

4 This PDF is also a Gameboy exploit that displays the “Pokémon Plays Twitch” article!

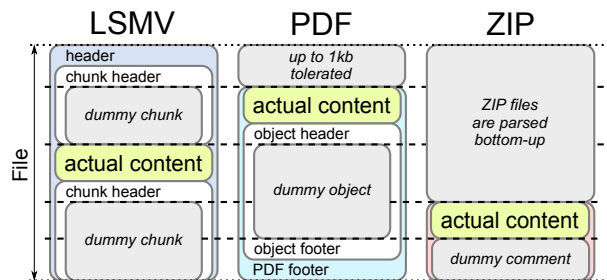
The idea for this polyglot is to embed the contents of the previous article in this fine issue of PoC||GTFO in such a way that it shows on when played as an LSNES movie. So now you can use your copy of the journal to exploit your hardware and read “Pokémon Plays Twitch” on your TV. This way, we hope to start a tradition of articles being viewable on the hardware of the article!

LSNES supports two kinds of movie files, which might better be thought of as input recording files. The older format is ZIP based and formally specified, while the new one is binary and custom. The new binary format has no official specs, but starting a PDF with a ZIP signature would now trigger Adobe’s blacklist—clearly, someone at the company must have disliked something about one of our previous releases. So the new, non-ZIP LSMV binary format is the one that we’ll use.

The buffers for read and write calls for movie data are straight out of the movie data in memory. One unintended benefit of the new format is that it is much easier to write from SIGSEGV or similar signal handlers. (The memory allocator cannot be trusted.)

The binary LSMV format is chunk-based. The “lsmv” magic must be at offset 0; we can’t have any appended data. So the PDF header and content must be added in a dummy chunk early in the LSMV, and the ZIP and PDF footer must be added at the end of the file, in another dummy chunk (see included diagram).

A clean version of the LSMV file has been submitted to TASVideos.²⁴ You can play this polyglot on a modified LSNES with the hybrid emulation core using BSNES and Gambatte or, if you have the required hardware, on the real stuff!



Be warned that none of these approaches is trivial. We include detailed howtos with the zip contents of this issue.²⁵

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1 2 3 4
13380 | Ys + + + L R 0 23 | Ys + + + X R 0 2 | Ys + + + X L 0 12 | B s + + + X 0 1
13380 | sS + + + X R 1 1 | B Ys + + + X L 0 1 3 | B Ys + + + L 1 3 | s + + + X L 0 1
13380 | B s + + + R | YsS + + + R 23 | Ys + + + 1 | Y S + + + R 1
13380 | B s + + + L 12 | | A | | A L 0 1 3 | | A
13381 | sS + + + A X R | | A X 0 123 | | A L R 0 1 3 | | A L 12
13382 | A X R | | A X 0 123 | | A L R 0 1 3 | | A L 12
13382 | B Ys + + + L 1 3 | s + + + R 0 1 | sS + + + X L 0 1 | YsS + + + R 123
13382 | Ys + + + L R 0 123 | B s + + + X R 12 | B s + + + X L | | A
13382 | Ys + + + 12 | Y S + + + 12 | B S + + + L 12 | Ys + + + X L 0 1
13382 | B s + + + R | | A X R | | A | | YsS + + + 12
13382 | B s + + + L 1 | Y + + + L R 0 12 | YsS + + + L R 0 12 | + + + X L 0 1 3
13382 | B s + + + X 0 12 | | A X R | | A | | B Ys + + + L R 0 1 3
13382 | A L 0 1 | Ys + + + X 0 12 | | A L R 0 1 3 | | + + + X 0 12
13383 | A 1 | | A X 0 123 | | A R 0 23 | | s + + + X
13384 | A 1 | | A X 0 123 | | A R 0 23 | | s + + + X
13384 | Y S + + + R 2 | B Y S + + + L R 0 1 | YsS + + + L R 0 2 | s + + + R 0 1
13384 | Ys + + + R 12 | Ys + + + X R 23 | + + + X R 3 | sS + + + X 0 1
13384 | Ys + + + 0 12 | YsS + + + R 23 | B s + + + 12 | s + + + X 0 1 3
13384 | Ys + + + R 0 123 | | A | | A 0 12 | | B sS + + + R 1 3
13384 | sS + + + L R | | sS + + + X R 0 1 3 | Y S + + + L R 0 12 | YsS + + + L 23
13384 | B s + + + X | | B Y S + + + L R 0 1 3 | Ys + + + R 23 | B Ys + + + X 0 3
13384 | A R 23 | | B s + + + X 0 12 | | A | | Ys + + + L 23
13385 | YsS + + + X 0 123 | | B s + + + X L 0 1 3 | B YsS + + + L R 3 | s + + + X R 3
13386 | YsS + + + X 0 123 | | B s + + + X L 0 1 3 | B YsS + + + L R 3 | s + + + X R 3
13386 | Ys + + + L R 0 23 | Ys + + + R 0 2 | B S + + + L R 0 | B s + + + L R 1
13386 | B s + + + 1 | | A | | 1 3 | | B Ys + + + 1 3 | | A L R 0 2
13386 | s + + + X L 0 1 | B Ys + + + X L 0 12 | B Ys + + + L R 0 1 3 | s + + + X R 3

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Pokemon Plays Twitch

For the AGDQ 2015 charity marathon we exploited a chain of unmodified Nintendo game console components consisting of a Pokemon Red Game Boy cartridge in a Super Game Boy running in a Super Nintendo. We plugged the latter into custom hardware posing as a normal controller. In this 7-stage exploit, we corrupted a save file to give ourselves 255 Pokemon, swapped Pokemon, and tossed items to construct a payload. We committed a series of atrocities using documented command packets and ultimately broke into the Super Nintendo's working RAM, where we wrote our own chat

Chat

²⁴<http://tasvideos.org/4947S.html>

²⁵`unzip -j pocorgtfo10.pdf pokemon_plays_twitch/sgbhowto.pdf`