Product Bulletin
DMS-10 evolution to VoIP

In 2005, Nortel is introducing the 600 Series of Generics for its DMS-10. This enhancement will provide Voice over IP (VoIP) functionality to Nortel's cornerstone rural market product offering. Specifically, the initial release — Generic 601 — brings the ability to serve DMS-10 customers with Session Initiated Protocol (SIP)-controlled Voice over Broadband.

This continuing investment in the DMS-10 technology furthers Nortel's long-standing relationship with rural carriers by enabling new revenue-generating services, reducing operating costs and continuing the high reliability that end-users expect. Each year, Nortel has released a new generic to meet the needs of rural service providers. The 601 generic is the next product offering and is scheduled for Q3 2005.

This software release will enable VoIP service to DMS-10 subscribers who have broadband access. It supports all current DMS-10 peripherals and inherently provides PSTN to packet interworking. As part of Nortel's ongoing commitment to enhance the traditional TDM environment, the 601 release also delivers operational and service improvements to the DMS-10 feature set.

The 600 Series introduces significant architectural enhancements that enable VoIP capability and interworking. Figure 1 provides an overview of the new architecture.

Enhancing an old friend

Enhancements to the DMS-10 processor provide VoIP protocol processing stacks that include SIP session management for controlling VoIP terminals and gateways. VoIP protocol processing resides on the existing 3T98 System Processor. This integration of the VoIP protocol processing allows for effective interworking between VoIP calls and existing voice calling features. SIP is the first VoIP protocol to be supported, but the architecture is readily extendable to other, similar protocols.

The other enhancement is the introduction of a Packet Gateway Interface that provides signal processing of VoIP voice streams, enables delivery of network services and interworks with TDM network elements.

Within the central office, an Ethernet switch directs VoIP signaling packets to the DMS-10 call processor and separates the VoIP streams from existing DMS-10 IP Operational, Administrative and Maintenance (OA&M) packets providing enhanced network security.

Since the 600 Series software is designed to operate on the existing 500 Series hardware platform, a 500 Series DMS-10 can be easily upgraded to the 600 Series. The 601 software operates with the existing 3T98 System Processor and either the expanded or classic network. Therefore, upgrading the DMS-10 hardware platform for VoIP only requires the addition of a Packet Gateway Interface and an Ethernet switch. The Packet Gateway Interface and Ethernet switch are conveniently rack-mounted in a standard 19" miscellaneous frame. These additions, which are optional and are only required for VoIP capability, take up less than eight inches of rack space. All actively supported peripherals will continue to be supported by the 601 software.
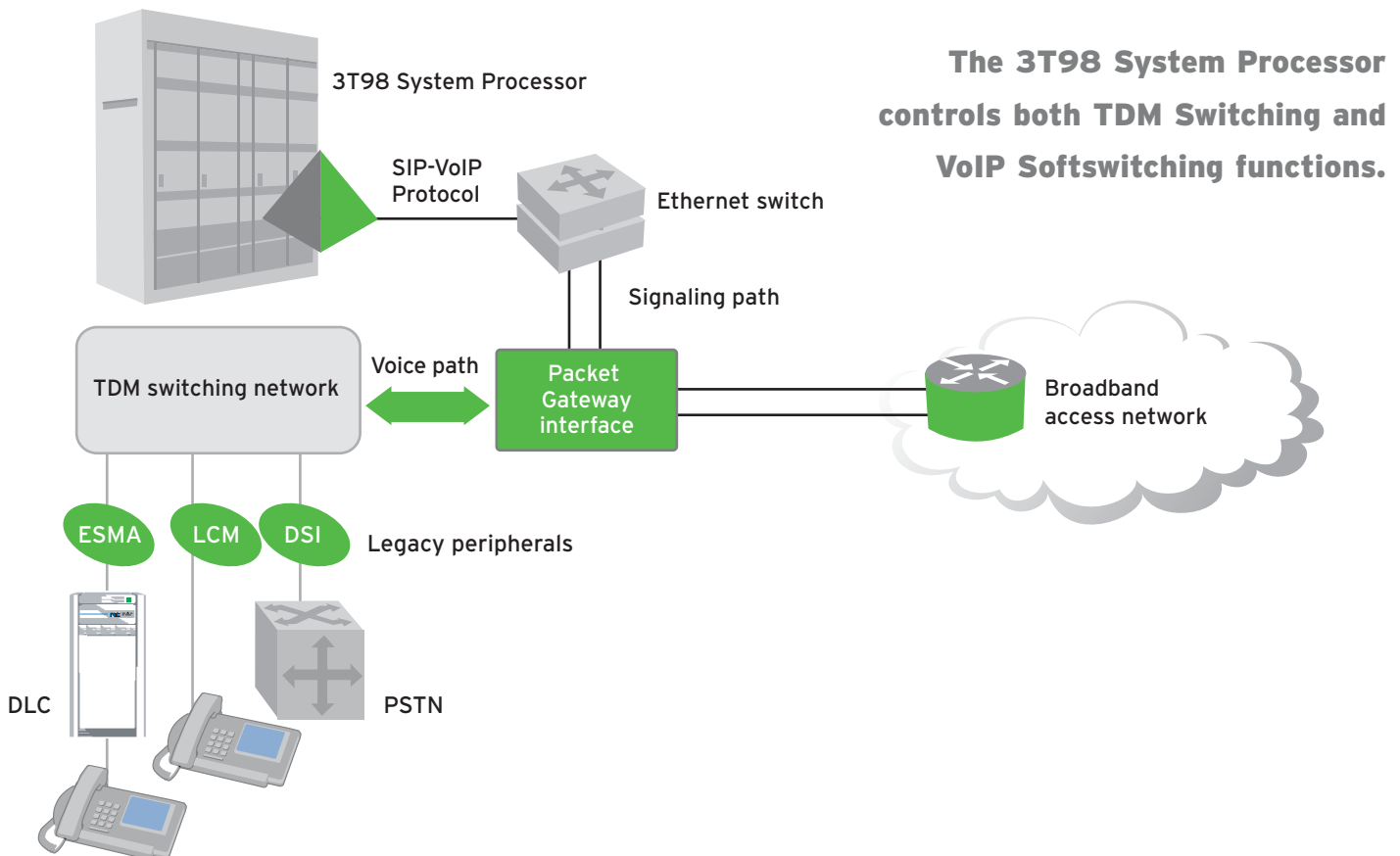
Creating new revenue opportunities

The DMS-10 600 Series offers new revenue opportunities for rural service providers. It enables out-of-territory expansion to grow the subscriber base. For existing subscribers, this capability can be used to economically deliver a second line. In addition, voice over broadband can be bundled with the subscriber's broadband or long distance service. This creates a competitive service to defend against VoIP offerings from other carriers. Figure 2 provides an overview of this voice over broadband service.

For voice over broadband service, each subscriber receives a SIP gateway device. At a minimum, this device would be a terminal adapter that converts VoIP to a Tip/Ring telephone connection. Other options include Ethernet phones or SIP PC client software that operates on a subscriber's personal computer.
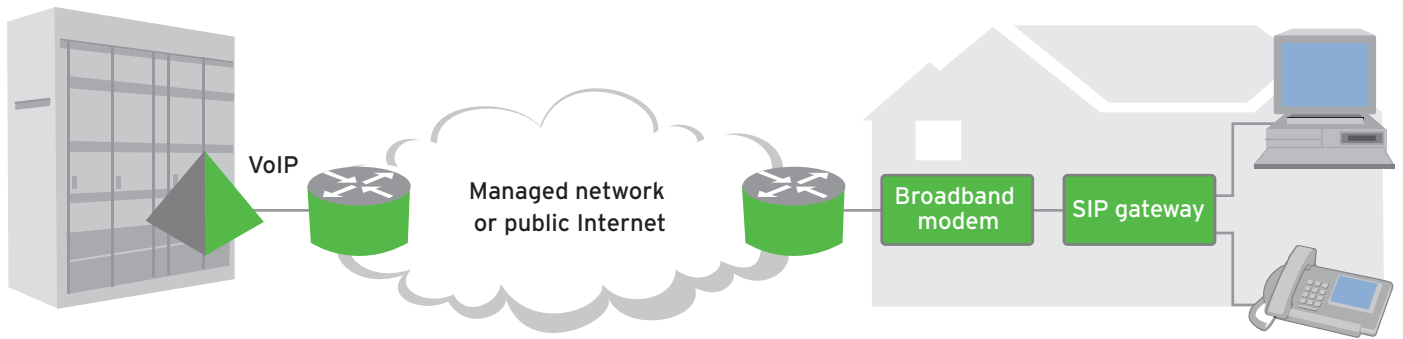
Since the DMS-10's VoIP architecture provides a solid platform upon which to build new services, Nortel plans to offer additional VoIP line and trunk services in future DMS-10 software releases.

Figure 1. DMS-10 VoIP architecture

The 3T98 System Processor controls both TDM Switching and VoIP Softswitching functions.

Figure 2. SIP service overview

VoIP

Managed network or public Internet

Broadband modem

SIP gateway

Benefits of DMS-10 evolution to VoIP

The DMS-10 600 Series provides an easy and reliable means for service providers to offer VoIP services. Its proven, traditional service remains available to the entire subscriber base, while the new VoIP service can be added incrementally to capture new subscribers and revenues. This evolution is further facilitated by the DMS-10's simplified VoIP migration strategy. With the DMS-10, service providers know they can continue to invest with confidence because VoIP services can be easily added on your timeframe to meet your business plans and subscriber take rates. The DMS-10 601 Generic provides:

> A low-cost upgrade that adds VoIP service to carriers' existing networks

> A smooth migration from today's TDM environment to VoIP

> An effective VoIP service offering that can increase revenue potential and protect the existing subscriber base

> No need to rip and replace the existing infrastructure — the DMS-10 becomes the softswitch

> Investment protection — all DMS-10 peripherals migrate forward by operating in a hybrid configuration

> Central office footprint reduction — when TDM peripherals are replaced with packet access

> No overlay network or adjunct switches

> Simple network management through the DMS-10 Manager

> A migration strategy that does not require retraining of switch technicians

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