IBM 8260 NWAYS MULTIPROTOCOL SWITCHING HUB

RELEASE NOTE

FOR

ATM CONTROL POINT VERSION 3.1.9 WITH PNNI-1

MES 5511

1 CONTENTS

2 Fixes.

2.1 New EEproms

When we switch to AMD EEproms we got flash memory error problems when dowloading operational and boot microcode. This has been fixed

2.2 Year 2000

Minor changes to correctly display date for year 2000 and beyond.

2.3 LECs

After a 8260 reset, all LECs addresses are restored.

2.4 LEC and LECs

In some configuration we could have a LEC turn down due to the fact that LECS is not yet ready. Now if this still occurs we record a message and we will retry the LEC connection.

3 Enhancements

No

4 Known Problems Currently being addressed

No problem at writting time

5 Important information

DUE TO NEW FUNCTIONS INTEGRATED IN THIS RELEASE, THE A-CPSW OPERATIONAL MICROCODE V.3.1.0 AND ABOVE, AND ITS COREQUISITE BOOT MICROCODE V.3.1.0 AND ABOVE , IMPLY THE FOLLOWING:

° PVCS, STATIC ROUTES AND LOGICAL LINKS ARE NOT MIGRATED.

BECAUSE OF THE MAJOR DIFFERENCES OF OPERATIONS BETWEEN PNNI-1 AND SSI, ALL YOUR PVCS ARE CLEARED, ALL LOGICAL LINKS AND STATIC ROUTES ARE CLEARED.

THE PERMANENT VIRTUAL CIRCUIT (PVC) MANAGEMENT INVOLVING SEVERAL SWITCHES IS NOT COMPATIBLE WITH PREVIOUS RELEASES OF A-CPSW MODULES.

6 NON PNNI TO PNNI UPGRADE

If this release is used to migrate from a non PNNI environment (code level 2.5x), it is recommended to download first the OPERATIONAL micrcode, then issue the “swap ...” command to make it active, **BEFORE** downloading the BOOT microcode at new level.

7 New MIB2.1.

Following are the MIB Changes in v3.1(compared to v2.5) related to 8260.

- *Extension of signalling management*
  - configuration for each signalling layer
- *VP tunnel management*
- *Extension of physical port management*
  - extensions for PNNI and VP tunnels resources
  - various enhancements
- *Proxy management*
- *Enhancements in trace and dump facilities*
  - new dump functions
  - selective traces
- *Improvement in PVC management*
  - frame discard option
  - new addressing
- *Enhancements for the atmSvcLogTable*
  - new attributes
- *Security*
  - this function enables access control.
- *New modules supported:*
  - atm-8271-ethernet
  - atm-8272-token-ring
  - E1-T1
  - 622 Mbps
  - Super-ELAN bridging
- *New MIB supported by the SNMP agent:*
  - ATM Forum PNNI MIB

8 NETWORK CONFIGURATION ADVICE .

1. Setting the reachable addresses.

   If you configure a redundant link in your network, check carefully for each reachable address of the redundant link that the prefix length has the same value.

2. Setting the reachable addresses with an IISP port.

   If you define a port in IISP mode, check carefully that no VPI is defined in your reachable address.
   And if you define a VOID port + VPC LINK type = IISP, check carrefully that VPIx is defined in your reachable address.

9 Documentation UpDate

9.1 SET PORT

SET PORT slot.port ENABLE PUBLIC_UNI ADMINISTRATIVE_WEIGHT

The ADMINISTRATIVE_WEIGHT parameter, described in the 8260 A-CPSW Command Reference Guide SA33-0453, is no longer in usage.

9.2 SET LAN_EMUL CONFIGURATION_SERVER

SET LAN_EMUL CONFIGURATION_SERVER atm_address

This command, defined in the Command Reference Guide SA33-0385, has been slightly modified: the parameters ACTIVE_WKA and INACTIVE_WKA are no longer in usage.

9.3 SET DEVICE

SET DEVICE LAN_EMULATION_CLIENT TR EMULATED_LAN_NAME

This enables the user to specify to the LECS the name of the desired emulated LAN.

9.4 SET TFTP

```
SET TFTP FILE_TYPE CONTROLLER_OPERATIONAL
                   CONTROLLER_BOOT
```

This enables the user to download microcode on the controller module without any DMM.

9.5 SET LAN_EMUL

```
SET LAN_EMUL SERVERS START LES_entity  START   TR/ETH      max lec id
SET_MIN_LEC_ID

SET LAN_EMUL SERVERS LES_entity  STOP
```

This command, defined in the Command Reference Guide SA33-0385, has been slightly modified: To support the super ELAN bridging, you need to specify the max LEC ID and optionally the minimum LEC ID for each LAN EMULATION server.

9.6 Maximum number of ESIs per switch

The IBM 8260/8285 ATM Control-Point Version 3 User: Guide SA33-0452 contains a "Troubleshooting" chapter in which the section "Problems with normal ATM operations" lists the maximum number of ESIs per port.

This number is in fact the maximum number of ESIs per switch.

9.7 Maximum number of Parties on Multicast Trees

The "Troubleshooting" chapter, listed above, does not give the overall maximum number of parties in multicast trees.

This number has changed, compared to the versions 2.x.x:

MAXIMUM NUMBER OF PARTIES, OVERALL: 4000

9.8 Stop LEC

```
CLEAR DEVICE LAN_EMULATION_CLIENT TR
                                  ETH
```

A warning saying that “This call will reset the ATM subsystem...” will the be issued, followed by a confirmation prompt “Are you sure ? (Y/N)”.

9.9 SET PVC ... ACTIVATE

```
SET PVC  <slot.port> <pvcid> ACTIVATE
```

This command allows to restart an already defined PVC.
As a complementary effect, the fact to restart the PVC will setup the retry sequence in case of failure (one retry every 15 seconds, for 5 minutes).

10 INFORMATION

10.1 NETWORKING RULES

This section describes 8260 module performance and lists the rules to follow to build and validate your network.

10.1 .1 ATM PEER GROUP INTRACONNECTION (PNNI).

An ATM Peer Group is a group of ATM hubs interconnected by Private Network-to-Network Interfaces. (PNNI). The PNNI protocol supports networking functions such as routing, node failure and recovery, backup and topology management.

BANDWIDTH RECOMMENDATIONS: when you configure PNNI ports on an 8260, keep this in mind:

- The bandwidth you specify, or which is taken by default, must be identical at both ends of the PNNI link.
- The bandwidth budget of the PNNI ports defined on an ATM media module, must not exceed 212 Mbps.

NUMBER OF SWITCHES IN THE SAME PEER GROUP: depending on the network topology and complexity, the peer-group can have up to 100 nodes (assuming there are up to
200 Foreign addresses and 500 links in the peer group).

MAXIMUM NUMBER OF PNNI PHYSICAL LINKS AND/OR VPCS PNNI PER 8260: 32

10.1 .2 ATM PEER GROUP INTERCONNECTION (IISP).

Interim Inter Switch Signalling (IISP) defines the interface between two 8260 ATM hubs belonging to different ATM clusters in the same subnetwork or in different subnetworks.

- IISP links are supported over both physical links and Virtual Path connections (VP tunneling)

- Parallel IISP links can be enabled between two clusters.

o The following limitations apply when configuring IISP ports:

- The total bandwidth reserved for IISP links is limited to 85 % of the full bandwidth of the port (for example 85Mbps for the A4-FB100 modules). The limitation is 180 Mbps per media module.

- PVCs are defined over IISP links by defining PVC on each individual peer group involved in the connection.

- The maximum number of reachable address that can be defined, per 8260, is 64.

10.1 .3IP OVER ATM (RFC 1577)

o The A-CPSW supports an IP client implementation to be managed over ATM (SNMP, Telnet, TFTP, Ping). For that purpose the actual supported MTU size is 944 bytes.

o The IP Over ATM client imbedded in the A-CPSW supports up to 64 concurrent IP Over ATM connections.

10.1 .4 ATM FORUM COMPLIANT LAN EMULATION CLIENT (LEC)

Each 8260 LEC supports up to 30 connections to other LECs

10.1 .5 ATM FORUM COMPLIANT LES/BUS

o The 8260 A-CPSW only supports one LES/BUS at a time.
o The maximum number of LECs on the LES/BUS is 128.
o Each 8260 with LES/BUS supports a maximum of 800 downstream LAN workstation with :
up to 880 broadcast frames per second for a 64 byte maximum frame size.
up to 480 broadcast frames per second for a 500 byte maximum frame size.
o The use of 8260 LES/BUS is not recommended in a Redundant A-CPSW configuration.

11 KEEPING YOUR 8260 UP TO DATE

11.1 USING INTERNET

The 8260 V3 updates are available on the INTERNET.
We invite you to regularly go to the IBM 8260 Upgrade Web page :
http://www.networking.ibm.com/826/826fix.html
You will be asked for **USER NAME** and **PASSWORD** (case sensitive)
The **USER NAME** to be used is: cpv3
The **PASSWORD** to be used is: 7707xr06

IF YOU WANT TO BE NOTIFIED AUTOMATICALLY WHEN MICROCODE UPDATES ARE AVAILABLE, WE RECOMMEND YOU SUBSCRIBE TO OUR FREE UPDATE NOTIFICATION SERVICE ON THE 8260 MICROCODE UPGRADE WEB PAGE :
http://www.networking.ibm.com/826/826reg.html

12 RELEASE HISTORY

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.1.1.5:

- MIB Version 1.1.
- Support of 8260 10-slot chassis
- Code upgrade control
- Unlimited combination of UNI/SSI ports
- Automatic discovery of IBM 8282 workgroup concentrators
- Link Aggregate for SSI and NNI configurations

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.1.2.9:

- A-CPSW boot performance improvements
- Support of the ATM 155 Mbps Flexible Concentration Module (A2-MB155)
- module
- PNNI phase 0
- Error log compression
- Enhanced status display
- Full multicast capability
- 16 Virtual Paths (VP) per NNI port (4-bit VPI)
- Early Packet Discard, Partial Packet Discard
- Reserved bandwidth support firewall.
- MIB Version 1.2

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.2.0.4/V.2.0.8:

- Support of the UNI Version 3.1
- Optional ILMI Address Registration
- Optional Flow Control for UNI Port
- Support of SDH and SONET for A2-MB155 Module
- Fixed Scrambling Scheme for A2-MB155 Module
- Bandwidth Allocation Setting for SSI Interface
- LAN Emulation Configuration Servers Address Advertisement
- PVC Management from the A-CPSW Console
- Serial Line IP Support for A-CPSW Console Port
- Upload and Download of the A-CPSW Configuration
- New Commands in Maintenance Mode
- Compressed Image of the A-CPSW Operational Microcode
- Support of MIB Version 1.3
- Support of Nways 8260 TR/Ethernet LAN Bridge Module

- Support of Nways 8260 ATM Carrier Modules
- Improvements to Existing A-CPSW Commands

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.2.1.0:

- LAN Emulation Client (LEC) Ethernet 802.3/DIX Ethernet
- Increased number of connections
- MIB version 1.4
- Full Chassis monitoring
- Redundant Switch support
- DMM subset

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.2.2.2:

- LAN Emulation Client (LEC) Token-Ring 802.5
- Static Routes inside a single subnetwork
- MIB version 1.5
- DMM subset (full chassis monitoring)
- LAN emulation Server/Broadcast Unknown Server (LES/BUS)
- Switch Redundancy versus LES/BUS
- MSS module support
- 12 port 25 Mbps module support
- WAN module support

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.2.4.0 OR V.2.4.3 OR V.2.5.0:

- MIB version 1.6 (v.2.4.0).
- MIB version 1.7 (v.2.5.0).
- Variable range of VPC/VCC values
- ABR flow control
- Larger buffer size
- A3-MB155 module support
- PVC multipoint
- Combo card support (v.2.5.0).
- 1 port 155 Mbps for A12TP25.

o IN A-CPSW OPERATIONAL MICROCODE VERSION V.3.0.0:

- MIB version 2.0.
- ATM Interim Inter Switch Signalling (IISP).
- ATM Public Network-to-Network Interface (PNNI).

- VP tunneling.
- Link redundancy.
- Troubleshooting support/selective traces.
- Security.
- A8-WAN (E1T1)

o IN 8260 OPERATIONAL MICROCODE VERSION V.3.1.0 :

- MIB version 2.1.
- Super ELAN (Short Cut Bridging).
- Controler module download.
- 622 Mbps.
- Automatic migration of the peer group.

o IN 8260 OPERATIONAL MICROCODE VERSION V.3.1.7 :

- Improvement in detection of duplicate node id a Peer group
- Improvement in connection traces
- New command for stopping LEC thru a *"clear device ..."* command.

o IN 8260 OPERATIONAL MICROCODE VERSION V.3.1.8 :

- Interoperability problem with adapters (MADGE, 8274, CISCO, ...) which doesn't respect the standards.
- Longest matching prefixes routing - Performance improvement in routing, search time significantly reduced.
- New command to restart a failing PVC (...ACTIVATE).
- In case the 827x VPD image is incorrect, the module no longer resets when it is plugged in the 8260.
- T1 links load balancing improvement in case of link redundancy.

o IN 8260 OPERATIONAL MICROCODE VERSION V.3.1.9 :

- Minor changes to be year 2000 compatible while displaying date.
- Aftre a 8260 reset, all LECS addresses are restored.
- In some configuration we could have a LEC turned down due to the fact that the LECS is not yet ready. Now if this still occurs we record a message, and we retry the LEC connection
- This code version allows the Boot downlaod toward new generation of AMD Eeproms installed on new CPSW modules (Fru PN 25L4651 and 25L4652).

END OF DOCUMENT