Technote and troubleshooting guide for loading firmware in Sixnet Series SLX/ET-OEM managed switches with large or small NAND hardware

Purpose: To provide a comprehensive procedure on when to use specific versions of the switch utility firmware loader or web based over the air (OTA) method for firmware upgrades/downgrades for SLX/ET-OEM managed switches. The technote also provides potential issues and corrective actions to assist in troubleshooting.

Switch Utility Firmware Loader Versions – When to use which one:

1) Switch Utility Firmware Loader Version 1.0.46 – For use with **32-bit machines** to upgrade or downgrade firmware on **Small NAND** switches. It is compatible with released versions 4.4.1000 to 5.3.192 (Current Release)
   Note: Do not use version 1.0.46 on a large NAND switch. This version of the utility was removed from our website because it is unable to differentiate between small and large NAND switches. Please refer to the hardware revision chart below for your specific switch model and verify the hardware revision on the switch label.

2) Switch Utility Firmware Loader Version 1.0.82 – For use with **64-bit machines** to upgrade or downgrade firmware on **Small NAND** switches. It is compatible with released versions 4.4.1000 to 5.3.192 (Current Release).
   Note: Do not use version 1.0.82 on a large NAND switch. This version of the utility was removed from our website because it is unable to differentiate between small and large NAND switches. Please refer to the hardware revision chart below for your specific switch model and verify the hardware revision on the switch label.

3) Switch Utility Firmware Loader Version 1.0.84 – For use with **64-bit machines** to upgrade or downgrade firmware on **All Small and Large NAND** switches. It is compatible with released versions 4.4.1000 to 5.3.192 (Current Release) on Small NAND switches and compatible with released versions 5.3.180 – 5.3.192 (Current Release) on Large NAND switches.
   Note: This utility will not allow you to load firmware versions prior to 5.3.177 into Large NAND switches and has a built in pop-up message that says, "You need at least firmware version 5.3.177" when you attempt downgrading the switch to an unsupported firmware version. This was a check put in place and is the expected behavior.

Web Based (OTA) Method – When and When not to use and potential issues:

1) This method is supported for 5.0.X and later.
2) Using this method is recommended for upgrades and downgrades within the same firmware branch, for example from 5.0.X – 5.0.X, 5.2.X - 5.2.X and 5.3.X - 5.3.X. After the firmware is loaded into each slot, we recommend saving a new configuration checkpoint or creating a new configuration file manually to avoid possible issues between versions.
3) When upgrading/downgrading firmware via this method, it is recommended that the same firmware version is loaded into both slots. When different versions are loaded into each slot, there is a potential that a configuration could be lost or changed due to a power glitch or surge that causes the switch to use the fallback firmware in the other slot. This could potentially cause flapping between different slots, which have different configuration checkpoints for each version and other possible differences between firmware versions.
4) Downgrading firmware across major branches could cause the switch to lock up and the only way to recover it is to use the switch utility for the proper condition listed under the switch utility firmware loader section, or by sending the switch back to the factory to be re-initialized.
   Note: Do not downgrade firmware across major branches of firmware. You can only downgrade in the same major branch. The major branches are 5.0.X, 5.2.X and 5.3.X
5) Upgrading firmware across major branches could result in the saved configuration files not being properly carried over to the new version, or the switch not behaving as expected due to differences between the version it was created on and the new version. Try saving a new configuration checkpoint or creating a new configuration file manually to avoid possible issues between versions. If any issues persist, we recommend using the switch utility firmware loader to upgrade firmware across major branches of firmware.
   Note: The major branches are 5.0.X, 5.2.X and 5.3.X
6) **Large NAND switches will not allow you to load firmware versions prior to 5.3.177 via this method.**
   Note: You will receive a pop-up message that says, "You need at least firmware version 5.3.177" when you attempt downgrading the switch to an unsupported firmware version. This was a check put in place and is the expected behavior.

Hardware Revision reference chart for SLX/ET-OEM managed switches

Model	Old Rev (Small NAND)	New Rev (Large NAND)
ET-8MS-MIL-1	301	302
ET-8MG-MIL-1	301	302
ET-8MS-OEM-1	C01	C02
ET-8MS-OEM-1-3	C01	C02
ET-8MS-OEM-2	C01	C02
ET-8MS-OEM-2-3	C02	C03
SLX-10MG-1	320	321
SLX-16MS-1	320	321
SLX-18MG-1	320	321
SLX-5MS-1	310	311
SLX-5MS-3734	310	311
SLX-5MS-4SC	310	311
SLX-5MS-4ST	310	311
SLX-5MS-5SC	310	311
SLX-5MS-5SCL	310	311
SLX-5MS-5ST	310	311
SLX-5MS-5STL	310	311
SLX-5MS-MDM-1	310	311
SLX-5MS-MDM3852	310	311
SLX-8MG-1	301	302
SLX-8MS-1	300	301
SLX-8MS-4SC	300	301
SLX-8MS-4ST	300	301
SLX-8MS-5SC	300	301
SLX-8MS-5SCL	300	301
SLX-8MS-5ST	300	301
SLX-8MS-5STL	300	301
SLX-8MS-8SC	300	301
SLX-8MS-8ST	300	301
SLX-8MS-9SC	300	301
SLX-8MS-9SCL	300	301
SLX-8MS-9ST	300	301
SLX-8MS-9STL	300	301
ET-5MS-OEM-2-1	B00	B01
ET-5MS-OEM-2-1B	B00	B01
ET-8MS-MIL-1	301	302
ET-8MG-MIL-1	301	302
ET-8MS-OEM-1-1	C02	C03
ET-8MS-OEM-1-3-1	C01	C02
ET-8MS-OEM-2-1	C01	C02
ET-8MS-OEM-2-3-1	C02	C03
ET-8MG-OEM-F	100	102