

# **Release Notes for the Model 28115/ADV and Model 28104/ADV Fast Ethernet Switch Software Version 2.1.1**

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**Bay Networks**



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## Introduction

These release notes contain information about Bay Networks® Ethernet switch software version 2.1.1 for the Model 28115, BayStack™ 28115/ADV, and BayStack 28104/ADV Fast Ethernet Switches. For more information about these Ethernet switches themselves, refer to the documentation that shipped with these products.

These release notes cover the following topics:

- [Upgrading to Ethernet Switch Software Version 2.1.1](#)
- [Downgrading Ethernet Switch Software](#)
- [Flexible Boot Feature](#)
- [Operational Notes](#)
- [Bug Fixes](#)
- [Known Problems](#)
- [Related Publications](#)
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**Note:** The BayStack 281xx Ethernet switch and the Model 281xx Ethernet switch are synonymous.

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## Upgrading to Ethernet Switch Software Version 2.1.1

This section describes the procedure to update the Ethernet switch software to version 2.1.1 for BayStack 281xx switches. Although the switches have a software image loaded at the factory, Trivial File Transfer Protocol (TFTP) is used to download new software images. Use the following procedure to update an old version of the BayStack 281xx switch software.



**Note:** When performing a reset with Image Load Mode set to Network Mode to download a new image, as in the following procedure, the download will run faster and more reliably if any redundant links connected to the BayStack 281xx switch being reset are unplugged before the download begins. They may be reconnected when the download is complete.

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## At the TFTP Server

To update an old version of the BayStack 281xx switch software, at the TFTP server:

1. **Install TFTP on your server system.**

For more information, see [“Setting Up the TFTP Server”](#) on [page 7](#).

2. **Copy the software image *281xx211.img* to the */tftpboot* directory on the host TFTP server.**

3. **Assign everyone read permission to the image.**

If the TFTP server is a UNIX workstation, execute the following command:

```
chmod og+r /tftpboot/281xx211.img
```

On all other platforms, make sure that the file image is readable.

## Using the Service Port Menu

Choose one of the following procedures for updating the BayStack 281xx switch software based on the version level or release status of the software currently running on the switch.

### Common Update Procedure

This procedure works for all release-level combinations of currently running and downloaded software. Refer to [“Release-Dependent Update Procedure”](#) on [page 4](#) for an alternative upgrade procedure.



**Note:** You must use this procedure when the currently running software is earlier than version 1.3.6 or when the downloaded software release level, ignoring suffixes, is earlier than or the same as the currently running software. The only exception is if the release level of the downloaded software is precisely the same as the release level of the currently running software. In this scenario, you can use either the common update procedure or the simplified update procedure (see [“Release-Dependent Update Procedure”](#) on [page 4](#)). The case where the release level of the currently running software is identical to the release level of the downloaded software occurs when a copy of the current software is downloaded to the second (standby) bank of flash memory.

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**Note:** If you are upgrading software in a multiswitch community, the TFTP host must be on the switch that is being upgraded. If the TFTP host is across a router, the router must be on the switch that is being upgraded.

To use the common update procedure to update the software at the BayStack 281xx switch using the service port menu:

1. **In the Main menu, choose the Configuration Parameters menu.**
2. **In the Configuration Parameters menu, choose Boot Parameters.**
3. **Choose Modify Image Load Mode.**
4. **Choose Network Mode, press [Enter], and answer Y to confirm your selection.**
5. **Choose Modify Boot Router IP Address.**
6. **Type the IP address of the boot router, press [Enter], and answer Y to confirm your selection.**
7. **Choose Modify TFTP Load Server IP Address.**
8. **Type the IP address of the TFTP load server, press [Enter], and answer Y to confirm your selection.**
9. **Choose Modify Image File Name.**
10. **Type the file name (*281xx211.img*), press [Enter], and answer Y to confirm your selection.**
11. **Perform steps a through h only if the IP address, default gateway, and subnet mask have not been set previously or if they have been cleared by a “Reset to Default” operation.**
  - a. **Go back to the Configuration Parameters menu using [Control]+U.**
  - b. **Choose the Switch Parameters menu.**
  - c. **Choose Modify IP Addr.**
  - d. **Type the IP address of this BayStack 281xx switch, press [Enter], and answer Y to confirm your selection.**
  - e. **Choose Modify Default Gateway Addr.**
  - f. **Type the IP address of the default gateway, press [Enter], and answer Y to confirm your selection.**
  - g. **Choose Subnet Mask.**

- h. Type the subnet mask, press [Enter], and answer Y to confirm your selection.
  12. Go back to the Main menu using [Control]+P.
  13. Choose Reset System Menu.
  14. Choose Reset, select the hard reset option (if reset mode is selectable), and answer Y to confirm your selection.
  15. If you are currently running version 1.3.6 or later, choose Soft Reset from the Reset Menu and answer Y to confirm your selection.
- The BayStack 281xx switch will now go through the system load cycle and boot with the new software. Check the Switch Software Version string on the screen to verify that the switch is running the updated version of the software image. Also verify that the switch enters OPERATIONAL mode after the software image is downloaded. If the switch or the community remains in CONFIGURING mode for more than 90 seconds, power cycle the switch to resolve the problem.
16. Repeat steps 1, 2, 3, 4, 12, 13, 14, and 15 to download the new image to the other memory bank.

## Release-Dependent Update Procedure

In order to implement this streamlined procedure, the following conditions must be met:

- BayStack 281xx switches in the community are running version 1.3.6 or later.
- The downloaded software is precisely the same or a later version number of the software currently running in the BayStack 281xx switch.

If the version numbers differ only in the suffixes (for example, 1.4.2 and 1.4.2-1), follow the steps described under [“Common Update Procedure”](#) on [page 2](#). If the downloaded version number is earlier than the currently running software, follow the procedure described under [“Downgrading Ethernet Switch Software”](#) on [page 6](#).

- The IP address and default gateway of the BayStack 281xx switch have been previously set.

To use the release-dependent update procedure to update the software at the BayStack 281xx switch using the service port menu:

1. In the Main menu, choose the Configuration Parameters menu.

2. **In the Configuration Parameters menu, choose Boot Parameters.**
3. **Choose Modify Boot Router IP Address.**
4. **Type the IP address of the boot router, press [Enter], and answer Y to confirm your selection.**
5. **Choose Modify TFTP Load Server IP Address.**
6. **Type the IP address of the TFTP load server, press [Enter], and answer Y to confirm your selection.**
7. **Choose Modify Image File Name.**
8. **Type the file name, press [Enter], and answer Y to confirm your selection.**
9. **Go back to the Main menu using [Control]+P.**
10. **Choose Reset System Menu.**
11. **Select Download Image from Reset System Menu.**

Note that the download replaces the currently inactive image (Image 1 or Image 2) in flash memory. The download to the backup flash bank will occur while the system continues to run. When the download is done, look at the image display to verify that the download was successful.

12. **Choose Select Boot Image Version from the Reset System menu.**

The Reset System menu displays a line showing Image 1, Image 2, and Latest Image.

13. **Select the newly downloaded image that you want to boot (either Image 1, Image 2, or Latest Image).**

The Latest Image chooses the image with the latest creation date. Typically, this is the image with the highest version numbers, except in the case of special patch releases.

14. **Perform a soft reset or schedule an image reboot (version 1.4.2 or later) to boot the new image.**

For information about image reboot scheduling, refer to “[Scheduling an Image Reboot](#)” on [page 8](#).

- 15. When the community comes back up, verify that all switches are running the correct software version. If so, repeat steps 1 through 13 on each switch to load a copy of the software in the remaining flash memory bank. It is not necessary to reset the switches again.**



**Note:** The image version that is booted as a result of a hard reset or power cycle depends on which version levels are stored in the flash memory. For example, if the software versions are earlier than version 1.4.2, the higher version level is booted. In this case, any image that had been selected when version 1.4.2 was running previously is ignored. If version 1.4.2 or later is in one or both flash banks, the image that was selected from the System Reset Menu (Image 1, Image 2, or Latest Image) is booted. The Latest Image is the default setting and might not be the latest version of software. If version 1.4.2 or later is in one flash bank and a release prior to 1.4.2 is in the other flash bank and you select the Select Boot Image Version option to boot the earlier software, you must use one of the following procedures if you want to boot from the version 1.4.2 software at a later time: 1) You can download version 1.4.2 again and perform a soft reset. 2) You can reset the unit to the factory default configuration (all configuration parameters revert to the factory default settings), perform a hard reset, and respecify all of your configuration parameters.



**Caution:** If any BayStack 281xx switches are running Ethernet switch software version 1.3.6 or earlier, all the switches in the community must be upgraded to version 1.3.6 or later. (Bay Networks recommends version 2.1) BayStack 281xx switches do not support software earlier than version 1.3.6.

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## Downgrading Ethernet Switch Software

To run an earlier version of Ethernet switch software on a BayStack 281xx switch currently running version 1.3.6 or later:

- 1. Put the software on the TFTP server.**
- 2. Follow steps 1 through 15 from the procedure for updating software at the BayStack 281xx switch using the service port menu as described earlier in these release notes. You must use the procedure described under [“Common Update Procedure”](#) on [page 2](#).**
- 3. Check the console screen to see the switched software version number running on the system.**



## Setting Up the TFTP Server

To set up the TFTP server, perform the following procedures.

### Installing the TFTP Server When Using Optivity Campus for Windows

TFTP is installed automatically as part of Optivity Campus™ for Microsoft®Windows®. Refer to the documentation provided with Optivity Campus for Windows for more information.

### Installing the TFTP Server on a Sun Workstation

To install the TFTP server on a Sun workstation, you must first have super user privileges. To install and run tftpd, follow the procedures described in the Sun documentation. Then follow these steps:

1. **Log in as root.**
2. **Create the /tftpboot directory and give everyone read permission to the directory. To do so, execute the following commands at the shell prompt:**

```
cd /  
mkdir /tftpboot  
chmod og+r /tftpboot
```

3. **Add the following line in the file /etc/inetd.conf, if it is not already there:**

```
tftp dgram udp wait root /usr/etc/in.tftpd in.tftpd -s /tftpboot
```

## Flexible Boot Feature

Starting with version 1.4.2, the image upgrade process for loading and booting specific images has been enhanced. It is now possible to download an image without an immediate system reset. From the Reset System user interface screen, the user can specify the image to boot. The user can choose to boot from Image 1, Image 2, or the Latest Image. If the user chooses the Latest Image, the software determines which image was built last and boots from that image.

From the Reset System screen, the user can schedule a reboot up to seven days in advance.

## Scheduling an Image Reboot

To schedule a time to reboot the switch:

1. **Choose Schedule Image Boot from the Reset System menu.**

The Reset System menu prompts you to enter the scheduled reboot time.

2. **Enter how much later in days, hours, and minutes the switch will be rebooted (D:H:M). The maximum time for scheduling a reboot is seven days, 23 hours, and 59 minutes.**

The system reboots when the countdown counter reaches zero.

## Canceling a Scheduled Reboot

To cancel a scheduled reboot of the system, choose Cancel scheduled reset from the Reset System menu. The scheduled image reboot time is reset to zero.

The system prompts you to confirm your entry.

## Operational Notes



**Note:** Releases earlier than version 1.3.6 of the Ethernet switch software are not compatible with the revision G motherboard.

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The following operational notes apply to version 2.x.x of the software:

- The conversation steering feature is designed to perform on one switch to monitor local traffic. It cannot monitor traffic through trunk ports.
- You should set threshold values in Optivity® to have a duration of at least 10 seconds. Threshold values set at a lower duration have been observed to cause switch resets when the switch is under a heavy traffic load.
- In the event that a port on the BayStack 281xx is partitioned and Optivity network management software is not available to unpartition the port, you can unpartition the port from the Debug menu using the following procedure:
  - a. **Using a console connection, enter your password, if necessary, from the login screen and press [Return].**

**b. Press and hold the [Control] key and type d+b+g to display the Debug menu.**

**c. Choose the Partition Port option and press [Return].**

The Switch Port Partition Mode screen is displayed. A list of the switch ports with the partition status of each is displayed. The port partition status is displayed to the right of the port number.

**d. Highlight the port you want to unpartition and press [Return]. Choose the Unpartition option and press [Return].**

**e. Enter Y to verify your entry.**

**f. Press [Control]+P to exit to the Main Menu.**

- A one-way link transmission state might occur if you connect a bad cable to a switch when the switches are in BUILDING TOPO or COLLECTING VLAN modes. One-way link detection is supported only on full-duplex links between switches when the links enter the BUILDING TOPO state. As a result, a one-way link transmission state is not detected if the link between switches is added after the switches have entered a BUILDING TOPO or COLLECTING VLAN state.
- One-way link detection is a feature supported under the LattisSpan™ Protocol.
- If your network includes one or more switches that are running Ethernet switch software version 1.4.2 and you are experiencing operational problems with the one-way link detection feature, Bay Networks recommends that you upgrade all the switches in your network to software version 2.1.1.
- In communities with different LattisSpan Ethernet switches that are managed by Optivity network management software, make sure the master (M2) switch is running switch software version 1.4.2 or later. If a master switch is running an earlier version of switch software, Optivity will not manage the switches that are running software version 1.4.2 or later. To prevent this problem, upgrade the master switch to 1.4.2 or later or change the switch priorities in your network so that the switch running version 1.4.2 or later is the master switch. For more information about how to change the master switch priority, refer to *Using Ethernet Switch Software Version 2.0*.
- For star and star-like topologies, the master BayStack 281xx switch should be at or near the center of the star, rather than at a leaf node. To select a master BayStack 281xx switch, use the console on that switch; choose the BayStack 281xx switch priority item in the Switch Parameters screen and input a numeric value lower than that on any other Ethernet switch in the community.

- When planning a network that includes BayStack 281xx switches, Bay Networks recommends that you include TFTP server capability to facilitate future upgrades, if necessary, to the BayStack 281xx switch software. TFTP server software is provided by most UNIX workstation vendors and is included with the Optivity Campus for Windows network management application. For users who do not run Optivity Campus for Windows, TFTP server software is readily available for Windows, UNIX, and most other platforms.
- Ethernet switch software version 1.3.6 and later supports a community with 32 Ethernet switches.
- With Ethernet switch software version 1.4.2 and later, allowable IP ARP traffic is limited to 200 to 250 packets per second. Other IP broadcasts are subject to the overall broadcast traffic limit of 2000 to 2400 packets per second. These limits apply only to packets sent to the media access control (MAC) broadcast address. Packets sent to MAC multicast addresses are not subject to these limits.

## **Interoperability with Optivity Network Management Software**

To more fully manage the BayStack 281xx switch (running software version 2.1) using Optivity, you must use version 8.0.1 or later of Optivity Network Management System on the UNIX platform.

## **Bug Fixes**

The following problem has been corrected in version 2.1.1 of the software:

- The Model 28115/ADV and Model 28104/ADV modules now recognize the date 02/29/00 as a leap year.

## Known Problems

The following problems are known to exist in version 2.x.x of the software:

- When a Model 28115/ADV or Model 28104/ADV switch is reset to factory default values, the conversation steering setting is not cleared.
- When adding a redundant link in a spanning tree mode environment, it is possible to create a temporary loop in the network that results in a MAC broadcast storm. One or more switches within the spanning tree domain will detect this MAC broadcast storm within one second. After a switch detects the broadcast storm, the switch enters the Blocking state and rebuilds its spanning tree topology. While the switch transitions to Blocking, Listening, Learning and Forwarding states in the building of the spanning tree topology, user connectivity may be disrupted.
- When a switch that is running the Spanning Tree Protocol (STP) detects a topology change on one of its ports (that is, the port state has changed to either Forwarding or Blocking), all the ports on the switch enter the Blocking state and the switch rebuilds its spanning tree topology. This process may compromise connectivity for all devices connected to that switch and all devices connected through the designated ports of that switch.
- When a switch is running the Spanning Tree Protocol, high levels of broadcast traffic will trigger broadcast traffic thresholds, which detect potential loops in the network and may cause the switch to stop forwarding all frames and rebuild its spanning tree topology. This feature currently cannot be disabled.
- When a switch is running the Spanning Tree Protocol, STP does not perform address sharing between switches. It is possible that in a large spanning tree environment with clients using protocols that do not attempt retries (for example, Banyan VINES), initial attempts to connect to a server might fail. The client machine may need to be rebooted a second time to connect to the server.
- Occasionally, a 10 megabits per second (Mb/s) Ethernet port may transmit traffic but be unable to forward traffic received at the port. As a result, source MAC addresses cannot be learned at the port. To recover from this situation, reset the port from the Optivity™ application. Ethernet switch software version 2.0.2 contains enhanced diagnostics. Several messages have been added to the event log to indicate this and other potential hardware problems. If problems persist, replace the associated 10 Mb/s MDA.

- Image download through the FDDI expansion module is supported only by the runtime Download Image option on the Reset System menu.
- Expanded View™ running under Optivity Campus 6.2 does not function if the switch is running under LattisSpan mode or Spanning Tree.

## Related Publications

For more information about products relating to Ethernet switch software for BayStack 281xx switches, refer to the following publications:

- *Using Ethernet Switch Software Version 2.0* (Bay Networks part number 893-00963-A)
- *Quick Installation and Reference for the Model 514/515 100 Mb/s Ethernet Transceivers* (Bay Networks part number 893-721-A)
- *Using the BayStack 281xx Fast Ethernet Switch* (Bay Networks part number 893-00965-A)
- *Using Optivity Network Management System 8.1 LAN Applications* (Bay Networks part number 893-568-K)
- *Using Optivity Campus 7.0 for Windows* (Bay Networks part number 893-786-E)

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Europe	33-4-92-96-69-66	33-4-92-96-69-96
Asia/Pacific	61-2-9927-8888	61-2-9927-8899
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Sydney, Australia	61-2-9927-8800	61-2-9927-8811
Tokyo, Japan	81-3-5402-0180	81-3-5402-0173

