-0-7D - ANISPILL - ST).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Verify call arrives at AOSS operator position; place a general set call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify set call arrives at the Assistance position. Verify the assistant, operator, and customer can talk to each other.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Release call from assistance and complete call at</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
general position.

AOSS critical feature test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION FROM: LINE TYPE OR CLLI DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Repeat above test, making a directed set call to an Incharge position Float call to Incharge and release call.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Gateway critical feature tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify functionality of MAP, TTPs and attendant resources (for all maintenance levels).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify functionality of CDRs, oms, LOGS, subsystems.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify functionality of all test lines for national and international types.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify functionality of all test lines for TASI,SAT OVERIDE, NWM,SA,FEATURES.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify functionality of cancel repeat attempts and code blocking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify calls will reroute or reattempt upon encountering troubles (R1,N5,N6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify all table editor features are functional.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Verify DMO changes and data updates may be made.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**IBN/MDC critical feature test**  
*(Meridian Digital Centrex, NTX100 IBN/MDC-Basic)*

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE OR REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Observe from the LOGS all consoles in the office have returned to the status they were before the reload.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ensure the console to be used in testing, can be RTS &amp; verify the night service LED is on (console unjacked).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify all customer groups correctly respond to their listed DN dialed e.g. night service or att service.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 4       | Verify:  
   a) IBN/MDC station to IBN/MDC station calls terminate correctly  
   b) IBN/MDC station to IBN/MDC trunk calls (MF, DP, DTMF) calls terminate correctly  
   c) IBN/MDC trk to IBN/MDC station calls terminate correctly.  
   d) IBN/MDC trk to IBN/MDC trunk calls terminate correctly. |             |               |                           |             |
### IBN/MDC critical feature test (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>JACK_IN to the test console and make it available to rcv calls.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Make zero call to the attendant &amp; answer it. Verify speech connection Extend call to: a) another IBN/MDC stn b) an IBN/MDC trunk.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Access an idle loop at the TC. Make AC to IBN/MDC line call. Answer it. Key the digits of another IBN/MDC station and answer it. Verify speech paths from all 3 connections Release the call from the AC and verify the 2 stations are connected. Release the call.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Verify DOD access, Centrex &amp; PBX.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Verify Toll calls are recorded.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>If SMDR is applicable, verify SMDR is working.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify a diagnostics to the AC works.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEST NO.</td>
<td>TEST DESCRIPTION</td>
<td>FROM: LINE TYPE OR CLLI</td>
<td>DIGITS DIALED</td>
<td>TO: CALL TYPE</td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>-------------------------</td>
<td>---------------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>12</td>
<td>Verify interposition calling and PBX.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IBN/MDC critical feature test (continued)**
### P-PHONE critical feature tests
(NTX089 Enhanced Coin Services)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Complete IBN/MDC critical feature tests as applicable.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify the following calls terminate correctly:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) P-Phone to attendant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) P-Phone to IBN/MDC station</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) P-Phone to IBN/MDC trunk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) P-Phone to P-Phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) Attendant to P-Phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f) IBN/MDC station to P-Phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) IBN/MDC trunk to P-Phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### DMS-TOPS critical feature tests  
(NTX030 TOPS Call Processing Features)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RTS traffic office TTY,FM CRT,FM TTY, assistance pos. &amp; Incharge pos.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>From MF combined trunk group, place 0- ANI call (KP-ST3P-KP-7D ANI SPILL-ST)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify call arrives at TOPS operator pos.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Place general set call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify set call arrives at the Assistance pos. Verify the assistant, operator &amp; customer can talk to each other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Release call from assistance operator.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Complete call using the TOPS operator position.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# DMS-250 critical feature test

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM LINE TYPE</th>
<th>TO CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify EANT ANI screening functions</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>I) Invalid “NXX” ANI SPILL TRMT</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>II) Restricted call routing access</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>(Note CDR results)</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>2</td>
<td>Verify &quot;#&quot; / &quot;**&quot; re-dial features</td>
<td>ONAL,DAL,ONAT,EANT</td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>3</td>
<td>Verify hotline call routing functions</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>I) dedicated</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>II) conditional</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>4</td>
<td>Verify CF3P/CF6P call setup, ANS, re-dial, disconnect</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>5</td>
<td>Verify (IMT, ONAT) route advance FUNC. (SAT RTE, PART’NED)</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>6</td>
<td>Verify CDR search on call records functions correctly</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>7</td>
<td>Verify NEMAS/AOM link access, file transfer operation</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>8</td>
<td>Confirm MM access:</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>I) all map levels</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>II) table editor</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>III) DMO, JF INCREMT</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>IV) CDR, OM LOG REPS</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td></td>
<td>V) map test lines</td>
<td></td>
<td></td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>TEST NO</td>
<td>TEST DESCRIPTION</td>
<td>FROM LINE TYPE</td>
<td>TO CALL TYPE</td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>---------</td>
<td>------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>9</td>
<td>*** TOPS REQMT ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Verify TOPSPOSDATA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CCTS operational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with console functions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-100 International critical feature tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify ground start</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify hunting- (DNH) option CIR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify bridge night number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify local coin calls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify 1MR - peg routes, non peg routes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify one alternate route, routes correctly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify PS/PD line routes correctly to LKOUT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Verify OM routing and reporting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Verify each LCC can originate and terminate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Verify access to all map levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify special billing (SPB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Verify service orders</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DMS-100 International critical feature tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Verify table</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>editor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-200 International critical feature tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify one alternate route routes correctly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify OM routing and reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify access to all map levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify table editor basic commands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Non-critical tests
#### DMS-100 non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify coin touch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>tonepad disabling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify flash ignore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1FR OGT MF ON TM call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1FR OGT DP ON TM call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1FR OGT MF ON DCM call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1FR OGT DP ON DCM call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>EAS INC MF to 1FR DGT CLI idle call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>EAS INC MF to 1FR DGT CLI busy call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>EAS INC MF to line on operator intercept call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>* EAS INC to SYNC/ NON-SYNC test line call</td>
<td>* Not needed for ISUP (CCS7) TRK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>* EAS INC to OPEN CKT test line call</td>
<td>* Not needed for ISUP (CCS7) TRK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>* EAS INC to SHORT</td>
<td>* Not needed for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEST NO</td>
<td>TEST DESCRIPTION OR CLLI</td>
<td>FROM: LINE TYPE</td>
<td>TO: CALL TYPE</td>
<td>TEST RESULT</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>13</td>
<td>EAS INC to MW test line call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>EAS INC to BALANCE test line call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>EAS INC to LOOP AROUND port 1 &amp; 2 call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>CDF or CCF coin call -PS/PD(CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>CDF or CCF coin call - vacant code ann (CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>CDF or CCF coin call - DACS (CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>CDF or CCF coin call - repair desk (CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>CDF or CCF coin call - intercept (CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>CDF or CCF coin call - OGT with answer (CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>CDF or CCF coin call - OGT without answer (CR)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
23  #3LTC or CALRS or equivalent - post
  DGT idle line

DMS-100 non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24  #3LTC or CALRS or equivalent - post
  DGT busy(talking)
  line

25  Verify service analysis basic commands

26  Verify LOGUTIL routing and reporting

27  MAP tests - PM level. For each PM type below equipped, do the following tests:

* * * * * * WARNING: With TELCO approval only * * * * * *

BSY - TEST - REMOVE controller card
(OX70 for TM, MTM & OAU;
2X38 for DCM
2X27 for LM & RLM)
- test should fail -
replace controller card -
RELOAD - TEST - RTS

Do above on TM2 0,
TM4 0, TM8 0, MTM 0
OAU 0, DCM 0,
LM 0, RLM 0
## DMS-100 non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Verify the following features work:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) 3we</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) efw - regular, remote &amp; remote equal acced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) cwt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) speed calling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Map tests - net level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select a network pair and plane:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perform BSY-TEST-RTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Map tests - LTP level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post a line: DIAGN-BSY-RTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Map tests - TTP level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post a trunk: Perform BSY-RTS-TEST (no parms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-200 non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify incoming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAMA TO:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>101 test line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>102 test line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>103 test line</td>
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<tr>
<td></td>
<td>104 test line</td>
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<td></td>
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<tr>
<td></td>
<td>108 test line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify incoming</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>intertoll to:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>101 test line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>102 test line</td>
<td></td>
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<tr>
<td></td>
<td>103 test line</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>104 test line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>108 test line</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>analysis basic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>commands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify network</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>management basic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>commands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MAP tests - PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>level. For each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM type below</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>equipped, do the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>following tests:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>* * * * * * * WARNING: With TELCO approval only * * * * * * *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Controller card (OX70)**
- test should fail -
- replace OX70 card -
- RELOAD - TEST - RTS

Do above on TM 2 0,
TM 4 0, TM 8 0, MTM 0,
DMS-200 non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
<th>OR CLLI</th>
<th>DIGITS DIALED</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Map tests - NET level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select a network pair and plane:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perform BSY-TEST-RTS.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Map tests - TTP level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post a trunk:perform BSY-RTS-TEST</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(no parms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### AOSS non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE OR CLLI DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the FM TTY, key ‘P’ and verify a position status summary is received.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify OM pegs in OM group: ‘AOSS are being incremented for work volume, initial position seizures, and calls waiting queue usage.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## ATT100 non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE (OR CLLI)</th>
<th>DIGITS DIALED</th>
<th>TO: CALL TYPE</th>
<th>REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Make a coin line to TSPS call. Verify expanded inband signalling coin collect, return, ringback, operator release, operator-attached function operation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify AMA record on a MUMR call</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify correct register pulsing on a hotel/motel line.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify that a 2-party or 4-party ANI line with DOR not originate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify that a 2 or 4 party ANI line with SUS may not originate or be terminated on.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Make a coin call with an insufficient coin deposit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Verify that coin call totalizer operation is correct.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Datapath non-critical tests (NTX250 Datapath-Basic)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ensure that data unit switches are set as follows: Manual Answer Manual Origination Self Test off Far End Loopback off Local Loopback off Internal Clock Adaptive Profile off Buzz soft Assert DTR off Assert RTS off 9600 BAUD ASYNC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Connect Data Terminal Equipment with the following settings to both data units: 9600 Baud Async No Parity On Line Full Duplex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ensure that POWER/SYNC and DTR lamps on data units are lit.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify that the POWER/SYNC lamp flashes if the jack is unplugged, and the POWER/SYNC lamp lights solid within 2 sec. when the jack is plugged in.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Datapath non-critical tests (continued)
<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION FROM: LINE TYPE OR CLLI DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>At LTP level of MAP POST a data unit line and verify that line is posted.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Diagnose line and verify the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) line state changes to ‘MB’,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) UNDER TEST lamp is lit on data unit,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) diagnostic passes,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) UNDER TEST lamp turns off and line state returns to idle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Turn the SELF TEST switch on momentarily and verify:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) POWER/SYNC and UNDER TEST are only lamps lit,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) all lamps are lit after several sec.,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) data unit returns to its previous state.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# ESN non-critical test
*Electronic Switched Network*

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify calls from IBN/MDC line using:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) network speed call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) variable outpulsing types on a trunk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) tone detection route</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) authorization code</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) queuable routes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f) route with ESN protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify that Time of DAY routing is using proper routes for the current time of day.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify operation of the DISA feature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify access through virtual facility groups.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify proper timeouts in digit collection on various access codes</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
## Equal Access non-critical tests
(NTX186 Equal Access End Office)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED / REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Complete a 10XXX</td>
<td>7 digit intralata intrastate call (providing intralata calls are allowed to complete).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Complete a 10XXX-1</td>
<td>-7 digit interlata intrastate call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Complete a 10XXX-1</td>
<td>-10 digit interlata intrastate call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Complete a 10XXX-1</td>
<td>-10 digit interlata interstate call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Complete a 10XXX-0</td>
<td>-10 digit world zone 1 call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Complete a 10XXX-1</td>
<td>-10 digit world zone 1 call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Complete a 10XXX-0</td>
<td>011 - international call.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Repeat tests 1 through 7 and verify that both feature group C and feature group D calls complete correctly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Equal Access non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE / REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Repeat tests 1 through 7 using either an interim or transitional carrier dialing 950 1XXX and verify that the calls complete correctly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>For tests 1 through 9 verify that the correct AMAB logs and AMA records are output.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify that all existing trunk logs reflect the correct equal access information in the new corresponding fields.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Verify that operational measurements correctly pegs equal access calls and failures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Verify that TSMS correctly pegs equal access calls and failures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Verify that abbreviated dialing operates correctly with equal access calls.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Equal Access non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Verify that speed calling operates correctly with equal access calls.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Verify that automatic number identification (ANI) can be turned on and off on a per carrier basis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Verify that treatment 'CACE' exists and can be applied properly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Verify that treatment 'D950' exists and can be applied properly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Verify that treatments 'N950', 'ILRS', 'NACD', and 'DACD' exist and can be applied properly.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Gateway non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAP level tests on CPU synchronization, PS/DS card tests, etc.</td>
</tr>
<tr>
<td>2</td>
<td>TTP tests on trunks ie. posting, holding seizing, etc.</td>
</tr>
<tr>
<td>3</td>
<td>Monitor level tests, line side, drop side MW KVM tests, etc.</td>
</tr>
<tr>
<td>4</td>
<td>Transmission level tests, ie. tone det, tone gen, tst call, etc.</td>
</tr>
<tr>
<td>5</td>
<td>Verify irregularities on N6 signalling CP and link management</td>
</tr>
<tr>
<td>6</td>
<td>Verify irregularities on N5 signalling line and register.</td>
</tr>
<tr>
<td>7</td>
<td>Verify irregularities on R1 signalling</td>
</tr>
<tr>
<td>8</td>
<td>Verify proper recording of CDR records on printer and on tape.</td>
</tr>
<tr>
<td>9</td>
<td>Verify proper log messages for particular fail types.</td>
</tr>
</tbody>
</table>

**Gateway non-critical tests (continued)**
<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Verify operational measurements are obtained as requested: QUARTERLY HALF HOURLY DAILY, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Verify proper thresholds are set for all alarms on trunk group occupancy.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IBN/MDC non-critical test  
(NTX100 IBN/MDC-Basic)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify following station features still work:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) call transfer &amp; 3WC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) call forwarding- CFU,CFB,CFD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) call pickup</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) call-waiting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) speed calling - individual, group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f) Meet Me conference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify AC functions still work:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) AC to trk &amp; trk to AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Various ICI's can queue for the AC &amp; are answered correctly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) AC HOLD functions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) AC RECALL calls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) AC conference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f) AC position busy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>g) AC busy verification of trks &amp; lines</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>h) AC camp-on</td>
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</tr>
<tr>
<td></td>
<td>i) AC to AC from call forwarded lines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>j) AC operational measurements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>k) AC display</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IBN/MDC/Equal Access non-critical tests  
(NTX100 IBN/MDC-Basic/NTX186 Equal Access End Office)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using a 500/2500 set make a DP call from a LCM to an outgoing ATC trunk on DTC dialing 9-10XXX-7 digits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Repeat step 1 dialling 9-10XXX-international.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Repeat step 1 dialling 9-9501XXX.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Repeat step 1 from a LM dialing 9-10XXX-7 digits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Repeat step 1 from a LM dialling 9-10XXX-0-10 digits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Repeat step 1 from a LM dialling 9-9501XXX.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Repeat step 1 from a RLM dialling 9-10XXX-10 digits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Repeat step 1 from a RLM dialling 9-10XXX-01-international.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Repeat step 1 from a RLM dialling 9-9501XXX.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## IBN/MDC/Equal Access non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>From an ATT console on a LCM place a call to an outgoing trunk on DTC dialing 9-10XXX-7 digits.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Repeat step 10 dialing 9-10XXX-10 digits.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Repeat step 10 dialing 9-10XXX-international.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Repeat step 10 dialing 9-10XXX-0-7 digits.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Repeat step 10 dialing 9-10XXX-0-10 digits.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Repeat step 10 dialing 9-10XXX-01-international.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Repeat step 10 dialing 9-9501XXX.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Place an incoming DTC call to a LM station.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Place an incoming DTC call to a LM ATT console.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IBN/MDC/Equal Access non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Place an incoming DTC call to a RLM station.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Place an incoming TM8 call to a LCM station.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Place an incoming DCM call to a LCM station.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Place an incoming DTC call to a LCM station.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Place an incoming DTC call to a LCM P-Phone.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Place an incoming DTC call to a LCM ATT console.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# P-PHONE non-critical test
(NTX089 Enhanced Coin Services)

<table>
<thead>
<tr>
<th>TEST NO.</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Complete IBN/MDC non-critical feature tests as applicable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify following P-Phone features still work:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) call transfer &amp; 3WC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) call forwarding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) call pickup</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>d) call waiting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e) speed calling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f) automatic dial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>g) ring again</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify calls to and from a MADN group terminate correctly</td>
<td></td>
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</tr>
</tbody>
</table>
### DMS-TOPS non-critical tests
(NTX030 TOPS Call Processing Features)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION FROM: LINE TYPE OR CLLI DIGITS DIALED /REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the FM TTY, key 'P' and verify a position status summary is recv'd</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-250 non-critical test

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM LINE TYPE DIGITS DIALED</th>
<th>TO CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify ATT function for auto, manual test setup, results (TL6N, T105, ATMS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify NWM PRE-RTE operational, and other controls REQ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>(USTS only) service analysis feature being operational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify SYNCLK links SWACT successfully Note &quot;RE-SYNC&quot; time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify LTC/DTC warm SWACT ability (no call interrupt)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Verify KT pegging resolve problem CCT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>*** TOPS REQMT *** POS status summary, Verify OM pegging for 'TOPS', 'OFZ'</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-MTX non-critical test

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: TRUNK TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify ATT function for auto, manual test setup, results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify pool link &quot;SWBCK&quot; to assigned dedicated CSC link (non-pooled config)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify CSC &quot;XPM&quot; SWACT execution. (no call interrupt)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Verify SYNCLK links SWACT successfully Note &quot;RE-SYNC&quot; time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Verify KT pegging resolve problem CCT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DMS-100 International non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify flash ignore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1FR OGT MF on TM CALL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1FR OGT DP on TM CALL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1FR OGT MF on DCM CALL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1FR OGT DP on DCM CALL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>INC MF to 1FR DGT CLI idle call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>INC MF to 1FR DGT CLI busy call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>INC MF to line on operator intercept call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>INC to SYNC/ non-sync test line call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>INC to open CKT test line call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>INC to short CKT test line call</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>INC to MW test line call</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### DMS-100 International non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION</th>
<th>FROM: LINE TYPE OR CLLI</th>
<th>DIGITS DIALED / REMARKS</th>
<th>TO: CALL TYPE</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>INC to balance test line call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>INC to loop around PORT1 &amp; 2 call</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Coin call PS/PD (CR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Coin call - vacant code ANN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Coin call - DACS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Coin call REPAIR DESK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Coin call - intercept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Coin call - OGT with answer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Coin call - OGT without answer (CR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Verify service analysis basic commands</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Verify LOGUTIL routing and reporting</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

NTP 297-1001-303  Release 04.01  September 1994
### DMS-100 International non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
</table>

24  **MAP tests - PM**  
level. For each  
PM type below  
equipped, do the  
following tests:

* * * * * * * * WARNING: With TELCO approval only * * * * * * * *

- **BSY - TEST - REMOVE**  
controller card  
(OX70 for TM, MTM & OAU;  
2X38 for DCM  
2X27 for LM & RLM)  
- test should fail -  
replace controller card -  
RELOAD - TEST - RTS

Do above on TM2 0,  
TM4 0, TM8 0, MTM 0  
OAU 0, DCM 0,  
LM 0, RLM 0

25  **Map tests - NET**  
level  
Select a network  
pair and plane :  
perform BSY-TEST  
-RTS

26  **Map tests - LTP**  
level  
post a line:  
DIAGN-BSY-RTS

27  **Map tests - TTP**  
level  
post a trunk :  
Perform BSY-RTS  
-TEST (no parms)
### DMS-200 International non-critical tests

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verify incoming intertoll to:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>101 test line</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Verify service analysis basic commands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Verify network management basic commands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MAP tests - PM level. For each PM type below equipped, do the following tests:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* * * * * * * WARNING: With TELCO approval only * * * * * * *

BSY - TEST - REMOVE controller card  
(OX70 for TM, MTM & OAU; 2X38 for DCM)  
- test should fail -  
replace controller card -  
RELOAD - TEST - RTS

Do above on TM2 0, TM4 0, TM8 0, MTM 0  
OAU 0, DCM 0

### DMS-200 International non-critical tests (continued)

<table>
<thead>
<tr>
<th>TEST NO</th>
<th>TEST DESCRIPTION OR CLLI</th>
<th>FROM: LINE TYPE DIGITS DIALED</th>
<th>TO: CALL TYPE /REMARKS</th>
<th>TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Map tests - net level</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Select a network</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
pair and plane:
Perform BSY-test
-RTS.

6 Map tests - TTP
level
Post a TRK: perform
FORM BSY-RTS-TEST
(no parms)
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