Lantronix SLC9000 Advanced Console Server

USB Firmware Install Release Notes
Version 9.8.0.0 and later releases
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Release notes are also available on the Lantronix web site (www.lantronix.com).

Contact Lantronix or your reseller for more information.

This document describes how to install SLC9000 firmware version 9.8.0.0 and later via USB drive; version downgrade and upgrade are supported.

PRODUCTS SUPPORTED

These instructions are for the SLC9016, SLC9024, SLC9032, and SLC9048 Advanced Console Servers.

WHEN TO USE THIS PROCEDURE

Lantronix does not support patch downgrading SLC9000 firmware in place from the running (newer) version to an older version. If the SLC9000 firmware must be downgraded to a version lower than the one currently installed, this USB firmware install procedure is the method Lantronix recommends.

This procedure is a clean install. It erases the entire system, including the configuration, and installs the selected firmware version as a factory-default image on both boot banks of the device. After the installation, the unit boots into a factory-default configuration, and the configuration must be re-applied. A configuration saved from a newer firmware version cannot be restored onto an older version.

Before starting, back up the current configuration to a remote location and plan for the unit to be out of service while it is reinstalled and reconfigured.

FIRMWARE FILE LOCATION

This procedure requires the firmware installation files for the target version to be copied to the USB drive. The files can be obtained from https://ts.lantronix.com/ftp/slc9000/. For example, the firmware installation files for 9.8.0.0 are available in the uboot-install-files.zip file under the https://ts.lantronix.com/ftp/slc9000/9.8.0.0RXX directory.

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FIRMWARE INSTALL INSTRUCTIONS

The USB firmware install uboot-install-files.zip file contains 4 files:

- slc9k-loader-signed-recovery_v9.8.0.0R11.rom.zip
- slc9k-loader-signed-recovery_v9.8.0.0R11.rom.zip.md5sum
- slc9update-9.8.0.0R11.tgz
- slc9update-9.8.0.0R11.tgz.md5sum

Note: *the X.X.X.XRX version in these filenames will vary depending on the release version.*

The files ending in .md5sum can be used to verify the integrity of the loader rom.zip file and the update .tgz file. A USB thumb drive formatted with the FAT filesystem is required for the installation.

Note: *do not mix loader rom.zip and update .tgz files from different firmware version.*

Steps to install:

1. If desired, back up the current configuration to a remote location. This configuration can be restored if the firmware version being installed is the same or newer than the current running version. The configuration cannot be restored if the firmware version is older than the current running version.
2. Unzip the slc9k-loader rom.zip file, and copy the slc9k-loader-signed-recovery.rom to the top directory of the USB drive.
3. Copy the update .tgz file to the top directory of the USB drive.
4. Power off the SLC9000, then insert the USB drive into the U1 or U2 USB slot of the SLC9000, then power up the SLC9000. Do not remove the USB drive or power off the unit. A console port connection is recommended to verify the firmware is successfully installed.
5. The SLC9000 will automatically detect the USB drive with the loader and begin the firmware installation. The install has started when the console displays these messages:

   ```
   Please wait.
   Looking for a USB drive. Starting firmware update...
   ...
   eMMC layout ready.
   USB firmware package found. Installing firmware.
   ```

6. The firmware installation is successful when the console displays these messages:

   ```
   Firmware install finished.
   Saving recovery files on the USB drive.
   Rebooting now...
   ```

   Note: *the "OK" and "FAIL" messages displayed when services are being stopped are benign.*

7. The unit will automatically be rebooted and the USB drive can be removed (the files on the USB drive are left intact).
8. If there are any errors during this process, contact Lantronix Technical Support for assistance.

Complete output from firmware install:

```
Bootloader: 3.0.0.0R3
BL33 is Validated.
signed recovery loader verified. Auto recovery progress started..
   Loading Ramdisk to f33f0000, end f6c06400 ... OK
[    0.398365] optee firmware:optee: probe with driver optee failed with error -22
Saving 256 bits of creditable seed for next boot
Starting syslogd: OK
Starting klogd: OK
Running sysctl: OK
Starting udevd: OK
Starting network: OK
Starting crond: OK
Please wait. Looking for a USB drive.
Starting firmware update...
Writing eMMC directly...
Wiping the disk..Delete MBR
Creating partitions
Creating new msdos partition table on /dev/mmcblk0...
Creating partitions...
Setting partition flags...
Re-reading partition table...
Verifying partitions...
Formatting partitions...
Preparing p6 (/ewww) as plain ext4 (encrypt on first boot via TPM)...
eMMC layout ready.
USB firmware package found. Installing firmware.
Firmware upgrade started
Current boot bank is 1
Image 1 type: gzipped ext4 rootfs image
Image 1 version: 9.8.0.0R11  (current: NA)
Image 1: starting gzipped ext4 rootfs image write
Image 1: write completed (ok)
Image 2 type: www_tar_gz
Image 2 version: 9.8.0.0R11  (current: NA)
Image 2: starting www_tar_gz write
Image 2: write completed (ok)
Image 3 type: www_update_script
Image 3 version: 9.8.0.0R11  (current: NA)
Image 3: starting www_update_script write
Image 3: write completed (ok)
Image 4 type: QSPI Image
Image 4 version: 3.0.0.0R3  (current: 3.0.0.0R3)
Image 4: starting QSPI Image write
QSPI firmware: staging image
QSPI firmware: updating from 3.0.0.0R3 to 3.0.0.0R3
Starting bootloader upgrade...Please wait 3-4 minutes.
Do not power off the device.
Erasing the flash..
Writing the flash...
QSPI firmware: updated to 3.0.0.0R3
Image 4: write completed (ok)
Bootbank set to 1 (both eMMC banks written)
Firmware Upgrade Successful
Firmware install finished.
Saving recovery files on the USB drive.
Rebooting now...
Stopping crond: no /usr/sbin/crond found; none killed
FAIL
Stopping network: OK
Stopping udevd: OK
Stopping klogd: stopped /sbin/klogd (pid 131)
OK
Stopping syslogd: stopped /sbin/syslogd (pid 127)
```

```
OK
Seeding 256 bits and crediting
Saving 256 bits of creditable seed for next boot
umount: devtmpfs busy - remounted read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
[  213.007480] wasp2_ec: reboot: (null)
Bootloader: 3.0.0.0R3
BL33 is Validated.
Secure kernel validation successful
Starting SLC9000...
Pivoting tmpfs mounts...
Starting lmled
Starting udev
Setting bootcount to 1
SLC9000 is using AC power.
Mounting Filesystems...
Creating coupler devices...
TPM 2.0: ST33KTPM2I, Version 10.257
Running TPM health check...
TPM health check passed
Setting up encrypted config storage...
Encrypted config storage state - Plain
Migrating plaintext config to encrypted config storage...
Storing keys on the TPM...
Encrypting configuration storage...
Data partition mounted
Ethernet Switch Module installed in slot 3 (16 ports).
Bootloader: Name=SLC9000 Model=SLC9032_2AC(155) Number of Ports=32 Boot Bank=1
Serial Number: 0080A38CFF91
Device ID: 00204AYYHIRG79X99O34TN42FCINZ3UA
Ethernet Switch Module change detected: module in slot 3 inserted.
Restoring log files...
Starting syslogd...
FIPS mode is disabled
Starting Daemons...
Mounting cgroupfs: OK
Setting local time zone to GMT
Watchdog Timer set to 900 seconds.
Saving current configuration before reconfiguring Port Configuration...
Customizing Web Pages...
Customizing with Lantronix, SLC, Lantronix SLC9000 Advanced Console Manager,
                 SLC9032, www.lantronix.com, support@lantronix.com
Generating timezones...
Reconfiguring Device Port configuration to 32 ports.
ZTP: Checking for config file via Eth1
ZTP: Starting udhcpc for Eth1
udhcpc: started, v1.38.0
udhcpc: broadcasting discover on eth0
udhcpc: no lease, failing
ZTP: Checking for config file via Eth2
ZTP: Starting udhcpc for Eth2
udhcpc: started, v1.38.0
udhcpc: broadcasting discover on eth1
udhcpc: no lease, failing
ZTP: Checking for config file via Eth3
ZTP: No link on Eth3
ZTP: Checking for config file via Eth4
ZTP: No link on Eth4
Bootcount is 1, bootlimit is 10
Starting Lantronix SLC9000 Advanced Console Manager...
```

```
Firmware version 9.8.0.0R11, OS version IT Management Gateway OS 7.0
Starting Management Server...
Starting Connection Server...
Starting Application Server...
Starting Automation Framework...
Starting Web Server...
Starting Discovery Server...
Starting Script Manager...
Starting Percepxion...

SLC Startup Complete.

Welcome to the SLC

Default credentials: sysadmin / last 8 characters of the Device ID shown on the
unit label or displayed in the console boot messages.

login:
```