Release Notes
IBM 8210 Nways Multiprotocol Switched Services (MSS) Server
Version 2.2

IBM Corporation (Part Number 31L3659, EC F53292)
March 5, 1999

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Chapter 1. General Changes, Procedures, and Restrictions

MSS Server Hardware Platforms

There are two types of Multiprotocol Switched Services (MSS) Servers:

The IBM 8210 Nways MSS Server (8210), which is a standalone product (see Table 1-1)

The IBM MSS Server Module, which can be installed in the IBM 8265 Nways ATM Switch (8265) or the IBM 8260 Nways Multiprotocol Switching Hub (8260) (see Table 1-2 for more information)

MSS Server microcode V2.2 operates on both types of MSS Server.

Table 1-1 displays information about the various models of the 8210.

Table 1-1. 8210 Hardware History

8210 Model	Size	Currently Available?
8210 Model 003	1-U (See Note)	Yes
8210 Model 002	1-U (See Note)	No
8210 Model 001	2-U (See Note)	No

Note: An EIA unit (U) equals 44.5 mm (1.75 in.).

Table 1-2 displays information about the various MSS Server Modules.

Table 1-2. MSS Server Module Hardware History

MSS Server	Installed In	Size	Currently Available?
A-MSS 3.0 Server Module FC 5403	8265	1-slot	Yes
A-MSS 2.5 Server Module FC 5401	8265	1-slot	No
A-MSS Server Module FC 5400	8260/8265 (See Note)	1-slot	Yes
A-MSS Server Module FC 5300	8260	2-slot	No

Note: The A-MSS Server Module FC 5400 can be installed in the 8265 with some restrictions.

What's New in MSS Server V2.2?

MSS Server V2.2 replaces MSS Server V2.1 and includes the following additional new functions:

Additional Dynamic Reconfiguration

Broadcast Unknown Server (BUS) Filters

Broadcast Unknown Server (BUS) Packet Policing

CPU Performance Monitor

Dynamic RFC1483 PVC/SVC

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IP Multicast VLANs

LANE LEC Fast Path for Source Routed and 802.3 Packets

LAN Emulation Configuration Server (LECS) Synchronization

LAN Emulation Server/Broadcast Unknown Server (LES/BUS) Peer Redundancy

Multiprotocol over ATM (MPOA) IPX Server

Support for Non-Zero VPIs on PVCs

Performance Enhancements through improved Cache Management

Persistent Data Direct VCCs

The MSS Server V2.2 operational code and the corresponding firmware and configuration program can be obtained as explained in "Obtaining the Latest Information, Code, and Fixes" on page 1-2.

Most MSS Server V2.2 functions are already documented in the publications shipped with MSS Server V2.2. These release notes include additional information available since MSS Server V2.2 publications were published.

Obtaining the Latest Information, Code, and Fixes

Refer to the README file on the CD-ROM shipped with the MSS Server for information about code shipped on the CD-ROM.

Note: There are special instructions if you are loading the code from CD-ROM onto an AIX 3.2.5 machine.

You can obtain the latest MSS Server information, operational code, firmware, configuration program, and fixes on the World Wide Web at the following URL:

http://www.networking.ibm.com/netsupt

From the above URL, you can register for e-mail bulletins containing notification of code updates and the latest MSS Server information.

To access the MSS Server V2.2 operational code on the World Wide Web, a valid userid and password is required. A userid and password is included with the MSS Server V2.2 CD-ROM.

For new installations, it is recommended that you install the latest code level. Check the Web page for updates more recent than the CD-ROM.

MSS Server Books

The CD-ROM shipped with MSS Server V2.2 contains books for the MSS Server. In addition, you can obtain hardcopies of the MSS Server books by calling 1-800-879-2755 and placing an order.

Compatibility with 8260 and 8265

When plugged into an 8265 or 8260, the A-MSS Server Module and the A-MSS 2.5 Server Module are subject to the restrictions in the following table.

Table 1-3. A-CPSW Code Levels and Slot Restrictions

Module	Minimum A-CPSW Code Level	Pluggable Slots
	Release 4 8265	
CP/SW FC 6502		
A-MSS 3.0 Server Module:	V4.1	Slots 1 to 8 or 12 to 17
A-MSS 2.5 Server Module:	V4.0.0	Slots 1 to 8 or 12 to 17
A-MSS Server Module:	N/A	N/A
CP/SW FC 6501		
A-MSS 3.0 Server Module:	V4.1	Slots 1 to 8 or 12 to 17
A-MSS 2.5 Server Module:	V4.0.0	Slots 1 to 8 or 12 to 17
A-MSS Server Module:	V3.2.0	Slots 1, 3, 5, 7
	8265 (Prior to Release 4)	
CP/SW FC 6502		
A-MSS 3.0 Server Module:	V4.1	Slots 1 to 8 or 13 to 17 (See Note)
A-MSS 2.5 Server Module:	V4.0.0	Slots 1 to 8 or 13 to 17 (See Note)
A-MSS Server Module:	N/A	N/A
CP/SW FC 6501		
A-MSS 3.0 Server Module:	V4.1	Slots 1 to 8 or 12 to 17
A-MSS 2.5 Server Module:	V4.0.0	Slots 1 to 8 or 12 to 17
A-MSS Server Module:	V3.2.0	Slots 1, 3, 5, 7
	8260	
A-MSS 3.0 Server Module:	N/A	N/A
A-MSS 2.5 Server Module:	N/A	N/A
A-MSS Server Module:	V2.5.2	Slots 1 to 8 or 12 to 17

Note: Slot 12 is not available to the A-MSS 3.0 Server Module or the A-MSS 2.5 Server Module in this configuration.

Compatibility Between MSS Server Hardware, Firmware, and Software

Table 1-4 shows the versions of MSS Server firmware, operational code, and configuration program that are compatible with the different MSS Server hardware platforms.

Table 1-4. MSS Server Hardware, Firmware and Operational Code Compatibility

MSS Server Hardware	MSS Server Operational Code					
	1.0	**1.1**	**2.0**	**2.0.1**	**2.1**	**2.2**
8210-003						
64 MB	X X	X X	X X	X X	X X	FW 4.0+ CP 2.2
8210-002						
64 MB	X X	X X	X X	X X	FW 3.21+ CP 2.1	FW 4.0+ CP 2.2
8210-001						
32 MB	FW 1.0+ CP 1.0	FW 2.0+ CP 1.1	X X	X X	X X	X X
64 MB	X X	FW 3.0+ CP 1.1	FW 3.0+ CP 2.0	FW 3.0+ CP 2.0.1	FW 3.0+ CP 2.1	FW 4.0+ CP 2.2
1-Slot Blade (FC 5403)						
64 MB	X X	X X	X X	X X	X X	FW 4.0+ CP 2.2
1-Slot Blade (FC 5401/5400)						
64 MB	X X	X X	X X	FW 3.1+ CP 2.0.1	FW 3.1+ CP 2.1	FW 4.0+ CP 2.2
2-Slot Blade (FC 5300)						
32 MB	FW 1.0+ CP 1.0	FW 2.0+ CP 1.1	X X	X X	X X	X X
64 MB	X X	FW 3.0+ CP 1.1	FW 3.0+ CP 2.0	FW 3.0+ CP 2.0.1	FW 3.0+ CP 2.1	FW 4.0+ CP 2.2

FW = Firmware Level **CP** = Configuration Program Level **X** = Not Supported

Upgrading to MSS Server V2.2

To upgrade to MSS Server V2.2:

1. Ensure that the MSS Server has 64 MB of memory.

   64 MB of memory is required for MSS Server V2.2. To determine the amount of memory installed in the MSS Server:

   a. Access the firmware console.

      The instructions to access the firmware console are included in the section "Using MSS Server Firmware" in the *MSS Server Interface Configuration and Software User's Guide*.

   b. Select **Manage Configuration** and note the memory installed in the MSS Server.

   c. If the MSS Server has less than 64 MB of memory, upgrade it to 64 MB of memory. See "Upgrading the MSS Server Memory to 64 MB" on page 1-7 for details. Do not proceed further unless 64 MB of memory is installed in the MSS Server.

   d. If the MSS Server has 64 MB of memory, proceed to the next step.

2. Upgrade the MSS Server firmware to 4.0+.

   Older versions of the firmware (1.x, 2.x, and 3.x) do not work with MSS Server V2.2. This is because MSS Server V2.2 requires support for dump enhancements, which is provided in version 4.0 or higher. Therefore, firmware version 4.0 or higher is required for MSS Server V2.2

   a. To determine the firmware version of the MSS Server:

      1) Access the firmware console.

         The instructions to access the firmware console are included in the section "Using MSS Server Firmware" in the *MSS Server Interface Configuration and Software User's Guide*.

      2) The firmware version appears in the upper-left corner of the console.

   b. If the firmware version is 1.x, upgrade the firmware to version 2.0 before proceeding to the next step. See "Upgrading the MSS Server Firmware" on page 1-8 for details on upgrading the firmware.

      Note: Firmware 2.0 is required as an intermediate step in migrating to firmware 4.0 or higher because the old firmware (1.x) does not recognize the format of the new firmware (4.0+).

   c. If the firmware version is less than 4.0, upgrade the firmware to 4.0 or higher. See "Upgrading the MSS Server Firmware" on page 1-8 for details on upgrading the firmware.

3. Upgrade the MSS Server operational code to V2.2.

   a. To determine the operational code version of the MSS Server:

      1) Access the MSS Server console. This is described in the *MSS Server Interface Configuration and Software User's Guide*.

      2) At the * prompt, type **talk 6**.

      3) At the Config> prompt, type **boot**.

4) At the Boot Config> prompt, type **list**. Note the bank that contains the active image.

5) At the Boot Config> prompt, type **describe**. Note the version and PTF level of the bank that contains the active image.

b. If the operational code version is less than 1.1 PTF 4, upgrade the operational code to version 1.1 (PTF 4 or higher) before proceeding to the next step. See "Upgrading the MSS Server Operational Code" on page 1-8 for details on upgrading the operational code.

Note: MSS Server operational code 1.1 (PTF 4 or higher) is required as an intermediate step to upgrading to MSS Server V2.2 so that the new (V2.2) MSS Server operational code can be loaded using the current operational code. Without MSS Server operational code 1.1 (PTF 4 or higher), the new (V2.2) MSS Server operational code files could be loaded only one at a time via Xmodem, which is slow.

c. If the operational code version is 1.1 (PTF 4 or higher) or 2.x, upgrade the operational code to version V2.2. See "Upgrading the MSS Server Operational Code" on page 1-8.

4. Upgrade the MSS Server Configuration Program to V2.2.

   If you plan to use the Configuration Program to create configurations for the MSS Server, then you need to upgrade your existing Configuration Program to the level that supports the MSS Server V2.2. See "Obtaining the Latest Information, Code, and Fixes" on page 1-2 for instructions about obtaining the Configuration Program for MSS Server V2.2.

5. Upgrade the MSS Server configuration file.

   If you plan to use the Configuration Program to manage MSS Server configurations, then you should migrate the existing configuration database (cdb) file to the new release format.

6. Transfer the updated configuration file to the MSS Server.

   There are three ways to transfer the updated configuration file to the MSS Server:

   a. Using the Configuration Program.

      The Configuration Program can establish IP communication with the MSS Server and transfer the file to it. The instructions to do this are included in the *Configuration Program User's Guide*.

   b. Using the MSS Server operational code.

      The MSS Server operational code can be used to transfer a configuration file from a TFTP server to one of the MSS Server storage banks using **tftp get config** from the Change Management menu. The instructions to do this are included in the section "Performing Change Management Operations" in the *MSS Server Interface Configuration and Software User's Guide*.

   c. Using the MSS Server firmware.

      The MSS Server firmware can be used to transfer a configuration file from a TFTP server to one of the MSS Server storage banks. The instructions to do this are included in the section "Change Management" in the *MSS Server Interface Configuration and Software User's Guide*.

Upgrading the MSS Server Memory to 64 MB

To upgrade MSS Server memory to 64 MB:

1. Order 64-MB MSS Server memory (feature code 5301).
2. Ensure that the current level of firmware is 4.0 or higher.
   a. To determine the firmware version of the MSS Server,
      1) Access the firmware console.

         The instructions to access the firmware console are included in the section "Using MSS Server Firmware" in the *MSS Server Interface Configuration and Software User's Guide*.

      2) The firmware version appears in the upper-left corner of the console.

   b. If the firmware version is 1.x, upgrade the firmware to version 2.0 before proceeding to the next step. See "Upgrading the MSS Server Firmware" on page 1-8 for details on upgrading the firmware.

      Note: Firmware 2.0 is required as an intermediate step to upgrading the firmware to version 4.0 or higher because the older firmware (1.x) does not recognize the format of the new firmware.

   c. If the firmware version is less than 4.0, upgrade the firmware to 4.0 or higher. See "Upgrading the MSS Server Firmware" on page 1-8 for details on upgrading the firmware.
3. Once the 64-MB memory modules are physically installed, you must re-format the PCMCIA hard drive.

   Attention

   The PCMCIA hard drive has a reserved area where the MSS Server can dump its memory if it crashes. These dumps are used by IBM Service Personnel to diagnose problems. Based on when the PCMCIA hard drive was manufactured, you might have to re-format it to accommodate a 64-MB memory dump.

   If the PCMCIA hard drive is not capable of storing a 64-MB memory dump and an MSS Server with 64 MB of memory dumps its memory to the hard drive, operational code and configuration files on the hard drive are destroyed.

   a. Ensure that backup copies of the operational code images and configuration files are available. You can obtain the operational code from the World Wide Web as described in "Obtaining the Latest Information, Code, and Fixes" on page 1-2. You can save the configuration files using the Configuration Program as described in the *Configuration Program User's Guide*.

      If there are any operational code images and configuration files in bank A or B, they will be destroyed when the PCMCIA hard drive is re-formatted. It is recommended that you have backups of the operational code images and configuration files for all the banks before proceeding to the next step. You can back up configuration files and restore them from flash bank F.

b. Access the firmware console. The instructions to access the firmware console are included in the section “Using MSS Server Firmware” in the *MSS Server Interface Configuration and Software User’s Guide*.

c. Re-format the hard drive. The instructions for re-formatting the hard drive are included in the section “Preparing the Hard Disk” in the *MSS Server Interface Configuration and Software User’s Guide*.

d. Restore the operational code through the firmware using Change Management as described in the section “Using MSS Server Firmware” in the *MSS Server Interface Configuration and Software User’s Guide*.

Upgrading the MSS Server Firmware

MSS Server Version 2.2 provides a new level of MSS Server firmware, Version 4.0+. Refer to Table 1-4 on page 1-4 for the firmware level requirements for each MSS Server version and platform.

To upgrade the MSS Server firmware:

1. Obtain the appropriate level of MSS Server firmware as explained in “Obtaining the Latest Information, Code, and Fixes” on page 1-2.
2. Update the firmware.
   a. From the initial Firmware menu, select **Utilities**.
   b. If the current firmware version is 2.0 or less, then install the firmware on the hard drive in the root directory with a filename of *.IMG (for example, FIRM.IMG). You can copy the new firmware image to the hard drive by using the **Copy Remote Files** option and selecting **tftp** or **xmodem**.
   c. If the current firmware version is 3.x or higher, then you can install the firmware on the hard drive in the root directory with any filename. You can copy the new firmware image to the hard drive by using the **Copy Remote Files** option and selecting **tftp** or **xmodem**.
   d. Select **Updating System Firmware** from the System Management Utilities menu.
   e. Select **Local Image File** Option from the Updating System Firmware menu.
   f. Enter **-a** *filename***.img**, where *filename* is the name of the firmware image on the hard drive. The *-a* causes the firmware recovery block to be updated along with the normal firmware image. This is needed to make dump work correctly with MSS Server V2.2.

Upgrading the MSS Server Operational Code

To upgrade the MSS Server operational code:

1. Obtain the appropriate version of MSS Server operational code as explained in “Obtaining the Latest Information, Code, and Fixes” on page 1-2.
2. Update the operational code.

   There are two ways to update the operational code:

   a. You can update the operational code in-band by using the operational code as described in the section “Performing Change Management Operations” in the *MSS Server Interface Configuration and Software User’s Guide*.

Note: If you are updating the MSS Server operational code to V2.2 in-band using the current operational code, then the current operational code must be at version 1.1 PTF 4 or higher. MSS Server V2.2 operational code is shipped as multiple files. These files are automatically loaded when the tftp get load modules command is used from the Change Management menu.

b. You can also update the operational code from the firmware by using Change Management as described in the section "Using MSS Server Firmware" in the *MSS Server Interface Configuration and Software User's Guide*.

Note: If you are updating the MSS Server operational code to V2.2 using the current firmware, then the current firmware must be at version 3.0 or higher. Older versions of the firmware (1.x and 2.x) do not work with MSS Server V2.2. This is because MSS Server V2.2 operational code is shipped as multiple files and requires support for dynamic linking and loading of software modules. This support is provided only in firmware version 3.0 and higher. Alternatively, you can load the operational code from firmware using Xmodem one file at a time, but that is very slow.

Migration from the 8210-001 and the Double-Wide A-MSS Server Module

The 8210-001 and the double-wide A-MSS Server Module have internal flash storage and a plug-in PCMCIA hard drive. The flash and the hard drive can be used to store MSS Server operational code images and configurations.

Note: The single-wide A-MSS Server Modules and the 8210-003 have internal hard drives and an optional plug-in PCMCIA flash card.

Transferring Configurations from a PCMCIA Hard Drive to the Internal Hard Drive

To transfer a configuration from the PCMCIA hard drive of an 8210-001 or double-wide A-MSS Server Module to a single-wide A-MSS Server Module's internal hard drive, use the following procedure:

1. Make sure that the single-wide A-MSS Server Module or 8210-003 operational code is up and running. When the operational code is running, you will see the * prompt on the MSS Server console.

   Attention

   DO NOT insert the old PCMCIA hard drive into the single-wide A-MSS Server Module or 8210-003 unless the operational code is up and running.

   Inserting the PCMCIA hard drive into the single-wide A-MSS Server Module and then starting the MSS Server can corrupt the operational code images and configuration files on the internal hard drive.

2. Insert the PCMCIA hard drive into the right PCMCIA slot.
3. At the * prompt, type **talk 6**.
4. At the Config> prompt, type **boot**.
5. At the Boot Config> prompt, select **IMPORT/EXPORT from PCMCIA hardfile**.

Note: The **IMPORT/EXPORT from PCMCIA hardfile** option appears on the Boot Config> menu only when the PCMCIA hard drive is actually inserted into the single-wide A-MSS Server Module.

6. At the Import/Export config> prompt, select **IMPORT Config File**.
7. Select the desired bank and config to import from the PCMCIA hard drive.
8. Select the desired bank and config on the internal hard drive as the destination.

   The configuration is copied to the internal hard drive.
9. At the Import/Export config> prompt, type **exit**.
10. Remove the PCMCIA hard drive from the PCMCIA slot.

Transferring Configurations from a PCMCIA Hard Drive to the PCMCIA Flash Card

To transfer a configuration from the PCMCIA hard drive of an 8210-003 or a double-wide A-MSS Server Module to a single-wide A-MSS Server Module's or 8210-003's PCMCIA flash card:

1. Follow the procedure described in "Transferring Configurations from a PCMCIA Hard Drive to the Internal Hard Drive" on page 1-9 to first transfer the configuration from the PCMCIA hard drive to the internal hard drive.
2. Insert the PCMCIA flash card into the left PCMCIA slot.
3. Format the PCMCIA flash card as described in "Preparing the PCMCIA Flash Card" on page 1-10.
4. At the MSS Server console * prompt, type **talk 6**.
5. At the Config> prompt, type **boot**.
6. At the Boot Config> prompt, type **copy config**.
7. Select the appropriate bank and config on the internal hard drive to copy from.
8. Select **Bank F** (flash card) as the destination.

   The configuration is copied to the flash card.

Preparing the PCMCIA Flash Card

Before the PCMCIA flash card can be used to store the operational code or configuration images, you must prepare it.

1. Insert the PCMCIA flash card into the left PCMCIA slot.
2. Access the firmware console.

   The instructions to access the firmware console are included in the section "Using MSS Server Firmware" in the *MSS Server Interface Configuration and Software User's Guide*.
3. Select **Utilities**.
4. Select **Prepare Hard Disk**.
5. Select **20 MB disk ID 0, Controller 1**.
6. Select **Yes** when prompted to confirm.
7. Once the flash is ready, the MSS Server restarts.

Chapter 2. MSS Server Firmware

Firmware version 4.0 or higher is required to support the MSS Server V2.2 operational code. The following notes are applicable to all versions of the MSS Server firmware running in A-MSS Server Modules.

If XMODEM is used to load operational code, configuration file or firmware in A-MSS Server Modules, then perform the following procedure:

1. Disable the ATM port that the A-MSS Server Module is plugged into.
2. Load the appropriate files.
3. Re-enable the ATM port.

The ATM port can be enabled and disabled from the 8260/8265 CPSW console.

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Chapter 3. MSS Server Operational Code

Command Line Interface Usability Improvements

Several usability improvements were added to the Command Line Interface in this release. The improvements include a more intuitive Operator Console (OPCON) menu, automatic Command Completion, and online help on using the Command Line Interface.

Operator Console Menu Improvements

The Operator Console (OPCON) menu has the new commands **configuration**, **console**, and **event** as aliases for the arcane commands **talk 6**, **talk 5**, and **talk 2**. However, the **talk** commands still remain valid. The IP **ping** command now appears in the OPCON menu for convenience. Also, commands issued in the OPCON menu can now be retrieved via the Command History keys (Control-B and Control-F).

Automatic Command Completion

Automatic Command Completion helps the you to form a valid command. It builds upon the command line interface style of the 8260/8265. When you abbreviate a command, the command is automatically expanded. For example, “ena<Space Bar>” turns to “ENABLE” when you press the Space Bar. For a full discussion of the automatic command completion function, see the “Command Completion” section in Chapter 2 of the *MSS Server Interface Configuration and Software User’s Guide*.

If you are utilizing any type of automated script that is run against the Command Line Interface, you should consider disabling Command Completion until this function is fully understood. To disable Command Completion, use the talk 6 configuration command **disable command-completion**.

Online Help for the Command Line Interface

Online help provides explanations for the various key sequences and describes the behavior of automatic Command Completion. To obtain online help, press **ESCAPE**, then type **?** at any command line prompt.

MSS Server Web Interface HTML Help Screens

Support has been withdrawn for the HTML format help files that are used with the MSS Server Web Console. These files are accessed from links on the Web pages presented by the MSS Server in response to HTML commands. The HTML format help files from previous releases will continue to work with the MSS Server. However, the content of those pages might be inaccurate, and links from Web console pages for new function might be unresolved.

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LAN Emulation Client (LEC)

Token-Ring LEC MTU Size and IP MTU Size

In order to work with ATM-to-legacy bridges, the Token-Ring LEC's MTU size has been reduced. This solves an OSPF problem where the OSPF packets coming from an MSS Server were dropped in the ATM-to-legacy bridges, preventing the MSS Server from forming adjacencies with routers behind the ATM-to-legacy bridges. With V2.2, you can set the IP MTU size in talk 6 under the Protocol IP option. Because of this new feature, the Token-Ring LEC MTU limit has been removed. However, you must ensure that any Token-Ring LECs that send packets across an ATM-to-legacy bridge have the IP MTU set to 4420.

Persistent Data Direct VCC Mode

The parameter to set Persistent Data Direct VCC mode was omitted from the *MSS Server Interface Configuration and Software User's Guide*. When Persistent Data Direct VCC mode is enabled, if the LEC loses its connection to the LES/BUS, the LEC does not immediately drop any Data Direct VCCs. The LEC continues to try to reconnect to the LES/BUS. If the LEC cannot reconnect to the LES/BUS before the reconnect time-out expires, all data direct VCCs are disconnected. The default for Persistent Data Direct VCC mode is disabled.

Persistent Data Direct VCC Time-Out

The parameter to set Persistent Data Direct VCC Time-Out was omitted from the *MSS Server Interface Configuration and Software User's Guide*. When Persistent Data Direct VCC mode is enabled, if the LEC loses its connection to the LES/BUS, the LEC does not immediately drop any Data Direct VCCs. The LEC continues to try to reconnect to the LES/BUS. If the LEC cannot reconnect to the LES/BUS before the reconnect time-out specified by this parameter expires, all data direct VCCs are disconnected. The default for Persistent Data Direct VCC Time-Out is 30 seconds.

IP Multicast BUS Filtering

Enabling IP Multicast BUS filtering can filter frames other than IP Multicast data frames. To circumvent this problem, do not select IP Multicast BUS Filters. Instead, create a sliding-window filter using the following sliding-window data and mask fields. Ethernet might require two sliding-window filters if both IP encapsulation types are used by network devices attached to the ELAN.

ELAN Type	Offset	Data	Mask	Comment
Ethernet	2	AAAA030000000800 4500000000000000 0011000000000000 E0	FFFFFF000000FFFF FF00000000000000 00FF000000000000 F0	IEEE 802.3
	0	0800450000000000 0000001100000000 0000E0	FFFFFF0000000000 000000FF00000000 0000F0	Ethernet DIX
Token-Ring	0	AAAA030000000800 4500000000000000 0011000000000000 E0	FFFFFF000000FFFF FF00000000000000 00FF000000000000 F0	IEEE 802.5

Using and Configuring APPN

You cannot configure APPN user-defined COS from the command line interface. The Configuration Program is the only means to configure user-defined COS.

SuperELAN II and TCP/IP Host Services

TCP/IP Host Services can be used to configure and monitor the MSS Server ASRT Bridge using TCP/IP even when IP routing is not enabled in the MSS Server. However, TCP/IP Host Services are not supported by the SuperELAN II bridge.

To configure and monitor a SuperELAN II bridge using TCP/IP when IP routing is not enabled in the MSS Server:

1. Create an additional LEC that is not a SuperELAN bridge port.
2. Configure the LEC to join any one of the ELANs in the SuperELAN.
3. Assign an IP address to this LEC interface.

Configuring ATM

ATM Virtual Interfaces

All physical ATM Interfaces should be configured before any ATM Virtual Interfaces are configured. If a second ATM adapter is added, you should first remove ATM Virtual Interface definitions, configure the second ATM Interface, then add back the ATM Virtual Interfaces. This restriction applies only if you are configuring from the console.

Burned-In ESI Addresses

The MSS Server incorrectly reads the burned-in ATM adapter End System Identifier (ESI). Duplicate burned-in ESIs are possible. If your configuration uses burned-in ESIs, it is recommended that you check all such adapters connected to a single ATM switch for duplicates. Use the talk 5 **int** *x* command, where *x* is the network number of the ATM adapter. If you find a duplicate, change the configuration to use configured ESIs in place of the burned-in ESIs.

Configuring Bridging

IP Multicast VLANs

Dynamic IP Multicast VLANs are intended to operate in an environment with multicast routing (for example, MOSPF or DVMRP). To filter IP multicast traffic in a network without a multicast router, you must use manual configuration to set each port to either Always-Include or Always-Exclude multicast traffic associated with each VLAN. This manual configuration prevents ports (by default in Auto-Detect mode) from aging out prematurely.

Bridging and Routing Banyan Vines

While both the configuration tool and the console (talk 6) allow you to configure Banyan Vines for both bridging and routing, the result is that packets with a Banyan Vines ethertype are routed. This can make the network behave in an indeterminate fashion. You must ensure that the configuration for Banyan Vines specifies either bridging or routing, but not both.

Bridging and Filtering IP on an Interface

In some configurations of the MSS Server, an IP address was configured on a bridge port to block forwarding of IP traffic on that port. However, because MSS Server V2.2 supports bridging and routing of IP traffic on an interface, this configuration no longer filters IP traffic on the bridge port. IP packets destined to the MAC address of the bridge port are routed. All other IP packets are bridged. To block the forwarding of IP packets, you must configure a bridge filter.

Chapter 4. MSS Server Configuration Program

Installation and Migration Requirements

See the README file provided with the MSS Server Configuration Program for the installation and migration instructions relevant to your environment.

Using the Command Line Facility

The Command Line facility provides the capability to automate configuration operations by allowing you to perform configuration operations using commands instead of the graphical user interface.

If you use the Command Line Facility, you cannot use the "*" character in a command.

What's New in the Configuration Program

The Configuration Program supports the new functions of the MSS Server as described in "What's New in MSS Server V2.2?" on page 1-1. The following functions are also now supported:

- LANE Services Usability Enhancements
- Classical IP Usability Enhancements

ELS (Event Logging System) Configuration

The Configuration Program does not support ELS configurations. To configure ELS, you must use the command line or Web browser interface on the MSS Server. If ELS configurations are included in a configuration file that you retrieve from an MSS Server, the ELS configurations are preserved when you send the configuration back to the MSS Server. Any changes to the ELS configurations made on the server after retrieving the configuration and before sending it back are lost.

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