

# Multilink Firmware Revision 6.0.0 and 6.0.0.3k

## Release Notes

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### Overview

#### Summary

GE Multilin regularly introduces firmware updates to address enhancements in certain functional areas. This firmware is applicable to:

ML3000, ML3100, ML810 switches (revision 6.0.0.3k).

ML2400, ML1600, ML1200, ML800 switches (revision 6.0.0).

Highlights of this release include the following:

#### **Multilink Firmware revision 6.0.0/6.0.0.3k**

Updated switch software to include security enhancements

- Open SSL library upgrade
- Support for disabling weak and CBC ciphers
- Suppress user management configuration
- Hiding visible passwords / secrets / keys

Other enhancements

- HTML based WEB Interface.
- MIB support for TFTP File Transfer

Release Date: **May 15, 2019**

Upgrading the firmware to 6.0.0/6.0.0.3k can be done by downloading the upgrade file directly from the individual product pages on our website. For example:

<https://www.gegridsolutions.com/app/ViewFiles.aspx?prod=ml3000&type=7>

Notes:

When upgrading ML firmware from a version below 5.4.1, **FIRST upgrade the ML to firmware version 5.4.1**, then upgrade to version 6.0.0. Upon completion, restart the device by typing `reboot` and upgrade the boot code, as instructed in the screens.

**Please contact your local Multilin sales representative or Multilin Customer Service Department for any questions regarding this upgrade.**

## Release details

In the following release descriptions, a revision category letter is placed to the left of the description. Refer to the Appendix at the end of this document for a description of the categories displayed.

### E Open SSL library upgrade

OpenSSL Library has been upgraded to the latest version to patch the fixes for the various vulnerabilities done by OpenSSL (<https://www.openssl.org/>).

### E Support for disabling weak and CBC ciphers

The weak and insecure SSL cipher suites, particularly those having key strength of less than 128 bits, like the 56 bit DES, RC4, MD5 based MACs are disabled by default in the software release 6.0.0. However, for the users who are still using older web browsers and need these cipher suites to be supported, a new command has been introduced to enable one or more of the weak ciphers during deployment. Also support has been added in CLI Command to disable the vulnerable CBC Ciphers. The CBC Ciphers are enabled by default and can be disabled using the 'cipher' command.

For example:

```
ML2400(access)##cipher ?
cipher : Enables or Disables insecure/ weak cipher suites. Ciphers of less than
128 bit key strength do not get enabled with 'all-cbc' option.
```

Usage

```
cipher name=<des-cbc-sha|des-cbc3-sha|rc4-md5|rc4-sha|idea-cbc-sha|all-cbc>
<enable|disable>
```

Groups: access

```
ML2400(access)##show-ciphers
```

Cipher State

```
=====
```

```
DES-CBC-SHA Disabled
DES-CBC3-SHA Disabled
RC4-MD5 Disabled
RC4-SHA Disabled
IDEA-CBC-SHA Disabled
ALL-CBC Enabled
```

```
ML2400(access)##
```

### E Suppress user management configuration

To upgrade the level of security, the latest version of the Multilink software does not display user management configuration in running config, saved config or script files. It is also not allowed to save the user management configuration to config file or script file through TFTP or FTP. Also, any user management command will not be applied if the script file or config file is not being received over an authenticated mechanism (SFTP, HTTPS or Xmodem) along with the authorized user privileges.

### E Hiding visible passwords / secrets / keys

GE Multilink application software displays several passwords/ keys/ secrets which pose as a security threat as they can be easily accessed and can be misused by any malicious user. The intent of this feature is to hide all the visible passwords/ secrets/ keys on the user interfaces and the configuration files being exported out of the switch, thereby enhancing the security in the network. The following list of passwords/ keys/ secret information shall not be displayed to any user:

S.No.	Password/ Secret/ Key
1	S-Ring License Key
2	CLI/ GUI User Password
3	SNMPv3 User Authentication Password
4	SNMPv3 User Privacy Password
5	RADIUS Server Secret
6	TACACS Server Key
7	Host Password in Host Table

### E HTML based WEB Interface

This release of Multilink comes with a refreshed GUI interface. The flash-based GUI is now replaced with an HTML based GUI.

### E MIB support for TFTP File Transfer

- MIB attribute ml1600TFTPAction has been updated to support uploading encrypted config file (i.e.configUploadEncrypted.).

For example:

```
ml1600TFTPAction OBJECT-TYPE
SYNTAX INTEGER{
  none (1),
  downloadImage (2),
  configUpload(3),
  configDownload (4),
  configUploadEncrypted(5)
}
ACCESS read-write
STATUS mandatory
DESCRIPTION "TFTP Action"
 ::= {ml1600TftpGroup 4}
```

- A new read-only MIB attribute ml1600TFTPTrfrStatus has been added to monitor the status of file transfer via TFTP, initiated through the SNMP Interface.

The file transfer operation is specified through the MIB attribute ml1600TFTPAction, the values for which are imageDownload, configUploadText, configDownload, configUploadEncrypted.

To check the success/failure of file transfer, the SNMP manager shall poll on MIB attribute ml1600TFTPTrfrStatus.

For example:

```
ml1600TFTPTrfrStatus OBJECT-TYPE
SYNTAX INTEGER{
  other (0),
  pending (1),
  ok(2),
  failed(3)
}
ACCESS read-only
STATUS mandatory
DESCRIPTION "This object returns the result of the last file transfer
other - No File Transfer in progress
pending - File Transfer in progress
```

```

success - File Transfer is successful
failed - File Transfer failed"
::= { m11600TftpGroup 5}

```

## Appendix

### Change categories

This document uses the following categories to classify the changes.

**Table 1: Revision Categories**

Code	Category	Comments
<b>N</b>	New feature	A separate feature added to the relay. Changes to existing features even if they significantly expand the functionality are not in this category
<b>G</b>	Change	A neutral change that does not bring any new value and is not correcting any known problem
<b>E</b>	Enhancement	Modification of an existing feature bringing extra value to the application
<b>D</b>	Changed, incomplete or false faceplate indications	Changes to, or problems with text messages, LEDs and user pushbuttons
<b>R</b>	Changed, incomplete or false relay records	Changes to, or problems with relay records (oscillography, demand, fault reports, etc.)
<b>C</b>	Protocols and communications	Changes to, or problems with protocols or communication features
<b>M</b>	Metering	Metering out of specification or other metering problems
<b>P</b>	Protection out of specification	Protection operates correctly but does not meet published specifications (example: delayed trip)
<b>U</b>	Unavailability of protection	Protection not available in a self-demonstrating way so that corrective actions could be taken immediately
<b>H</b>	Hidden failure to trip	Protection may not operate when it should
<b>F</b>	False trip	Protection may operate when it should not
<b>B</b>	Unexpected restart	Relay restarts unexpectedly

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## For further assistance

For product support, contact the information and call center as follows:

GE Grid Solutions

650 Markland Street

Markham, Ontario

Canada L6C 0M1

Worldwide telephone: +1 905 927 7070

Europe/Middle East/Africa telephone: +34 94 485 88 54

North America toll-free: 1 800 547 8629

Fax: +1 905 927 5098

Worldwide e-mail: [multilin.tech@ge.com](mailto:multilin.tech@ge.com)

Europe e-mail: [multilin.tech.euro@ge.com](mailto:multilin.tech.euro@ge.com)

Website: <http://www.gegridsolutions.com/multilin/>