

IBM 8285 NWAYS WORKGROUP SWITCH

RELEASE NOTE

for

ATM CONTROL POINT WITH PNNI

version V.3.1.9

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1 FIXES

1.1 New EEproms

When we switch to AMD EEproms we got flash memory error problem when downloading a boot microcode. This problem has been fixed

1.2 Year 2000

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

1.3 LECS

After a 8285 reset, all LECS addresses are restored.

1.4 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.

2 ENHANCEMENTS

None.

3 Known Problems Currently being addressed

No problem at writing time

4 IMPORTANT INFORMATION.

Due to new functions integrated in this release, the 8285 operational micro-code v.3.1.0 and above, and its corequisite boot microcode v.3.1.0 and above, imply the following when upgrading from SSI to PNNI:

PVCS, STATIC ROUTES AND LOGICAL LINKS ARE NOT MIGRATED.

Because of the major differences of operations between PNNI-1 (codes version 3.x) and SSI (codes version 1.x), all the PVCs are cleared, all the logical links and static routes are cleared.

The permanent virtual circuit (PVC) management involving several switches is not compatible with releases 1.x of 8285 and releases 2.x of 8260.

5 NON PNNI TO PNNI UPGRADE

If this release is used to migrate from a non PNNI environment (code level 1.5x), it is recommended to download first the OPERATIONAL microcode, then issue the “swap ...” command to make it active, **BEFORE** downloading the BOOT microcode at new level.

6 NEW MIB 2.1.

Following are the MIB Changes in v3.1 (compared to v1.5) related to 8285.

- o Extension of signalling management
 - configuration for each signalling layer
- o VP tunnel management
- o Extension of physical port management
 - extensions for PNNI and VP tunnels resources
 - various enhancements
- o Proxy management
- o Enhancements in trace and dump facilities
 - new dump functions
 - selective traces
- o Improvement in PVC management
 - frame discard option
 - new addressing
- o Enhancements for the atmSvcLogTable
 - new attributes
- o Lan-Emulation:
 - lesMinLecId and lesMaxLecId for super-ELAN Bridging (NEW)
- o Security
 - this function enables access control.
- o New modules supported:
 - E1-T1
- o New MIB supported by the SNMP agent:
 - ATM Forum PNNI MIB

7 NETWORK CONFIGURATION ADVICE.

- o Setting the reachable addresses.

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

- o 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.
- If you define a port as VOID, with a VPC_LINK of the IISP type on the VPI x, check carefully that the VPI x is defined in your reachable address statement.

8 DOCUMENTATION UPDATE

8.1 SET DEVICE LAN_EMULATION_CLIENT

```
SET DEVICE LAN_EMUL_CLIENT TR|ETH EMULATED_LAN_NAME
```

This command, defined in the IBM 8285/8260 ATM Command Reference Guide (SA33-0385), has been slightly modified. You may now specify the name of the Emulated LAN on which you need to attach the LAN-Emulation Client.

8.2 SET LAN_EMUL SERVERS

```
SET LAN_EMUL SERVERS 1|2 START TR|ETH MAXLECID  
SET_MIN_LEC_ID:MinLec|D
```

This command, defined in the IBM 8285/8260 ATM Command Reference Guide (SA33-0385), has been slightly modified.

Indeed, to support the Super-ELAN Bridging (also called shortcut bridging), you need to specify the MaxLecID for each LAN-Emulation Server.

By default, the MinLecID is zero, but you may change it, using the optional parameter SET_MIN_LEC_ID as shown above.

8.3 SET LAN_EMUL CONFIGURATION_SERVER

```
SET LAN_EMUL CONFIGURATION_SERVER atm_address
```

This command, defined in the IBM 8285/8260 ATM Command Reference Guide (SA33-0385), has been slightly modified: the parameters ACTIVE_WKA and INACTIVE_WKA are no longer in usage.

```
SET PORT <slot.port> ENABLE PUBLIC_UNI ADMINISTRATIVE_WEIGHT
```

SET PORT

The ADMINISTRATIVE_WEIGHT parameter, described in the IBM 8285/8260 ATM Control-Point Version 3, Command Reference Guide (SA33-0453), is no longer in usage.

- o Maximum number of connections for the 8285

The IBM 8285/8260 ATM Control-Point Version 3, User's Guide (SA33-0452) contains a "Troubleshooting" chapter in which the section "Problems with normal ATM operations" lists the maximum number of connections.

The maximum number of virtual connections per switch, stated to be equal to 6000, is ONLY VALID FOR THE 8260.

For the 8285, the maximum number of virtual connections per switch is 3000.

- o Maximum number of ESIs per switch

The IBM 8285/8260 ATM Control-Point Version 3, User's 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 (512) is in fact the maximum number of ESIs PER SWITCH.

- o Maximum number of Parties on Multicast Trees

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

MAXIMUM NUMBER OF PARTIES, OVERALL: 2000

8.5 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).

9 GENERAL INFORMATION

9.1 NETWORKING RULES

This section describes 8285 module performance and lists the rules to follow to build and validate your network.

9.1.1 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 8285, keep this in mind:
 - The bandwidth must be identical at both ends of the PNNI link.
When you let the 8285 choose the default bandwidth, check that it corresponds with the one at the other end 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 VPCS PER 8285:** 32

- **MAXIMUM NUMBER OF VPCS PER 8285:** 64

9.1 .2 ATM PEER GROUP INTERCONNECTION (IISP).

Interim Inter Switch Signalling (IISP) defines the interface between two 8285 ATM hubs belonging to different ATM peer-groups in the same subnetwork or in different subnetworks.

- IISP links are supported over both the physical links and the Virtual Path connections (VP tunneling).
- Parallel IISP links can be enabled between two peer-groups.
- 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 addresses that can be defined, per 8285, is 64.

9.1 .3 IP 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.

9.1 .4 ATM FORUM COMPLIANT LAN EMULATION CLIENT (LEC)

- o Each 8285 LEC supports up to 30 connections to other LECs

9.1 .5 ATM FORUM COMPLIANT LES/BUS

- o The maximum number of LECs on the LES/BUS is 128.

10 KEEPING YOUR 8285 UP TO DATE

10.1 USING INTERNET

USER NAME AND PASSWORD |

The 8285 V3 updates are available on the INTERNET.

We invite you to regularly go to the IBM 8285 Upgrade Web page :

[HTTP://WWW.NETWORKING.IBM.COM/82A/82AFIX.HTML](http://www.networking.ibm.com/82A/82AFIX.HTML)

You will be asked for USER NAME and PASSWORD

The USER NAME to be used is: cpv3

The PASSWORD to be used is: 7707xr06

REGISTRATION

If you want to be notified automatically when microcode updates are available, we recommend you SUBSCRIBE to our FREE update notification service on the 8285 Microcode Upgrade Web page:

[HTTP://WWW.NETWORKING.IBM.COM/82A/82AREG.HTML](http://www.networking.ibm.com/82A/82AREG.HTML)

11 VERSION HISTORY

- o IN 8285 OPERATIONAL MICROCODE VERSION V.1.2.0:
 - Expansion Unit support
 - LAN Emulation Client (LEC) Token-Ring 802.5
 - Static Routes inside a single subnetwork
 - MIB version 1.5
 - 12 port 25 Mbps module support
 - WAN module support
- o IN 8285 OPERATIONAL MICROCODE VERSION V.1.3.0
 - MIB version 1.6 (v.1.3.0).
 - A3-MB155 module support
- o IN 8285 OPERATIONAL MICROCODE VERSION V.1.4.3/V.1.5.0
 - ABR flow control
 - Variable range of VP/VC values
 - PVC multipoint
 - Larger buffer size
 - MIB version 1.7 (v.1.5.0).
 - 1 port 155 Mbps for A12-TP25 module (v.1.5.0)
- o IN 8285 OPERATIONAL MICROCODE VERSION V.3.0.0:
 - MIB version 2.0.
 - ATM Interim Inter Switch Signalling (IISP).
 - ATM Public Network-to-Network Interface (PNNI).
 - Security.
 - VP tunneling.
 - Link redundancy.
 - Troubleshooting support, Selective traces.
- o IN 8285 OPERATIONAL MICROCODE VERSION V.3.1.0:
 - MIB version 2.1.
 - Smooth Migration of ATM address and SSI links
 - Support for super-ELAN (shortcut) bridging.
- o IN 8285 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 8285.
 - T1 links load balancing improvement in case of link redundancy.
- o IN 8285 OPERATIONAL MICROCODE VERSION V.3.1.9 :
- Minor changes to be year 2000 compatible while displaying date.
 - After a 8285 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 LECs connection
 - This code version allows the Boot download toward new generation of AMD EEproms installed on new CP/SW modules (Fru PN 25L4651 and 25L4652).

END OF DOCUMENT