

Details Status panel will appear for the other segment that is attached to the alternate adapter. Both panels will be similar to Figure 4-10 on page 4-25.

Information Pertaining to Both Panels

If no errors have been detected since the Bridge Program has been running, the fields will contain all zeros.

The bridge adapter address currently being used for each LAN segment is also displayed.

If you suspect that an error has occurred while these panels have been displayed, press the **F5 (Refresh)** key to update the panels with the most recent information.

For detailed help concerning specific fields or conditions for the IBM Token-Ring Network, refer to:

- The *IBM Token-Ring Network Problem Determination Guide*
- The *IBM Token-Ring Network Architecture Reference*.

For detailed help concerning specific fields or conditions for the IBM PC Network, refer to the *IBM PC Network Hardware Maintenance and Service* manual.

The Path Trace Panel

Type **3** and press the **Enter** key at the Main Menu to display the Path Trace panel. This panel displays information about path trace log entries.

The log entries are the result of up to the 15 most recent frames that have passed through the bridge and requested that system path trace information be compiled. If no system path trace frames have been received since the Bridge Program was loaded, the path trace log is empty. The **Routing information** field will be blank and all other fields will contain zeros.

When multiple entries are in the log, use the **PgDn** and **PgUp** keys to scroll through all of the path trace entries in the log. The upper-right section of the panel displays the number of panels required to display all of the entries. The most recent log entries are displayed. If you suspect that another entry has been logged while you are viewing this panel, press **F5 (Refresh)** to update the panel with the most recent log information.

To clear the path trace log, press **F9 (Reset)**.

The Path Trace Help panels explain the information displayed on the Path Trace panel.

The Performance Statistics Panel

Type **4** and press the **Enter** key at the Main Menu to display the Performance Statistics panel.

The information available on this panel is useful for evaluating the flow of bridge traffic over a 24-hour period.

This panel gives information about frames not forwarded from one bridge adapter to the other by the Bridge Program. It displays the number of times within a 5-minute period that the bridge performance threshold is exceeded. These statistics are displayed for each LAN segment for a 24-hour period. The performance statistics span two panels; use the **PgUp** and **PgDn** keys to change the display to the previous or next panel.

To obtain more information about bridge traffic, use:

- The Performance Counters panel (described on page 4-30)
- The Performance Analysis Worksheets (see Appendix D)
- Appendix C
- The *IBM Local Area Network Administrator's Guide*.

The Performance Counters Panel

Type **5** and press the **Enter** key at the Main Menu to display the Performance Counters panel. This panel provides a cumulative count of:

- Broadcast frames and bytes forwarded
- Non-broadcast frames and bytes forwarded
- Frames not forwarded because target LAN segment inoperative
- Frames not forwarded because of adapter congestion
- Frames not routed across this bridge
- Frames not forwarded for other reasons.

The display of information on this panel is not updated automatically as the activity and error counters change. To display the latest data, press **F5 (Refresh)**.

To set the counters to zero, press **F9 (Reset)**.

The Help panels explain the information displayed on the Performance Counters panel.

To obtain more information about bridge traffic, use:

- The Performance Counters panel (described on this page)
- The Performance Analysis Worksheets (see Appendix D)
- Appendix C
- The *IBM Local Area Network Administrator's Guide*.

Note: The "Frames not routed across this bridge" counter (H) is not sent to the IBM LAN Manager. If a bridge in your network has experienced adapter congestion (counter F is not zero), you should use the Worksheet Method at the bridge station to evaluate more exactly the traffic for that bridge. See Appendix C for an explanation of how to use the Worksheet Method. Although the calculations done without using counter H yield an acceptable approximation, the use of counter H refines the adapter congestion calculations for a more precise result.

The Communication Status Panel

Type **6** and press the **Enter** key at the Main Menu to display the Communication Status panels. Each panel describes the status of one of the four reporting links between the bridge and the IBM LAN Manager. Use the **PgUp** and **PgDn** keys to view the panel for each link.

The information displayed on these panels is not refreshed automatically as it changes. To display the latest data, press **F5 (Refresh)**.

If there are no links established to the IBM LAN Manager, the **Network manager type** will be **None**.

The first 2 characters (hexadecimal) of the **Network manager route** field are 2 bytes of routing control information. Each following 4 characters (2 bytes; 16 bits) consist of a LAN segment number (12 bits) and a bridge number (4 bits) for each bridge that was crossed to establish the link between this bridge and the IBM LAN Manager.

You enable the **Parameter server**, **Error monitor**, and the **Configuration report server** functional addresses by using the Configuration Program to set their parameters to **Y (Yes)** in the Bridge Program ECCPARMS.BIN configuration file. The **LAN reporting mechanism** and the **Bridge server** are always enabled for the Bridge Program.

The IBM LAN Manager that establishes the link with the bridge requests the reports from the servers and the **Error monitor**.

See the *IBM LAN Manager User's Guide* for more information about requesting reports, and the *IBM Local Area Network Administrator's Guide* for information about the use of the report information in problem determination for your network.

The Shutdown Verification Window

Type **S** and press the **Enter** key at the Main Menu to display the Shutdown Verification window. If there are one or more links to the IBM LAN Manager, a message is displayed. You should contact your network administrator to determine if the links need to be disconnected before continuing with shutdown of the Bridge Program.

If there are no links active, or after IBM LAN Manager links are disconnected and you continue with shutdown, the **Shutdown Panel** will be displayed.

If you want to return to the Main Menu without shutting down the Bridge Program, type **N (No)** and press the **Enter** key.

If you want to proceed with shutdown to end the operation of the Bridge Program, type **Y (Yes)** and press the **Enter** key.

The Shutdown Panel

This panel is displayed as a result of one of the following:

- You typed **Y (Yes)** on the Shutdown Verification window.
- An error condition was detected that made the Bridge Program unable to continue operation.

Note: If the shutdown is due to an error and your system is prepared for automatic loading, the computer will automatically reload DOS and the Bridge Program.

This panel is similar to the Initialization panel. The messages displayed indicate either an orderly shutdown or a shutdown caused by an error condition. The first message displayed on this panel indicates the reason for the shutdown. The Error Log (ECCLOG.DAT) file logs the error messages.

After the shutdown is complete, the bottom of the panel is erased and the DOS prompt is displayed.

Chapter 5. Bridge Program Problem Determination

Initialization

The Bridge Program looks for errors during the initialization procedure. Messages indicate any errors that are detected. Appendix A provides cause and action information for those messages to help locate and correct the cause of the detected error.

Operation

If the Bridge Program does not detect any error conditions during initialization and becomes operational, follow these suggestions to resolve communication problems involving the bridge:

1. For any messages displayed on the Bridge Program panels, refer to their cause and action descriptions in Appendix A.
2. If you want to determine if communication is possible through your bridge, use a network application program to see if data can be transmitted from a device on one LAN segment to a device on the other LAN segment.
3. If a device or devices on a LAN segment cannot communicate with a device or devices on the other LAN segment:
 - a. Verify that each adapter used in the bridge computer is actually connected to the correct LAN segment as planned.

Notes:

- 1) The IBM LAN Manager Version 1.0 will provide information about **only** the token-ring network connections to the bridge, not the PC network connections to the bridge.
 - If you have the IBM Token-Ring Network Manager or IBM LAN Manager Versions 1.0 or 2.0 installed on the same token-ring network segment as the bridge's adapter, you can refer to the program's ring configuration "map" to locate the bridge's adapter and the adapter of the device initiating the communication.

If both the bridge adapter and the communicating device are not in the network configuration list and are therefore not on the same LAN segment, you must correct that situation to proceed.

Next, verify that the bridge's other adapter is on the same LAN segment as the device to which the communication is directed, using the same method as above.

If there are multiple bridges in the path, you must verify that each two sequential bridges in the path are connected to the same LAN segment.

- If you do not have a facility such as the IBM Token-Ring Network Manager or IBM LAN Manager installed on your network, you must determine the network configurations in another way. Contact your network administrator or planner, and refer to the network planning and organization documentation for your network.
- 2) For PC network problems, talk to your professional network designer or installer.
- b. Verify the correct Bridge Program configuration settings.
- 1) The single-route broadcast parameter is set as required (according to the overall design of your network).
 - 2) The hop count limit parameter is set as required (according to the overall design of your network).
 - 3) All bridges attached to each LAN segment refer to that LAN segment by the same LAN segment number.

You can use the Bridge Test to determine if the Bridge Program can communicate from one LAN segment to the other by using both adapters. See "The Bridge Test" on page 4-20 for more about the test.

If a bridge providing single-route broadcast paths becomes inoperative, the single-route broadcast bridge parameter settings throughout the network must be reevaluated and reset as necessary to maintain the single-route broadcast paths. If you chose single-route broadcast manual mode in the bridge configurations in your network, you must manually reevaluate the paths and change bridge single-route broad-

cast parameters. Automatic single-route broadcast will make the necessary adjustments automatically.

For the IBM Token-Ring Network, see the *IBM Local Area Network Administrator's Guide*, the *IBM Token-Ring Network Introduction and Planning Guide*, and Appendix C for more help. For the IBM PC Network, see Appendix C or talk to your professional network designer or installer.

Special Consideration for Using the Bridge Program

Read this section only if you are using the Bridge Program to connect **a PC network segment and a Token-Ring network segment**. There is a special consideration you must be aware of to prevent problems from occurring when using the Bridge Program in the network.

PC Network Memory Location 3

Choose memory location 1 or 2 when using the Reference Diskette to set the configuration for one of the following:

- IBM PC Network Adapter II/A
- IBM PC Network Adapter II/A - Frequency 2
- IBM PC Network Adapter II/A - Frequency 3
- IBM PC Network Baseband Adapter/A.

Warning: DO NOT USE memory location 3 due to possible shared RAM address conflicts. See the "Host Interface" chapter in the respective adapter's technical reference manual for more information about memory locations.

Appendix A. Status and Messages

LAN Segment Status Conditions

Any one of seven conditions can be displayed in each of the LAN Segment Status areas.

If your computer has a color monitor, the LAN Segment Status conditions appear as follows:

- Normal condition is **white**
- Soft Error condition is **yellow**
- Beaconing, Adapter Closed, Wire Fault, Continuous-Carrier, and No-Carrier conditions are **red**.

If your computer has a monochrome monitor, all the LAN segment status conditions except **Normal** are highlighted.

Normal

Cause: The LAN segment is operating normally.

Action: No action is necessary.

Soft Error

Cause: Intermittent errors are occurring and being corrected on the token-ring network segment.

Action: No action is necessary, but if this persists, refer to the *IBM Token-Ring Network Problem Determination Guide* or contact the person responsible for your network problem determination.

Note: A soft-error message will be displayed for **only** the IBM Token-Ring Network.

Beaconing

Cause: The token-ring network segment is inoperative.

Action: If this condition persists longer than 1 minute, problem determination is necessary. Refer to the *IBM Token-Ring Network Problem Determination Guide* or contact the person responsible for your network problem determination.

Note: A beaconing message will be displayed for **only** the IBM Token-Ring Network.

Adapter Closed

Cause: The bridge adapter on the indicated LAN segment is no longer active on the network.

Action: If a message is displayed with this status, follow the recommended action for the message. This condition does not usually indicate a problem with the LAN segment; no action to correct LAN segment problems is needed.

Wire Fault

Cause: There is a problem with the lobe (cable) between the adapter and the access unit to which it is connected.

Action: Verify correct operation of the adapter and the adapter cable. For the IBM Token-Ring Network Adapter/A and IBM Token-Ring Network 16/4 Adapter/A, use the system tests on the Reference Diskette for the bridge computer. If the adapter or cable is not defective, contact the person responsible for your network problem determination.

Note: A wire fault message will be displayed for **only** the IBM Token-Ring Network.

No Carrier

Cause: There is a hardware problem with the PC network, such as:

- A broken cable
- The translator is not functioning
- The pair of frequencies that the adapter is using does not match the pair of frequencies that the translator is using
- The adapter is failing.

Action: Contact the network administrator and report the no-carrier status of the PC network segment.

To correct the no-carrier PC network status, the network administrator does one of the following:

- Isolates and replaces any failing components (translator, cable, or adapter)
- Verifies that all other nodes are functioning correctly
- Installs the correct adapter for the network.

The network administrator should refer to the *IBM PC Network Hardware Maintenance and Service* for additional information to correct this situation.

Note: A no-carrier message will be displayed for **only** the IBM PC Network.

Continuous Carrier

Cause: The network is not operating. A faulty adapter is causing a carrier to be continuously transmitted on the network, thus preventing any other nodes from transmitting their carriers.

Action: Contact the network administrator and report the continuous-carrier status of the PC network segment.

The network administrator determines which node is transmitting the continuous carrier by examining each node's error codes and takes the defective node off the network until the problem is fixed.

The network administrator should refer to the *IBM PC Network Hardware Maintenance and Service* manual for additional information to correct this situation.

Notes:

1. A continuous-carrier message will be displayed for **only** the IBM PC Network.
2. The message will appear on the screen as "Cont. Carrier."

The Messages

Message Content

The messages listed here can be displayed by:

- The Bridge Program on the Initialization panel, the Shutdown panel, or the message line (area) of the function panels
- The Configuration Program on the message line (area) of each panel.
- The Installation Program on the message line (area) of each panel.

The message consists of a message ID (identifier) and related text.

The messages listed here are in sequence by the numerical portion of the message ID (the 6th through 8th characters of the message ID). Explanations of the cause and the action to take are also included. The last character of the message ID indicates the classification of the message. The classifications are:

I	An information message, no action required
W	A warning message, action may be required
E	An error message, some action is required

If your computer has a color monitor, the messages appear as follows:

- Information messages are **cyan (turquoise)** when displayed on the panel or **white** when displayed on the message line
- Warning messages are **yellow**
- Error messages are **red**.

Additionally, instructions for operation, such as function key use, are displayed in **cyan (turquoise)**.

If your computer has a monochrome monitor, the messages appear as follows:

- Warning messages are **highlighted**
- Error messages are **highlighted**
- Information messages are not highlighted

- All messages are **highlighted** when displayed on the message line. You may need to adjust the contrast and intensity on your display so that both highlighted and non-highlighted messages are visible.

The remainder of this chapter contains Bridge Program messages in numerical order. The message number and text of the message are enclosed in boxes. Some reasons that cause the Bridge Program to display each message and the actions to be taken follow each message.

ECCBR001I Bridge initialization is in progress, please wait.

Cause: This message is displayed while the Bridge Program is performing its initialization process.

Action: None. Wait for subsequent messages. The initialization process can take up to 3 minutes.

ECCBR021E Network adapter interrupt levels are incorrect.

Cause: This message is displayed when the Bridge Program detects that a bridge adapter interrupt level is set to something other than 2 or 3, or when both bridge adapter interrupt levels are set to the same value. The "Bridge initialization failed" message follows this message.

Action: Verify the interrupt level settings. Check:

- The configuration information displayed using the Reference Diskette for the bridge computer for the IBM Token-Ring Network Adapter/A and the IBM Token-Ring Network 16/4 Adapter/A.

Make sure the primary adapter is set to interrupt level 2 and the alternate adapter is set to interrupt level 3. Correct the settings if necessary, start the computer again, and reload the Bridge Program.

- The configuration information displayed using the Reference Diskette for the IBM PC Network Adapter II/A, Adapter II/A - Fre-

quency 2, Adapter II/A - Frequency 3, and the IBM PC Network Baseband Adapter/A.

Make sure the primary adapter is set to interrupt level 2 and the alternate adapter is set to interrupt level 3. Correct the settings if necessary, start the computer again, and reload the Bridge Program.

Note: If you are using a token-ring network adapter and a PC network adapter in the bridge computer, the PC network adapter **must** be the primary adapter and set to interrupt level 2.

ECCBR023E Adapter interface is not loaded.
--

Cause: This message is displayed when the Bridge Program detects that adapter support code has not been loaded into bridge computer memory.

Action:

1. Verify that the CONFIG.SYS file is correct as described on page 3-6, page 3-9, or in Appendix B.
2. Verify that the ECCxxMOD.SYS files are on the Bridge Program working copy and that the correct working copy is in the default drive or default directory.

ECCBR024W ECCPARMS.BIN file was not found, default values were used.
--

Cause: This message is displayed when the Bridge Program detects that there is no configuration file on the working diskette or fixed disk directory from which the Bridge Program is being loaded. The Bridge Program will continue to initialize using default values identical to those provided in the original ECCPARMS.BIN file.

Action: If you want to use the default values for the bridge configuration parameters, no action is required.

If you have changed the default values by altering the configuration file (ECCPARMS.BIN), make sure that the altered file is on the working diskette or fixed disk in the default drive. Then reload the Bridge Program.

ECCBR025I Using parameters in ECCPARMS.BIN file.

Cause: This message is displayed when the Bridge Program detects that there is a configuration file on the working diskette or fixed disk directory with the Bridge Program files.

Action: None.

ECCBR026I Bridge Program level is X.X.

Cause: This message is displayed when the Bridge Program starts the initializing and opening of the adapters.

This message is also displayed when the Bridge Program stops running.

Action: None normally. If this message is displayed as a result of an abnormal termination of the Bridge Program, refer to the error message that describes the termination. Also, record the program level for presentation to your service supplier.

**ECCBR028I Network adapter X is open, address is
YYYYYYYYYYYY.**

Cause: This message is displayed after the Bridge Program has opened each adapter during initialization. It is displayed once for each adapter and contains the following additional data:

- X = Adapter number (0 = primary or 1 = alternate)
- Y = Adapter address (6 bytes, 12 hex characters).

Action: None.

ECCBR029I Bridge X initialization is complete.

Cause: This message is displayed when the initialization process is completed without errors. In the message, X is the bridge number as defined in the configuration file or as the default value.

Action: None.

ECCBR030E Invalid ECCPARMS.BIN file.

Cause: This message is displayed when the Bridge Program detects that a cyclic redundancy check (CRC) of the configuration file has failed. This can be caused when:

- The file has been altered in some way other than by using the Configuration Program or the IBM LAN Manager Version 2.0 (for example, editing the file with a text editor).
- An ECCPARMS.BIN file from a previous Bridge Program version has been used.

The "Bridge initialization failed" message follows this message.

Action: Use the Configuration Program to verify and correct the parameter values in the configuration file. When you have made all of the necessary corrections, press **F6 (Save)**; a new ECCPARMS.BIN file will be created. Reload the Bridge Program with the new ECCPARMS.BIN file on the working diskette or fixed disk in the default drive.

ECCBR031W Invalid ECCPARMS.BIN; default values were used.

Cause: This message is displayed when the Configuration Program detects that a CRC of the existing configuration file has failed. This can be caused when:

- The file has been altered in some way other than by using the Configuration Program or the IBM LAN Manager Version 2.0 (for example, editing the file with a text editor).

- An ECCPARMS.BIN file from a previous Bridge Program version has been used.

The Configuration Program will display the parameter defaults on the panel; it will not try to display the values in the existing file.

Action: Change values for any parameters not using the defaults as required for the network. Press **F6 (Save)** to write the changed configuration in a new ECCPARMS.BIN file on the diskette or fixed disk in the default drive. The old invalid configuration file will be erased.

**ECCBR033W LAN segment number conflict on LAN segment
XXX; actual value is YYY.**

Cause: This message is displayed when the Bridge Program detects that the configured LAN segment number does not match the LAN segment number sent by another bridge on the same LAN segment. It contains the following additional data:

- XXX = LAN segment number obtained from the configuration file
- YYY = LAN segment number obtained from another bridge on this LAN segment.

The Bridge Program will cease to function as a bridge or as a parameter server.

Action:

1. Determine the correct LAN segment number.
2. Use the Configuration Data panel to verify the LAN segment number value in the configuration file (ECCPARMS.BIN) for each bridge on the LAN segment.
3. Use the Configuration Program or IBM LAN Manager Version 2.0 to correct any discrepancies.
4. Reload the Bridge Program for the bridges that required corrections; use the corrected configuration files.

ECCBR035W Unable to start parameter server on LAN segment XXX.
--

Cause: This message is displayed when the Bridge Program is unable to start the parameter server due to a LAN segment parameter conflict or a network problem during the parameter server initialization process.

This message also can be displayed when the Bridge Program is initializing during peak traffic periods, such as when large files are crossing the bridge or many users are sending data over the same bridge at the same time.

In the message, XXX is the LAN segment number.

Action:

1. Shut down the Bridge Program and then reload it.

If the message does not reappear, the Bridge Program is operating correctly and no further action is required.

If you receive this message again, continue with step 2.

2. Use the Configuration Data panel to verify that the configuration parameters are correct (particularly the LAN segment numbers and bridge number) for all bridges on the LAN segment.
3. Use the Configuration Program to make any necessary corrections.
4. Reload the Bridge Program for the bridges requiring corrections using the corrected configuration files.

If the message appears and the parameters are correct, use the Ring Diagnostic to verify that each token-ring network segment is operating correctly. See the *IBM Token-Ring Network Problem Determination Guide* for instructions on using the Ring Diagnostic. If this does not correct the problem, contact your service supplier.

ECCBR036W Unable to start automatic single-route broadcast.

Cause: This message is displayed when the Bridge Program is unable to start automatic single-route broadcast processing due to a network problem during the parameter server initialization process.

This message also can be displayed when the Bridge Program is initializing during peak traffic periods, such as when large files are crossing the bridge or many users are sending data over the same bridge at the same time.

Action:

1. Shut down the Bridge Program and then reload it.

If the message does not reappear, the Bridge Program is operating correctly and no further action is required.

If you receive this message again, continue with step 2.

2. Use the Configuration Data panel to verify that the configuration parameters are correct (particularly the LAN segment numbers and bridge number) for all bridges on the LAN segment.
3. Use the Configuration Program to make any necessary corrections.
4. Reload the Bridge Program for the bridges requiring corrections using the corrected configuration files.

If the message appears and the parameters are correct, use the Ring Diagnostic to verify that each token-ring network segment is operating correctly. See the *IBM Token-Ring Network Problem Determination Guide* for instructions on using the Ring Diagnostic. If this does not correct the problem, contact your service supplier.

ECCBR037E Frame forwarding is not active.

Cause: This message appears when the frame forwarding function is not active due to a parameter conflict, failure of the bridge test, or the frame forwarding configuration parameter being set to **N (No)**.

Action: If frame forwarding is inactive due to a parameter conflict, correct the bridge configuration parameters. Reload the Bridge

Program for the bridges that required corrections; use the corrected configuration files. Check specifically the LAN segment and bridge numbers for all bridges on the LAN segment.

If frame forwarding is inactive as a result of the failure of the Bridge Test, take the action indicated by the message regarding the failure of the Bridge Test.

If the configuration parameter was intentionally set to **N (No)**, no action is necessary. Use the IBM LAN Manager Version 2.0 that is linked to the bridge as the controlling LAN Manager to start frame forwarding when desired.

Note: The IBM LAN Manager Version 1.0 does not contain a function to start bridge frame forwarding. Frame forwarding must always be set to **Y (Yes)** in the Bridge Program configuration file if there are links with the IBM LAN Manager Version 1.0. The IBM LAN Manager Version 2.0 does contain the function to start frame forwarding. See page 2-16 for more information about setting this parameter.

ECCBR038E

Both adapters are using the same locally administered address.

Cause: This message is displayed during the initialization process when the Bridge Program discovers that both adapters in the bridge computer are using the same locally administered address.

Action: Edit the CONFIG.SYS file and make sure that each statement contains a different locally administered address for each adapter.

Make sure the CONFIG.SYS file has been modified according to the manual instructions in Appendix B.

ECCBR040I

Bridge initialization has failed.

Cause: This message is displayed when the Bridge Program detects that the initialization has failed. After this message is displayed the program stops running and control is returned to DOS.

Action: Refer to the explanation of the previously displayed error message on this panel that describes the reason for the termination.