

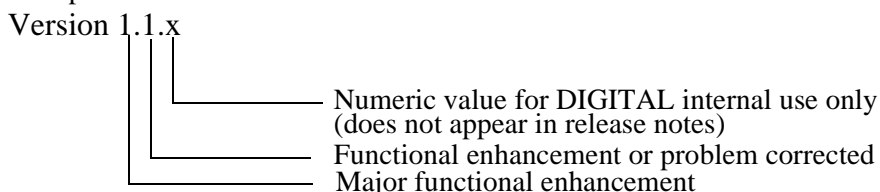


AA-R0KLB-TE

DIGITAL MultiSwitch 600 Stack Director
Release Notes
Version 1.1
August 1997

As warranted, DIGITAL changes the firmware of this device to make functional enhancements or to correct reported problems. These release notes identify enhancements and changes to the firmware that impact end-user operations. They also contain firmware and software requirements, and list updates in this release as well as known conditions and restrictions that apply to the operation of the DIGITAL MultiSwitch 600 Stack Director.

The following example describes the firmware version number:



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Firmware Requirements

The DIGITAL MultiSwitch 600 Stack Director firmware version V1.1, or higher, is required to manage the following versions of network modules in a managed DIGITAL MultiSwitch 600 stack:

Product	Version	Filename
DIGITAL MultiSwitch 612EX	V1.1	dlmw1110.bin
DIGITAL MultiSwitch Hub 624T	V1.0	dlmr2100.bin

The Stack Director V1.1 firmware image name is dlssm110.bin. See the section entitled Accessing Online Information in these release notes for information on how to obtain a firmware kit.

DIGITAL requires that you update your network modules to the latest version.

Software Requirements

Stack Director firmware version V1.1 can be managed by:

- clearVISN MultiChassis Manager V6.1, available in the clearVISN V2.0 product suite
- clearVISN Stack Manager V2.1, available in the clearVISN V2.0 product suite or by later versions of these products.

NOTE

The clearVISN V1.1 Recovery Manager will not support MultiSwitch 600 modules. You must use Recovery Manager V2.0, available in the clearVISN V2.0 product suite.

Changes in This Release

The following is a list of changes in this release:

- After a power failure of a fully configured stack with lots of ports connected on the backplane, some ports would not be connected after the stack rebooted. These ports would still show up as being connected on the Lan Interconnect screen in ClearVISN Multichassis manager, but the front-panel LEDs would not be lit and the ports would not transfer traffic. This problem has been fixed in V1.1.
- Occasionally you get "add failed" messages when trying to connect a port on the stack backplane using the Lan Interconnect screen of MultiChassis Manager, even though there should be enough backplane channels to make the connection. Retrying the connection never succeeds. This problem has been fixed in V1.1.
- With auto-healing enabled, removing all the modules in rapid succession and reinserting them would cause some ports to not be connected after all the modules had completed rebooting. This problem has been fixed in V1.1.
- When downline loading a MultiSwitch 600 module via Flash Loader, a successful completion status sent by the module would not be correctly passed to Flash Loader. As a result, Flash Loader would display a message indicated that the load was not successful. This has been fixed.

- Implemented a lock on updates of backplane information to non-volatile memory to prevent a pre-scheduled update of non-volatile memory from occurring if the patch manager was rearranging the connection table.
- Fixed potential double-deallocation of memory during certain obscure conditions during a downline upgrade.
- Fixed RMON history calculation of utilization.

Known Conditions and Restrictions

The following is a list of conditions and restrictions.

Hot-Swapping

Hot-swapping is the removal or insertion of a module into either the DIGITAL MultiSwitch 600 System or the DEChub 900 MultiSwitch without disrupting power to the unit. Do not hot-swap more than one module at a time. Simultaneously inserting or removing more than one module, can cause problems with the operation of other installed modules.

Upgrading the Stack Director

When updating the Stack Director along with network modules, upgrade the Stack Director to V1.x before upgrading network modules.

If Backplane Auto Healing is enabled, you must disable it before upgrading any network modules. It can be disabled from the LAN Interconnect window of the clearVISN MultiChassis Manager or Stack Manager.

Wait 15 seconds after making LAN connections before doing a Stack Director firmware upgrade. This allows the changes to be written to nonvolatile storage.

Module Removal and Insertion Conditions and Restrictions

You can remove and insert a network module from the Stack Director or a Stack Station while the power is either on (hot-swap) or off (cold-swap).

Backplane Auto Healing, when enabled, preserves port and LAN configuration information when one network module in a stack slot is hot-swapped with an identical network module. The Stack Director restores the previous connections to the new module.

Make sure that all modules are fully up and configured correctly before enabling auto healing.

When Backplane Auto Healing is enabled and you are replacing a network module with one that is not identical, the Stack Director removes all backplane connections to the new module and deletes the modules backplane configuration.

Auto healing does not support port groups. When Backplane Auto Healing is enabled and you are replacing a module with configurable port groups (such as the DIGITAL MultiSwitch Hub 624T) with an identical module, the port group configurations are not transferred from the previous module to the current one. Instead, port group configurations are stored in the nonvolatile memory of each network module and thus stick with the module, not the stack slot.

Stack Level Addition and Removal Conditions and Restrictions

Adding or removing a stack level (a Stack Station or Stack Director, with or without an attached network module) is not supported in a powered stack. All Stack Stations and the Stack Director must be powered down before adding, removing or exchanging any Stack Stations or the Stack Director.

Flow Control Not Supported

When connecting a terminal to the setup port, configure the terminal for jump scroll because the Stack Director does not support flow control.

Using a DECserver 90TL or DECserver 90M as a SLIP Server

If you are using a DECserver 90TL or a DECserver 90M as a SLIP server on the OBM port, disable AUTOBAUD and enable AUTOCONNECT.

Enable/Disable Request-to-Send Not Supported

The enable/disable RTS function available under the "Configure out-of-band port..." menu item is not supported in this version of the Stack Director. This means that the RTS modem lead is always asserted, which is normal.

Simultaneous Downline Upgrade of Stack Modules

If you initiate a downline upgrade of a stack module while other module downline upgrades are in progress, it is difficult to tell which modules the status messages are referring to. Therefore, it is important to verify that each module was upgraded correctly when all upgrades are complete. You can do this by selecting Downline Upgrade from the Stack Director Installation menu and pressing RETURN a second time. A display will show the name and version identification of each module in the stack.

Installing or Replacing Network Modules in a System

Adding a New Network Module

When you are adding a new network module, follow these steps:

Step	Action
1	Install the network module by following the product's installation documentation.
2	Ensure that the module contains the latest firmware. Update the module, if necessary.
3	Ensure that Backplane Auto Healing is disabled.
4	Configure the new backplane connections.
5	Enable Backplane Auto Healing, if you desire.

Replacing an Existing Network Module with an Identical One

When you are replacing an existing network module with an identical one, follow these steps:

Step	Action
1	Do not change the state of Backplane Auto Healing.
2	Remove the existing network module.
3	Replace the network module you removed with an identical module. For example, replace a DIGITAL MultiSwitch Hub 624T with a DIGITAL MultiSwitch Hub 624T.
4	Ensure that the module contains the latest firmware. Update the module, if necessary.
5	If Backplane Auto Healing was not enabled before you replaced your module or if you had to disable it in order to update the module, you must configure the replacement network module. If Backplane Auto Healing was enabled, all the backplane connections will be restored.

Adding or Removing a Stack Level in a MultiSwitch 600 stack

When adding or removing a stack level (a Stack Station or Stack Director, with or without an attached network module), follow these steps:

Step	Action
1	Record the backplane configuration of each network module and the Stack Director, either manually or by using clearVISN Recovery Manager V2.0.
2	If Backplane Auto Healing is desired, check the LAN Interconnect window in the clearVISN MultiChassis Manager or Stack Manager to ensure that Backplane Auto Healing is in the desired state.
3	Power down all Stack Stations and the Stack Director, proceeding from the top of the stack to the bottom.
4	Remove or add Stack Stations or the Stack Director according to the product's installation documentation.
5	Power up the Stack Director and the Stack Stations, proceeding from the bottom of the stack to the top.
6	Check the backplane configuration of the Stack Director and each network module. Restore configurations to modules that are no longer in the desired state, either manually through the LAN Interconnect window or by using clearVISN Recovery Manager V2.0. Be sure to disable Backplane Auto Healing while restoring configurations.

Instructions for Updating your Stack Director

When you are updating your Stack Director, follow these steps:

Step	Action
1	Update the Stack Director firmware to the current version.
2	Install clearVISN MultiChassis Manager V6.1 or later, or clearVISN Stack Manager V2.1 or later.
3	Update all the network modules to the latest firmware using clearVISN Flash Loader or the Downline Upgrade option on the Stack Director installation menu. Be sure to leave Backplane Auto Healing disabled until all your network modules are updated.

Updating the Stack Director Firmware

You can perform a firmware update to the Stack Director in either of two ways:

- 1) By using the Flash Loader Utility supplied with clearVISN and the firmware consolidated kit.
- 2) By using the Downline Upgrade option on the Stack Director installation menu and the firmware consolidated kit.

NOTE


Before performing a firmware update using either of these methods, read through the next section, titled Downline Upgrade (DLU) Process. The section contains a detailed process description of how the Stack Director behaves during and after a firmware update.

For instructions on using Flash Loader to perform an update, refer to the Flash Loader online help.

For detailed instructions on performing an update from the Stack Director installation menu, refer to the Downline Upgrade section in the *DIGITAL MultiSwitch 600 System Installation and Configuration* manual.

The Downline Upgrade (DLU) Process

The Downline Upgrade Process occurs when you initiate a downline upgrade to the Stack Director, either via Flash Loader or the setup port installation menu. The DLU process consists of five stages:

Stage	Description
1	Verifying the TFTP Connection In this stage the DLU process verifies that a TFTP connection can be made to the server, and that the file requested contains the correct header identifying a Stack Director firmware image. During this stage, the Stack Director is functional and can respond to management requests. This stage may take 1 minute or longer to complete. If the TFTP server does not respond, the load will timeout after several minutes. If an error or timeout occurs in this stage, the Stack Director continues normal operation.
2	Transferring the Firmware Image This stage begins when the Stack Director's operating firmware transfers control to the primitive loader in the Stack Director's boot block. The primitive loader transfers the firmware image across the network from the TFTP host to the Stack Director's RAM memory. During this stage, the Stack Director is not functional and cannot respond to management requests. Now that the primitive loader is executing, the Stack Director module status LEDs are used to indicate downline load progress. In this stage, the module status LEDs will display the following pattern: TFTP Load in Progress  This stage can take as little as 1 minute to complete over an Ethernet connection, or as long as 10 minutes over an OBM connection. If a TFTP error occurs during this stage, the Stack Director will reset and boot the old firmware image.

Stage	Description
-------	-------------

3 Verifying the Firmware Image

When the TFTP load transfer is complete, the DLU process verifies that the new firmware image has been transferred correctly. During this stage, the Stack Director is not functional and cannot respond to management requests. The Stack Director module status LEDS will show the following pattern:

Verifying Image ● ● ● ○ ○ ○ ○ ○

This stage takes approximately 5 seconds to complete. If the Stack Director finds that the new firmware was not transferred correctly, the Stack Director will reset and boot the old firmware image.

4 Blasting the New Firmware Image

After the new firmware image is validated, the DLU process blasts the image into the Stack Director's nonvolatile Flash memory, replacing the previous firmware image. During this stage, the Stack Director is not functional and cannot respond to management requests. The Stack Director module status LEDS will show the following pattern:

Blasting Image to Flash ● ● ● ● ○ ○ ○ ○

This stage can take up to 1 minute to complete. When it is complete, the Stack Director module status LEDs will indicate success or failure. If the image was stored successfully, the LEDs will show the following pattern:

Flash Blast Succeeded ● ● ● ● ● ○ ○ ○

If the flash blasting procedure failed, the Stack Director module status LEDs will alternate between the following patterns, causing a blinking effect.

Flash Blast Failed ● ○ ● ○ ● ○ ● ○

Flash Blast Failed ○ ● ○ ● ○ ● ○ ●

If the flash blasting failed, the Stack Director will reset. If the old firmware image is no longer intact, the Stack Director will not complete diagnostics. It will attempt to BOOTP for a new firmware image. Please see the Stack Director installation documentation for further instructions.

CAUTION

If power is interrupted during Stage 4 of the DLU process, the firmware image can become corrupted. Do not turn off power to the unit or perform any action that can cause the unit to lose power during Stage 4 of the DLU process.

Stage	Description
5	<p>Booting the New Firmware Image</p> <p>With the new firmware image in the Stack Director's nonvolatile Flash memory, the Stack Director boots the new firmware by performing a reset. After the reset, the Stack Director runs self-test, then begins executing the new firmware. During the reset and self-test, the Stack Director is not functional and cannot respond to management requests. When self-test is complete, the Module OK LED will light, and the setup port screen will display the MultiSwitch 600 Stack Director installation menu. This completes the downline load upgrade procedure.</p> <p>This stage takes approximately 5 seconds to complete.</p>

Table 1 summarizes how the Stack Director module status LEDs display the stages of the DLU process. The first item, BOOTP Request Sent, is only used when there is no valid firmware image in Flash memory. The last status in the list, Flash Blast Failed, alternates between the two patterns shown, creating a blinking effect.

Table 1: Summary of Downline Load LED status

BOOTP Request Sent	● ○ ○ ○ ○ ○ ○ ○
TFTP Load in Progress	● ● ○ ○ ○ ○ ○ ○
Verifying Image	● ● ● ○ ○ ○ ○ ○
Blasting Image to Flash	● ● ● ● ○ ○ ○ ○
Flash Blast Succeeded	● ● ● ● ● ○ ○ ○
Flash Blast Failed	● ○ ● ○ ● ○ ● ○
Flash Blast Failed	○ ● ○ ● ○ ● ○ ●

If You Downgrade Your Stack Director

If you downgrade your Stack Director from a later major version of firmware to an earlier version, such as from V2.0 to V1.x, or upgrade from a test version of firmware to any other version of firmware, the Stack Director will clear all nonvolatile memory configuration settings and reset a second time.

If you are downgrading your Stack Director, record your backplane LAN configuration before downgrading. After downgrading, re-enter all IP address information and other setup menu data. The clearVISN MultiChassis Manager or Stack Manager LAN Interconnect view will show an initialized backplane. All backplane flexible channel connections are deleted and default backplane connections to the ThinWire are established. Use your recorded configuration data to restore the backplane configuration. Connections made to the front panel are unchanged.

Errata

This section lists changes that were not included in the manual. Please incorporate the following changes to the *DIGITAL MultiSwitch 600 System* manual.

Chapter	Page	Replace
Chapter 1	1-6	Replace the 5th bullet with: <ul style="list-style-type: none">• Backplane Auto Healing restores backplane connections for a re-inserted functional module of the same type as previously removed. Replace the 8th bullet with: <ul style="list-style-type: none">• Out-of-band management via SLIP.
Chapter 2	2-13	Replace the 1st bullet under Step 2 with: <ul style="list-style-type: none">• 9600
	2-17	Replace Step 1 with: <p>If available, use clearVISN Recovery Manager to backup current settings for each device (including the Stack Director) on the stack.</p>
	2-18	Replace the first paragraph under Step 8 with: <p>If available, use clearVISN Recovery Manager to restore settings for each device on the stack that may have lost its settings.</p>
Chapter 3	3-5	Replace the complete page with:

Backplane Auto Healing

Part of the installation process for a managed DIGITAL MultiSwitch 600 system may be to connect the functional module ports to the internal Ethernet LAN channels. This is generally done to create individual shared and switched Ethernet segments conforming to the desired network topology. clearVISN Multichassis Manager (MCM) or clearVISN Stack Manager is used to set up the initial connections after the DIGITAL MultiSwitch 600 system is built. Swapping or removing functional modules in a DIGITAL MultiSwitch 600 stack is sensed by the Stack Director to update the stack's internal Ethernet LAN channel connections. Backplane Auto Healing must be enabled using clearVISN Multichassis Manager or Stack Manager for this feature to be activated. This feature allows you to remove, replace and/or swap functional modules of the same type without having to re-configure the internal LAN connections with clearVISN.

When a functional module is removed from a stack level, any connections to the internal Ethernet LAN channels are deleted. However, with Backplane Auto Healing enabled, connections are restored when a functional module of the same type is re-inserted in that level. If another type of functional module is inserted into the stack level, the connections are not restored and are permanently deleted. You must then use clearVISN Multichassis Manager or Stack Manager to make the desired connections.

Chapter	Page	Replace
Chapter 4	4-2	Replace NOTE with:
<hr/> <p>NOTE</p> <p>DIGITAL recommends that a stack level not be removed from or added to a live stack. If available, backup your current stack settings using clearVISN Recovery Manager, power down the stack, and reconfigure the stack.</p> <hr/>		
	4-5	Replace NOTE with:
<hr/> <p>NOTE</p> <p>DIGITAL recommends that a stack level not be removed from or added to a live stack. If you must remove or add a stack level, the stack must be powered down. If available, backup your current stack settings using clearVISN Recovery Manager.</p> <hr/>		
		Replace Step 1 with:
		If available, use clearVISN Recovery Manager to backup current settings for each device (including the Stack Director) on the stack.
	4-6	Replace the first paragraph under Step 9 with:
		If available, use clearVISN Recovery Manager to restore settings for each device on the stack that lost its settings

Accessing Online Information

Network Product Business Web Site

Further information on this network product or topic is available on Digital's Network Product Business Web Site as well as its Bulletin Board System. Both systems maintain a common, rich set of up-to-date information on NPB's products, technologies, and programs.

The Web Site can be reached at geographic locations via the following URLs:

Americas Network Product Business Home Page	http://www.networks.digital.com/
Europe Network Product Business Home Page	http://www.networks.europe.digital.com/
Australia Network Product Business Home Page	http://www.digital.com.au/networks/
Digital Equipment Corporation Home Page	http://www.digital.com/

To get firmware and MIB information, please choose the "Technical Information" link, and from there choose the "Technical Information (Drivers, Manuals, Tech Tips, etc.)" link. You will see a listing of all the products available on the NPB Web Site.

To connect to the Network Product Business Bulletin Board System, you need a PC and a modem. Dial 508-486-5777 (U.S.A.). Set your modem to 8 bits, no parity, 1 stop bit.

Using Electronic Mail

The DDN Network Information Center (NIC) of SRI International provides automated access to NIC documents and information through electronic mail. This is especially useful for users who do not have access to the NIC from a direct Internet link, such as BITNET, CSNET, or UUCP sites.

You can access MIBs and RFCs using the following URL:

ftp://ds.internic.net/rfc/

To use the mail service, follow these instructions:

- 1) Send a mail message to **SERVICE@NIC.DDN.MIL**.
- 2) In the SUBJECT field, request the type of service that you want followed by any needed arguments.

Normally the message body is ignored, but if the SUBJECT field is empty, the first line of the message body is taken as the request.

The following example shows the SUBJECT lines you use to obtain DDN NIC documents:

```
HELP
RFC 822
RFC INDEX
RFC 1119.PS
FYI 1
IETF 1IETF-DESCRIPTION.TXT
INTERNET-DRAFTS IID-ABSTRACTS.TXT
NETINFO DOMAIN-TEMPLATE.TXT
SEND RFC: RFC-BY-AUTHOR.TXT
SEND IETF/1WG-SUMMARY.TXT
SEND INTERNET-DRAFTS/DRAFT-IETF-NETDATA-NETDATA-00.TXT
HOST DIIS
```

Requests are processed automatically once a day. Large files are broken into separate messages.

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