



Updating MNS-BB

PK012906

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1. Getting Started

Necessary tools for the job...

This document describes how to upgrade the LE2425A Fiber Switches and the LEV2525A Industrial Switches to MNS-BB latest Release. The methods described for updating the MNS-BB software are either locally at the console port on the LE2425A Fiber Switches and the LEV2525A Industrial Switches or remotely over the network using FTP or TFTP.



Depending on the update process (update through the serial/console port or remotely through the network), it would be best if the necessary tools listed below are available, tested and working before you start.

For serial port updates directly through the serial/console port

- 1) A female-female null modem cable.
- 2) Serial port – if your PC does not have a serial port, you may want to invest in a USB to serial converter or cable.
- 3) A PC (or a workstation/computer) with a terminal emulation program such as HyperTerminal (included with Windows) or Teraterm-pro or other equivalent software. Make sure that the software supports Xmodem protocol
- 4) Enough disk space to store and retrieve the configuration files as well as copy software files from ftp site listed above. We recommend that at least 5 MB of disk space is available for this purpose
- 5) Manager level account name and password of the switch being upgraded
- 6) Connection to the Internet. Make sure the connection does not block ftp file transfers

For remote updates over the network using FTP or TFTP

- 1) A PC (or a workstation/computer) with a FTP as well as TFTP server software. This software is widely available as a free download on the Internet.
- 2) Enough disk space to store and retrieve the configuration files as well as copy software files from Black Box. We recommend at least 5MB of disk space for this purpose
- 3) Connection to the Internet. Make sure the connection does not block FTP file transfers

- 4) IP address of the switch that is being upgraded. Along with that, the manager level account name and password is also needed
- 5) Connection to the LE2425A Fiber Switches or the LEV2525A Industrial Switch being upgraded. Make sure the Intranet over which the software update will occur does not block FTP or TFTP traffic.

Downloading the MNS-BB software

To download the MNS-BB software, follow these simple steps:

- 1) Access FTP site through any standard browser by using <ftp://blackbox.le25a@ftp.bbfibsw.com>
 - a) (Note: Make sure the browser has – “enable the ftp view” option checked. For Internet Explorer it can be enabled by using the menu Tools→ Internet options → Advanced).
 - b) If the site uses another socket number for ftp connections, use the socket number at the end of the URL. For example, if the network administrator has setup a firewall to use socket number 1684, the URL would be as follows:
<ftp://blackbox.le25a@ftp.bbfibsw.com:1684>
 - c) **NOTE** - You can use any other FTP program available on the Internet, including the ‘ftp’ command available on most operating systems instead of the browser for downloading the software.



Remember the file name and the directory where the MNS-BB software is downloaded. This will be needed later for the upgrade – irrespective of whether the MNS-BB software is updated via the serial port or over the network. For example, in the file is saved in C:\TFTP\GCI\Configs folder.

NOTE – the common error is to use <ftp://www.bbfibsw.com> – **this URL will not work**. It will give you an error. Please use <ftp://ftp.bbfibsw.com>

Name	Size	Type	Modified
Bitview		File Folder	2/23/2005 5:39 AM
Boot_Code		File Folder	8/13/2003 12:00 AM
MIB		File Folder	2/23/2005 5:40 AM
MNS-BB		File Folder	2/23/2005 5:38 AM
User_Guide		File Folder	2/23/2005 12:53 AM
Black Box LE2425A_quickstep...	57.5 KB	Microsoft Word Doc...	2/23/2005 5:56 AM

Figure 1– Select the MNS-BB folder to download the latest Release. Release numbers increase – thus Release 1.4 is current compared to Release 1.3

- 2) Navigate to the folder MNS-BB. See Figure 1. (There are other folders with additional software, MIBs as well as additional useful information for the LE2425A Fiber Switches and the LEV2525A Industrial Switches which you may want to use later.) From the MNS-BB folder download the latest Release Notes (from the Release Notes sub folder)

as well as the file **LE_Rel1.x.bin** – where “x” is the most current release number. The release notes provide additional information on the latest features and functionality plus any other additional information not covered in the manuals.

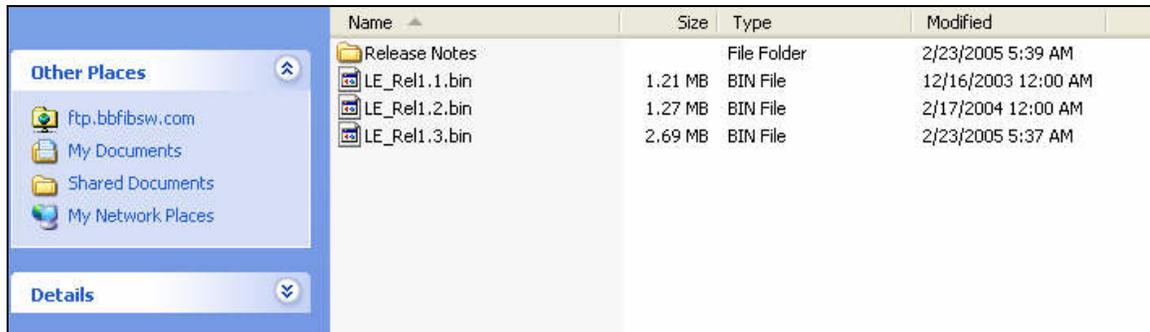


Figure 2– Navigate to MNS-BB folder to download the latest LE_Rel1.3.bin file and the release notes from the Release Notes folder

- 3) Copy the **LE_Rel1.x.bin** file by using the copy command. This can be done by using the right click (or for left handed mouse – the left click) button and then selecting the copy command. (Note - Linux or other operating system users – please use the appropriate copy command.)
 - a) If you are using another ftp program, use that programs copy command. Make sure to download the **LE_Rel1.x.bin** file in the binary mode, or the MNS-BB image may be corrupted
- 4) Make sure you remember the locations (or directory) where the file is stored as this file will be needed for the next step

Next steps

- 1) Access the LE2425A Fiber Switches or the LEV2525A Industrial Switch being updated. The access can be over the console port using the null modem cable or through the network using telnet. This is described in step 2.
- 2) Save the existing configuration (either through the serial port or through the network – depending on the access method). This is also described in step 2.
- 3) Load the updated MNS-BB software and reboot the switch. This is described in step 3.



2. Preparing to load the software

Backup your existing configuration.

Once the MNS-BB software is downloaded from the ftp site, it is strongly recommended that the existing configuration of the switch is preserved before the MNS-BB software upgrade is performed. This section will show you how to save the existing configuration and prepare you for loading the configuration.

Accessing the switch

The MNS-BB User Guide explains how the switch can be accessed. For clarity, this section simplifies the details and describes some of the commands you can use for accessing the switch.

The LE2425A Fiber Switches or the LEV2525A Industrial Switch can be accessed via the serial port or through the network using telnet. For using telnet, make sure the switch is configured with the proper IP address, netmask and default gateway information. If needed, refer to Chapter 1 of the User Guide on how to set IP address and related parameters on the LE2425A Fiber Switches or the LEV2525A Industrial Switch.

Make sure the Manager level login name and password associated with that switch is also known. Without the proper access (login name and password) the switch cannot be upgraded.

Serial Connection

Connect the serial port on the switch to the serial port on the computer using the serial cable listed in step 1. The settings for the HyperTerminal software emulating a VT100 are shown in Figure 3 below. Make sure the serial parameters are set as shown (or bps = 38400, data bits=8, parity=none, stop bits=1, flow control=none).

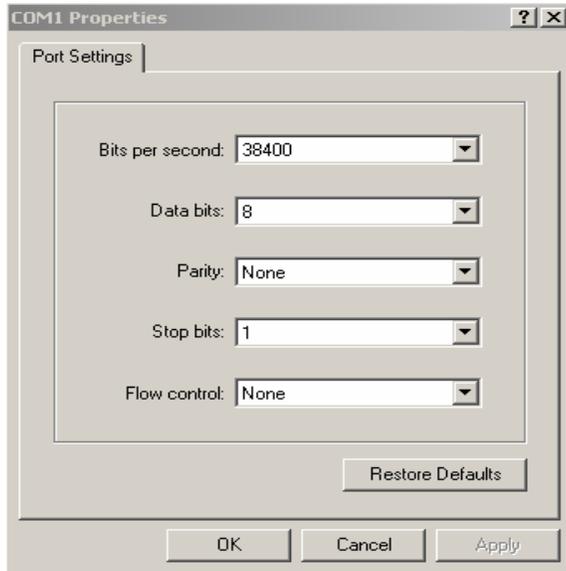


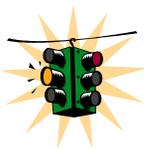
Figure 3 - HyperTerminal screen showing the serial settings

Network Access

Prerequisite - a PC (or workstation/computer) with telnet software and the IP address of the LE2425A Fiber Switches or the LEV2525A Industrial Switch (or DNS name associated with the switch) to be upgraded. Access the LE2425A Fiber Switches or the LEV2525A Industrial Switch by using the telnet command. For example, if the switch has the IP address 192.168.10.11 the command is as shown in Figure 4 below.

```
C:> telnet 192.168.10.11
Trying ..... connected...
```

Figure 4 – Using telnet command to connect to a LE2425A Fiber Switches and the LEV2525A Industrial Switches with IP address 192.168.10.11



If the telnet command does not work – check for network connectivity (using the ‘ping’ command). If telnet services fail¹ then the alternative is to locate the LE2425A Fiber Switches and the LEV2525A Industrial Switches and update the MNS-BB software through the serial port following the serial update process described in this document.

Saving the Configuration

Before saving the configuration, please ensure that one of the three capabilities listed below are available

- 1) Serial file transfer capability such as X-modem or equivalent

¹ telnet services can fail due to a number of reasons. Please check with your system and/or network administrator for additional help.

- 2) TFTP server
- 3) FTP server

As a good practice, it is recommended that you should have all these capabilities available on your local computer if you plan to upgrade additional switches as well as switches in the future.

The command used for saving the existing configuration of the LE2425A Fiber Switches and the LEV2525A Industrial Switches is **'saveconf'**

Syntax **saveconf mode=<serial | tftp | ftp> [<ipaddress>] [file=<name>]**

Where

[ipaddress] is the IP address of the server running the TFTP services or the FTP services. The field is needed if either the TFTP or FTP is chosen.

file=<name> is needed for saving the configuration



If mode=<tftp | ftp> is used, be aware that most FTP and TFTP services, as a default, do not over-write files. If the file transfer fails, check to see if the file name already exists or use a different file name with the **'saveconf'** command. Also make sure the ftp or TFTP/FTP services are running before the **'saveconf'** command is used on the switch.

Serial Connection

To save the configuration using the serial connection, use the **'saveconf'** command as shown below. In this example, we will show the **'saveconf'** interaction using the HyperTerminal software available on most Windows® systems.

```
LE2425A# saveconf mode=serial file=config-10.11
Do you wish to upload the configuration? [ 'Y' or 'N' ] Y
```

Figure 5 – Example of **saveconf** command using serial interface

At this point, switch to the VT100 emulation software (e.g. HyperTerminal on Windows platform) and invoke the Xmodem file receive.

Once the “Receive File” is invoked (as shown in Figure 6) follow the dialog to save the file in the proper directory and with the proper name.



Figure 6 – Make sure to select the Xmodem protocol and the proper directory where the configuration is saved. Click on Receive. This starts the file transfer.

Once the file transfer is started, the Xmodem status window is shown below

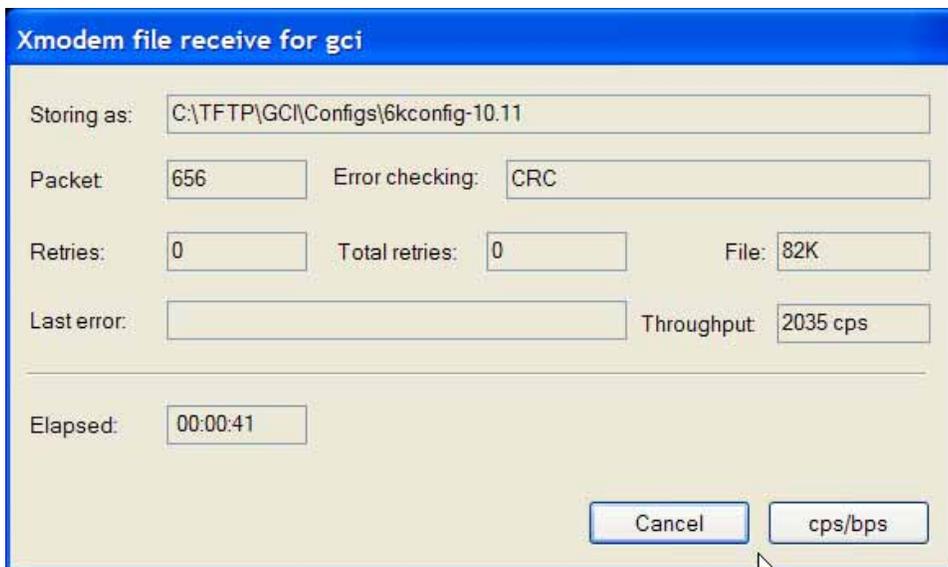


Figure 7 – Status window for Xmodem (using HyperTerminal under Windows XP)

When the file transfer is completed, the window shown in Figure 8 exits and the completion message is displayed.

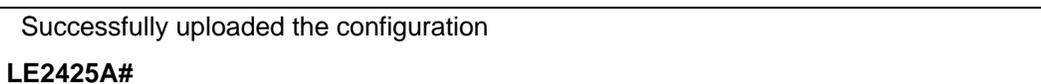


Figure 8 – Message which shows the completion of the file transfer (from 'saveconf' command)

Network Access

Prerequisites – PC (or workstation/computer) with telnet software and a PC (or workstation/computer) with FTP or TFTP server software. For simplicity, the two PC's (or workstations/computers) can be one and the same.

To save using TFTP or FTP first ensure that you have the FTP or TFTP server set up and the switch can 'ping' the TFTP or the FTP server. For ftp services, make sure the server can support anonymous login or make sure the login password information is available.

For saving the configuration, use the same saveconf command listed above. In the example below, assume the IP address of the TFTP or FTP server is 192.168.10.99 and is connected to the switch with proper network connectivity (i.e. the switch can ping the TFTP or FTP server as well.)

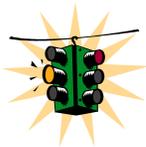
Example using TFTP

```
LE2425A# saveconf mode=tftp 192.168.10.99 file=BBLEconfig-10.11
Do you wish to upload the configuration? ['Y' or 'N'] Y
```

Figure 9 – Example of *saveconf* command

This will save the file BBLEconfig-10.11 to the specified IP address (192.168.10.99) in the default TFTP folder.

Using FTP would be the same as Figure 9, except replace '**mode=tftp**' with '**mode=ftp**'



- 1) In some situations (e.g. routed networks), TFTP or FTP services may be blocked. Check for network connectivity (using the 'ping' command). If the connectivity is OK, please contact your system or network administrator to unblock FTP or TFTP packets. If that is not possible, the alternative then is to locate the LE2425A Fiber Switches or the LEV2525A Industrial Switches and update the MNS-BB software through the serial port as described in this document.
- 2) AFTER Release 1.3, the release will support username and password for the ftp server. The syntax of the command will be

```
saveconf mode=<serial|tftp|ftp> [<ipaddress>] [file=<name>] [user=<name>] [pass=<password>]
```

(Note the ipaddress, file=name are mandatory parameters if tftp is used and ipaddress, file=name, user=name, pass=password are mandatory parameters if ftp is used)

Next steps

- 1) Upload the updated MNS-BB software and reboot the switch. This is described in step 3



3. Loading the MNS-BB software

Load the latest MNS-BB image.....

AT this stage, the MNS-BB software has been downloaded from the ftp site, and the configuration saved. The LE2425A Fiber Switches or the LEV2525A Industrial Switch is now ready to upload the latest Release.

Before loading the MNS-BB software

It will be necessary for the LE2425A Fiber Switches or the LEV2525A Industrial Switches to be reset or re-booted after the new MNS-BB software is loaded. Since this may cause a network outage, software upgrades should be performed when it is tolerable for the outage and the appropriate users are informed of this outage.

Alternately, if the S-Ring technology is used, the outage will not be noticeable and the switch will be re-inserted in the S-Ring after the upgrade is performed. It is however a good practice to inform the affected people of a possible outage.

Accessing the switch

Continue to use the access method defined in steps 1 and 2.

The command used for upgrade is

Syntax **upgrade mode=<serial|tftp|ftp> [<ipaddress>] [file=<name>]**

Where

mode is the mode by which the software will be accessed for upload – serial, ftp or tftp

ipaddress is the IP address of the ftp or tftp server (only used when mode = ftp or tftp)

file=name is the name of the MNS-BB software file to be used for upgrade. This file was downloaded from the ftp site (as described in steps 1 and 2).

Serial Connection

Prerequisites - make sure the directory and the file name of the MNS-BB software image downloaded in steps 1 and 2 is known. To use the serial connection to update the MNS-BB image, the command dialog is shown below:

```
LE2425A# show version
Version 2.6.0, Build Date: Jan 29 2004, Time: 12:02:32
LE2425A# upgrade mode=serial
Do you wish to upgrade the image? ['Y' or 'N'] Y
```

Figure 10 – *Upgrade using serial connection*

Once the upgrade process is started, the VT100 emulation software (e.g. HyperTerminal) will ask for the file location. Once the file location is indicated, the file transfer begins. Make sure the Xmodem protocol is also selected in this file location dialog window. Once selected, the file transfer begins.

Once the transfer is complete, the dialog is shown in Figure 11.

```
Upgrade is Successful. Please reboot LE2425A to start the application
```

```
LE2425A# reboot
```

```
Proceed on rebooting the switch? ['Y' or 'N'] Y
```

```
Do you wish to save current configuration? ['Y' or 'N'] Y
```

The switch will now reboot. Reconnect and login.

After successful login, you will be prompted whether the firmware should be upgraded. Answer "Y" to that. The switch then updates the firmware and is ready for use. To check the version, use the "show version" command.

```
LE2425A# show version
```

```
MNS-BB Ver: 1.4 Date:Jan 24 2006 Time:14:26:28 Build ID 1138141587
```

Figure 11 – *Upgrading the switch using the serial interface*

Network Access

Prerequisites - make sure the directory and the file name of the MNS-BB software image downloaded in steps 1 and 2 is known. To upgrade using TFTP or FTP, ensure that the FTP or TFTP server is set up and the switch can 'ping' the TFTP or the FTP server and vice-versa. Ensure that the server has access to the MNS-BB software image downloaded in step 2. Make sure the MNS-BB software image file is copied to the default folder specified

by the FTP or TFTP server. If using FTP services, make sure the FTP access information (login name and password) is also known.

In the example below, let us assume that the IP address of the TFTP server is 192.168.10.99; that the server can ping the switch and the switch can ping the server.

```

LE2425A# show version

Version 1.2.0, Build Date: Jan 29 2004, Time: 12:02:32

LE2425A# upgrade mode=tftp 192.168.10.99 file= LE_Rel1.x.bin

Do you wish to upgrade the image? ['Y' or 'N'] Y

Upgrade is Successful. Please reboot LE2425A to start the application

LE2425A# reboot

Proceed on rebooting the switch? ['Y' or 'N'] Y

Do you wish to save current configuration? ['Y' or 'N'] Y

```

The switch will now reboot. Reconnect and login.

After successful login, you will be prompted whether the firmware should be upgraded. Answer "Y" to that. The switch then updates the firmware and is ready for use. To check the version, use the "show version" command.

```

LE2425A# show version

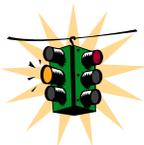
MNS-BB Ver: 1.4 Date:Jan 24 2006 Time:14:26:28 Build ID 1138141587

```

Figure 12 – Dialog for upgrading the image using tftp

This will load the **LE_Rel1.x.bin** file from the TFTP server with the IP address (192.168.10.99) on the switch.

A similar example using ftp would be similar to what is shown in Figure 12, except the command '**mode=tftp**' will be replaced by '**mode=ftp**'. Make sure the ftp server allows anonymous logins and the **LE_Rel1.x.bin** file is accessible by the anonymous user.



ftp may require anonymous login. Make sure the ftp server is setup to support anonymous login and has the latest image file in the public access area. Alternately the ftp command will prompt you for the user name and password if the anonymous user is not used. After Release 1.3, the ftp upgrade process supports user name and password capability on the command line. The syntax of the command will be

```
upgrade mode=<serial|tftp|ftp> [<ipaddress>] [file=<Name>] [user=<name>] [pass=<password>]
```

(Note the ipaddress, file=name are mandatory parameters if tftp is used and ipaddress, file=name, user=name, pass=password are mandatory parameters if ftp is used)

