

**IBM 8260 Nways Multiprotocol Switching Hub**

**Release Note**

**for**

**Nways 8260 ATM TR/Ethernet LAN Bridge Module (Feature Code 5204)  
ATM Forum LAN emulation Operational software version 2.1  
ATM Forum LAN emulation Configuration utility program version 2.1  
IBM LAN emulation Operational software version 1.16**

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## 2.0 Trademarks and Service Marks

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Windows (TM) is a registered trademark of Microsoft Corporation

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## 3.0 References

Here are the references to the documents you should always refer to

*Nways 8260 ATM TR/Ethernet LAN Bridge Module Installation and User's guide (SA33-0361).*

*ATM Control Point and Switch Module Installation and User's guide (SA33-0326).*

They both have useful sections on either Troubleshooting or description of error codes for specific functions.

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## 4.0 Upgrade Information

This release note, part number 10J2028, EC level E28236, is included in a field bill of material (FBM) part number 10J2029, EC level E28236.

This FBM has been planned to upgrade the Nways 8260 ATM TR/Ethernet LAN Bridge Module Operational software and Configuration utility program. The purpose of this software upgrade is twofold:

When the bridge is used with an IBM LAN emulation server, the Operational software version 1.16 allows to fix the problems detected with version 1.15. See the list of problems in 6.0, "List of corrected problems and improvements with IBM LAN emulation Operational software version 1.16." on page 5. Also with version 1.16, the maximum number of supported SVC's is increased from 250 to 500, thus allowing up to 500 ATM stations on an emulated LAN to connect to a legacy LAN at the same time. Note that the Configuration utility program remains at version 1.9.

When the bridge is used with a ATM Forum LAN emulation server, the Operational software version 2.1 and the Configuration Utility program 2.1 provide the support for the Forum Compliant LAN emulation protocol.

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### 4.1 Installing the Nways 8260 ATM TR/Ethernet LAN Bridge Module code upgrade Field BM

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## IBM LAN emulation Operational software version 1.16 upgrade

The file for the Operational software version 1.16 is included in the diskette provided in the field bill of material (FBM) part number 10J2029, EC level E28236. Operational software version 1.16 diskette part number is 10J2076.

The files may be retrieved from the ATMBIN disk on ATMPE user at LGEVMA system: you have to get the 8281UPG3 PACKAGE from this disk.

Also, the files are now available from the IBM Networking World Wide Web. The home page is <http://www.raleigh.ibm.com/826/826fix.html>. Select "ATM TR/Ethernet LAN Bridge module (FC 5204)" entry. Further instructions are provided online.

Note that the Configuration utility program remains at version 1.9.

Refer to chapter 6. (Using the configurator) of the Nways 8260 ATM TR/Ethernet LAN Bridge Module Installation and User's Guide (SA33-0361) in order to load the new Operational software. The loading procedure is explained in detail in the chapter 6 section Using ATM LAN Bridge Utilities, under "Loading New Operational software and Viewing the Vital Product Data".

### Verifying your Installation after Field BM upgrade

Enter the command SHOW PORT x.1 VERBOSE from the CPSW console, x being the slot number which the Nways 8260 ATM TR/Ethernet LAN Bridge Module is installed in. Check that the reported Operational Code version is 1.16.

## ATM Forum LAN emulation Operational software version 2.1 and Configuration utility program version 2.1 installation

The files for both the Configuration utility program Rel 2.1 and the Operational software Rel 2.1 are included in the diskettes provided in the field bill of material (FBM) part number 10J2029, EC level E28236. Configuration utility Rel 2.1 diskette part number is 10J2026, Operational software Rel 2.1 diskette part number is 10J2027.

The files may be retrieved from the ATMBIN disk on ATMPE user at LGEVMA system: you have to get the 8281V21 PACKAGE from this disk.

Also, the files are now available from the IBM Networking World Wide Web. The home page is <http://www.raleigh.ibm.com/826/826fix.html>. Select "ATM TR/Ethernet LAN Bridge module (FC 5204)" entry. Further instructions are provided online.

In order to install the new Configuration utility program Rel 2.1, refer to chapter 4. (Installing the configurator) of the Nways 8260 ATM TR/Ethernet LAN Bridge Module Installation and User's Guide (SA33-0361).

Once the new Configuration utility program is installed, refer to chapter 6. (Using the configurator) of the above documentation in order to load the new Operational software. The loading procedure is explained in detail in the chapter 6 section Using ATM LAN Bridge Utilities, under "Loading New Operational software and Viewing the Vital Product Data".

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## Verifying your Installation after Field BM upgrade

Enter the command SHOW PORT x.1 VERBOSE from the CPSW console, x being the slot number which the Nways 8260 ATM TR/Ethernet LAN Bridge Module is installed in. Check that the reported Operational Code version is 2.1

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## 5.0 Network Management

The 8260 ATM LAN Bridge Module is now fully supported by the Network Management applications (up to release 1.14 of the Operational code software, the 8260 ATM LAN Bridge was handled by the Network management applications strictly in the same way as the Stand Alone 8281 ATM LAN Bridge).

ATMC PTF NUMBER UR45751 MUST BE INSTALLED AS A PREREQUISITE FOR THE 8260 ATM LAN BRIDGE SUPPORT BY THE NETWORK MANAGEMENT APPLICATIONS WITH THE BRIDGE OPERATIONAL CODE STARTING FROM LEVEL 1.15.

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## 6.0 List of corrected problems and improvements with IBM LAN emulation Operational software version 1.16.

The following fixes are included in the 8281 operational code 1.16.

The configurator remains at version 1.9.

- Problems with the 8281 TCP/IP stack sometimes caused loss of connectivity between Netview and the 8281 in token ring mode.
- 8281 reset due to excessive errors on a LAN port.
- Increased the SVC age out time in order to reduce the number of SVC connection setups in the ATM network.
- In networks with large number of ATM stations connecting to one bridge, the 8281 sometimes stopped setting up direct VCC, causing all traffic to go through LES.
- Increase the maximum supported SVCs from 250 to 500. This change allows up to 500 ATM stations on an emulated LAN to connect to the legacy LAN at the same time.
- Bridge sometimes reset when an unterminated token ring STP cable was attached to the LAN port for a long time.
- 8281 did not bridge SRF frames with broadcast indicator bits set to b'010' across ATM.
- Ring number user filter on the ATM port did not work. SAP user filter in Ethernet mode did not work.

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- In Token Ring Mode the bridge was incorrectly interpreting some broadcast frames as spanning tree frames causing spanning tree instability and network traps.
- When bridge was powered on with a serial cable attached to the RS232 port, the bridge sometimes failed diagnostics.

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## **7.0 Installation and User's Guide SA33-0361-00 UPDATE for ATM Forum LAN emulation Operational software and Configuration utility program version 2.1**

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### **7.1 Chapter 1. Overview**

The ATM interface meets ATM UNI Specification V3.1.

The 8260 ATM LAN Bridge can support up to a maximum of 508 virtual circuits (VCs). The 8260 ATM LAN Bridge, Release 2, provides ATM Forum LAN emulation over the ATM network. LAN emulation is used to send LAN frames over the ATM network, transparent to the LAN-attached workstations. A LAN emulation server resolves MAC addresses and route descriptors to ATM addresses, according to the LE-ARP protocol that is found in the ATM Forum LAN emulation Specification. The LAN emulation Server (LES) and Broadcast and Unknown Server (BUS) emulate the services of a LAN across the ATM network.

The type of emulated LAN to be supported by the 8260 ATM LAN Bridge, either token-ring or Ethernet, is chosen during configuration of the 8260 ATM LAN Bridge. Because of the difference in frame format, all 8260 ATM LAN Bridges that share a LAN emulation server have to be configured as the same LAN type (either token ring or Ethernet), unless the server functions as a bridge or a router and can forward frames between Ethernet and token-ring emulated LANs.

When LAN emulation is used, the end-systems in the network connect to the ATM network and the software applications interact as if they were attached to a traditional LAN. Software applications residing on ATM-attached end-systems and software applications residing on traditional LAN end-systems can interoperate.

Release 2 of the 8260 ATM LAN Bridge supports ATM Forum LAN emulation LAN emulation. Release 1 supports IBM proprietary LAN emulation. Because these implementations of LAN emulation are different, LAN emulation clients of a Release 2 8260 ATM LAN Bridge cannot communicate with LAN emulation clients of a Release 1 8260 ATM LAN Bridge. It would require special conversion software to establish communication between them.

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## 7.2 Chapter 4. Installing the Configurator

### Hardware requirements

8 MB of memory for Microsoft\*\* Windows\*\* (instead of 4 MB with 8260 ATM LAN Bridge Release 1).  
Type 2 UART

### Software requirements

IBM TCP/DOS version 2.1.1.4 or higher with WINSOCK.DLL installed and running on the workstation

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## 7.3 Chapter 6. Using the Configurator

### Using ATM LAN Bridge Utilities

The 8260 ATM LAN Bridge utilities enable you to:

- Load new Operational software over the serial port and view Vital Product Data (VPD).
- Load new Operational software over the network
- Erase a configuration
- Perform a memory dump
- View the Bridge Status Report
- Retrieve the Error Log
- Reset the Bridge

To access these choices, click **Utilities** on the menu bar of the Profile Selection window.

### Viewing the Bridge Status Report

The bridge status report gives general information on the status of the 8260 ATM LAN Bridge, including:

#### Vital Product Data

- Operational software release and version number.
- Operational software filename and timestop of the file.

How long the 8260 ATM LAN Bridge has been up.

LAN port information, including:

- The local and universal MAC address of the port.
- The state of the spanning tree protocol on the port.
- The duplex mode (full or half) of the port.
- The length of the transmit and receive queues.

ATM port information, including:

- The ATM address of the port.
- The local and universal MAC address of the port.

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- The status of the spanning tree protocol on the port.

To view the bridge status report:

- 1** From the Profile Selection window menu bar, click **Utilities**. From the Utilities menu, select **Additional utilities**. The Additional Utilities window appears.
- 2** Select **View Bridge Status Report**. The bridge status report is displayed.

## Retrieving the Error Log

This utility enables you to retrieve the error log from the 8260 ATM LAN Bridge to assist you in diagnosing software problems.

To retrieve the error log:

- 1** From the Profile Selection window menu bar, select **Utilities**.
- 2** From the Utilities menu, select **Additional utilities**. The Additional Utilities window appears.
- 3** Select **Retrieve Error Log**, and click on **OK**. You are prompted to enter the filename to save the error log.

## Resetting the Bridge

This utility enables you to reset the 8260 ATM LAN Bridge remotely. Reasons for resetting the bridge remotely include:

- activating a new profile that has been sent to the 8260 ATM LAN Bridge but not previously activated.
- activating new operational code that has been previously downloaded.
- resetting the bridge in the event of an operational problem.

To reset the 8260 ATM LAN Bridge:

- 1** From the Profile Selection window menu bar, select **Utilities**.
- 2** From the Utilities menu, select **Additional utilities**. The Additional Utilities window appears.  
**Attention:** Resetting interrupts all traffic that passes over the 8260 ATM LAN Bridge. Be sure that the network has been prepared for the reset before you perform it.
- 3** Select **Reset Bridge**, and click on **OK**.  
The 8260 ATM LAN Bridge is reset, and you are returned to the Profile Selection window.



## 7.4 Chapter 7. ATM LAN Bridge parameters

Table 1 (Page 1 of 3). Index to the Parameters

Parameter Name	Media type
ATM address—terminal portion	Both
Bridge default gateway	Both
Bridge IP address	Both
Bridge IP subnet mask	Both
Bridge name	Both
Bridge number	Both
Bridge priority	Both
Community name of the trap community	Both
Configuration (SNMP community)	Both
Default inbound filter order	Both
Ethernet type filter	Ethernet
Forward delay	Both
Generic Flow Control	Both
Hello time	Both
Hop count filter	Token ring
Host IP address (trap community)	Both
ILMI Virtual Channel Identifier (VCI)	Both
ILMI Virtual Path Identifier (VPI)	Both
Initial port state	Both
LAN emulation server—Aging Time	Both
LAN emulation server—Connection Completion Timer	Both
LAN emulation server—Control Timeout	Both
LAN emulation server—Data Directs Up After Control Failure	Both
LAN emulation server—Emulated LAN Name	Both
LAN emulation server—Flush Timeout	Both
LAN emulation server—Forward Delay Time	Both
LAN emulation server—Maximum LE-ARP Response Time	Both
LAN emulation server—Maximum LE-ARP Retry Count	Both
LAN emulation server—Maximum Unknown Frame Count	Both
LAN emulation server—Path Switch Delay	Both

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Table 1 (Page 2 of 3). Index to the Parameters

<b>Parameter Name</b>	<b>Media type</b>
LAN emulation server—VCC Timeout	Both
LAN emulation token ring port spanning-tree parameters	Both
MAC address filter	Both
MAC address filter list	Both
MAC address format	Both
MAC address to use	Both
Maximum age (for bridge-wide spanning-tree parameters)	Both
Maximum frame size (bridge-wide)	Both
Monitor view	Both
Operation and Maintenance/Flow 5	Both
Path cost	Both
Physical connector type	Ethernet
Port name	Both
Priority	Ethernet
Ring number (for port)	Token ring
Ring number filter (port)	Token ring
Ring number filter list (port)	Token ring
Run-time control (SNMP)	Both
Security (SNMP)	Both
SNAP filter (port)	Token ring
SNAP filter list	Token ring
SNMP community view parameters	Both
SNMP configuration	Both
SNMP description parameters	Both
Source SAP filter (port)	Both
Source SAP filter list	Both
Spanning-tree mode	Token ring
Specified network prefix	Both
Terminal portion (LAN emulation server address)	Both
Token ring settings—active monitor participant	Token ring
Token ring settings—early token release	Token ring

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Table 1 (Page 3 of 3). Index to the Parameters

Parameter Name	Media type
Use same network prefix as bridge or specify another?	Both

## Spanning-Tree parameters—Token Ring and Ethernet

### Forward delay

The value used for the aging time of ARP-cache entries while there is a LAN emulation Topology change.

## Transparent Bridging parameters—Ethernet

### Aging time

This is the length of time, in seconds, used to age entries in the Filtering Database when a topology change is not in place.

### Database full action

This is the default action to be taken by the 8260 ATM LAN Bridge when an entry cannot be added to the filtering database because the database is full. Valid options are to **discard** the entry to be inserted, or to **replace** the oldest existing entry with the new entry.

## Port Parameters for Token Ring

### Full duplex

The parameter values are On and Off; the default is Off. This parameter determines whether the port will operate in a full-duplex mode. For the port to function correctly, it must be connected to a switch that supports full-duplex operation. If you set this parameter to Off, the port will operate in half-duplex mode.

### Maximum frame size

The token ring default is 4399. This value cannot be larger than the maximum frame size configured for the whole 8260 ATM LAN Bridge. The range is 516–17749. This parameter specifies the size in bytes of the largest information field that is permitted to cross this port.

For the ATM port this variable will also control the maximum frame size specified on the Join and on the data SVC setups initiated by the bridge. The value the bridge specifies on the Join and in its data SVC setups will be the value the user specifies for this variable rounded up to one of the Forum Compliant SVC maximum frame size values. Those Forum compliant SVC maximum frame size values are 1516, 4544, 9234, and 18190. If the value specified by the user for this parameter is overridden by LES, then the bridge will use value specified by LES on data SVC setups and the bridge will use the closest (but lower value) for the maximum i-field size and for specifying the maximum size bits in RI broadcast headers.

To be forum compliant a LES must reject a join whose maximum frame size is less than the LES's configured value. Therefore you must take the LES's configured maximum frame size value in mind when you configure the bridge's maximum frame size for the ATM port. Also if you specify a port maximum frame size greater than the bridge's maximum frame size, the bridge's maximum frame size will be used. Raising bridge's maximum frame size above 4k will degrade the bridge's performance.

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## Port Parameters for Ethernet

### Full duplex

The parameter values are On and Off; the default is Off. This parameter determines whether the port will operate in full-duplex mode. For the port to function correctly, it must be connected to a switch that supports full-duplex operation. If you set this parameter to Off, the port will operate in half-duplex mode.

## Port Source-Route Filter Configuration—Token Ring

You use these parameters to set up filters on the port. Filters exclude certain frames from crossing the bridge. They check specified fields or addresses in the frame to determine whether to let the frame pass. The 8260 ATM LAN Bridge supports filters only on traffic inbound to the bridge. In Token Ring mode, the 8260 ATM LAN Bridge applies filters only to broadcast frames. To determine whether or not to apply the specified filter action, the 8260 ATM LAN Bridge applies the filter mask to the frame, and then compares the result with the value specified by the filter. If the values match, the 8260 ATM LAN Bridge takes the action specified by the filter.

The following filters are used:

- Hop count filter
- MAC address filter
- Ring number filter
- SNAP filter
- Source SAP filter

## Port Transparent Bridging Filters—Ethernet

Ethernet filters work in the same manner as Token Ring filters, but when the 8260 ATM LAN Bridge is in Ethernet mode, active filters are applied to all frames.

## How Virtual LAN Port Parameters Differ from LAN Parameters

The default path cost for the ATM Virtual Port is 10, a smaller number than the default for token ring or Ethernet. Also, because the virtual Ethernet LAN uses the ATM connector, there is no parameter for Physical connector type.

### Filters

The emulated LAN port supports the same filters as the physical LAN ports. For a complete description of these filters, see “Port Source-Route Filter Configuration—Token Ring” and “Port Transparent Bridging Filters—Ethernet.”

## ATM LAN emulation Parameters—Token Ring and Ethernet

These parameters are required to communicate with the LAN emulation server.

### Use same network prefix as bridge or specify another?

The ATM address consists of a 13-byte network prefix and a 7-byte terminal portion. The parameter values are Bridge or Specify, and the default value is Bridge. If the ATM LAN emulation server and the 8260 ATM LAN Bridge are on the same ATM subnetwork, you should select Bridge. The ATM

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switch informs the 8260 ATM LAN Bridge what the 13-byte prefix is, using the ILMI address registration procedures, and the 8260 ATM LAN Bridge will use that prefix to formulate the LAN emulation server's ATM address network prefix.

If you do not use the specified network prefix, you must provide the complete ATM address of the LAN emulation server, as requested by the Specified network prefix and the Terminal portion parameters.

The high-order 13 bytes, which represent the network prefix, are displayed as 0's if you use the 8260 ATM LAN Bridge's network prefix. These 0's indicate that the 8260 ATM LAN Bridge does not yet know what this prefix is, but that the 8260 ATM LAN Bridge has been configured to use its own network prefix for this value.

### **Specified network prefix**

This is the network prefix of the LAN emulation server's ATM address. This value is required only if you choose **not** to use the 8260 ATM LAN Bridge's network prefix. It is a 13-byte hexadecimal number.

### **Terminal portion**

This is the terminal portion of the LAN emulation server's ATM address. It is a required 7-byte value.

### **Complete server address**

This area of the window is a display area that shows you the value of the LAN emulation server ATM address. You cannot enter information in this area; information is displayed here after you have edited the appropriate areas in the upper part of the window.

### **Control Timeout**

This parameter sets the length of time that the ATM Bridge will wait for a response, after sending a control request frame, before repeating the frame.

The default value is 120 seconds and the range is 10–300 seconds.

### **VCC Timeout**

This parameter sets the length of time that the ATM Bridge will hold Data Direct VCCs without their being used to transmit or receive data.

The default value is 1200 seconds and the range is 1–65 535 seconds.

### **Flush Timeout**

This parameter sets the length of time after sending an LE\_FLUSH\_REQUEST that the ATM Bridge will wait for an LE\_FLUSH\_RESPONSE before taking recovery action.

The default value is 4 seconds and the range is 1–4 seconds.

### **Path Switch Delay**

This parameter sets the length of time after sending a packet to the BUS that the ATM Bridge will wait before switching to the new data direct path, regardless of the state of the Flush protocol.

Lowering this value decreases the amount of time required to set up a new connection, but increases the chance of getting the initial data frames out of order.

The default value is 6 seconds and the range is 1–8 seconds.

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## Connection Completion Timer

This parameter sets the length of time that the ATM Bridge will wait for either data or a READY\_INDICATE message from the calling party when setting up a new connection. If neither is received within this time, the ATM Bridge will send a READY\_QUERY to the calling party.

Lowering this value decreases the amount of time required to set up a new connection when there is a failure in the READY\_QUERY/READY\_INDICATE protocol, but increases the possibility of unnecessary control traffic.

The default value is 4 seconds and the range is 1–10 seconds.

## Maximum LE-ARP Response Time

This parameter sets the length of time that the ATM Bridge will wait for an LE\_ARP\_REQUEST/LE\_ARP\_RESPONSE cycle to complete. In other words, if, after the length of time set by this parameter, a response has not been received for an LE\_ARP\_REQUEST, the ATM Bridge will retry the request if the Maximum LE-ARP Retry Count has not been exceeded.

Lowering this value decreases the time necessary to set up a new connection, but can increase the amount of unnecessary traffic.

The default value is 1 second and the range is 1–30 seconds.

## Maximum LE-ARP Retry Count

This parameter sets the maximum number of times that the ATM Bridge will retry an LE\_ARP\_REQUEST for any given frame's LAN destination.

The default value is 1 time and the range is 0–2 times.

## Maximum Unknown Frame Count

This parameter sets the maximum number of frames that the ATM Bridge will send to the BUS for a particular LAN destination. Frames above this maximum number will be discarded until a data direct connection is set up and is ready to use.

The default value is 10 times and the range is 1–10 times.

## Emulated LAN Name

This parameter specifies the name of the emulated LAN that the ATM Bridge attempts to join. This parameter is optional.

## Aging Time

This parameter sets the maximum length of time that the ATM Bridge will maintain an entry in its LE-ARP cache without having verification of that relationship. This is the same Aging Time that is used for the ATM Bridge's Filtering Database.

The default value is 300 seconds and the range is 10–1 000 000 seconds.

## Forward Delay Time

This parameter sets the maximum length of time that the ATM Bridge will maintain an entry for a non-local MAC address in its LE-ARP cache without having verification of that relationship, as long as the Topology Change flag is true. This is the same Forward Delay Time used by the ATM Bridge's Spanning Tree Protocol.

The default value is 15 seconds and the range is 4–30 seconds.

## Data Directs Up After Control Failure

This parameter sets the length of time that the ATM Bridge will wait before tearing down all data VCCs and terminating LAN membership after one of the connections to the BUS or LES goes down.

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The bridge will retry the failed connection during this waiting period. This parameter protects all data direct VCCs from being lost due to a single temporary failure.

For Ethernet, there is an inherent risk in this parameter because loops in an Ethernet network are catastrophic. If the connection to the BUS goes down and the bridge is unable to forward BPDUs, other transparent bridges in the network detect the failure and will reconfigure the spanning tree of bridges. A problem can occur if the bridge is forwarding data on the data direct VCCs when this reconfiguration occurs. Thus it is recommended for Ethernet that this parameter be less than the Maximum Age STP Protocol parameter used by all 802.1d bridges in the network.

For both Ethernet and Token-Ring, when the bridge is running with a control connection down but is still forwarding over data direct VCCs, established connections operate normally but no new connections can be set up.

The default value is 0 for Ethernet and Token-Ring, indicating that data directs VCCs are dropped immediately when a control VCC is dropped, and the range for both Ethernet and Token-Ring is 0–3600 seconds.

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## 7.5 Chapter 8. SNMP Management

### MIBs Supported by the 8260 ATM LAN Bridge

The 8260 ATM LAN Bridge supports the following MIBs:

- MIB-II [RFC 1213]
- Bridges [RFC 1493]
- Source-Route Bridging [RFC 1525]
- ATM (AToM) [RFC 1695]
- ILMI [ATM Forum UNI 3.0] (**Release 1 only**)
- ILMI [ATM Forum UNI 3.1] (**Release 2 only**)
- IEEE 802.5 Token Ring [RFC 1231]
- &IBM. Extensions to RFC 1231
- Ethernet-like Interfaces [RFC 1643]
- &IBM. 8281 ATM/LAN Bridge, for example, [ibm8281.MIB]
- Evolution of the Interfaces Group of MIB-II [RFC 1573]
- ATM Forum LAN emulation Client MIB

These MIBs are all standard except for the two &IBM. MIBs. Refer to the appropriate RFCs for MIB variable descriptions.

### RFC 1231 (dot5)

The following tables from RFC 1231 are supported:

1. dot5Table
2. dot5StatsTable
3. dot5TimerTable

### Exceptions to RFC 1231

1. dot5ActMonParticipate is read-only
2. dot5Tests not supported
3. dot5ChipSets not supported
4. dot5TimerTable variables are read-only

### IBM Extensions to RFC 1231

The following variables/tables from IBM Extensions to RFC 1231 are supported.

1. dot5ExtnsIfNum
2. dot5ExtnsTable

### Exceptions to IBM Extensions to RFC 1231

dot5ExtnsEarly TokenRel is read only.

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## RFC 1643 (dot3)

The following tables from RFC 1643 are supported:

dot3StatsTable

### Exceptions to RFC 1643

1. dot3CollTable not supported
2. dot3Tests not supported
3. dot3Errors not supported
4. dot3ChipSets not supported

## Evolution of the Interfaces Group of MIB-II [RFC 1573]

The following groups/tables from RFC 1573 are supported:

1. IfTable (provides an updated interpretation of the RFC 1213 version)
2. IfxTable
3. IfStackGroup (ifStuckTable)

### Exceptions to RFC 1573

High capacity (64 bit) counters are not supported. These counters are SMNP version 2 specific and the 8281 only supports SNMP version 1. The ifTestTable is not supported (it is optional).

## ILMI MIB [ATM Forum UNI 3.1]

The UNI 3.1 MIB is supported by Release 2 of the 8260 ATM LAN Bridge **only**.

Release 1 of the 8260 ATM LAN Bridge **does not** support the UNI 3.1 MIB.

The following groups from the ILMI MIB are supported:

1. Physical Port Group (atmfPhysicalGroup)
2. ATM Layer Group (atmfAtmLayerGroup)
3. ATM Statistics Group (atmfAtmStatsGroup)

The following groups are not supported:

1. Virtual Path Group (atmfVpcGroup)
2. Virtual Channel Group (atmfVccGroup)

These groups are not supported for the following reasons:

The VPC and VCC groups are not supported because they are for PVCs only.  
The 8260 ATM LAN Bridge does not manage VPs directly; this is a second reason why the VPC Group is not supported.

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## Exceptions to ILMI MIB [ATM Forum UNI 3.1]

Certain Adjacency Information objects are supported. The atmfMyIpNmAddress object is supported but the atmfMyOsiNmNsapAddress is not supported. The UNI 3.1 specification indicates that most systems will support one or the other, but not both.

## LAN emulation Client MIB

When objects in the lecConfigTable are written via SNMP, they change the run-time and configuration values of those variables. Thus if you write one of these variables and reset the box, that value will still be used. This is the only MIB (besides the bridges private configuration MIB) which alters the bridge's configuration. All other writable SNMP MIB variables are run-time only (for example, writes will be lost on reset).

## Exceptions to LAN emulation Client MIB

The LEC ATM Addresses Group (lecATMAddressesTable) is not currently supported.

## MIB Table Indexing

Because various standard MIBs are supported, the indexing scheme for MIB tables varies. This section contains explanations and examples to help you understand the relationship between the MIB table data and the physical configuration of the 8260 ATM LAN Bridge.

The MIB tables in the 8260 ATM LAN Bridge are indexed either by the value of the **ifIndex** object from the MIB-II ifTable or by the value of the **dot1dBasePort** object from RFC 1493 dot1dBasePortTable.

Management information in the tables of RFC 1493 and 1525 is indexed according to **logical bridge port**. The 8260 ATM LAN Bridge has five logical bridge ports. For the Ethernet and token ring ports, there is a consistent one-to-one correspondence between the physical port and the logical bridge port. With ATM LAN emulation, there is a correspondence between the ATM Emulated LAN layer and the logical bridge port. The correlation between the ifTable entries and the logical bridge ports is provided by the **dot1dBasePortIfIndex** object from the dot1dBasePortTable.

The following table provides the information necessary to make the correlation between the labeling of the actual interface and the indexes of the ifTable and dot1dBasePortTable.

Actual Interface	ifTable Index (ifIndex)	dot1dBasePortTable Index (dot1dBasePort)
ATM Port	1	
Port 1	2	1
Port 2	3	2
Port 3	4	3
Port 4	5	4
<sup>1</sup> AAL5	6	
<sup>1</sup> ATM Emulated LAN Layer	7	5

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A physical port can be unavailable. For example, one of the &amod.s might not be installed, or a port might have failed diagnostics. If the port is not available, then it will not appear in either the ifTable or the dot1dBasePortTable.

There are multiple interface entries associated with the physical ATM port. The relationship between these interfaces is described by the ifStackTable of RFC 1573.

The tables in RFC 1213, RFC 1695, RFC 1231, RFC 1573, RFC 1643, the IBM Extension to RFC 1231, and the ILMI MIBs are indexed by **ifIndex**. Certain tables in the private MIB that relate to physical things are also indexed by **ifIndex**.

The tables in the ATM Forum LAN emulation Client Management Specifications, version 1.0, are indexed by leclIndex. The relationship between the leclIndex and the ifIndex is described in the lecMappingTable.

The tables in the Bridge MIBs (RFC 1493 and 1525) and certain tables in the private MIB that relate to logical bridge ports are indexed by **dot1dBasePort**.

The description of each tabular object in the private MIB informs you whether the object is indexed by **ifIndex** or by **dot1dBasePort**.

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## 7.6 Appendix A. Planning and Record Worksheets

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<sup>1</sup> These entries are not physical port. They are conceptual interfaces that ride above the ATM port.

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## ATM Virtual Token-Ring Port Parameters Worksheet

Worksheet No.: \_\_\_\_\_

8260 ATM LAN Bridge Description: \_\_\_\_\_

Table 2 (Page 1 of 5). ATM Virtual Token-Ring Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port	Page ___ of ___
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### ATM Virtual Token-Ring Port Configuration

Parameter Description	Default Value	Allowed Range	Your Data
Port name	None	0 to 32 alpha-numeric characters	
MAC address format	Non-canonical	Non-canonical or canonical	
MAC address to use for LAN emulation	Universal	Universal or Local	
<p><b>Note:</b> If you choose Local, you must fill in the MAC address. Type the non-canonical MAC address in the configurator with colons between the bytes, for example, X' 4 : : 5A:9F:24:85 '. Use hyphens between the bytes if you choose canonical format, for example, X' 2- -5A-F9-24-A1 '.</p>			
Spanning tree initial port state	Enabled	Enabled or Disabled	
Ring number	5	X' 1-FFF ' ; must be set	
Maximum frame size	4399	516-17749	

### Virtual Token-Ring Port Spanning Tree Parameters

Parameter Description	Default Value	Allowed Range	Your Data
Spanning tree mode	Automatic	Automatic, Disabled, or Forced	
Path cost	10	1-65536	

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Table 2 (Page 2 of 5). ATM Virtual Token-Ring Port Configuration Parameters Worksheet

**Bridge Desc.** \_\_\_\_\_ **ATM Port** \_\_\_\_\_ **Page** \_\_\_ **of** \_\_\_

**Virtual Token-Ring Port—Source Route Filter**

Parameter Description	Default Value	Allowed Range	Your Data
<b>Hop Count Filter</b>			
Status	Off	Off or On	
Order	N/A	N/A, 1, 2, 3, 4, or 5	
Hop limit	7	1–13	

**MAC Address Filter**

Status	Off	On or Off	
Order	N/A	N/A, 1, 2, 3, 4, or 5	
Mode	Deny	Deny or Permit	
Frame type	Both ARB and SRB	ARB (all-routes broadcast) or SRB (source-route broadcast) or both	

**Ring Number Filter**

Status	Off	Off or On	
Order	N/A	N/A, 1, 2, 3, 4, or 5	
Mode	Deny	Deny or Permit	

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Table 2 (Page 3 of 5). ATM Virtual Token-Ring Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port	Page ___ of ___
Frame type	Both ARB and SRB	ARB (all-routes broadcast) or SRB (single-route broadcast) or both
<b>SNAP Filter</b>		
Status	Off	Off or On
Order	N/A	N/A, 1, 2, 3, 4, or 5
Mode	Deny	Deny or Permit
Frame type	ARB	ARB (all-routes broadcast) or SRB (source-route broadcast) or both
<b>Source SAP filter</b>		
Status	Off	Off or On
Order	N/A	N/A, 1, 2, 3, 4, or 5
Mode	Deny	Deny or Permit
Frame type	ARB	ARB (all-routes broadcast) or SRB (source-route broadcast) or both

**ATM Port LAN emulation**

Parameter Description	Default Value	Allowed Range	Your Data
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Table 2 (Page 4 of 5). ATM Virtual Token-Ring Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port		Page ___ of ___
Complete server address	None		Display area
Use same network prefix as bridge or specify another?	Bridge	Bridge or Specify	
Specified network prefix	None		
Terminal portion	None		

### **ATM Port LAN emulation Settings**

Parameter Description	Default Value	Allowed Range	Your Data
Control Timeout	120 seconds	10–300 seconds	
VCC Timeout	1200 seconds	1–65 535 seconds	
Flush Timeout	4 seconds	1–4 seconds	
Path Switch Delay	6 seconds	1–8 seconds	
Connection Completion Timer	4 seconds	1–10 seconds	
Maximum LE-ARP Response Time	1 second	1–30 seconds	
Maximum LE-ARP Retry Count	1	0–2	
Maximum Unknown Frame Count	10	1–10	
Emulated LAN Name	None		
Aging Time	300 seconds	10–1 000 000 seconds	
Forward Delay Time	15 seconds	4–30 seconds	
Data Directs Up After Control Failure	0 seconds	0–3600	

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Table 2 (Page 5 of 5). ATM Virtual Token-Ring Port Configuration Parameters Worksheet

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Bridge Desc. _____	ATM Port	Page ___ of ___
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**Bridge-Wide ATM Physical Port Configuration Parameters**

See the Bridge-Wide ATM Physical Port Configuration Parameters part of the Bridge-Wide Token-Ring Configuration Parameters Worksheet. The same parameters are used for the port as are used bridge-wide.

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## Bridge-Wide Ethernet Configuration Parameters Worksheet

Worksheet No.: \_\_\_\_\_

Table 3. Bridge-Wide Ethernet Configuration Parameters Worksheet

Bridge Desc. \_\_\_\_\_ Page \_\_\_ of \_\_\_

### Bridge-wide Transparent Bridging Configuration

Parameter Description	Default Value	Allowed Range	Your Data
Aging time	300 seconds	10–1 000 000 seconds	
Database Full Action	discard	discard/replace	
Default inbound filter order	Ethernet type 1 MAC address 2 Source SAP 3	1–3	Ethernet type ____ MAC address ____ Source SAP ____

## ATM Virtual Ethernet Port Configuration Parameters Worksheet

Worksheet No.: \_\_\_\_\_

Table 4 (Page 1 of 7). ATM LAN emulation Ethernet Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port	Page__ of __
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### Emulated Ethernet Port Configuration

Parameter Description	Default Value	Allowed Range	Your Data
Port name	None	0 to 32 alpha-numeric characters	
MAC address to use for LAN emulation	Universal	Universal or Local	
<b>Note:</b> If you choose Local, you must type in the MAC address. Type the canonical MAC address in the configurator with colons between the bytes, for example, X' 2: :5A:F9:24:A1 '.			
Spanning tree initial port state	Enabled	Enabled or Disabled	
Maximum frame size	1500	516–1500	

### Virtual Ethernet Port Spanning Tree Parameters

Parameter Description	Default Value	Allowed Range	Your Data
Priority	128	0–255	
Path cost	10	1–65 536	

### Virtual Ethernet Transparent Bridging Filter Configuration

Parameter Description	Default Value	Allowed Range	Your Data
<b>Ethernet Type Filter</b>			
Status	Off	On or Off	
Order	N/A	N/A, 1, 2 or 3	

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Table 4 (Page 3 of 7). ATM LAN emulation Ethernet Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port	Page__ of __

**Virtual Ethernet Transparent Bridging Filter Configuration**

Parameter Description	Default Value	Allowed Range	Your Data
<b>MAC Address Filter</b>			
Status	Off	On or Off	
Order	N/A	N/A, 1, 2, or 3	
Mode	Deny	Deny or Permit	

**MAC Address Filter List**

MAC addresses can be entered in canonical or non-canonical format, depending on the settings of the **Canonical** and **Non-Canonical** buttons in the MAC Filter Format dialog box. Up to 32 MAC Addresses can be specified (6-byte hexadecimal values). Type each MAC address in the configurator with colons between the bytes, for example, X' 2: :5A:F9:24:A1'.

Destination Address/Mask	Source Address/Mask

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Table 4 (Page 4 of 7). ATM LAN emulation Ethernet Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port	Page __ of __

**Virtual Ethernet Transparent Bridging Filter Configuration**

Parameter Description	Default Value	Allowed Range	Your Data
<b>Source SAP Filter</b>			
Status	Off	Off or On	
Order	N/A	N/A, 1, 2, or 3	
Mode	Deny	Deny or Permit	

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Table 4 (Page 6 of 7). ATM LAN emulation Ethernet Port Configuration Parameters Worksheet

Bridge Desc. _____	ATM Port	Page__ of __

**ATM Port LAN emulation**

Parameter Description	Default Value	Allowed Range	Your Data
Complete server address	None		Display area
Use same network prefix as bridge or specify another?	Bridge	Bridge or Specify	
Specified network prefix	None	13-byte value	
Terminal portion	None	7-byte value	

**ATM Port LAN emulation Settings**

Parameter Description	Default Value	Allowed Range	Your Data
Control Timeout	120 seconds	10–300 seconds	
VCC Timeout	1200 seconds	1–65 535 seconds	

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Table 4 (Page 7 of 7). ATM LAN emulation Ethernet Port Configuration Parameters Worksheet

<b>Bridge Desc.</b> _____	<b>ATM Port</b>		<b>Page__ of __</b>
Flush Timeout	4 seconds	1–4 seconds	
Path Switch Delay	6 seconds	1–8 seconds	
Connection Completion Timer	4 seconds	1–10 seconds	
Maximum LE-ARP Response Time	1 second	1–30 seconds	
Maximum LE-ARP Retry Count	1	0–2	
Maximum Unknown Frame Count	10	1–10	
Emulated LAN Name	None		
Aging Time	300 seconds	10–1 000 000 seconds	
Forward Delay Time	15 seconds	4–30 seconds	
Data Directs Up After Control Failure	0 seconds	0–3600	

### **Bridge-Wide ATM Physical Port Configuration Parameters**

See the Bridge-Wide ATM Physical Port Configuration Parameters part of the Bridge-Wide Ethernet Configuration Parameters Worksheet. The same parameters are used for the port as are used bridge-wide.

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