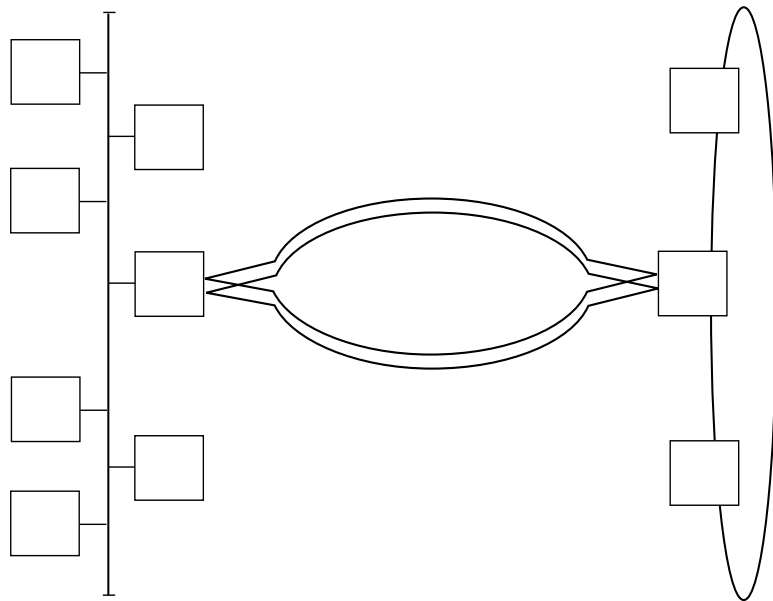


QUICK REFERENCE GUIDE FOR NETWORK TROUBLESHOOTING



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CHAPTER 1

INTRODUCTION

This guide is intended for use by network managers and technicians as an aid in identifying possible causes to various types of network problems. Details on how to perform tests, use network management applications, and LANVIEW LEDs are not covered except in a few isolated cases where the information appears in examples or in the form of a note called, **TIP**.

LANVIEW LEDs used on Cabletron Systems modules or standalone devices may vary. For details on what the LANVIEW LEDs indicate, refer to the manual associated with the particular module or standalone device. Also, refer to these manuals for information concerning problems that may occur during installation and how to use Local Management when applicable. Not all devices have Local Management.

The information in this guide is based on the most common problems that Cabletron Systems has encountered servicing network systems. By easily identifying the possible causes and quickly isolating it to one cause, immediate corrective action can be taken to help minimize network downtime.

Due to the vast number of potential problems that can occur in a network environment, only the most common problems in each of seven categories are covered.

NOTE: In this guide a problem is defined as a failure occurring in the network after the network has been properly installed and operating. Configuration and application problems are not covered in this guide.

1.1 How to Use This Guide

If you know what the problem is, refer to the table of contents ahead of this chapter for a complete list of the problems covered in this guide, then to the chapter associated with the suspect problem for a possible quick solution. Otherwise, refer to **Chapter 2** for guidelines about the following:

- How to determine if a reported problem is actually a network problem.
- How to isolate the problem down to a specific category of problems involving various network technologies.

Once the problem has been isolated to a specific category, refer to the appropriate chapter (**3** through **9**) for a list of the most common problems in that category. Each one of these chapters contains a category of problems along with a guide to help isolate and correct each of the problems. The categories covered in this guide include the following:

- Booting/Image Code Loading Problems (**Chapter 3**)
- Desktop Network Interface (DNI) Problems (**Chapter 4**)
- Routing Problems (**Chapter 5**)
- FDDI Problems (**Chapter 6**)
- Ethernet Problems (**Chapter 7**)
- Terminal Server Problems (**Chapter 8**)
- Token Ring Problems (**Chapter 9**)

Check to see if any of the problems listed match the problem that you have identified.

Example

For some reason the network is acting up or went down completely. What do you do?

1. Refer to **Section 2.1, Problem Identification and Notification**, for guidelines to gather relevant information about the network to determine how, or if part or all of the network is affected.
2. Refer to **Section 2.2, Problem Verification and Information Gathering**, for guidelines about how to verify that a problem actually exists and gather relevant information about the problem.
3. Refer to **Section 2.3, Develop Theories**, for guidelines to develop theories about what the problem could be and how to isolate it to a particular category.
4. Refer to one of the chapters (3 through 9) according to the category of the suspect problem as determined in step 3. For example, if it is suspected that the problem is with booting the system, refer to **Chapter 3** for a list of common problems related to booting. If you find your problem listed, follow the associated troubleshooting procedure to solve the problem. When applicable, sections in **Appendix A** are referred to for additional information.

The troubleshooting information in Chapters 3 through 9 is in a form made up of paths consisting of statements followed by **Y** (yes) and **N** (no). If the statement is true, follow the **Y** path. If the statement is false, follow the **N** path. Do this until the path leads to a conclusion. If a solution is not found, refer to **Appendix B** for instructions about contacting Cabletron Systems for help.

1.2 Structure of This Guide

This guide is organized as follows:

Chapter 1, **Introduction** – Describes the purpose of this guide, how it is organized, and how to use it.

Chapter 2, **Troubleshooting Guidelines** – Provides guidelines about what to do when a problem occurs in the network and how to isolate it down to a particular category of problems described in one of the Chapters 3 through 9.

Chapter 3, **Booting/Image Code Loading Problems** – Provides guidelines for booting or loading an image code from a PC or workstation to a device such as a management module.

troubleshooting procedures concerning booting problems.

Chapter 4, **Desktop Network Interface (DNI) Problems** – Provides troubleshooting procedures concerning DNI problems.

Chapter 5, **Routing Problems** – Provides troubleshooting procedures concerning bridge routing problems.

Chapter 6, **FDDI Problems** – Provides troubleshooting procedures concerning FDDI problems.

Chapter 7, **Ethernet Problems** – Provides troubleshooting procedures concerning Ethernet Problems.

Chapter 8, **Terminal Server Problems** – Provides troubleshooting procedures concerning Terminal Server problems.

Chapter 9, **Token Ring Problems** – Provides troubleshooting procedures concerning Token Ring.

Appendix A, **Router Password Recovery Procedures** – Provides password recovery procedures for various models of Cisco routers.

Appendix B, **Getting Additional Help** – Provides information on how to obtain additional help from Cabletron Systems.

1.3 Document Conventions

The following conventions are used throughout this document:

- **NOTE** - Calls the reader's attention to any item of information that may be of special importance.
- **TIP** - Conveys helpful hints concerning procedures or actions.
- Code examples, commands, and displayed messages are shown in `courier` type face.
- Combination key strokes are shown hyphenated such as CTRL-L, which indicates that you press both the CTRL key and the L key.
- Press Return means press either the Enter or Return key.

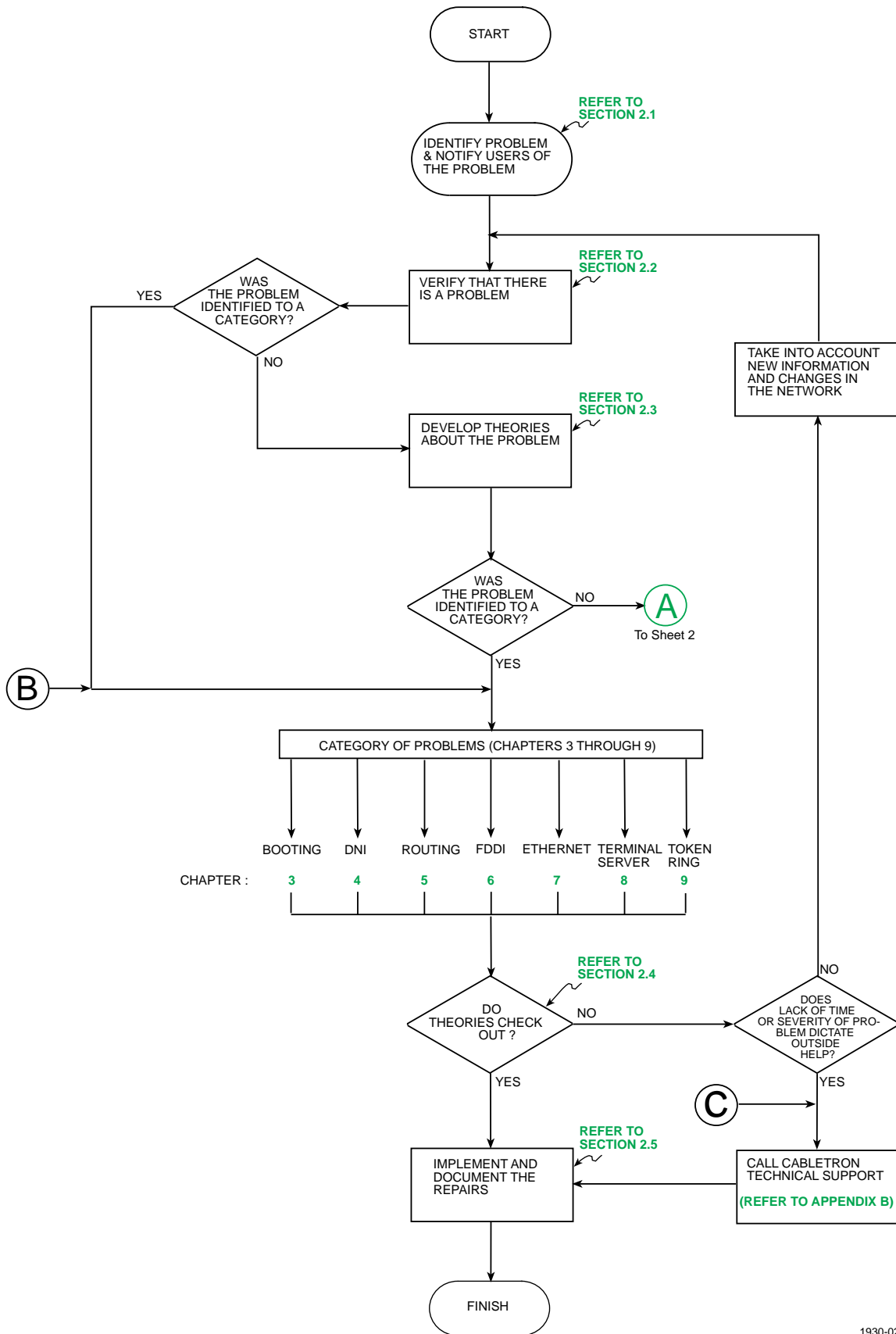
CHAPTER 2

TROUBLESHOOTING GUIDELINES

This chapter provides guidelines on what to do when someone suspects that there is a problem with the network. The guidelines in this chapter are from a system manager's viewpoint and cover the following items:

- Problem identification and notification
- Problem verification and information gathering
- Theory development
- Theory testing

Figure 2-1 and **Figure 2-2** provide flowcharts of the troubleshooting process to isolate a network problem down to one of the categories covered in Chapters 3 through 9. Details are contained in the sections referred to in the flowcharts.



1930-02

Figure 2-1. Troubleshooting Flowchart (Sheet 1 of 2)

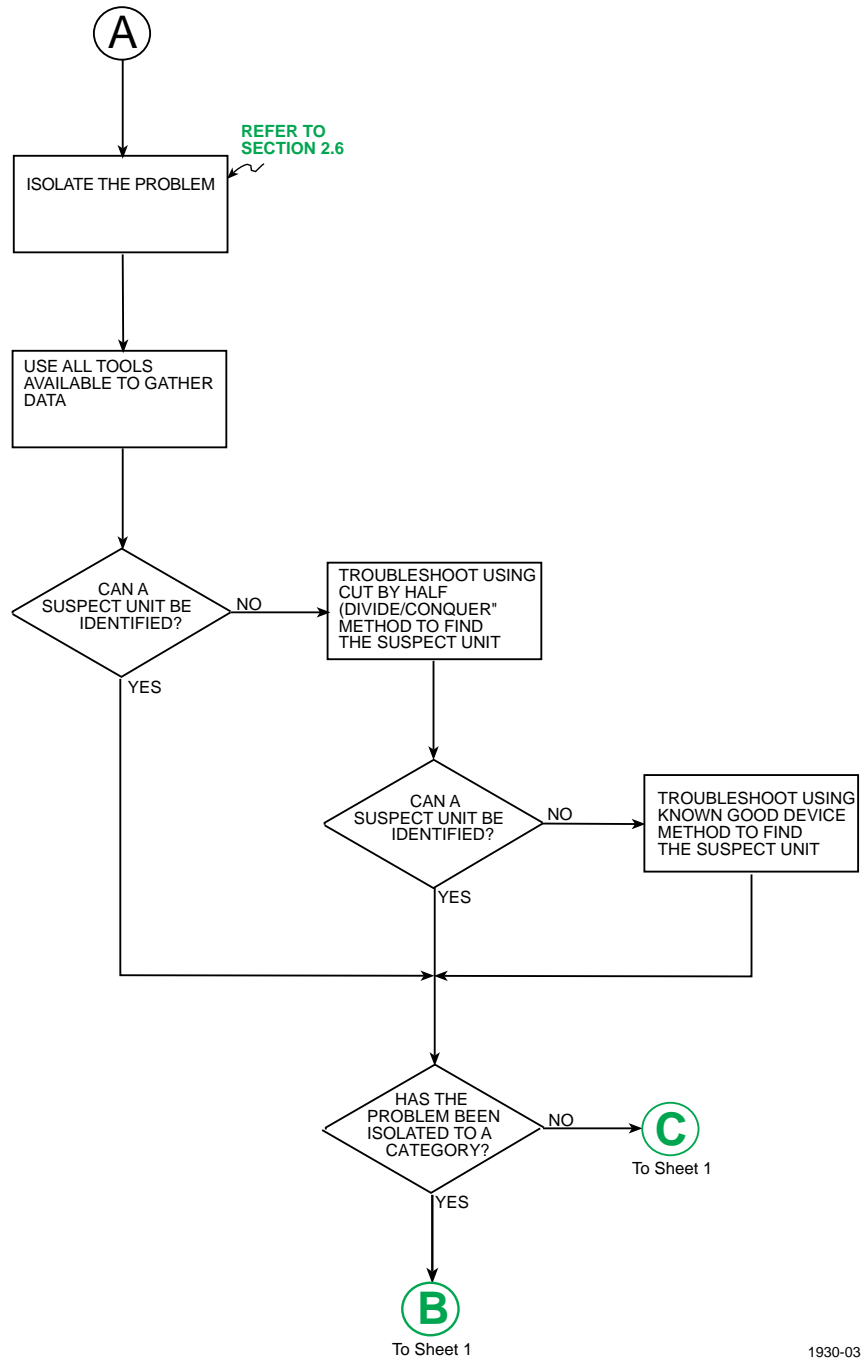


Figure 2-2. Troubleshooting Flowchart (Sheet 2 of 2)

2.1 Problem Identification and Notification

How did someone notice that there is a problem, and how far-reaching is it? Gather all the information relevant to the perceived problem. Check on the following:

- Is it the whole network, a server, or just one user that is down?
- Can the users get to the services that they are supposed to?
- Is there a slow transfer of information?
- Does the problem involve a new installation or one that has been operating for some time?
- Was the equipment designed to do the particular task in process when the problem occurred?
- Does the problem occur during a certain time of day?

NOTE: The network manager(s) must be notified that there is a problem. This can be done by telephone, pager, or other means. Notification can be done automatically by pager if the system has a system management application installed such as the Cabletron Systems SPECTRUM or the SPECTRUM Element Manager (SPEL). Refer to the appropriate application documentation for an explanation of this feature.

2.2 Problem Verification and Information Gathering

As the network manager or technician called to the site, proceed as follows to evaluate the situation and determine the scope of the problem.

1. If you have a network management software application (such as SPECTRUM, SPECTRUM Element Manager for Windows or Lanalyzer), use it to check for any indications of a problem and the extent of impact on the network. Get a trace of the network traffic if possible and port statistics.

Was the problem narrowed down to one of the categories in Chapters 3 through 9?

If YES, refer to the appropriate chapter for instructions on how to remedy the most common problems in that category. If NO, go to step 2.

2. See if the network has one main hub or other area where you can perform a visual inspection of the equipment and check the power indications, LEDs, and switch settings. Refer to the associated manuals for details about the LEDs and switch settings.

Was the problem narrowed down to one of the categories in Chapters 3 through 9?

If YES, refer to the appropriate chapter for instructions on how to remedy the most common problems in that category. If NO, go to step 3.

3. Check the server(s) to see what is happening and if the server(s) is operating properly.

Was the problem narrowed down to one of the categories in Chapters 3 through 9?

If YES, refer to the appropriate chapter for instructions on how to remedy the most common problems in that category. If NO, go to step 4.

-
4. Check to see if the network has been changed recently in any way by adding, removing, upgrading or reconfiguring any of its elements?

Was the problem narrowed down to one of the categories in Chapters 3 through 9?

If YES, refer to the appropriate chapter for instructions on how to remedy the most common problems in that category. If NO, go to step 5.

5. Look at the release notes to see if there are any incompatibilities or known issues. Check the revisions to get a clue of what could be happening between devices. Was the problem narrowed down to one of the categories in Chapters 3 through 9?

If YES, refer to the appropriate chapter for instructions on how to remedy the most common problems in that category. If NO, go to **Section 2.3**.

2.3 Develop Theories

Use the following guidelines to help determine the location and identity of the problem.

1. Develop plans to test the problem areas of the network by systematically eliminating those areas that are trouble free from those that are not. Use one or more of the following troubleshooting methods:
 - a. Isolate the problem to one part of the network. Refer to **Section 2.6** for details.
 - b. Go to the specific modules. Refer to the associated manuals for operating and troubleshooting information.
2. Remember the basics.
 - a. Check the power and cable connections. Be aware of building electrical problems, for noise, grounds, spikes, brownouts, and outages.
 - b. Also, check any uninterruptible power supplies (UPS) connected to the devices. The UPS can fail too. Is there any construction going on? Things could be happening to fragile data links.
 - c. Make sure the network is within specifications.
3. Narrow down the problems by considering only the information relevant to the problem, but don't completely discount the possibility of a remote problem affecting the network.

2.4 Test the Theories

To test the theories and make sure the problem has been corrected, proceed as follows:

1. Identify the course of action, specific steps, and then perform each step.
2. Try things one at a time, do not change all variables at once.
3. Record your progress by documenting what has actually been tried, the parts swapped, etc.
4. Observe the network and/or check with the users. Did your corrective action fix the problem? If not, did it change any of the symptoms, and if so, how?

5. If the problem has not been remedied, proceed as follows:
 - a. Repeat steps in Sections 2.2, 2.3, and 2.4 until a solution is found within a reasonable period of time. The possibilities should narrow down until either a solution is found or the problem is found to be unsolvable by the persons applying this method.
 - b. Depending on the severity or urgency of the problem, call in other experts such as Cabletron Systems Technical Support.

2.5 Implement and Document Fixes

Document everything! Whether or not your effort fixed the problem, document your efforts to help prevent repeating your steps or for future reference in case you run into the problem again. The documentation is especially helpful for troubleshooting intermittent problems.

2.6 Isolate the Problem

The following steps provide a guide to help isolate the problem to a particular part of the network:

1. To help determine if there is a problem, when it started, and if it's a critical network situation, consider the following.
 - a. Is the problem on all of the network?
 - b. Is it critical that the network remain up and running without interruption?
If so, refer to the Service Contract for spares coverage and other service support information.
 - c. What is the network bounded by?
 - Is it local?
 - Is it bridged?
 - What distance does it cover?
 - Is the network a WAN?
 - d. Is the problem confined to one portion of the network?
 - You can remove components such as MIMs to see if the problem goes away.
 - e. Does that portion have any well-defined boundaries, such as bridges, routers, ATM switches or types of workgroups?
 - f. Is the problem confined to one hub or workgroup, software application, or protocol?
 - g. Have there been any additions, changes, or upgrades made to the network within the last month or so? If so, what, and what kind of consequences could they have on the network, and how could they affect the current situation?

-
2. What tools do you have for troubleshooting? Have you used the tools in this situation, and what were the results? For example:
 - a. Using a Lanalyzer or sniffer (refer to its manual for operating instructions)
 - 1.) Did you get a trace of the failure?
 - 2.) Do you have a trace of normal network activity?
 - 3.) What is the traffic rate, normal and at the time(s) of the failure(s)?
 - b. Using SPECTRUM Element Manager for Windows or SPECTRUM management applications (refer to the respective manuals for operating instructions), check for the following:
 - 1.) What information does the management application provide about the problem? Does it show you what is happening?
 - 2.) Can you see if the whole network is down? Or, how widespread is the problem?
 - c. Using some other management software or packet analyzer
 - d. Using a cable tester
 - e. Using a LAN-MD or LAN-Specialist (refer to the respective manual for operating instructions)
 - f. Using a layout of the network (Faxable format is probably the most frequently needed.)
 3. Where do you start? The following provides suggestions on what to do:
 - a. Check to see if there has been any similar problems in the last 30-60 days? Go straight to the trouble spots and do not waste any time. Check the following items:
 - 1.) Swap out (shotgun) any suspected defective devices with known good working spare devices. (This shotgun method can be quick and effective.)
 - 2.) Refer to system records and service contract information about replacements and on-site spares. Good records on what happened before and how it was solved can save hours of troubleshooting.
 - b. If a known trouble spot is not the problem, do the cut by half algorithm as follows:
 - 1.) Separate the network or problem area into two halves in order to get part of it working. Use bridges or routers of the appropriate technology as needed.
 - 2.) Keep isolating the problem down as far as you can until you get to the troubled spot(s). For example: There are two hubs connected together. Isolate one from the other so that both can operate independently. See if one or both can come up and operate properly. Chances are one should come up. If not, refer to the respective manuals for operating and troubleshooting information.

4. Now that you have troubleshooted down to the piece of equipment or problem area, refer to the appropriate category in Chapters 3 through 9 for the more common solutions associated with the following:
 - Booting/Image Loading Problems (**Chapter 3**)
 - DNI Problems (**Chapter 4**)
 - Routing Problems (**Chapter 5**)
 - FDDI Problems (**Chapter 6**)
 - Ethernet Problems (**Chapter 7**)
 - Terminal Server Problems (**Chapter 8**)
 - Token Ring Problems (**Chapter 9**)

Record your efforts to help prevent repeating your troubleshooting steps or for future reference in case you run into the problem again.

CHAPTER 3

BOOTING/IMAGE CODE LOADING PROBLEMS

This chapter provides guidelines with some procedures for booting or loading an image code from a PC, or workstation, to a device such as a management module in a network environment.

In this category of problems, there is only one problem and that is you cannot boot or download an image code to a device such as a management module. There are several ways to set up a device using the Bootstrap Protocol (BootP) and transfer an image file from the server to the device using the Trivial File Transfer Protocol (TFTP). The method you use depends on the following:

- The management station application being used (such as SPECTRUM Element Manager for Windows (SPEL) or Remote LANVIEW for Windows) when booting from a PC
- If a UNIX station is being used as a TFTP download server or BootP server

NOTE: The screens shown in this chapter are examples only and may not reflect the screens displayed by your application.

Refer to the following list and then proceed to the appropriate section shown in parentheses for details.

1. TFTP and BootP Download Guidelines for Personal Computers (PC) — (Section 3.1)
2. TFTP Download Guidelines When Using a PC — (Section 3.1.1)
3. TFTP Downloading Using a PC with SPEL — (Section 3.1.2)
4. TFTP Downloading Using a PC with Remote LANVIEW, Version 2.10 — (Section 3.1.3)
5. TFTP Downloading Using a PC with Remote LANVIEW, Version 2.0x — (Section 3.1.4)
6. BootP Downloading Guidelines When Using a PC — (Section 3.2)
7. BootP Downloading Using a PC with SPECTRUM Element Manager — (Section 3.2.1)
8. BootP Downloading Using a PC with Remote LANVIEW 2.10 — (Section 3.2.2)
9. BootP Downloading Using a PC with Remote LANVIEW 2.0x — (Section 3.2.3)
10. TFTP Downloading Guidelines for UNIX Stations — (Section 3.3)
11. Setting Up UNIX Station as TFTP Download Server on Local Subnet — (Section 3.3.1)
12. Setting Up UNIX Station as TFTP Download Server Going Across a Router to the Device — (Section 3.3.2)
13. Setting Up UNIX Station as BootP Server Going Across a Router to the Device — (Section 3.3.3)
14. Potential Points of Failure When Using a UNIX Station — (Section 3.3.4)

3.1 TFTP and BootP Download Guidelines for Personal Computers (PC)

Section 3.1.1 through Section 3.1.4 provide guidelines on how to use a PC running SPECTRUM Element Manager for Windows, or Remote LANVIEW for Windows (Versions 2.1 or 2.0x) application to TFTP download to a device using Netmanage or Microsoft's TCPIP (MSTCPIP) application.

NOTE: In this chapter SPECTRUM Element Manager for Windows and Remote LANVIEW for Windows are referred to as SPEL and RLVW, respectively.

3.1.1 TFTP Downloading When Using a PC

To TFTP download to a device, proceed as follows:

1. Check that your community name is Read/Write or Super-User. Otherwise, there will be a set failed error message displayed when you try to initiate the download.
2. Ensure that you use an image file with a .hex extension and that the data path in your Network Management Station **does not** go through a BRIM in the device that you are downloading to. If the data path does go through a BRIM, use the .fls file and do an on-line download.

NOTE: Before doing a .hex download, make sure that the device does not use a BRIM, or that your Network Management Station is not connected through a BRIM in the device to be downloaded. Otherwise, when the .hex file download starts, the device will reboot and interrupt network traffic, preventing data from being forwarded out of the BRIM port.

3. Ensure that a permanent Address Resolution Protocol (ARP) entry is set. It is necessary when using network management applications such as (such as SPEL or Remote LANVIEW 2.10) to perform TFTP downloads to a device. To determine if the ARP entry is already set for a device, check to see if the device icon displayed by your network management application is green. If the ARP is not set for the device, you need to determine the MAC address and IP address from the ARP Table of the network management application being used, then create a permanent ARP cache entry. **Section 3.1.1.1** and **Section 3.1.1.2** provide instructions for making permanent ARP cache entries in Netmanage and MSTCPIP, respectively.

For other network management compliant IP stacks besides those of Netmanage or Microsoft, contact the IP stack vendor on how to set up a permanent ARP entry.

3.1.1.1 Netmanage

To make a permanent ARP cache entry, proceed as follows:

1. Display the Netmanage NEWT table (**Figure 3-1**) by double clicking on the minimized NEWT icon, which is in the background when SPEL or RLVW 2.10 is opened.
2. Click on **Tables** in the Netmanage NEWT table screen and select **ARP** from the pull down menu to display the ARP Table. This table contains the IP address and the MAC (Hardware) addresses.

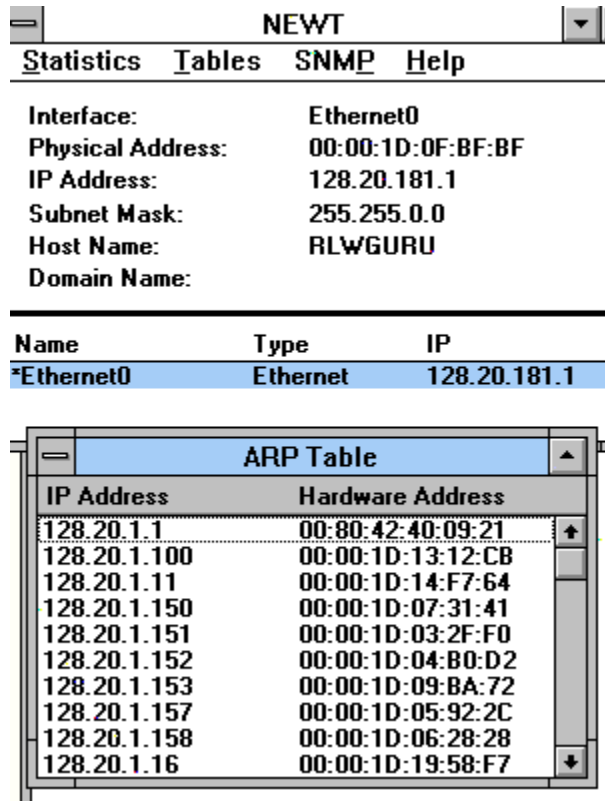


Figure 3-1. Netmanage NEWT Table and ARP Table Screens

3. Find the IP address to Hardware (MAC) address correlation of the device that you want to TFTP download and enter it in the Frequent Destinations table.

For example: Refer to the ARP Table shown in **Figure 3-1** and assume that the IP address for the device is 128.20.1.100. The associated hardware address is 00:00:1D:13:12:CB.

4. To enter this information (IP addresses and Hardware addresses) into the Frequent Destinations table, proceed as follows:
 - a. Open up the Custom icon in the program group for Netmanage. The CUSTOM screen is displayed (**Figure 3-2**).
 - b. Click on **Services** and select **Frequent Destinations** from the pull down menu.
 - c. Enter the IP address and hardware address (for example, 128.20.1.100 and 00:00:1D:13:12:CB as shown in the Frequent Destinations table in **Figure 3-2**).
 - d. After the changes are made and saved, close out your Network Management Software and open it again. This will update the ARP Table and Network Management Software to the newly entered data.

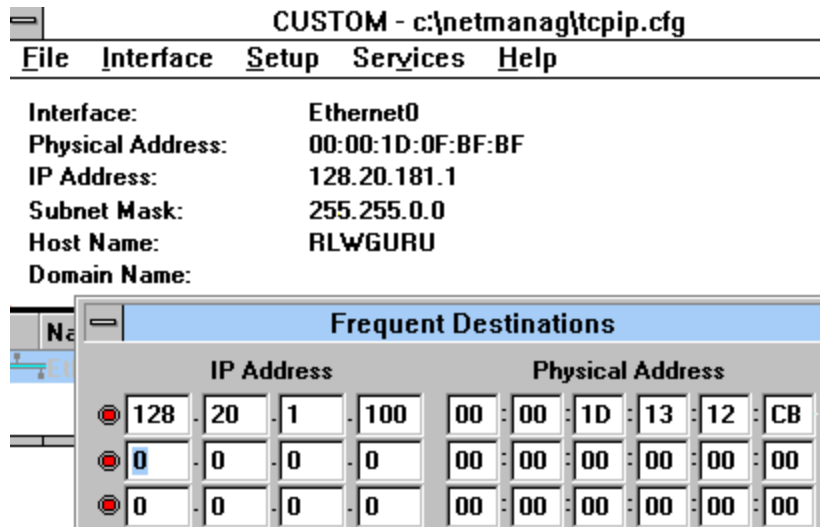


Figure 3-2. CUSTOM and Frequent Destination Screens

3.1.1.2 TFTP for MSTCPIP

In this situation you must also set up the ARP Table. To do this, proceed as follows:

1. Go to the MS DOS prompt and type `arp -a` at the command line. A list of the dynamic entries is displayed (Figure 3-3).
2. Find the IP (logical address) to MAC address (physical address) correlation of the device that you want to TFTP download.
3. Now type in the following command with the first field being the actual IP address and the second field being the actual MAC address.

```
arp -s xxx.xxx.xxx.xxx xx-xx-xx-xx-xx-xx
```

4. Type `arp -a` and the correlation of addresses will display as being static. Now you can proceed with your TFTP application.

```
C:\users\default>arp -a
.

Interface: 128.20.151.52 on Interface 3
Internet Address      Physical Address      Type
128.20.1.1           00-80-42-42-10-26    dynamic
128.20.1.11          00-00-1d-14-f7-62    dynamic
128.20.1.16          00-00-1d-19-58-f9    dynamic
128.20.1.21          00-00-1d-18-af-cd    dynamic
128.20.1.150         00-00-1d-07-31-41    dynamic
128.20.1.151         00-00-1d-03-2f-f0    dynamic
128.20.1.152         00-00-1d-04-b0-d2    dynamic
128.20.1.153         00-00-1d-09-ba-72    dynamic
128.20.1.158         00-00-1d-06-28-28    dynamic
128.20.1.160         00-00-1d-0f-1c-4f    dynamic
128.20.1.164         00-00-1d-0c-84-8c    dynamic
128.20.1.166         00-00-1d-0c-ab-cd    dynamic
128.20.1.169         00-00-1d-0c-fd-2a    dynamic
128.20.1.174         00-00-1d-09-1b-ea    dynamic
128.20.1.176         00-00-1d-05-c4-df    dynamic
128.20.1.177         00-00-1d-05-82-2f    dynamic
128.20.1.250         00-00-1d-0d-4e-76    dynamic
128.20.1.253         00-00-1d-0e-6c-32    dynamic
```

Figure 3-3. DOS Command and ARP Table

3.1.2 TFTP Downloading Using a PC with SPEL

To TFTP download using SPEL, proceed as follows:

1. Click on the TFTP tool bar icon or click on utilities, then the tftp/bootp pulldown menu. You must have an icon selected or this will be grayed out. The Start Download screen is displayed (Figure 3-4).
2. Click on **Browse** button and find the file for download. The filename and path should not exceed more than 25 characters. The example c:\emme.hex uses 11 characters.
3. Click on the **DownLoad** button. This starts the TFTP download to the device.

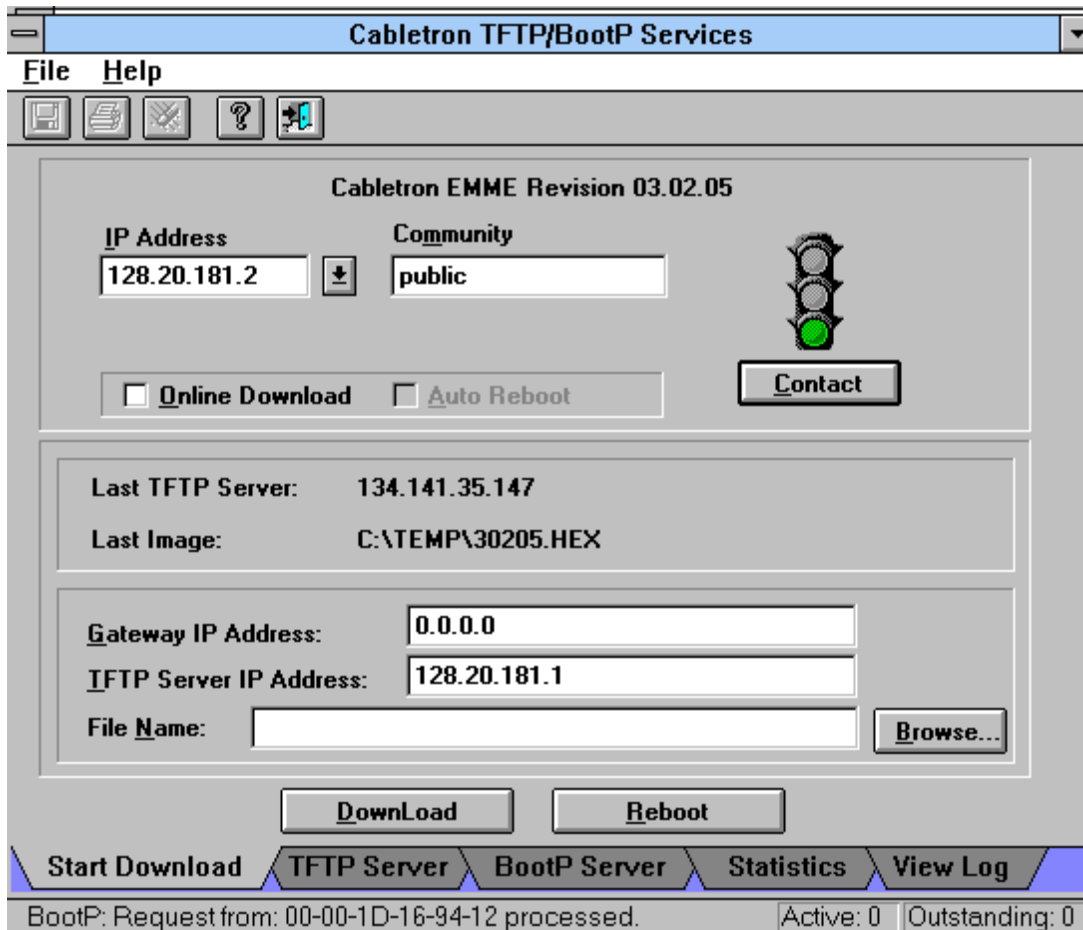


Figure 3-4. TFTP/BootP Services, Start Download Screen

3.1.3 TFTP Downloading Using a PC with Remote LANVIEW, Version 2.10

To TFTP download using Remote LANVIEW 2.10, proceed as follows:

1. While highlighting the device icon to which you are going to download, pull down the **Control** menu and highlight TFTP Download. The TFTP Download screen displays (Figure 3-5).
2. Click on the **Browse** button near the bottom of the TFTP Download screen and find the file with the .hex extension that is to be used for download. The file name and path should not exceed more than 25 characters. The example c:\emme.hex uses 11 characters.
3. Click on the **Download** button. This starts the TFTP download to the device.

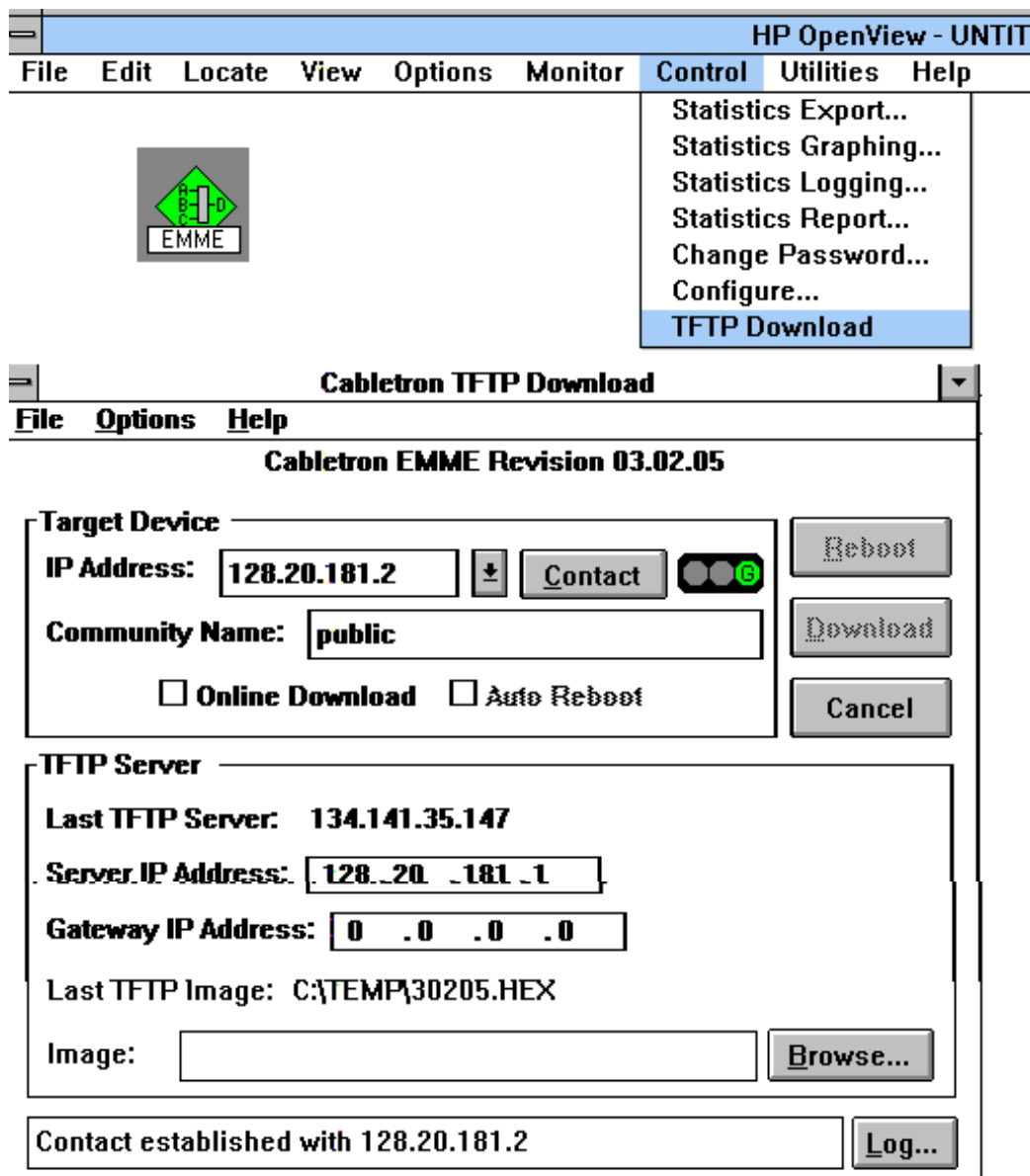


Figure 3-5. Control Pulldown Menu and TFTP Download Screen

3.1.4 TFTP Downloading Using a PC with Remote LANVIEW, Version 2.0x

Remote LANVIEW 2.0x uses a proprietary IP stack. If you have a green icon (such as the EMME icon shown in **Figure 3-6**) for the device to which you want to TFTP download, no ARP entry is needed. Just pull down the Control menu and then the TFTP Download menu.

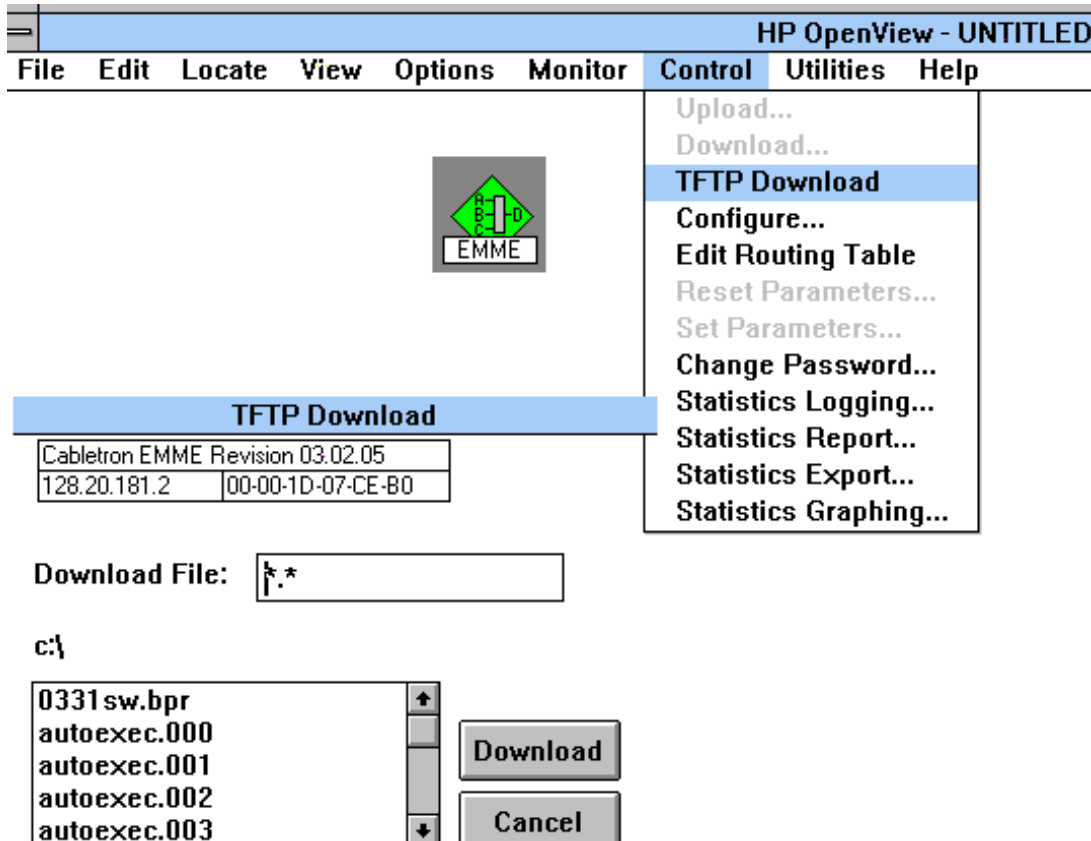


Figure 3-6. Control Pulldown Menu and TFTP Download Window

3.2 BootP Downloading Guidelines When Using a PC

If a device is requesting a BootP download, you still need to set up the ARP Table. However, in this case you have to get the MAC address from the white label on the device.

A device requests a BootP download because of one of the following reasons:

- BootP was initiated locally at the device using a switch on the device
- TFTP download was interrupted and the original image (system software for the device) could not be restored

In either case, approximately five minutes after your Network Management Software (NMS) loses connection with the device, the icon displayed for that device turns red, indicating that the device was disconnected (no longer recognized) and its IP to MAC address correlation was dropped from the ARP Table. To correct this situation, you must configure the correct MAC address for the interface that your device is connected to.

Therefore, if you are using a multiple interface device like the EMME or EMM-E6, make sure you use the correct MAC address. An EMME has four MAC addresses. The white label on the front of the EMME shows the MAC address for the first channel (A). You need to increment the address to the channel that your Network Manager Station comes in on. If, for example, the data path for the Network Management Station goes through a TPRMIM set to channel C, then increment the MAC address from CB to CD (for example, from 00:00:10:13:12:CB to 00:00:10:13:12:CD).

Other devices such as the MRXI, IRM-3, TRMM, TRXI, SEHI, MiniMMAC, and MicroMMAC only have one MAC address assigned, which appears on the white label.

Section 3.2.1 through Section 3.2.3 provide guidelines on how to BootP download to a device using a PC running SPECTRUM Element Manager, Remote LANVIEW 2.1x and Remote LANVIEW 2.0x applications.

3.2.1 BootP Downloading Using a PC with SPEL

To use SPEL for BootP, proceed as follows:

1. Make sure that you follow the ARP cache or Frequent Destinations instructions described in [Section 3.1.1, step 3](#), before configuring SPECTRUM Element Manager.
2. Bring up the TFTP/BootP application by either going to the Program group and double clicking on the TFTP-BootP Services icon, or click once on the icon in the Device list or the map and select the Utilities TFTP/BootP pulldown menu. The Start Download screen is displayed ([Figure 3-7](#)).

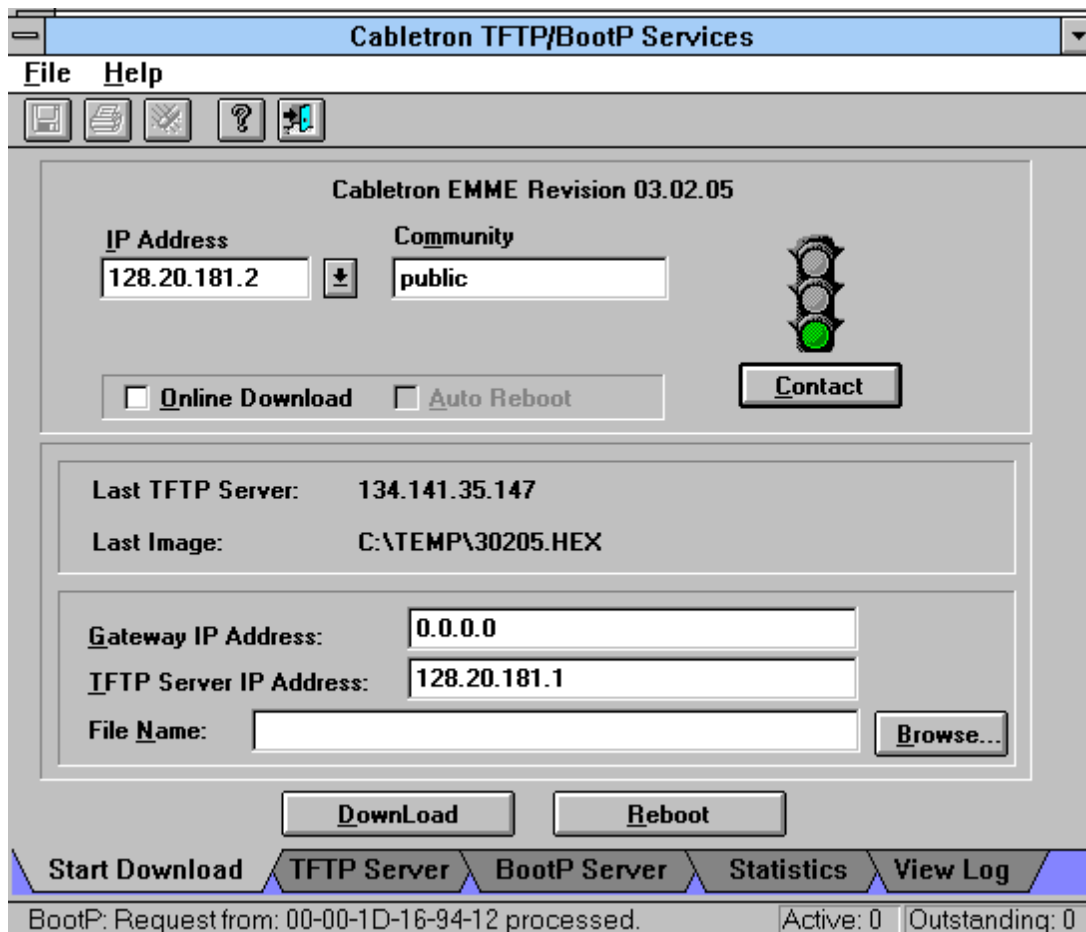


Figure 3-7. Start Download Screen

- Click on the **BootP Server** tab. The BootP Server screen (**Figure 3-8**) is displayed.

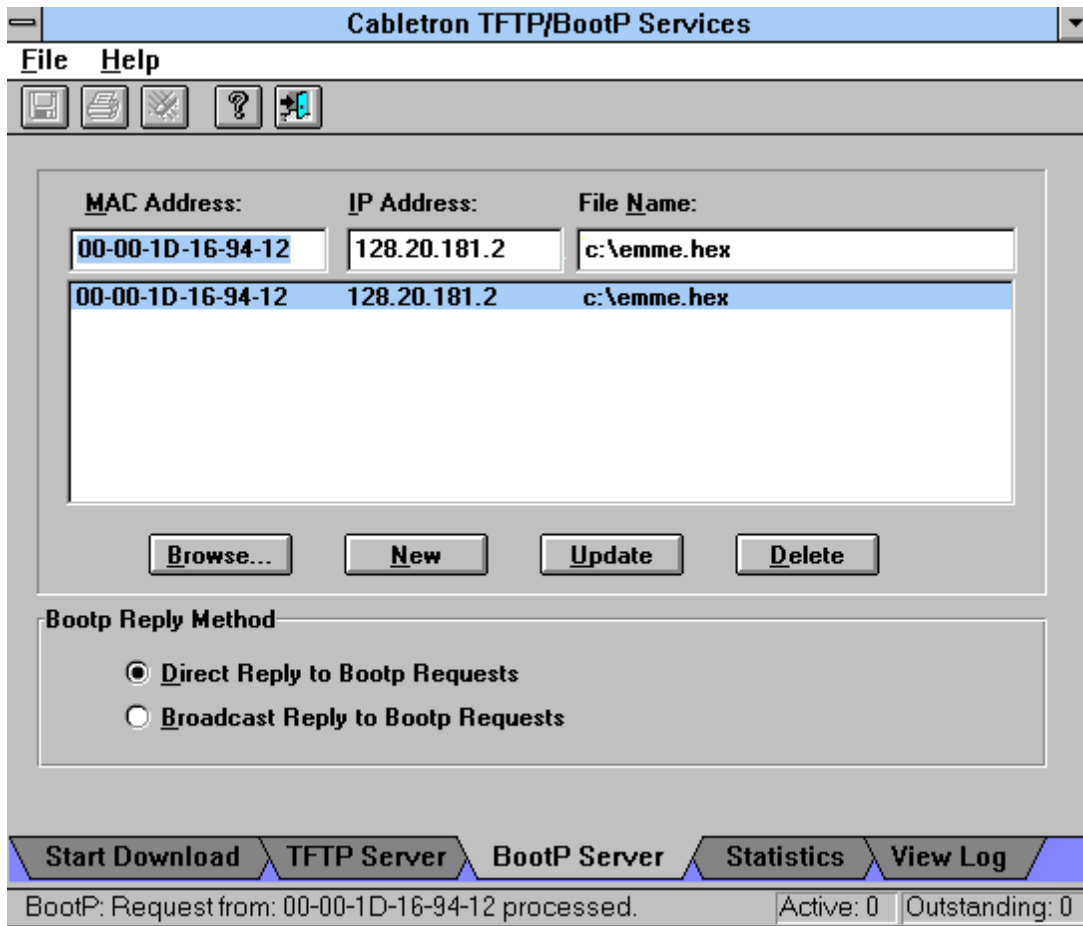


Figure 3-8. BootP Server Screen

- Enter the correct MAC address in the MAC Address field while making sure to use hyphens.
- Enter the IP address in the IP Address field using periods (Dot Decimal Notation).
- Enter the filename by using the **B**rowse button. The filename and path should not exceed more than 25 characters. For example, c:\emme.hex uses 11 characters. Keep the file path as close to the root as possible.
- Click on **U**ppdate so the data configured is now in the large box in the BootP Server screen.
- If the ARP table and this BootP screen are configured correctly, you should be able to click the **TFTP Server** tab and see the download start. If the download does not start, verify the following:
 - The MAC addrs used is correct.
 - The data path and filename are correct. The filename should have a .hex extension.

Correct as necessary. Then try this BootP Download procedure again.

3.2.2 BootP Downloading Using a PC with Remote LANVIEW 2.10

To use Remote LANVIEW 2.10 for BootP, proceed as follows:

1. Make sure that you follow the ARP cache or Frequent Destination instructions provided in [Section 3.1.1](#), step 3, before configuring Remote Lanview 2.10.
2. Click the pulldown menu under **Control**, then TFTP Download. This brings up the icon shown in [Figure 3-9](#).



Figure 3-9. BootP Icon

3. Double click on the BootP icon, then pull down the configure menu and select Configure BootP Server. The Configure BootP Server screen is displayed ([Figure 3-10](#)).

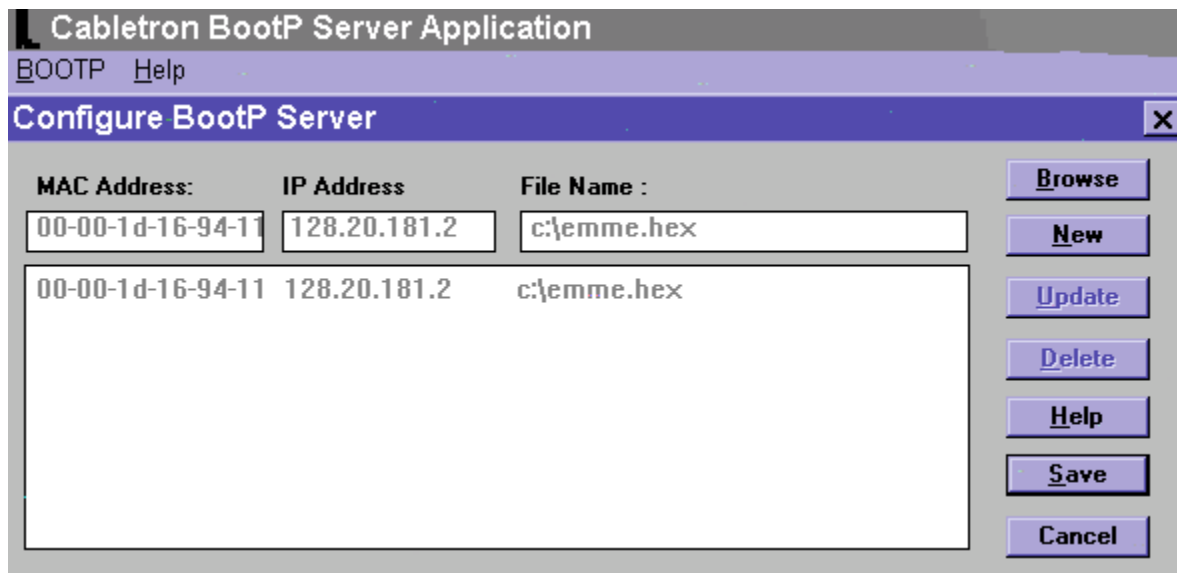


Figure 3-10. Configure BootP Server Screen

4. Add the MAC address to the MAC Address field while making sure you use hyphens.
5. Enter the IP address to the IP Address field using Dotted Decimal Notation (DDN).
6. Enter the filename by using the **Browse** button. The file name and path should not exceed more than 25 characters. The example, c:\emme.hex uses 11 characters. Keep the file path as close to the root as possible to minimize the length.
7. Click on **Update** so the data configured is now in the large box on the screen.

Unlike SPECTRUM Element Manager, there is no easy way to tell if BootP has begun. Although they are not as easy, there are other ways to tell as follows:

- Use the Local Management of the device to locally view the download.
- Check your hard drive LED to see if it is continuously reading your hard drive.
- Use the UDP Statistics screen of your network management application. This will show numerous UDP packets being sent and received.

3.2.3 BootP Downloading Using a PC with Remote LANVIEW 2.0x

To use Remote LANVIEW 2.xx for BootP, proceed as follows:

1. Configure the file route.tbl located in the rlw/bin directory.
2. Select **Control** from the pulldown menu.
3. Select Edit Routing Table. Below is an example. The “;” just comments out that line.

```
;          #0.0.0.0   is an example of a SUBNETWORK MASK entry.
;          Only one of these is allowed per routing tag e.
;          0.0.0.0   0-0-0-0-0-0 is an example of a ROUTE entry.
;          Multiple entries are allowed per
;          routing table. These entries are used to specify
;          the physical addresses of a router (gateway) device
;          that is associated with a particular network or
;          subnetwork. These entries can also define an
;          IP (Internet Protocol) address that is associated with
;          a particular device. LanView/Windows acts as a RARP
;          (Reverse Address Resolution Protocol) server. See
;          the LanView/Windows manual for more details.
;          Both of these example entries (as they appear in this comment)
;          will have no effect on routing and RARP abilities of LanView/Windows.

#255.255.255.0   (This line is the network mask)
134.141.36.0    00-00-0c-18-d9-0e (This line is used in a non-proxy Arp
                                router environment. It is the ip subnet of the remote
                                interface and the mac address of the local interface.)
134.141.36.254 00-00-1d-07-ce-b0  EMMEIMG (This line is the ip and mac
                                address of the device you want to bootp. The “EMMEIMG” is
                                any key word that reference a line in the lvw.ini file in
                                the windows directory.)
```

The LVW.INI file BOOTP section will look like this. The EMMEIMG keyword can be any word as long as they both match in the routing table and the lvw.ini file.

```
[BOOTP]

EMMEIMG=C:\EMME.HEX
```

3.3 TFTP Downloading Guidelines for UNIX Stations

Section 3.3.1 through Section 3.3.4 provide general guidelines to set up a UNIX workstation as a TFTP or BootP server. The examples given are general in nature and may not be specific to your UNIX Operating System. For information specific to your UNIX system, refer to the appropriate supporting documentation.

NOTE: Before upgrading firmware, read the firmware release notes to make sure the boot revisions, etc., are compatible.

The examples provided in the following sections are based on your network setup. The examples are as follows:

- TFTP download server on a local subnet ([Section 3.3.1](#))
- TFTP download server across a router to the device ([Section 3.3.2](#))
- BootP server going across a router to the device ([Section 3.3.4](#))

3.3.1 Setting Up UNIX Station as TFTP Download Server on Local Subnet

To set up a UNIX station as a TFTP download server on the local subnet, proceed as follows:

1. Verify the `/etc/inetd.conf` file. Make sure the `/etc/inetd.conf` file has the line for `tftp` uncommented (no `#` at the beginning of the line). If this line is commented out, then delete the hash symbol at the beginning of the line and restart the `inetd` daemon.

The line should not look like this:

```
#tftp dgram upd wait nobody /etc/tftpd -s /tftpboot
```

The line should look similar to this:

```
tftpd dgram upd wait nobody /etc/tftpd -s /tftpboot
```

2. Kill and then restart `inetd`: (as root user): `kill <process id for inetd>`, or reboot UNIX station.

For example:

```
% kill 3845
```

Then `cd` to `/etc` and type `inetd` (on Sun Solaris, you must use `-s`, example: `% inetd -s`).

NOTE: If TFTP is using the “-s” option (Secure), you must place the firmware image into the specified directory along with the option.

For example:

```
tftp dgram upd wait nobody /etc/tftpd -s /usr/tftpboot
```

On some UNIX stations, Sun Solaris for example, `/tftpboot` is the default directory and it is assumed that the “-s” is not used. In this case you would not enter the full path name to identify the hex file, only enter the hex filename.

Don't do this:

```
/tftpboot/30101.hex
```

Do this:

```
30101.hex
```

TIP: To avoid TFTP download failures, always use the /tftpboot directory structure and secure mode (look for the “-s /tftpboot” option in the inetd.conf). When using this technique, you **ONLY HAVE TO ENTER** the image filename and **NOT THE FULL PATH NAME**. This is a very important step, as some UNIX stations use tftpboot as a default whether or not the secure mode is used. If you specify a full path, the tftp download will fail. This has been a huge cause for failures. If you do not have enough disk space in the /tftpboot directory, you can create a symbolic link (soft link) to a file system that has enough space:

Syntax: `ln -s <destination dir> /tftpboot`

Example: `% ln -s /usr3/tftpboot /tftpboot`

NOTE: Refer to the supporting documentation for your UNIX station or online help (man tftpd, and man inetd).

3. Copy the hex image or fls image into the /tftpboot directory, or directory specified in the inetd.conf file (refer to TIP above). If the firmware image has the .zip extension, the file must be before you attempt the TFTP download. (For example, you can use Info-ZIP, a UNIX unzip utility.)
4. Now you are ready to start the TFTP download process. Use your management application to enter the appropriate information and start the TFTP process.

TIP: For SPMA users performing an “On-line” download, use the *.fls filename, click on “On-line download” and choose either “Download only”, or “Download and then Reboot”. When performing an “Off-line” download use the *.hex filename and choose “Off-line download”, “Download new image on reboot” or “Commit image to flash”.

3.3.2 Setting Up UNIX Station as TFTP Download Server Going Across a Router to the Device

To set up a UNIX station as a TFTP download server going across a router to the device, proceed as follows:

1. Perform steps 1 through 3 in [Section 3.3.1](#).
2. Verify whether PROXY ARP is enabled or disabled. Some routers need the TFTP server IP address in an “ip helper” table.

If PROXY ARP is enabled, you are now ready to perform the TFTP Download.

If PROXY ARP is disabled, your device must support the “Default Gateway” feature.

This can be verified under “setup” view in the device Local Management (or other network management software). The Default Gateway entry will be darkened, allowing you to type in the text field.

NOTE: If PROXY ARP is not enabled on the router and your device does not support the Default Gateway, then you must set up a TFTP server on the local subnet of the device.

TIP: Make sure the subnet mask is set correctly on the server, so the server knows that the device is across the router. This would typically be 255.255.255.0 for a Class C default mask.

-
3. Now you are ready to start the TFTP download process. Use your network management application to enter the appropriate information and start the TFTP process.

3.3.3 Setting Up UNIX Station as BootP Server Going Across a Router to the Device

To set up a UNIX station as a BootP server going across a router to a device, proceed as follows:

1. Refer to the instructions in the supporting document for your UNIX station to correctly set up your BootP environment.
2. Perform steps 1 through 3 of [Section 3.3.2](#).
3. Edit the `/etc/bootptab` file and add an entry for the device that includes the same name as found in the `/etc/hosts` file, using the following:

Syntax:

```
<host name>:ht=<hardware type>:ha<hardware address>:ip=<ip address of device>:hd=<bootp file directory>:bf<hex file name>:sa=<server address>:gw=<gateway, ip address of router interface on SERVER side>
```

Example:

```
emme_20:ht=ether:ha=00001d139786:ip=150.12.30.20:hd=/tftpboot:bf=30103.hex:sa=150.12.31.35:gw=150.12.31.1
```

TIP: On multi-channel devices, such as the EMME, use the hardware address of the interface that the network is coming in on. For example, if the network connection is connected into channel D, use the MAC address assigned to channel D.

4. Now you are ready to start the BootP process. Use your management application to enter the appropriate information and start the BootP process. Or set the dip switch on the device to force a BootP download.

3.3.4 Potential Points of Failure When Using a UNIX Station

The following provides information concerning:

- Download Requirements
- TFTP Preparations
- Cabletron Systems Device Requirements
- Failed RARP Requests
- Failed ARP Request
- Failed TFTP Read Request

Download Requirements:

The file transfer from a UNIX station to the device is done by using TFTP (Trivial File Transfer Protocol), which is connectionless. This can be initiated on a device from a Network Management System. If that device will not accept a TFTP download, then BootP (Bootstrap Protocol) is used.

Before a device requests a download, it needs to know three parameters:

- IP address of itself
- IP address of download server
- Filename of firmware image

TFTP Preparations:

TFTP assumes the device has been told the three pieces of information already via SNMP sets or a Network Management System. However, the `/etc/inetd.conf` configuration file must have `tftpd` set up and initialized with the configuration.

Cabletron Systems Device Requirements:

1. You must have Super-User access to the device to initiate a download. (Some Cabletron Systems devices only require Read-Write. Don't spend time guessing, just use Super-User privileges.)
2. Users must have read permissions to Download file (permissions that never fail: `% chmod 777 filename`).
3. The Cabletron Systems device must have its own IP address in boot portion of NVRAM (not to be confused with the IP address that is assigned and kept in the Local Management (LM) portion of NVRAM). Once the download is initiated, the Cabletron Systems device does a Reverse Address Resolution Protocol (RARP) request to itself with its IP Address. (Not all devices support this feature.)
4. Cabletron Systems device must have the MAC address for the TFTP download servers. Once the download is initiated, the Cabletron Systems device does an ARP request to the server and waits for a response. The device times out after 3 tries.

The following shows the sequence of events when you click the system reboot or start download button on the management screen:

- Set requests get set at the device.
- The device reboots.
- The device RARPs itself. (I've got my MAC, do I have my IP?) Look for the device ip addr in the packet.
- The device ARPs the server. (Hey there server, I've got your ip, what's your MAC?) Look for the server to respond with its MAC.
- The device does a TFTP READ REQUEST. (Device asks the server. Can I read the file?)
- The device and server begin transferring data: `tftp read` followed by `tftp ack`.

TIP: Set up an analyzer and watch the action! Any of the requirements above could result in failure. Requirements 3 and 4 are points of failure that can only be verified with an analyzer. To see the RARP and ARP requests, you must use a filter on the MAC address (Data Link layer) (try using a bilateral on the MAC address of the device). You will not see these requests at the IP layer.

Failed RARP Requests (Got a MAC, need the IP):

The device (for example, an EMME) sends out a RARP request with its MAC address and uses the TID portion of the packet to target the IP address of itself, 134.141.55.25. The RARP request will fail if the EMME RARPs with a TID IP address of 0.0.0.0 rather than 134.141.55.25. Then the device will just reboot. If this is the failure, you can fix this in one of two ways: either re-assign the IP address at the device, via LM, or clear NVRAM on the device. Then you must re-enter the IP address. (Clearing the NVRAM on the device is the less painful of the two fixes.)

Failed ARP Requests (Got an IP, need the MAC):

After the RARP is successful, the device will ARP with the server IP for the server's MAC address. If the server does not respond, it is probably because of the subnet mask. Make sure the target address in the packet is targeting the server. The only remedy here is to try to set up another server.

Failed TFTP Read Request:

Please, can I read the file? Does the file exist? Do I have read privileges? Does a checksum reveal a good file? Is this file for me (my device type)? You will see some explanation in the packet. "File not found" or checksum error. These errors are intuitive. Sometimes the TFTP download will fail after it begins TFTP read requests and TFTP data acknowledge. This could be a corrupt file that did not fail during the initial read.

CHAPTER 4

DESKTOP NETWORK INTERFACE (DNI) PROBLEMS

This chapter provides a troubleshooting guide that identifies some of the more common problems related to DNI cards in a PC or workstation. Refer to the following list and proceed to the appropriate section shown in parentheses for the possible causes and remedy.

NOTE: DNI cards are also known as Network Interface Cards (NICs).

1. After Installing an E22xx Ethernet Card in a Novell Server, Users Cannot Connect — (Section 4.1)
2. The PC Will Not Boot with an E22xx Card Installed — (Section 4.2)
3. The E22xx Card Settings Were Changed Using QuickSet, but When the Driver Loads, QuickSet Shows Different Card Settings — (Section 4.3)
4. T2015 Token Ring Card Passes Diagnostics, but When Trying to Load the Driver, the Card Will Not Insert Onto the Ring — (Section 4.4)
5. F70XX FDDI Card Will Not Initialize — (Section 4.5)
6. Client Driver Loads, but Cannot Find Any Novell Servers — (Section 4.6)
7. After Connecting an Unshielded Twisted Pair (UTP) Cable, There Is No Link on the F7019 Card — (Section 4.7)
8. Novell Server Upgraded from Ethernet to FDDI, but Now the Users Cannot See the Server — (Section 4.8)
9. When Loading the Driver for E22xx, There Is an Error Message, “invalid i/o address” — (Section 4.9)
10. An Error Message Displayed in the Windows NT Event Log Indicates that the E22xx in Your PC Is Not Functioning — (Section 4.10)

4.1 After Installing an E22xx Ethernet Card in a Novell Server, Users Cannot Connect

Check the Startup.ncf file on the Novell Server.

Is the “Set Maximum Physical Receive Packet Size” set to at least 1518?

Y N

| Set the maximum packet size to 1518.

The frame type (Ethernet-802.2, -802.3, -II, or SNAP) being used on the client and server Personal Computers (PCs) may not be the same.

Are the frame types different?

Y N

| Call Cabletron Technical Support.

Set the client and server PCs to use the same type frame and try to connect with the Novell Server.

Can the users connect with the Novell Server?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

4.2 The PC Will Not Boot with an E22xx Card Installed

The Plug-and-Play (PnP) bios may have configured the E22xx card, and now there are configuration conflicts with a non-PnP legacy card. Change the legacy card configuration settings to avoid conflicts. Boot the PC.

Will the PC boot?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

4.3 The E22xx Card Settings Were Changed Using QuickSet, but When the Driver Loads, QuickSet Shows Different Card Settings

Quickset changes are only used in non-PnP PCs. The PnP PCs configure the card automatically and ignore changes made using QuickSet.

4.4 T2015 Token Ring Card Passes Diagnostics, but When Trying to Load the Driver, the Card Will Not Insert Onto the Ring

Check that the I/O settings configured in the software match the I/O switch settings on the T2015 faceplate.

Are the settings different?

Y N

Check if the correct port is being assigned through the software: Primary = STP and Secondary = UTP.

Are the ports being correctly assigned?

Y N

Assign the ports correctly: Primary = STP and Secondary = UTP.

Will the T2015 Token Ring card insert onto the ring?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Set the software I/O settings and T2015 I/O dip switch settings so they are the same.

Will the T2015 Token Ring card insert onto the ring?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

4.5 F70XX FDDI Card Will Not Initialize

The SMT.BIN file may not be in the correct directory.

Is the SMT.BIN file in the same directory that the driver is being loaded from?

Y N

Make sure SMT.BIN is in the same directory that the driver is being loaded from.

Will the F70XX FDDI Card initialize?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

4.6 Client Driver Loads, but Cannot Find Any Novell Servers

Check the Link, Transmit, and Receive LEDs on the DNI card.

Is the Link LED lit and are the Transmit and Receive LEDs blinking?

Y N

| Ensure that the correct media is selected, verify that the cable is okay, or try a different port on the hub.

Did this solve the problem?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Is the card an E22xx?

Y N

| Try a different shared memory region.

Is the shared memory region excluded on the EMM386 command line in config.sys?

Y N

| Exclude the shared memory.

Did this solve the problem?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Check the Startup.ncf file on the Novell Server.

Is the "Set Maximum Physical Receive Packet Size" set to at least 1518?

Y N

| Set the maximum packet size to 1518.

The frame type (Ethernet-802.2, -802.3, -II, or SNAP) being used on the client and server Personal Computers (PCs) may not be the same.

Are the frame types different?

Y N

| Call Cabletron Technical Support.

Set the client and server PCs to use the same type frame and try to connect with the Novell Server.

Can the users connect with the Novell Server?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

4.7 After Connecting an Unshielded Twisted Pair (UTP) Cable, There Is No Link on the F7019 Card

The cable may have the wrong pinout. Check the cable for the following pinout.

Pin 1 to Pin 7

Pin 2 to Pin 8

Pin 7 to Pin 1

Pin 8 to Pin 2

Does the cable have the correct pinout?

Y N

| Replace the cable with one that does have the correct pinout.

Is there a Link with the F7019 card?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Call Cabletron Technical Support.

4.8 Novell Server Upgraded from Ethernet to FDDI, but Now the Users Cannot See the Server

Novell only supports FDDI_802.2 and FDDI_SNAP and does not support Ethernet 802.3.

Are the Ethernet clients using Ethernet 802.3?

Y N

| Call Cabletron Technical Support.

Edit the client driver configuration files to change the frame type for the proper Ethernet to FDDI conversion.

Can the users see the server?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

4.9 When Loading the Driver for E22xx, There Is an Error Message “invalid i/o address”

When the driver for the E22xx Card was loaded in the PC, the error message “invalid i/o address” was displayed. Running E22_TEST.EXE caused the message “no E22xx adapter found” to display.

Is the PC PnP compliant?

Y N

| Run QuickSet 2.04 or above and set the “Plug and Play System” to NO.

Now can you load the driver without getting the error message “invalid i/o address”?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Call Cabletron Technical Support.

4.10 An Error Message Displayed In the Windows NT Event Log Indicates that the E22xx in Your PC Is Not Functioning

If the PC is plug-and-play compliant, it will allocate resources for the E22xx Card to use.

Is the PC plug-and-play compliant?

Y N

| Call Cabletron Technical Support.

The resources allocated for the E22xx card must match those that you assign the card in Windows NT.

Boot the PC in MSDOS and run E22_TEST.EXE to determine what settings the card is using. Then use these settings in Windows NT. Boot the PC again.

Does the error message appear again in the Windows NT Event Log?

Y N

| Congratulations, the problem is solved.

Call Cabletron Technical Support.

CHAPTER 5

ROUTING PROBLEMS

This chapter provides a troubleshooting guide that identifies some of the more common routing problems in a network environment. Refer to the following list and proceed to the appropriate section shown in parentheses for the possible causes and remedy.

1. Cannot Set a Router to the Enable Mode — (Section 5.1)
2. The Router Does Not Boot Normally — (Section 5.2)
3. Device Cannot Establish IP Communication with Another Device Across a Router, but Can Establish IP Communication Locally — (Section 5.3)
4. Cannot Communicate with Another Network, Network Not Listed or Listed as Unreachable in Router Routing Table — (Section 5.4)
5. Configured an EMM-E6 or NBR Series Bridge for Routing, but It Doesn't Work — (Section 5.5)

5.1 Cannot Set a Router to the Enable Mode

Ensure that the password was entered correctly. The entry is case sensitive. If there are upper and lower case characters in the password, ensure that they are entered correctly.

Was the password entered correctly?

Y N

| Enter the password correctly.

Are you still having a problem setting the router into the enable mode?

Y N

| Congratulations, the problem is solved.

Verify that the password that you are using is the correct password.

Can you obtain the correct password?

Y N

| Perform the password recovery procedure for your Cisco router. Refer to [Appendix A](#) for the appropriate procedure.

Were you able to set the router to the Enable Mode?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Enter the password.

Did the router enter into the Enable Mode?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

5.2 The Router Does Not Boot Normally

With a terminal or PC connected to the router COM or CONSOLE port, access the Local Management application and note the prompt displayed, if any.

Did the “Router(boot)>” prompt display?

Y N

Did the “System Configuration Dialog” display with the following message?

Configuration interface IP parameters for netbooting:

Y N

Did the System Configuration Dialog display?

Y N

Call Cabletron Technical Support.

Enter the information requested. Then press Return.

Did the “Router(boot)>” prompt display?

Y N

Call Cabletron Technical Support.

At the prompt, type in: en

The prompt, Router(boot)# displays.

Type in: config t

Press Return.

Type in: config-register 0x2102

Press Return.

Press CTRL-Z

Type in: reload

Press Return.

Does the router boot normally?

Y N

Did the prompt “Router(boot)>” display?

Y N

Did the normal “Router>” prompt display with the router still trying to load its configuration off the network?

(For example: “Loading network | config... [timeout]”)

Y N

Call Cabletron Technical Support.

Wait until the router stops trying to load its configuration off the network.

Press Return.

The prompt Router > displays.

At the prompt, type in: en and enter the enable password.

Type in: config t

Press Return.

Type in: no service config

Press Return.

Press CTRL-Z

Press Return.

Type in: wr

Press Return.

(continue)

A B C D

A B C D

Type in: `reload`
Press Return.

Type in: `y`

Does the router boot normally?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

There may be a corrupt FLASH image. Download a new image to your router. Refer to your router documentation for instructions.

Did the prompt “Router(boot)>” display?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

For Cisco Model IGS (with firmware revisions 9.1 or greater), ensure that the FLASH SIMMs are installed in the proper SIMM sockets, then refer to [Appendix A, Section A.1](#), perform Steps 1 through 5, and then continue with this path.

For Cisco Models IGS (with firmware revisions prior to 9.1), 2000, 2500, 3000, and 4000, refer to [Appendix A, Section A.2](#), perform Steps 1 through 3, and then continue with this path.

For Cisco Models CGS, MGS, AGS, AGS (CSC3/CSC4) and 7000, refer to [Appendix A, Section A.3](#), perform Steps 1 through 4 and then continue with this path.

The prompt `>` displays.

Type in: `o/r`

Press Return.

Type in: `i`

Press Return.

Router reboots. Enter the information requested.

Press Return.

Did the “Router(boot)>” prompt display?

Y N

| Call Cabletron Technical Support.

At the prompt, type in: `en`

The prompt, `Router(boot)#` displays.

Type in: `config t`

Press Return.

Type in: `config-register 0x2102`

Press Return.

Press CTRL-Z

Type in: `reload`

Press Return.

Did the router boot normally?

Y N

| **Did the prompt “Router(boot)>” display?**

Y N

| **Did the normal “Router>” prompt display with the router is still trying to load its configuration off the network? (For example: “Loading network | config... [timeout]”)**

A B (continue)

A B

Y N

| Call Cabletron Technical Support.

Wait until the router stops trying to load its configuration off the network.
Press Return.

The prompt `Router >` displays.

At the prompt, type in: `en` and enter the enable password.

Type in: `config t`
Press Return.

Type in: `no service config`
Press Return.
Press CTRL-Z
Press Return.

Type in: `wr`
Press Return.

Type in: `reload`
Press Return.

Type in: `y`

Does the router boot normally?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

There may be a corrupt FLASH image. Download a new image to your router. Refer to your router documentation for instructions.

Did the router boot normally?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

5.3 Device Cannot Establish IP Communication with Another Device Across a Router, but Can Establish IP Communication Locally

Cannot establish IP communication from a PC across a router to a device in another network. See **Figure 5-1**.

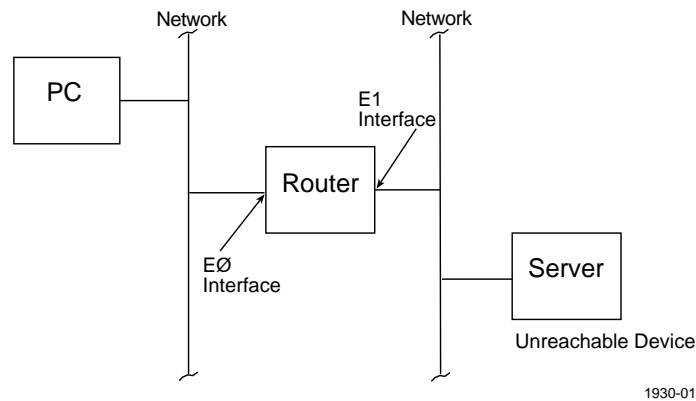


Figure 5-1. Example of Network

Try pinging across the router to other devices on the same network of the unreachable device.

Were you successful?

Y N

Can other devices on the same network of the unreachable device ping the unreachable device?

Y N

Check the unreachable device for problems.

Make sure the PC default gateway is set to the E0 interface of the router (**Figure 5-1**). Also make sure the default gateway of the unreachable device is set to the E1 interface of the router.

From the PC, try pinging across the router to the unreachable device again.

Were you successful?

Y N

Access the router Local Management using Telnet or the router Console port.
Set the router to the Enable Mode.
Type in: `show interface`
Press Return.

Did the display show: E0 up,line protocol up and E1 up,line protocol up?

Y N

Call Cabletron Technical Support.
Type in: `show ip route`
Press Return.
Router table is displayed.

Does the router table list the network of the unreachable device and is that network classified as reachable?

Y N

Go to **Section 5.4** to solve problem.
Type in: `ping IP_address`
where IP_address is the IP address of the unreachable device.
Press Return.

A B (continue)

Was the router able to ping the unreachable device?

Y N

Type in: `clear arp`
Press Return.

Type in: `ping IP_address`
where `IP_address` is the IP address of the unreachable device.
Press Return.

Was the router able to ping the unreachable device?

Y N

Type in: `show config`

Check the display to see if the IP address and subnet mask are set correctly for the E1 interface. Both the E1 interface and the unreachable device must be on the same network/subnet.
Correct as necessary and try to ping the unreachable device again.

Was the router able to ping the unreachable device?

Y N

Call Cabletron Technical Support.

Type in: `ping IP_address`
where `IP_address` is the IP address of the PC.
Press Return.

Can the router ping the PC?

Y N

Type in: `show config`

Check the display to see if the IP address and subnet mask are set correctly for the E0 interface. Both the E1 interface and the unreachable device must be on the same network/subnet.
Correct as necessary and try to ping the unreachable device again.

Was the router able to ping the PC?

Y N

Call Cabletron Technical Support.

Can the PC ping the unreachable device?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Can the PC ping the unreachable device?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Check the unreachable device for problems. Make sure that the default gateway of the unreachable device is set to the same IP address as that of the router E1 interface. Call Cabletron Technical Support if the problem is not solved.

5.4 Cannot Communicate with Another IP Network, Network Not Listed or Listed as Unreachable in Router Routing Table

Cannot communicate with another IP network. Entered the command, `show ip route` to display the routing table, but the IP network is either not listed or listed as being unreachable.

Depending on the complexity of the whole network, there may be one or more routers between your router and the network that is unreachable. It is strongly recommended that you obtain a network map to determine the router(s) that are directly connected to the unreachable network.

Do you know the router(s) that are directly connected to the unreachable network?

Y N

| Check with your Network Administrator for this information. Without it you cannot troubleshoot the problem any further.
| If unsure what to do, call Cabletron Technical Support.

Obtain the IP address and password assigned to the router directly connected to the unreachable network. Telnet to that router and set it to the Enable Mode. Enter the `show config` command to display the configuration for that router to determine which interface is connected to the unreachable network.

Type in: `show int`
Press Return.

Does the display indicate that the interface connected to the unreachable network is up and the line protocol is up?

Y N

| Type in: `show config`
| Press Return.

| The interface configuration displays.

| **Does the display indicate that the interface is “shutdown”?**

| **Y N**

| | Call Cabletron Technical Support.

| Type in: `config t`
| Type in: `int` followed by the name of the interface such as: `e 0`.
| For example: `int e 0`
| Press Return.

| Type in: `no shutdown`
| Press Return.
| Press CTRL-Z, then press Return.
| Type in: `wr`
| Press Return.

| To check if the interface is “up” and the protocol is “up”, type in: `show int`
| Press Return.

| **Are the interface and protocol up?**

| **Y N**

| | Call Cabletron Technical Support.

If you are doing a Telnet session from your router to the unreachable router, exit the Telnet session as follows:

Type in: `exit`
Press Return. Otherwise, Telnet to your router and enter the enable mode.
The router enable prompt (this is the host name followed by #) is displayed.

Type in: `show IP route`
Press Return. The routing table of the router displays.

Does the unreachable network appear in the routing table and is it “reachable”?

Y N

| Check both routers to make sure that they are running the same routing protocol.

A (continue)

Are the routers running the same routing protocol?

Y N

Configure both routers so they are running the same routing protocol such as RIP, IGRP, or OSPF.

NOTE: If you cannot configure both routers to run the same protocol, call Cabletron Technical Support.

With both routers running the same protocol, is the unreachable network still unreachable?

Y N

Congratulations, the problem is solved.

Check the configuration of the router directly connected to the unreachable network to make sure that router is configured to advertise the unreachable network.

NOTE: If there are any questions about how to check the routing protocol configuration, call Cabletron Technical Support.

Is the router configured properly to advertise the unreachable network?

Y N

Correct as necessary and then check to see if the unreachable network can be reached.

Is the unreachable network still unreachable?

Y N

Congratulations, the problem is solved.

Are both routers sending and receiving routing protocol updates? (Call Cabletron Technical Support if there are any questions on how to do this.)

Y N

If one or both of the routers are not sending updates, reboot the routers.

Did the unreachable network become reachable?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

5.5 Configured an EMM-E6 or NBR Series Bridge for Routing, but It Doesn't Work

The EMM-E6 or NBR device needs an 8Mb memory upgrade for it to function as a router.

Has a memory upgrade been installed to support routing?

Y N

An 8Mb memory upgrade is needed. Contact Cabletron Systems Sales for information about purchasing the correct memory upgrade needed for your EMM-E6 or NBR device.

Make sure the memory upgrade was installed correctly. Refer to the device documentation for details.

Is the upgrade installed correctly?

Y N

Correct as necessary. Then check to see if the EMM-E6 or NBR device is routing.

Is there still a problem with the device routing?

Y N

Congratulations, the problem is solved.

Initialize the router. (For example, access the Local Management application in the EMM-E6 or NBR device and select INITIALIZE in the Router Setup screen.)

Is the EMM-E6 or NBR device routing?

Y N

For IP routing, each interface in use must be on a different IP network or subnet. For example, if interfaces A, B, and C are being used, the following is a valid configuration. Let's assume that the network is 134.141.0.0 and the mask is 255.255.255.0. The possible IP address for each interface could be:

Interface A: 134.141.1.1
Interface B: 134.141.2.1
Interface C: 134.141.3.1

For IPX routing, each interface in use must be given different IPX network numbers.

Are the interface configurations correct?

Y N

Clear the NVRAM and reconfigure the EMM-E6 or NBR device. Refer to the following note.

NOTE: When clearing NVRAM, all user entered parameters are erased and replaced with the default parameters.

For instructions on how to clear NVRAM, refer to the device documentation for details.

Initialize the router.

Is there still a problem with the device routing?

Y N

Congratulations, the problem is solved.

Is routing enabled at both the system and port levels.

Y N

Configure accordingly so that both system and port levels are enabled.

Is the EMM-E6 or NBR device routing?

Y N

Clear the NVRAM and reconfigure the EMM-E6 or NBR router. Refer to the following note.

NOTE: When clearing NVRAM, all user entered parameters are erased and replaced with the default parameters.

After reconfiguring the EMM-E6 or NBR, is it routing?

Y N

Call Cabletron Technical Support.

A B Congratulations, the problem is solved.

A B

|
|
Clear the NVRAM and reconfigure the EMM-E6 or NBR router. Refer to the following note.

NOTE: When clearing NVRAM, all user entered parameters are erased and replaced with the default parameters.

After reconfiguring the EMM-E6 or NBR, is it routing?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

CHAPTER 6

FDDI PROBLEMS

This chapter provides a troubleshooting guide that identifies some of the more common problems in the FDDI network environment. Refer to the following list and proceed to the appropriate section shown in parentheses for the possible causes and remedy.

1. Workstation on Ethernet Network Cannot Communicate with Server on FDDI Ring — (Section 6.1)
2. Workstation and Server on the Same FDDI Ring Cannot Link — (Section 6.2)
3. Replaced a Concentrator Module, but Other Devices on the Ring Do Not Recognize It — (Section 6.3)
4. Installed a New Dual Attached Device on an Existing Ring, but Other Devices on the Ring Do Not Recognize It — (Section 6.4)
5. Ring Is Running Slower Than Expected — (Section 6.5)

6.1 Workstation on Ethernet Network Cannot Communicate with Server on FDDI Ring

A workstation (or PC) on the Ethernet network cannot communicate with a server on an FDDI Ring. The Ethernet network is bridged to the FDDI Ring using a Cabletron Systems FDMMIM bridge module.

Check the FDMMIM module to ensure that it is not in the standby mode.

Is the FDMMIM in standby mode?

Y N

Check the frame type to make sure that the Ethernet workstation is not set to the 802.3 frame type.

Is the frame type set to a frame type other than 802.3?

Y N

Change the frame type on the Ethernet workstation to match the frame type set on the server attached to the ring.

Can the workstation communicate with the server?

Y N

The DNI card in the server may not be configured correctly. Check the Startup.ncf file on the server.

Is the "Set Maximum Physical Receive Packet Size" set to at least 1518?

Y N

Set the maximum packet size to 1518.

The frame type (Ethernet-802.2, -802.3, -II, or SNAP) being used on the workstation and server may not be the same.

Are the frame types different?

Y N

Call Cabletron Technical Support.

Set the workstation and server to use the same type frame and try to connect with the server.

Can the users connect with the server?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Are both the workstation and server set for the same frame type?

Y N

Change the frame type on the Ethernet workstation to match the frame type set on the server attached to the ring.

Can the workstation communicate with the server?

Y N

The DNI card in the server may not be configured correctly. Check the Startup.ncf file on the server.

Is the "Set Maximum Physical Receive Packet Size" set to at least 1518?

Y N

Set the maximum packet size to 1518.

The frame type (Ethernet-802.2, -802.3, -II, or SNAP) that is being used on the workstation and server may not be the same.

Are the frame types different?

Y N

Call Cabletron Technical Support.

Set the workstation and server to use the same type frame and try to connect with the server.

A B C (continue)

A B C

Can the users connect with the server?
Y N
| Call Cabletron Technical Support.
| Congratulations, the problem is solved.
| Call Cabletron Technical Support.

Using the Chassis Status View screen in Local Management or using a network management application such as SPEL or SPECTRUM, enable the FDMIM (take it out of standby mode).

Can the workstation communicate with the server?

Y N

Check the frame type to make sure the workstation is not set to the 802.3 frame type.

Is the frame type set to a frame type other than 802.3?

Y N

Change the frame type on the workstation to match the frame type set on the server attached to the ring.

Can the workstation now communicate with the server?

Y N

Change the frame type on the Ethernet workstation to match the frame type set on the server attached to the ring.

Can the workstation communicate with the server?

Y N

The DNI card in the server may not be configured correctly. Check the Startup.ncf file on the server.

Is the "Set Maximum Physical Receive Packet Size" set to at least 1518?

Y N

Set the maximum packet size to 1518.

The frame type (Ethernet-802.2, -802.3, -II, or SNAP) that is being used on the workstation and server may not be the same.

Are the frame types different?

Y N

Call Cabletron Technical Support.

Set the workstation and server to use the same type frame and try to connect with the server.

Can the users connect with the server?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Are both the workstation and the server set to the same frame type?

Y N

Change the frame type section on the Ethernet workstation to match the frame type set on the server attached to the ring.

Can the workstation now communicate with the server?

Y N

Change the frame type on the Ethernet workstation to match the frame type set on the server attached to the ring.

A B C (continue)

A B C

Can the workstation communicate with the server?

Y N

The DNI card in the workstation may not be configured correctly. Check the Startup.ncf file on the server.

Is the "Set Maximum Physical Receive Packet Size" set to at least 1518?

Y N

Set the maximum packet size to 1518.

The frame type (Ethernet-802.2, -802.3, -II, or SNAP) that is being used on the workstation and server may not be the same.

Are the frame types different?

Y N

Call Cabletron Technical Support.

Set the workstation and server to use the same type frame and try to connect with the server.

Can the users connect with the server?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

6.2 Workstation and Server on the Same FDDI Ring Cannot Link

Both the workstation and server are connected to a ring concentrator.

Can any other workstation on the ring communicate with the server?

Y N

Check the DNI card configuration of the server. Novell only supports FDDI_802.2 and FDDI_SNAP and does not support Ethernet 802.3.

Are the Ethernet clients using Ethernet 802.3?

Y N

Call Cabletron Technical Support.

Edit the workstation driver configuration files to change the frame type for the proper Ethernet to FDDI conversion.

Can all of the workstations on the ring communicate with the server?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Did the workstation link?

Y N

Is the workstation dual attached to the ring?

Y N

Try moving the lobe cable of the workstation to a different port on the ring concentrator.

Did the workstation link?

Y N

Replace the cable.

Did the workstation link?

Y N

Call Cabletron Technical Support.

Can the workstation communicate with the server?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Reboot the station.

Can the workstation communicate with the server?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

NOTE: It is recommended that you run a DNI diagnostic test on the station DNI card to ensure that the card is trouble free.

Call Cabletron Technical Support.

6.3 Replaced a Concentrator Module, but the Ring Does Not Recognize It

A concentrator module such as a 9F12x-xx or FDCMIM-x was replaced, but now the ring does not recognize that concentrator.

Is the revision level of the concentrator firmware at the same revision level as the other concentrators in the hub?

Y N

| Call Cabletron Technical Support.

Try to install the concentrator into a different slot in the hub.

Did the ring recognize the concentrator module?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

6.4 Installed a New Dual Attached Device, but the Ring Does Not Recognize It

Make sure that the ring connections to all the devices on the ring are valid. Refer to the manuals for each device to check on how to make the connections.

Are the ring connections correct?

Y N

| Correct as necessary.

Does the ring recognize the new dual attached device?

Y N

| Perform the loopback test on the new dual attached device (jumper from the A to B port). Check the LEDs on the device for the following indications:

- The device is linked.
- There is no wrap.
- There is no twist.

Are the LED indications different?

Y N

| Ensure that all cables have been installed according to the X3T9.5 ANSI standards. Correct as necessary to bring the cables within standards.

Now, does the ring recognize the new dual attached device?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Perform the loopback test on the new dual attached device (jumper from the A to B port). Check the LEDs on the device for the following indications:

- The device is linked.
- There is no wrap.
- There is no twist.

(continue)

Are the LED indications different?

Y N

| Ensure that all cables have been installed according to the X3T9.5 ANSI standards. Correct as necessary to bring the cables within standards.

Does the ring recognize the new dual attached device?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Congratulations, the problem is solved.

6.5 Ring Is Running Slower Than Expected

Is the ring within the X3T9.5 ANSI standard?

Y N

| Correct the ring as necessary to bring it in within the X3T9.5 ANSI standard.

Does the ring continue to run slower than expected?

Y N

| Congratulations, the problem is solved.

Make sure the maximum frame size for the ring is set for 4500 or less.

Is the frame size set for 4500 or less?

Y N

| Set the frame size to 4500 or less.

Using a network management application such as SPEL or SPECTRUM, check for errors on the ring.

Are there any errors on the ring?

Y N

| Call Cabletron Technical Support.

The errors need to be cleared. Call Cabletron Technical Support for assistance.

CHAPTER 7

ETHERNET PROBLEMS

This chapter provides a troubleshooting guide that identifies some of the more common problems in an Ethernet network environment. Refer to the following list and proceed to the appropriate section shown in parentheses for the possible causes and remedy.

1. Cannot Access Local Management — (Section 7.1)
2. Connected Two Hubs Together, but Cannot Pass Traffic Between Them — (Section 7.2)
3. Observing Excessive Collisions on a Network Repeated Segment — (Section 7.3)
4. User Configurable Parameters for a Device Are Lost When That Device Is Powered Down — (Section 7.4)
5. ESX Will Not Pass Traffic Through MMAC-MxFNB, Channel A — (Section 7.5)

7.1 Cannot Access Local Management

Cannot access Local Management (LM) through the terminal or PC connected to an intelligent device. The PC has a Windows terminal emulation application.

Can you access the password screen?

Y N

Ensure that the correct cable is used to connect the terminal to the correct port on the intelligent device. Refer to the device documentation for cabling information and COM port usage.

Are the correct cable and port being used?

Y N

Correct as necessary to ensure that the correct cable and port are being used.

Now can you access the Password screen?

Y N

Check the terminal settings. Refer to the device documentation for the proper settings.

Are the settings correct?

Y N

Correct as necessary to ensure that the correct settings are used.

Can you access the Password screen?

Y N

Call Cabletron Technical Support.

Are you able to access the LM screens after the Password screen?

Y N

Ensure that you use the correct password to access LM. Refer to the device documentation for information concerning security and the restoration of default passwords.

Now can you access the LM screens?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

7.2 Connected Two Hubs Together, but Cannot Pass Traffic Between Them

Two hubs (standalone or modular) are connected together, but they will not pass traffic.

Check the LINK LEDs of the device ports that are used to connect the two hubs.

Are their LINK LEDs lit?

Y N

Check the cable used to connect the two hubs to ensure that it is the correct cable and it is not defective. Refer to the hub or device documentation for details about cable connections between two hubs. Typically, a crossover cable must be used to connect two of the same type devices (such as two hubs). Crossover cables (Part Number 9360034-x, where x is the length) are available from Cabletron Systems.

Is the correct cable being used?

Y N

Replace the existing cable with a correct known good cable.

Did the LINK LEDs light?

Y N

Call Cabletron Technical Support.

Are the ports that the cable is connected to, enabled?

Y N

Enable the ports.

Can traffic pass between the two hubs?

Y N

The problem may be with one of the ports. Try connecting to a different port on either or both of the hubs. Make sure that both of the ports are enabled.

Can traffic pass between the two hubs?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

7.3 Observing Excessive Collisions on a Network Repeated Segment

Collision (CLN) LED or network management application, such as SPEL or SPECTRUM, indicates that there are more collisions than expected on a repeated segment of the network.

Are there any transceivers attached to the segment with the SQE feature enabled?

Y N

Is the segment connected to a standalone hub such as an SEHI?

Y N

It is assumed that the segment is connected to a modular hub. Collisions problems can be isolated to a particular MIM in the hub by unplugging each MIM and observing if there is any reduction in the number of collisions.

Unplug a MIM and note if there is a reduction in collisions.

Was there a reduction in collisions?

Y N

Plug in the MIM, then unplug another.

Was there a reduction in collisions?

Y N

Repeat this process until all the MIMs in the hub have been checked. If after checking all the MIMs in the hub there is still no reduction in collisions, call Cabletron Technical Support.

The collision problem is now isolated to a MIM. The collision problem can now be isolated further to an end user device and the associated cabling by disconnecting one user device cable at a time from the MIM and noting if there is a reduction in collisions.

At the MIM, disconnect the cable coming from a user device and note if there is a reduction in collisions.

Was there a reduction in collisions?

Y N

Repeat this process until all the user devices have been checked. If there is still no reduction in collisions after checking all of the user devices connected to the MIM, call Cabletron Technical Support.

The problem may be with the cabling or the attached user device. Check the cable and device to make sure the cabling used is the correct one and that it is not damaged. Also check the device for any indications of a problem. Correct as necessary. Then reconnect the user device to the MIM.

Did the number of collisions remain reduced?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved. Reconnect all the other user device cables that were disconnected from the MIM.

The collision problem is now isolated to a standalone hub. The collision problem can now be isolated further to an end user device and the associated cabling by disconnecting one user device cable at a time from the standalone hub and noting if there is a reduction in collisions.

At the standalone hub, disconnect the cable coming from a user device and note if there is a reduction in collisions.

Was there a reduction in collisions?

Y N

Do not reconnect the cable and unplug a cable from another user device.

Was there a reduction in collisions?

Y N

Repeat this process until all the user devices have been checked. If there is still no reduction in collisions after checking all of the user devices connected to the standalone hub, call Cabletron Technical Support.

A B C (continue)

A B C

| | |

The problem may be with the cabling or the attached user device. Check the cable and device to make sure the cabling used is the correct one and that it is not damaged. Also check the device for any indications of a problem. Correct as necessary. Then reconnect the user device to the standalone hub.

Did the number of collisions remain reduced?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved. Reconnect all the other user device cables that were disconnected from the standalone hub.

Shut off the SQE feature of the transceiver.

Is there a reduction in the number of collisions?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

7.4 User Configurable Parameters for a Device Are Lost When That Device Is Powered Down

Does the device have a battery backup feature for NVRAM?

Y N

Check the NVRAM reset switch for proper setting. Refer to the device documentation for the proper setting. Power up the device. Reenter the user configurable parameters. Power down the device. Then power up the device to see if the new parameters were retained.

Were the user configurable parameters retained?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Check the positioning of the battery enable/disable jumper. Make sure that the jumper is in the battery enable position. Refer to the device documentation for jumper location and setting. Power up the device and reenter the user configurable parameters. Power down the device. Then power up the device to see if the reentered configuration parameters were retained.

Were the user configurable parameters retained?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

7.5 ESX Will Not Pass Traffic Through MMAC-MxFNB, Ethernet Channel A

The ESX (ESXMIM or ESXMIM-F2) will not pass traffic through Ethernet Channel A in an MMAC-MxFNB.

Is the Channel A LANVIEW LED lit on the ESX?

Y N

Access Local Management in the ESX and change the port 1 configuration from RJ45 to A Channel. Then check to see if the Channel A LANVIEW LED is lit.

Did the Channel A LANVIEW LED light?

Y N

Call Cabletron Technical Support.

Can the ESX pass traffic through Ethernet Channel A in the MMAC-MxFNB?

Y N

Is there a known good (operational) management module (such as an IRM-2 or EMME) in slot 1 of the MMAC-MxFNB?

Y N

A management module must be in slot 1 for the ESX to pass traffic through Channel A in the MMAC-MxFNB. Install a management module in slot 1.

After installing a management module in slot 1, can the ESX pass traffic through Channel A?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

CHAPTER 8

TERMINAL SERVER PROBLEMS

This chapter provides a troubleshooting guide that identifies some of the more common problems related to terminal servers in a network environment. Refer to the following list and proceed to the appropriate section shown in parentheses for the possible causes and remedy.

NOTES:

In this chapter, the term “CSMIM2” also refers to the CSMIM, MODMIM, MicroCS, and CSMIM-T1 devices unless it is specified differently.

The examples of the terminal displays shown in this chapter reflect the CSMIM software versions up to and including Version 10.1.

1. No monitor: Prompt — (Section 8.1)
2. Was Running, Had Power Outage, Now Won't Boot, Was Booting From UNIX Host — (Section 8.2)
3. Was Running, Had Power Outage, Now Won't Boot From Flash — (Section 8.3)
4. Booted, but Cannot Ping or Telnet — (Section 8.4)
5. Printer is Not Printing — (Section 8.5)
6. Attempted to Use Optional Software (LAT, Dial Up, IPX, or Telnet 3270), but Software Not Working — (Section 8.6)
7. On a Terminal Dial In, I Get Connect Message, but No Prompt, Menu, or Security Request — (Section 8.7)
8. When Dialing In as a Terminal, the “username” or “password:” Prompt Did Not Display — (Section 8.8)
9. Not Able to Establish a PPP Link — (Section 8.9)

8.1 No monitor: Prompt

No monitor: prompt displayed at the CSMIM2.

Is your terminal connected to Port One of the CSMIM2?

Y N

Connect to Port One using a straight-through 8-wire cable and Cabletron adapter (Part Number 9372074) to set up an asynchronous terminal.

Did monitor: prompt appear?

Y N

Did you get an error message?

Y N

Call Cabletron Technical Support.

Note the error message and call Cabletron Technical Support.

Congratulations, the problem is solved.

Check that you are using the proper cable and Cabletron adapter (Part Number 9372074) for the CSMIM2. The connectors used for local management are pinned out the same as the ports on the CSMIM2, but CTS/RTS is not used. Set VT100 terminal for 8 bits, no parity, X-ON/X-OFF, and 9600 baud.

Do you have the proper cable/adapter, and are the terminal settings correct?

Y N

Replace adapter/cable and correct terminal settings as necessary.

Reseat the CSMIM2. Slide the module out of the hub and then reinsert. Lock the card in place using the knurled-head thumb screws. Press the RESET button within 30 seconds of reseating the card. After a self test lasting up to 60 seconds, the ATTN LED will light and the CSMIM2 may display ON PORT ONE ONLY at the monitor: prompt. Enter a ? to view the help screen.

Did the help screen display?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

8.2 Was Running, Had Power Outage, Now Won't Boot, Was Booting from UNIX Host.

A CSMIM2 was running before a power outage occurred, and now it will not boot from the UNIX host. Check that the boot host is running.

Is the boot host running?

Y N

Try to start boot host.

Did the host boot without errors?

Y N

You may have to correct disc errors and/or recover files from the backup tapes. Correct as needed and try to restart the boot host.

Did the host boot?

Y N

Contact the host vendor for technical support.

Check to see if the erpcd is running.

Check the Services file to see if there is a line for socket 121. Refer to the software installation notes for the CSMIM2.

Check the startup script and add code if needed. Refer to release notes for codes. Try to boot the host again.

Did the host boot?

Y N

Load CSMIM2 software on another host. Boot from the new host.

Try to ping the CSMIM2.

Can the host ping the CSMIM2?

Y N

Can the host ping anything?

Y N

This is a host problem. Check the network connection. Check that the network software is running (rup or netstar -r). If not, contact the host vendor for technical support or check your UNIX Man pages.

Check to see if there are routers in the network.

Are there routers in the network?

Y N

Call Cabletron Technical Support.

Are all routers passing traffic?

Y N

From the UNIX host, ping other units on the same subnet as the CSMIM2.

Can you ping units on the same subnet?

Y N

This is a router problem. Refer to Chapter 5 for common router problems/solutions.

Reset the CSMIM2. The `monitor:` prompt is displayed. Enter `boot -v` at the `monitor:` prompt.

Did the CSMIM2 boot successfully?

Y N

At the `monitor:` prompt, enter the `addr -d` command. A list of addresses and other information is displayed. Check the load host IP address, CSMIM2 IP address, and the subnet mask to ensure that they are correct. If there is a router hop, check that the gateway address is correct.

A (continue)

A

Are all the addresses correct?

Y N

Correct the addresses as necessary.

Enter the `image -d` command. Three or four lines of data will display. Check the top line to see if the image name and the revision level of the software running on the UNIX host are appropriate for the device as shown in [Table 8-1](#).

Table 8-1. Devices/UNIX Software/Image Name

Device Software	Software Rev.	Image Name
CSMIM	7.X through 9.x	oper.42.enet
CSMIM2 and MODMIM	8.1.1 through 9.x	oper.42.enet
MicroCS	8.1.1 through 9.x	oper.52.enet
MicroCS	10.x and above	oper.56.enet
MODMIM, CSMIM-T1, CSMIM, and CSMIM2	10.x and above	oper.46.enet

Do you have the correct load image (for example, devices match UNIX level software and image name).

Y N

Correct as necessary.

At the `monitor:` prompt, enter the `sequence -d` command.

Did “net,self”, or “net” display?

Y N

Did “self” display?

Y N

If `self,net` displays, enter `sequence` at the `monitor:` prompt. A question displays. Enter the `net,self` command. Then enter the `boot -v` command to boot the device.

Did the device boot?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Do you want to boot from FLASH?

Y N

Change the sequence to “net”. Enter `sequence` at the `monitor:` prompt. A questions displays. Enter, `net`. Then enter the `boot -v` command to boot the device.

Did the device boot?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Go to [Section 8.3](#).

Enter the `boot -v` command.

Did the device boot?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

8.3 Was Running, Had Power Outage, Now Won't Boot, Was Booting from FLASH

A CSMIM2 was running before a power outage occurred, and now it will not boot. The CSMIM2 was booting from FLASH.

Place the CSMIM2 in the Setup Mode. To do this reseal the CSMIM2. Slide the module out of the hub and then reinsert. Lock the card in place using the thumb screws. Press the RESET button within 30 seconds of reseating the card. After a self test lasting up to 60 seconds, the ATTN LED will come on and the CSMIM2 may display the `monitor:` prompt, ON PORT ONE ONLY. Enter sequence `-d` at the `monitor:` prompt.

Was the reply, "self"?

```
Y  N
|  |
|  | Set the sequence to self.
```

Enter the `image -d` command. Four lines of data display.

Does the self test boot image name on line 4 match the image name on line 1?

```
Y  N
|  |
|  | Was there a line 4 displayed?
|  | Y  N
|  | |  | At the monitor: prompt, enter the config command. Check to see if FLASH is present in the CSMIM2.
|  | |  | Is FLASH present?
|  | |  | Y  N
|  | |  | |  | Does the CSMIM2 boot from a UNIX host?
|  | |  | |  | Y  N
|  | |  | |  | |  | Does the CSMIM2 boot from a VMS host?
|  | |  | |  | |  | Y  N
|  | |  | |  | |  | |  | Call Cabletron Technical Support to inquire about software availability.
|  | |  | |  | |  | |  | Call Cabletron Technical Support.
|  | |  | |  | |  | |  | Go to Section 8.2.
|  | |  | |  | |  | |  | Call Cabletron Technical Support.
|  | |  | |  | |  | |  | Is the text in lines 4 and 1 the same?
|  | |  | |  | |  | |  | Y  N
|  | |  | |  | |  | |  | |  | Make lines 1 and 4 the same.
```

Enter the `addr -d` command. Check that the IP address for the CSMIM2 and the subnet mask are correct. Also make sure the load host IP address is either zeros or the same as the CSMIM2.

Are all addresses and the subnet mask correct?

```
Y  N
|  |
|  | Correct the addresses and the subnet mask as necessary.
```

Enter the `boot -v` command. The device should boot in 3 to 4 minutes.

Does the device boot?

```
Y  N
|  |
|  | Call Cabletron Technical Support.
|  | Congratulations, the problem is solved.
```

8.4 Booted, but Cannot Ping or Telnet

The CSMIM2 booted, but you cannot ping or Telnet to a host.

Can you ping any IP address or host?

Y N

Check the channel connection in the hub.

Is the CSMIM2 connected to an active channel (A, B, or C)?

Y N

Move the CSMIM2 to an active channel.

Now can you ping the CSMIM2?

Y N

Check for duplicate IP addresses.

Is there a duplicate IP address?

Y N

Did the CSMIM2 boot via Maintenance Operations Protocol (MOP) from a VMS host?

Y N

Call Cabletron Technical Support.

Was the CSMIM2 programmed with an IP address?

Y N

Program the CSMIM2 with an IP address. Then reboot.

Can you ping or Telnet to the host?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Reassign the IP addresses to eliminate duplicate addresses. Then reboot the CSMIM2.

Can you ping or Telnet to the host?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Check for duplicate IP addresses.

Is there a duplicate IP address?

Y N

Call Cabletron Technical Support.

Reassign the IP addresses to eliminate duplicate addresses. Then reboot the CSMIM2.

Can you ping or Telnet to the host?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Are the devices that you cannot ping host names?

Y N

(continue)

A

Are these IP addresses on the same subnet as the CSMIM2?

Y N

Enter the `netstat -r` command. A list is displayed.

Can you see the subnet in the displayed list?

Y N

Check to see if the annex parameter route is set to Y.

Is the route set to Y?

Y N

With the CSMIM2 in the Admin Mode, enter the following commands:

```
admin: set annex route Y
admin: reset annex all
```

Reboot the system using the following command:

```
annex# boot -r
```

Did the CSMIM2 reboot?

Y N

Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

Are your routers doing Routing Information Protocol (RIP) broadcasts?

Y N

Make the following changes to the config.annex file:

```
%gateway
net default gateway <ip addr> metric 1 hardwired
```

where <ip addr> is the IP address of the router port on the same segment as the CSMIM2. You will have to reboot the CSMIM2.

Did the CSMIM2 reboot?

Y N

Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

Call Cabletron Technical Support.

Can you ping or Telnet to the host?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Can you ping or Telnet to the host?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

A B C D

Are your routers doing Routing Information Protocol (RIP) broadcasts?

Y N

Make the following changes to the config.annex file:

```
%gateway
net default gateway <ip addr> metric 1 hardwired
```

where <ip addr> is the IP address of the router port on the same segment as the CSMIM2. You will have to reboot the CSMIM2.

Did the CSMIM2 reboot?

Y N

Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

Call Cabletron Technical Support.

Can you ping or Telnet to the host?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Can you ping the IP address of that host?

Y N

Are the IP addresses on the same subnet as the CSMIM2?

Y N

Enter the netstat -r command. A list is displayed.

Can you see the subnet in the displayed list?

Y N

Check to see if the annex parameter route is set to Y.

Is the route set to Y?

Y N

With the CSMIM2 in the Admin Mode, enter the following commands:

```
admin: set annex route Y
admin: reset annex all
```

Reboot the system using the following command:

```
annex# boot -r
```

Did the CSMIM2 reboot?

Y N

Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

Are your routers doing Routing Information Protocol (RIP) broadcasts?

(continue)

A B C D E

A B C D E

Y N

Make the following changes to the config.annex file:

```
%gateway
net default gateway <ip addr> metric 1 hardwired
```

where <ip addr> is the IP address of the router port on the same segment as the CSMIM2. You will have to reboot the CSMIM2.

Did the CSMIM2 reboot?

Y N

| Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

| Call Cabletron Technical Support.

Can you ping or Telnet to the host?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Can you ping or Telnet to the host?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

Are your routers doing Routing Information Protocol (RIP) broadcasts?

Y N

Make the following changes to the config.annex file:

```
%gateway
net default gateway <ip addr> metric 1 hardwired
```

where <ip addr> is the IP address of the router port on the same segment as the CSMIM2. You will have to reboot the CSMIM2.

Did the CSMIM2 reboot?

Y N

| Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

| Call Cabletron Technical Support.

Can you ping or Telnet to the host?

Y N

| Call Cabletron Technical Support.

Does netstat -r show routes?

Y N

| Call Cabletron Technical Support.

Can you ping or Telnet to the host?

A B C D (continue)

A B C D

| | | | Y N
| | | | | Call Cabletron Technical Support.
| | | | | Congratulations, the problem is solved.
| | | | |
| | | | | Call Cabletron Technical Support.

This is a domain name server problem. Go to the CSMIM2 Administration Mode to check the server parameters.

Does the parameter pref-name-server-1 or 2 have the IP address of the Domain Naming Service (DNS) servers?

Y N

| Set the "pref_name1_addr" IP address to the IP address of the DNS server. If you have a second server, set the "pref_name2_addr" to the IP address of the second server. Reset annex security. From the annex prompt, try to ping or Telnet to the host.

Can you ping or Telnet to the host?

Y N

| Call Cabletron Technical Support.
| Congratulations, the problem is solved.

Can you ping to the DNS Server?

Y N

| The problem may be at the DNS Server. Call Cabletron Technical Support.
| Call Cabletron Technical Support.

8.5 Printer Is Not Printing

Is the printer known to be a working printer?

Y N

Start a printer self-test (refer to the printer documentation for instructions), or try printing a file by sending a print command from a VMS or UNIX host.

Did the printer do the self-test?

Y N

There is a printer problem. Refer to the printer documentation for troubleshooting instructions and maintenance support.

Check the wiring from the printer to the CSMIM2 to make sure that the printer is connected to Port One of the CSMIM2 using a straight-through 8-wire cable and a Cabletron Systems adapter (Part Number 9372074).

Is the wiring okay?

Y N

Correct the wiring. Then try printing a file.

Did the printer print the file?

Y N

Check the CSMIM2 port parameters.

Make sure mode is set to: `slave`

The bit speed of the port is the same as the printer serial interface speed.

The flow control (X-ON/X-OFF or CTS, RTS) of the printer is the same as the CSMIM2 port. The CSMIM2 defaults to software flow control: X-ON/X-OFF.

Are the parameters correct?

Y N

Correct the parameter settings as necessary and reset the CSMIM2 port.

Try to Telnet to the port.

The following is an example of how to do it:

If the CSMIM2 address is 134.144.35.60 and the printer is on port 16, your port command would be:

```
telnet 134.141.35.60 5016
```

The following response may vary depending on your system software:

```
trying
connected to 134.141.35.60
escape sequence is ^]
```

Type in a line of text.

Press CTRL-J.

Press CTRL-M.

Did the printer print that line of text?

Y N

Call Cabletron Technical Support.

Escape from Telnet to port by pressing CTRL-] and then entering the `close at telnet` command. Try sending a line of text and print command from the host to the printer.

Did the printer print the text?

Y N

Problem with host spooler. Call Cabletron Technical Support.

Congratulations, the problem is solved.

8.6 Attempted to Use Optional Software (LAT, DUIP, IPX, Telnet 3270 or ARAP), but Software Not Working

Attempted to use optional software such as Local Area Transport (LAT), Dial Up IP (DUIP), Internet Protocol Exchange (IPX), Telnet 3270 (TN3270), or Apple Remote Access Protocol (ARAP), but the optional software is not working.

Do you have an Option/LAT Key?

Y N

Have you purchased this software option?

Y N

Call Cabletron Systems Sales for available options.

Do you have the purchase order number and the Physical Address (MAC address)? The address starts with:
00-80-2D-xx-xx-xx

For LAT, you also need the number of ports on the CSMIM2.

Call Cabletron Customer Service to obtain the proper Software Option Key(s).

Enter the `starts -o` command.

Check the system reply to see if your Software Option Key is on.

Is the key on?

Y N

Was the reply “keyed, disables by loader” displayed?

Y N

Check the Software Option Key code to ensure that the syntax is correct. Input for the code is case sensitive.

NOTE: Zero and capital letter O, lower case i and 1, lower case g and q are often entered incorrectly.

Is the entry correct for your option?

Y N

Enter the correct code taking care to use the proper syntax. Reboot the CSMIM2.

Is the software now available when you enter a `stats -o` command?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

The CSMIM2 does not have enough memory. Call Cabletron Systems Sales for information on memory upgrades.

Call Cabletron Technical Support.

8.7 On a Terminal Dial In, I Get Connect Message, but No Prompt, Menu, or Security Request

Check the cable connection from the modem port to the CSMIM2 port.

Are you using a straight-through 8-wire cable from the CSMIM2 port to the modem where the cable is terminated with a Data Communications Equipment (DCE) connector, which is plugged into a Cabletron Systems adapter (Part Number 9372075) that connects to the modem?

Y N

Refer to the CSMIM2 installation manual for details on how to connect to a modem.

With the CSMIM2 in the Admin Mode, enter the command to set the port parameters.

Example: If the modem is connected to the CSMIM2 port 16, you would enter, `port 16`, press Return, then enter `show port`.

Check the port mode to see if it is set to a mode that is either "input" or "bidirectional". Also check that the port type is set to "dial-in", and the control lines are set to either "both" or "modem_control". Refer to the *CSMIM2 Network Administrator's Guide* for details.

Are the modem and the CSMIM2 using the same type of flow control (X-ON/X-OFF or the RTS/CTS Hardware Flow Control lines)?

NOTE: The default flow control setting for most high-speed modems (above 9600 bps) is RTS/CTS, while the setting for most low-speed modems (9600 bps or less) is X-ON/X-OFF. Check your modem manual for the default flow control.

Y N

Change either the modem or CSMIM2 flow control setting so both the modem and the CSMIM2 are set for the same flow control. The example below shows how to set the hardware flow control on port 16 of the CSMIM2.

Example: With the CSMIM2 set in the Admin Mode, enter the following commands:

```
port 16
set port control_lines both
set port input_flow_control eia
set port output_flow_control eia
reset 16
```

Dial in from a terminal.

Did the expected text display?

Y N

Is the displayed text unrecognizable?

Y N

Did the display get pass the connect message?

Y N

Call Cabletron Technical Support.

With the CSMIM2 in the Super-User Mode, enter `stat -m16` (16 is the port number). The port status displays. Check that RTS, DTR, DSR, DCD, and CTS are all capital letters.

Refer to *CSMIM2 Network Administrator's Guide*, Book C, for details on how to interpret the displayed port status.

NOTE: If the port status information indicates that there are parity, framing, and overrun errors, there may be a wiring problem or the parity and the data bits are set incorrectly. The transmitter and receiver must be set the same.

(continue)

A B C

A B C

The following is an example of a port setup for V.32 and V.42 type modems with a CSMIM2 and revision 9.0 or greater software. Port 16 is used in this example.

```
port 16
set port type dial_in
set port speed 115200
set port autobaud n
set port mode auto_adapt
set port control_lines both
set port input_flow_control eia
set port output_flow_control eia
(Also enter the next command on revisions below 9.2.7.)
set port bidirectional_modem y
reset 16
```

Correct the modem and CSMIM2 settings as necessary so both are set the same, then try dialing in from a terminal.

Did the expected display appear on the terminal?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

With the CSMIM2 in the Admin Mode, enter the commands (example is for port 16):

```
port 16
show port
```

The port parameters are displayed. In this example, it is the port 16 parameters.

Check for the following:

- Autobaud is set to N
- Port speed is set as high as possible. The highest port speed is dependent on the modem (refer to the modem manual for the maximum speed) and the CSMIM software revision. For MicroCS, MODMIM, and CSMIM2 with rev. 8.1.1, the maximum speed is 57600 bps; with rev. 9.0 or greater, the maximum speed is 115200 bps. The CSMIM maximum speed is hardware set to 38400 bps and the CSMIM-T1 maximum speed is 115200.

It is recommended that you set the CSMIM2 to its maximum port speed and then set the modem speed accordingly. Set the DTE line of the modem so that it runs at a fixed rate.

To program the modem, set the CSMIM2 port to "slave". The following example shows the code to do it assuming the port is 16.

```
port 16
set port mode slave
reset 16
quit
```

Try to Telnet to the port.

The following is an example of how to do it:

If the CSMIM2 address is 134.144.35.60 and the printer is on port 16, your port command would be:

```
telnet 134.141.35.60 5016
```

The following response may vary depending on your system software:

```
trying
connected to 134.141.35.60
escape sequence is ^]
```

Enter the at modem command.

A B (continue)

Did either “0” or “OK” display?**Y N**

| Call Cabletron Technical Support.

Program the modem. Depending on the modem used, the commands to program the modem parameters may be different. **Table 8-2** lists the modem parameters and the associated commands according to two of the more widely used modems, Hayes AT and US Robotics. For programming information about other modems, refer to the associated documentation.

Table 8-2. Modem Settings for High Speed (V.32, V.42) Type Links

Parameters	Hayes AT	US Robotics
CTS/RTS (hardware) flow control	&K3	&R2&H1
Hang up, disconnect, and reset on loss of DTR	&D3	&D2
DCD following Carrier Detect	&C1	&C1
DSR always forced on	&S0	&S0
Echo Commands	E1	E1
Numeric result codes	V0	V0
Result codes on originated calls only	Q2	Q2
Auto answer on	S0=1	S0=1
V.42 bis compression	S46=138	&B1&K2
V.42 error correction	&Q9	
Dial time-out of 60 seconds	S7=60	S7=60

Write the commands to the modem NVRAM. This is usually done using the AT&W command. (Refer to your modem documentation for further instructions.)

Stop the Telnet session by pressing CTRL -].

In the Admin Mode, set the port back to CLI Mode.

Example:

```
port 16
set port mode cli
reset 16
```

Try dialing in again.

Was the dial-in successful?**Y N**

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

With the CSMIM2 in the Admin Mode, enter the commands (example is for port 16):

```
port 16
show port
```

The port parameters are displayed. In this example, it is the port 16 parameters.

Check for the following:

- Autobaud is set to N.
- Port speed is set as high as possible. The highest port speed is dependent on the modem (refer to the modem manual for the maximum speed) and the CSMIM software revision. For MicroCS, MODMIM, and CSMIM2 with rev. 8.1.1, the maximum speed is 57600 bps; with rev. 9.0 or greater, the maximum speed is 115200 bps. The CSMIM maximum speed is hardware set to 38400 bps and the CSMIM-T1 maximum speed is 115200.

It is recommended that you set the CSMIM2 to its maximum port speed and then set the modem speed accordingly. Set the DTE line of the modem so that it runs at a fixed rate.

(continue)

To program the modem, set the CSMIM2 port to “slave”. The following example shows the code to use assuming the port is 16.

```
port 16
set port mode slave
reset 16
quit
```

Try to Telnet to the port.

The following is an example of how to do it:

If the CSMIM2 address is 134.144.35.60 and the printer is on port 16, your port command would be:

```
telnet 134.141.35.60 5016
```

The following response may vary depending on your system software:

```
trying
connected to 134.141.35.60
escape sequence is ^]
```

Enter the `at` modem command.

Did either “0” or “OK” display?

```
Y N
| Call Cabletron Technical Support.
```

Program the modem. Depending on the modem used, the commands to program the modem parameters may be different. **Table 8-2** lists the modem parameters and the associated commands according to two of the more widely used modems, Hayes AT and US Robotics. For programming information of other modems, refer to the associated documentation.

Table 8-3. Modem Settings for High Speed (V.32, V.42) Type Links

Parameters	Hayes AT	US Robotics
CTS/RTS (hardware) flow control	&K3	&R2&H1
Hang up, disconnect, and reset on loss of DTR	&D3	&D2
DCD following Carrier Detect	&C1	&C1
DSR always forced on	&S0	&S0
Echo Commands	E1	E1
Numeric result codes	V0	V0
Result codes on originated calls only	Q2	Q2
Auto answer on	S0=1	S0=1
V.42 bis compression	S46=138	&B1&K2
V.42 error correction	&Q9	
Dial time-out of 60 seconds	S7=60	S7=60

Write the commands to the modem NVRAM. This is usually done using the AT&W command. (Refer to your modem documentation for further instructions.)

Stop the Telnet session by pressing CTRL -].

In the Admin Mode, set the port back to CLI Mode.

Example:

```
port 16
set port mode cli
reset 16
```

Try dialing in again.

Was the dial in successful?

```
Y N
| Call Cabletron Technical Support.
```

Congratulations, the problem is solved.

8.8 When Dialing In as a Terminal, the “username” or “password:” Prompt Did Not Display

This is considered to be a security problem.

Is the last message displayed a connect message from your modem?

Y N

Did the “annex:” prompt display?

Y N

Check for error messages.

Did an error message such as the following one display?

```
Checking authorization, please wait...
```

```
CLI authorization impossible due to error: Connection timed out.
```

```
Annex Command Line Interpreter * Copyright (C) 1988, 1996 Xylogics, Inc.
```

```
Press return to start log-in.
```

Y N

Did an error message such as the following one display?

```
Checking authorization, Please wait..
```

```
Remote security server unavailable: Connection timed out
```

```
Invoking local security.
```

```
Port password:
```

```
Enter the correct port password.
```

Did the following message display?

```
Permission granted
```

```
annex:
```

Y N

Call Cabletron Technical Support.

Try pinging the security host IP.

Was the pinging successful?

Y N

This is like problem 8.4

Log on to the UNIX host as root. Depending on if the UNIX host supports Berkley Standard Distribution (BSD) or System 5, enter the following:

For BSD, enter:

```
ps -aux|grep erpc
```

For System 5, enter:

```
ps -ef|grep erpc
```

A B (continue)

A B

Did two or more lines display?

Y N

Enter the following command:

```
cd /usr/annex (or the appropriate home path when using CSMIM software Version 11.0 or greater)
./erpcd
```

Try to dial in as a terminal.

Did the “username:” prompt display?

Y N

At the UNIX host, enter the “more eservices” command. A display similar to the following example should appear. In this example, the last line is commented and charmer is the host name in the host prompt.

```
charmer 2# more eservices
# erpc remote programs
#
# prog no.      verlo   verhi   name
#
1              0       0       bfs
#3            0       99      acp
charmer 3#
```

Is the last line commented (# precedes the line)?

Y N

Enter the `ls -cal` command. A list of files are displayed.

Is there an acp_passwd file?

Y N

Create an acp_passwd file. Refer to the CSMIM2 Annex Administrative Guide, Book A, the chapter on security for instructions. Try dialing in again.

Did the “username:” prompt display?

Y N

Ping to the IP address of the CSMIM2.

Was the pinging successful?

Y N

Refer to the problem described in [Section 8.4](#) and proceed with that troubleshooting procedure.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Ping to the IP address of the CSMIM2.

Was the pinging successful?

Y N

Go to [Section 8.4](#) and proceed with that troubleshooting procedure.

Call Cabletron Technical Support.

A B C D E

A B C D E

Uncomment the last line using VI or some other text editor. Stop the erpcd process (DAEMON) by displaying the PID of the DAEMON. For example,

For BSD, enter:

```
ps -aux|grep erpc
```

For System 5, enter:

```
ps -ef|grep erpc
```

Then enter :

```
kill -9 <PID>
```

where <PID> is the number of the DAEMON.

Start the erpcd process by entering the following commands:

```
cd /usr/annex(or the appropriate home path when using CSMIM software Version 11.0 or greater)
./erpcd
```

Try to dial in as a terminal.

Did the “username:” prompt display?

Y N

Enter the `ls -cal` command. A list of files are displayed.

Is there an acp_passwd file?

Y N

Create an acp_passwd file. Refer to the CSMIM2 Annex Administrative Guide, Book A, the chapter on security for instructions. Try dialing in again.

Did the “username” prompt display?

Y N

Ping to the IP address of CSMIM2.

Was the pinging successful?

Y N

Go to **Section 8.4** and proceed with that troubleshooting procedure.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Ping to the IP address of the CSMIM2.

Was the pinging successful?

Y N

Go to **Section 8.4** and proceed with that troubleshooting procedure.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

A B C D

A B C D

At the UNIX host, enter the “more eservices” command. A display similar to the following example should appear. In this example, the last line is commented and charmer is the host name in the host prompt.

```
charmer 2# more eservices
# erpc remote programs
#
# prog no.      verlo   verhi   name
#
1              0       0       bfs
#3            0       99      acp
charmer 3#
```

Is the last line commented (# precedes the line)?

Y N

Enter the `ls -cal` command. A list of files are displayed.

Is there an acp_passwd file?

Y N

Create an acp_passwd file. Refer to the CSMIM2 Annex Administrative Guide, Book A, the chapter on security for instructions. Try dialing in again.

Did the username display?

Y N

Ping to the IP address of the CSMIM2.

Was the pinging successful?

Y N

Go to [Section 8.4](#) and proceed with that troubleshooting procedure.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Ping to the IP address of the CSMIM2.

Was the pinging successful?

Y N

Refer to the problem described in [Section 8.4](#) and proceed with that troubleshooting procedure.

Congratulations, the problem is solved.

With the CSMIM2 in the Administrative Mode, enter the following at the “admin.” prompt.

```
show annex security
```

The following shows an example of the resultant display.

```
enable_security: N
pref_secure1_host: 0.0.0.0
network_turnaround: 2
  acp_key: "<unset>"
allow_snmp_sets: N
  passwd_limit: 3
security_broadcast:
  pref_secure2_host: 0.0.0.0
  loose_source_route: Y
  password: "<set>"
  lock_enable: Y
  chap_auth_name: "chap"
```

A (continued)

A

Is there an IP set for the security host?

Y N

Enter the following commands:

```
set annex pref_secure1_host <IP address>
reset annex security
```

where the <IP address> is the address for your security host. For example:

```
admin: set annex pref_secure1_host 128.20.15.20
```

You may need to reset the appropriate port, Annex subsystem or
reboot the Annex for changes to take effect.

```
admin: reset annex security
```

Does the display indicate that “enable security” is set to yes?

Y N

Enter the following:

```
set annex enable_security y
reset annex security
```

For example:

```
admin: set annex pref_secure1_host 128.20.15.20
```

You may need to reset the appropriate port, Annex subsystem or
reboot the Annex for changes to take effect.

```
admin: reset annex security
```

Enter the following commands:

```
port <port number>
show port security
```

where <port number> is the number of the port being used to dial in.

The following shows an example of the resultant display showing the security status for port 8 of the CSMIM2?

```
port asy8:
  user_name: ""
  connect_security: N
  port_password: "<unset>"
  ipx_security: N
  cli_security: N
  port_server_security: N
  ipso_class: none
```

If cli_security is N, enter the following:

```
set port cli_security y
reset 8
```

For example:

```
admin: set port cli_security y
```

You may need to reset the appropriate port, Annex subsystem or
reboot the Annex for changes to take effect.

```
admin: reset 8
```

```
admin:
```

A (continue)

A

Is cli_security set to y?

Y N

Enter the following commands:

```
set port cli_security y
reset <port number>
```

where <port number> is the number of the port being used to dial in.

For example:

```
admin: set port cli_security y
```

You may need to reset the appropriate port, Annex subsystem or reboot the Annex for changes to take effect.

```
admin: reset 8
```

```
admin:
```

Try dialing in again.

Did the username display?

Y N

Did the annex: prompt display?

Y N

There is still a security problem. Call Cabletron Technical Support for assistance.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Refer to the problem described in [Section 8.7](#) and proceed with that troubleshooting procedure.

8.9 Not Able to Establish a PPP Link

Try to dial in as a terminal.

Is the last message displayed a connect message from your modem?

Y N

Check for the following:

- Is the correct phone number being used?
- Is the modem connected to the phone line?
- Is the modem set to operate in the auto-answer mode?
- Is the correct adapter and wiring used to connect the modem? (Refer to Appendix B of the CSMIM2 Install Guide for wiring information.)

Try to dial in again.

Was the dial in successful?

Y N

Call Cabletron Technical Support.

A security prompt "username:" or an "annex:" prompt should display.

Did the security prompt "username:" display?

Y N

Did the "annex:" prompt display?

Y N

Go to [Section 8.7](#) and proceed with that troubleshooting procedure.

Where you expecting a security prompt?

Y N

Is the PPP package expecting security?

Y N

Enter the command: `ppp`

Did an error message display?

Y N

PPP on the CSMIM2 is working. The problem may be with the remote host PPP software. Call Cabletron Technical Support.

With the CSMIM2 in the Admin Mode, enter the following (for example for port 8):

```
port 8
show port ppp
```

The following is an example of the resultant display.

```
port asy8:
  local_address: 0.0.0.0                remote_address: 0.0.0.0
  dialup_addresses: N                  metric: 1
  slip_ppp_security: N                 net_inactivity: 10
  phone_number: " "                   do_compression: N
  allow_compression: N                 net_inactivity_units: seconds
  ppp_mru: 1500                        ppp_acm: 0x0
  ppp_security_protocol: none          ppp_username_remote: " "
  ppp_password_remote: "<unset>"       ppp_ncp: all
  ppp_ipx_network: 00000000
  ppp_ipx_node: 00-00-00-00-00-00
```

A B C (continue)

A B C

A typical port setup in admin for a PPP link without PAP security on port 8 of the CSMIM2 is as follows (use your own IP address):

```
admin: set port local_address 128.20.195.30
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port remote_address 128.20.195.95
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port allow_compression y
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port slip_ppp_security n
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port ppp_security_protocol none
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: reset 8
admin:
```

Enter the following command:

```
show port PPP
```

The following is an example of the resultant display.

```
port asy8:
  local_address: 128.20.195.30    remote_address: 128.20.195.95
  dialup_addresses: N             metric: 1
  slip_ppp_security: N           net_inactivity: 10
  phone_number: " "              do_compression: N
  allow_compression: Y           net_inactivity_units: seconds
  ppp_mru: 1500                  ppp_acm: 0x0
  ppp_security_protocol: none    ppp_username_remote: " "
  ppp_password_remote: "<unset>"  ppp_ncp: all
  ppp_ipx_network: 00000000
  ppp_ipx_node: 00-00-00-00-00-00
```

Try to dial in as a terminal.

Was the dial-in successful?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

A B C

A B C

Set up the CSMIM2 security. Refer to the CSMIM2 Network Administrator Guide, Book A for details.

Go to **Section 8.8** and proceed with that troubleshooting procedure.

Enter the username and the password when prompted.

Did security work?

Y N

Go to **Section 8.8** and proceed with that troubleshooting procedure.

Enter the command, `ppp`.

Did an error message display?

Y N

The problem is most likely with the remote host PPP software.

NOTE: Access through security was successful, which means the (PPP) software on the remote host has to be set up for Password Authorization Protocol (PAP) security.

Refer to the remote host PPP software documentation for help. Call Cabletron Technical Support.

With the CSMIM2 in the Admin Mode, enter the following (for example for port 8):

```
port 8
show port ppp
```

The following is an example of the resultant display.

```
port asy8:
  local_address: 0.0.0.0                remote_address: 0.0.0.0
  dialup_addresses: N                  metric: 1
  slip_ppp_security: N                 net_inactivity: 10
  phone_number: ""                    do_compression: N
  allow_compression: N                 net_inactivity_units: seconds
  ppp_mru: 1500                        ppp_acm: 0x0
  ppp_security_protocol: none          ppp_username_remote: ""
  ppp_password_remote: "<unset>"       ppp_ncp: all
  ppp_ipx_network: 00000000
  ppp_ipx_node: 00-00-00-00-00-00
```

A typical port setup in admin for a PPP link using PAP security on port 8 of the CSMIM2 is as follows (use your own IP address):

```
admin: set port local_address 128.20.195.30
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port remote_address 128.20.195.95
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port allow_compression y
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
admin: set port slip_ppp_security y
      You may need to reset the appropriate port, Annex subsystem or
      reboot the Annex for changes to take effect.
```

(continue)

```
admin: set port ppp_security_protocol pap
```

You may need to reset the appropriate port, Annex subsystem or reboot the Annex for changes to take effect.

```
admin: reset 8
```

```
admin:
```

Enter the following command:

```
show port PPP
```

The following is an example of the resultant display.

```
port asy8:
  local_address: 128.20.195.30    remote_address: 128.20.195.95
  dialup_addresses: N           metric: 1
  slip_ppp_security: Y          net_inactivity: 10
  phone_number: ""              do_compression: N
  allow_compression: Y          net_inactivity_units: seconds
  ppp_mru: 1500                  ppp_acm: 0x0
  ppp_security_protocol: pap     ppp_username_remote: ""
  ppp_password_remote: "<unset>"  ppp_ncp: all
  ppp_ipx_network: 00000000
```

Try dialing in again using your PPP software.

Was the dial in successful?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

CHAPTER 9

TOKEN RING PROBLEMS

This chapter provides a troubleshooting guide that identifies some of the more common problems related to Token Ring networks. Refer to the following list of problems and proceed to the appropriate section shown in parentheses for the possible causes and remedy.

NOTE: In this chapter, references to SPECTRUM Element Manager for Windows (SPEL) refers to both management applications, SPEL and Remote LANVIEW for Windows.

1. Cannot Use IP Address of the Old Token Ring Management Module (TRMM) to Poll Its Replacement TRMM — ([Section 9.1](#))
2. Cannot Reinsert Rebooted PCs Into a Properly Operating Ring — ([Section 9.2](#))
3. Cannot Communicate with the Server After a Beaconsing Condition on the Network — ([Section 9.3](#))
4. There Is a Constant Stream of Burst Errors on the Network — ([Section 9.4](#))
5. There Is a Constant Stream of Line Errors on the Network — ([Section 9.5](#))
6. LCD on Standalone Management Device (TRXI, Micro-T, or STHI) Indicates an Eagle Insertion Error, Type 7 — ([Section 9.6](#))
7. Communication Between Two Rings Across a Newly Added TRBMIM Is Not Possible with Internet Packet Exchange (IPX) Protocol — ([Section 9.7](#))
8. Token Ring Users Cannot Communicate with Their Ethernet Servers in a Novell Environment (IPX) — ([Section 9.8](#))
9. Non-Cabletron Auto-Sensing Interface Card Cannot Insert Onto the Cabletron Systems Active TRMIM, but Operates Properly with a Passive Board — ([Section 9.9](#))
10. TRBMIM Goes into Out-of-Standby Condition — ([Section 9.10](#))

9.1 Cannot Use IP Address of the Old Token Ring Management Module (TRMM) to Poll Its Replacement TRMM

A TRMM was replaced with a new or spare TRMM. However, now the replacement TRMM cannot be polled with either application, SPECTRUM Element Manager for Windows (SPEL) or SPECTRUM, using the IP address of the old TRMM. So, now the ARP cache tables are associating the IP address with the MAC address of the old TRMM.

Assign a new IP address to the TRMM or, if needed, use the same IP address of the old TRMM.

Can you poll the TRMM using either SPECTRUM Element Manager for Windows (SPEL) or SPECTRUM?

Y N

Clear all the Address Resolution Protocol (ARP) cache tables of their routers and SPEL stations. After being cleared the ARP tables will learn the new MAC address associated with the new IP address.

Can you poll the TRMM using either SPEL or SPECTRUM?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

9.2 Cannot Reinsert Rebooted PCs onto a Properly Operating Ring

The network is functioning properly except that any PC rebooted on the ring cannot reinsert onto the ring. Also, new PCs not previously on the ring are unable to gain access to the ring.

NOTE: These symptoms indicate a ring poll failure. A ring poll failure occurs when a station on the ring does not report itself as a standby monitor. When this happens, there is no neighbor notification from that point to the Active Monitor. The Active Monitor will report the ring poll failure and transmit an Active Monitor frame to start the notification process again. If there are any users trying to insert between the Active Monitor and the failing station, they will be able to insert. It is important to note that those that are still actively on the ring are able to function properly.

To find the failing station, check the station list in SPEL. The list reports on all the stations up to the one before the failing station.

Example: If the Station List screen shows only stations 1 through 5 reporting, then station 6 would be the failing station.

Note that an analyzer can also report this failure. When the Active Monitor reports a ring poll failure it includes, in the detail of the frame, the last station to actively participate in the process.

Can you identify the failing station?

Y N

| Call Cabletron Technical Support.

Reboot or remove the failing station from the ring.

Can you now reboot a PC and reinsert it on the ring or insert a new PC on the ring?

Y N

| There may be more than one failing station on the ring. Check the station list in SPEL or use an analyzer again as previously discussed to determine if there is another failing station.

Can you identify another failing station?

Y N

| Call Cabletron Technical Support.

Reboot or remove the failing station from the ring.

Can you now reboot a PC and reinsert it on the ring or insert a new PC on the ring?

Y N

| Call Cabletron Technical Support.

Repeat the above procedure as necessary until all failing stations have been identified and either rebooted or removed from the ring.

Can you now reboot a PC and reinsert it on the ring or insert a new PC on the ring?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

9.3 Cannot Communicate with the Server After a Beaconing Condition on the Network

There was a beaoning condition on the network and now the users connected to one module or standalone device can no longer communicate with the server.

Check that all the individual ports on the module(s) or standalone device are enabled. Ports should **not** be disabled.

NOTE: In an MMAC chassis, the PEN LED on a TRMIM is off when a port is disabled. On a TRXI, STHI, MicroMMAC, MMAC-Plus, the LED associated with the disabled port will flash. When using the SPEL or SPECTRUM management application, a disabled port is shown as either a red icon or stated that the port is disabled.

Are all the ports enabled?

Y N

Do you have access to in-band management (SPEL or SPECTRUM)?

Y N

Do you have out-of-band management (PC with Windows, a VT100 terminal, or VT100 terminal emulation)?

Y N

Call Cabletron Technical Support.

Access Local Management. Select the Chassis Status View Menu screen via the Device Status Menu screen.

NOTE: If a port has been disabled, the situation that caused the beaoning condition may still be present. So, if you enable a port and the condition reoccurs, the port will be disabled again. If this happens, check the station connected to that port for problems.

Enable all ports.

Are there users that cannot communicate with the server?

Y N

Congratulations, the problem is solved.

The module or standalone device may be in standby mode.

TIP: A bypassed module/device is shown by a broken link when using SPEL or SPECTRUM, or as a B in angle brackets () when viewing the Chassis Status View screen in out-of-band management. For TRMM-2 or TRMM-4 modules, a period shown in angle brackets indicates which ring is disabled. For example: <1 . 3 4> indicates that ring 2 is bypassed.

Is the module/standalone device or ring in bypass?

Y N

Call Cabletron Technical Support.

Do you have access to in-band management (SPEL or SPECTRUM)?

Y N

Do you have out-of-band management?

Y N

Call Cabletron Technical Support.

Access local management and enable module(s) or standalone device.

TIP: In local management, select the Chassis Status View Menu screen via the Device Status Menu screen. For TRMM modules, use the arrows keys to select and highlight the field, . This indicates the module is being bypassed. To enable the module, use the space bar to step the field to, < >.

For TRXMIM modules, select and highlight the field in angle brackets (e.g., <. 1 . 3 4>). In this example 1BYP would be displayed, showing that ring 2 (.) is being bypassed. To insert ring 2, use the arrow key to step to the period. Then use the spacebar to step to <INS> and enter.

A (continued)

A

Can all users communicate with the server?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Ensure that all ports are set to insert (out of bypass).

NOTE: Use the management platform to select the box on the screen where the port has been bypassed. Click on BYPASS. The condition will toggle to INSERT. Then the screen will show a link.

Can all users communicate with the server?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

9.4 There Is a Constant Stream of Burst Errors on the Network

Burst errors are a normal occurrence when users are inserting onto a ring. If the burst errors continue after everyone is logged on, then there is a problem.

To determine which station is reporting burst errors, check the station statistics using SPEL.

Did you find which station is reporting the burst errors?

Y N

| Call Cabletron Technical Support.

The problem station can be either the station upstream from the station reporting the errors, or the receiver in the station reporting the errors.

NOTE: Burst errors may be reported by stations further down the ring. This is a normal occurrence, but by carefully looking at each station that is reporting the burst errors and seeing where the first station is that starts reporting them, you can isolate it to one station.

Did you locate the station that first started to report the burst errors?

Y N

| Call Cabletron Technical Support.

Remove its upstream neighbor from the ring.

Did this action solve the problem?

Y N

| Remove the station reporting the burst errors.

Did this action solve the problem?

Y N

| Call Cabletron Technical Support.

Reboot the station and insert it onto the ring.

Did this action solve the problem?

Y N

| The interface card in the station being rebooted may need to be replaced if it continually causes bursts. Replace the station interface card with a known good one. Reboot and reinsert the station on the ring.

Did this correct the problem?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

9.5 There Is a Constant Stream of Line Errors on the Network

This error may be caused by a defective cable or DNI card. Check the station statistics using SPEL to determine which station is reporting line errors.

Did you find which station is reporting the line errors?

Y N

| Call Cabletron Technical Support.

The problem may be with the cabling between the station reporting the line errors and the upstream station.

Move the station reporting the line errors along with its cable to another port beyond a port of a known working station.

Is the station that was moved still reporting line errors?

Y N

| **Is the original downstream neighbor of the moved station now reporting the line errors?**

Y N

| Call Cabletron Technical Support.

Check the cable of its upstream neighbor and replace it if necessary.

Did you replace the cable?

Y N

| Replace the DNI card of that upstream neighbor with a known good DNI card.

Did this solve the problem?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Did this solve the problem?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

Check the cable of this station and replace it if necessary.

Did this solve the problem?

Y N

| Replace the DNI card in the station. Use a known good DNI card.

Did this solve the problem?

Y N

| Call Cabletron Technical Support.

| Congratulations, the problem is solved.

9.6 LCD on Standalone Management Device (TRXI, Micro-T, or STHI) Indicates an Eagle Insertion Error, Type 7

This indicates that the management device was trying to insert into the ring, but it could not because it detected a beaconing condition.

Reset the management device.

Did the Eagle failure occur again?

Y N

Isolate the management device by disconnecting its ring in/ring out connections. Let the Eagle insert onto the ring.

Did the Eagle insert into the ring?

Y N

One of the stations connected to the management device is causing the problem. Isolate the management device by disconnecting all the stations from the management device. Let the Eagle chip insert into the ring again.

Did the Eagle chip insert into the ring?

Y N

Call Cabletron Technical Support.

Reconnect the cables to the ring in/ring out ports of the management device.

Is the Eagle still inserted into the ring?

Y N

Call Cabletron Technical Support.

Reconnect the stations one at a time and check if the Eagle is still inserted after each station is reconnected, thus showing that the reconnected station is operating properly.

Is the Eagle still inserted into the ring?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

The problem is external to this management device. Call Cabletron Technical Support.

Congratulations, the problem is solved.

9.7 Communication Between Two Rings Across a Newly Added TRBMIM Is Not Possible with Internet Packet Exchange (IPX) Protocol

This problem also occurs with 9T122-24 and 9T122-08 devices.

Two rings were operating together properly. But, after a TRBMIM was added between the two rings, communication across the TRBMIM is now not possible using IPX. The Internet Protocol (IP) is working properly. The TRBMIM is a source route bridge only.

NOTE: Most IP applications have the routing parameter built into their drivers, unfortunately, IPX ODI drivers do not. Also, note that Network Driver Interface Specification (NDIS) drivers do have the route field included in the specification of the drivers.

Is Route.com loaded on the clients (workstations or nodes) in the network?

Y N

| Load Route.com on the clients.

Is Route.NLM loaded on the client's servers?

Y N

| Load Route.NLM on the servers.

Can you communicate between the two rings using the TRBMIM?

Y N

| Call Cabletron Technical Support.

Congratulations, the problem is solved.

9.8 Token Ring Users Cannot Communicate with Their Ethernet Servers in a Novell Environment (IPX)

This can happen using an ETWMIM in an MMAC while operating in a Novell environment (IPX).

NOTE: The issue here is that Token Ring communicates in Most Significant Bit (MSB) mode, while Ethernet communicates using the Least Significant Bit (LSB) mode. Novell recommends that the users change their Token Ring drivers to LSB mode. However, when you do change your Token Ring drivers to LSB mode, everyone that needs to communicate on the Token Ring side must be in LSB mode.

Cabletron Systems provides a parameter in the ETWMIM and 9T122 boards called an IPX translation switch. This IPX translation switch canonically bit swaps the appropriate data and corrects the IPX issue. But, because Novell uses an internal MAC address for their SPX connections, you need to keep all SPX connections to the local segment for Ethernet, or local ring for Token Ring.

Can the Token Ring client communicate with Ethernet servers?

Y N

Set the IPX translation in the Token Ring client.

Is the IPX translation set?

Y N

Do you have in-band management?

Y N

Do you have out-of-band management?

Y N

Are your Token Ring clients using ODI drivers?

Y N

Call Cabletron Technical Support.

Go to net.cfg file for the Token Ring DNI card. In the Link Driver section of this file, add LSB to the Token Ring Frame Type.

Example: FRAME=TOKEN-RING LSB

Save the file and reboot the PC.

Can the Token Ring client communicate with the Ethernet servers?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

For the 9T122 board, go to the Bridge Configuration screen in SPEL or SPECTRUM and select "IPX translation". For the ETWMIM, refer to the release notes for the OID string. If there are any questions about how to use the OID strings, call Cabletron Technical Support.

Can the Token Ring client communicate with the Ethernet servers?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

If you have SPEL or SPECTRUM and ETWMIM modules, go to the Bridge Configuration screen and select "MSB", or if you have 9T122 boards, select "IPX translation".

Can the Token Ring client communicate with the Ethernet servers?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

Congratulations, the problem is solved.

9.9 Non-Cabletron Auto-Sensing Interface Card Cannot Insert onto the Cabletron Systems Active TRMIM, but Operates Properly with a Passive Board

NOTE: The speed fault detection circuit in the Cabletron Systems active modules do not allow a device to access the ring unless that device is operating at the proper speed. So, if a non-Cabletron auto-sensing interface card senses the operating speed of the ring and switches accordingly, the Cabletron Systems port will shut down the port of that auto sensing card if that card attempts to insert at the wrong ring speed.

Are there non-Cabletron auto-sensing interface cards that cannot insert onto the ring?

Y N
|
Is the auto-sensing card set for the proper speed.
Y N
| Set the auto-sensing card to the proper ring speed.
Can the auto-sensing card insert onto the ring?
Y N
| Call Cabletron Technical Support.
| Congratulations, the problem is solved.
| Call Cabletron Technical Support.

Can you adjust the auto-sensing interface card to the proper ring speed?

Y N
| Call Cabletron Technical Support.
Set the auto-sensing card to the correct speed.

Can the auto-sensing card insert onto the ring?

Y N
| Call Cabletron Technical Support.
Congratulations, the problem is solved.

9.10 TRBMIM Goes into Out-of-Standby Condition

The trouble could be the configuration of other bridges attached to the rings or the associated cabling.

Are there other bridges attached to the rings?

Y N

Is there a router connected to either ring?

Y N

Check the cable connection from the bridge to the two rings.

Are the cables defective?

Y N

Call Cabletron Technical Support.

Replace the defective cables.

Did this action correct the problem?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Check the ring numbers and the bridge numbers.

Do the TRBMIM ring numbers match those assigned by the other bridges?

Y N

Ensure that the station Flexible Network Bus (FNB) ring numbers match the ring numbers assigned by other bridge(s) and that there are not two rings with the same ring number.

Did this action correct the problem?

Y N

Call Cabletron Technical Support.

Congratulations, the problem is solved.

Call Cabletron Technical Support.

APPENDIX A

ROUTER PASSWORD RECOVERY PROCEDURES

The password recovery procedure that is used is dependent on the model of the Cisco router and in the case of the Model IGS, also the revision level of the firmware. The following procedures are included in this chapter:

1. Procedure for Cisco Model IGS (Prior to Rev. 9.1) — (**Section A.1**)
2. Procedure for Cisco Models IGS (Rev. 9.1 or later), 2000, 2500, 3000, and 4000 — (**Section A.2**)
3. Procedure for Cisco Models CGS, MGS, AGS, AGS (CSC3/CSC4), and 7000 — (**Section A.3**)

A.1 Procedure for Cisco Model IGS (Prior to Rev. 9.1)

To recover the password, proceed as follows:

1. Connect a terminal or PC to the COM port of the router.

NOTE: On some routers, the COM port may be labeled CONSOLE.

2. Power down the router.
3. Record the original settings of the hardware configuration register dipswitch. (Refer to the router documentation for the location of the switch.)
4. Set switch 8 to the ON (or closed) position and set switches 1 through 7 to the OFF (or open) position.
5. Power up the router.
6. At the terminal or PC, press Return until the `Test-System>` prompt displays.
7. Type in: `enable` at the `Test-System>` prompt.
Press Return.
Type in: `show config` at the `Test-System>` prompt.
Record the password(s).
8. Power down the router. Then return the hardware configuration register dipswitch to its original settings.
9. Power up the router.

A.2 Procedure for Cisco Models IGS (Rev. 9.1 or later), 2000, 2500, 3000, and 4000

To recover the password, proceed as follows:

1. Connect a terminal or PC to the COM port of the router.

NOTE: On some routers, the COM port may be labeled CONSOLE.

2. Power down the router, then power up the router (power cycle the router).
3. At the terminal or PC, press the CTRL and Break keys within 60 seconds.
4. Type in `e/s 2000002` at the `>` prompt.
Press Return.
5. Record the original software configuration register value.
6. Type in `q` at the `>` prompt.
Press Return.
7. Type in `o/r` at the `>` prompt.
Press Return.
8. Type in `i` at the `>` prompt.
Press Return.
9. Answer “no” to all the SETUP questions displayed.
10. Type in `enable` at the `>` prompt.
Press Return.
11. Type in `show config` at the `#` prompt.
Press Return.
12. Record the password(s).
13. Restore the software configuration register to its original value by:
At the `#` prompt, type in: `config term`
Press Return.
Then type in: `config-register 0x(original value)`
Press CTRL-Z.
14. Type in `reload` at the `#` prompt or power cycle the router.

A.3 Procedure for Cisco Models CGS, MGS, AGS, AGS (CSC3/CSC4), and 7000

To recover the password, proceed as follows:

1. Connect a terminal or PC to the COM port of the router.

NOTE: On some routers, the COM port may be labeled CONSOLE.

2. Power down the router.
3. Change the hardware register by moving the jumper from bit position 0 to bit position 15.
Refer to the router documentation for the location of the jumpers and bit positions.
4. Power up the router.
5. Type in `b` at the `>` prompt.
6. Press Return until the prompt, `Test-System>` displays.
7. Record the password(s).
8. Power down the router.
9. Return the jumper from bit position 15 to bit position 0.
10. Power up the router.

APPENDIX B

GETTING ADDITIONAL HELP

In the event that the cause cannot be found and additional support is needed to troubleshoot the network system, or if you have any questions, comments or suggestions related to this guide, contact Cabletron Systems Technical Support.

B.1 Before Calling Technical Support

Before calling technical support, have as much information as possible available in order to save time and to allow the support representative to provide better service. When calling technical support, be prepared to provide the following information:

- A detailed description of the failure.
- A description of any action already taken to resolve the problem (swapping the bad unit with a unit known to work properly, etc.).
- A description of your network (environment, layout, cable type and length, etc.).
- Serial numbers of all affected Cabletron Systems products used in the network.
- Revision level of all affected Cabletron Systems products in the network.
- Revision level of firmware installed on all affected Cabletron Systems products.
- The network load and frame size at the time of the failure, if known.
- Product history (had the product been returned previously, did it have the same problem, etc.).
- The Return Material Authorization (RMA) number generated, if any.

For additional technical support, contact Cabletron Systems Technical Support:

Phone	(603) 332-9400 Monday – Friday; 8 A.M. – 8 P.M. Eastern Time
CompuServe	GO CTRON from any ! prompt
Internet mail	support@ctron.com
FTP Login Password	ctron.com (134.141.197.25) <i>anonymous</i> <i>your email address</i>
BBS Modem setting	(603) 335-3358 8N1: 8 data bits, 1 stop bit, No parity
For information about Cabletron Systems products, visit the World Wide Web site: http://www.cabletron.com/	

