NetRider Client for Macintosh

Installation and Use

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Reader's Comments:	Your comments and suggestions help us improve the quality and usefulness of our documentation. You can respond to the documentation manager at: **Email:** doc-quality@lkg.mts.dec.com **FAX:** 508 486 5655

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Preface

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Purpose

This guide explains how to install and use NetRider Client for Macintosh software.

Intended Audience

This guide is written for NetRider Client for Macintosh users.

Conventions

This guide uses the following conventions:

Convention	Description
boldface text	Represents the introduction of a new term or the name of a button, icon, menu, menu option, or folder. Boldface text is also used to show user input.
numbers	Unless otherwise noted, all numbers in the text are decimal.

Associated Documents

The following documents provide information about the environment in which you install NetRider Client for Macintosh software:

- *AppleTalk Remote Access Modem Developer's Guide.* You can obtain the document from the Apple Programmers and Developers Association by calling 1 (800) 282-2732 (in the US only) or by sending AppleLink email to APDA.
- *DECserver 700 Site Preparation and Maintenance*. Explains how to prepare the site before installing the DECserver 700 hardware.
- *DECserver 90TL/DECserver 90M Owner's Manual*. Explains how to install and operate the DECserver 90TL/DECserver 90M hardware.
- *DECserver 900 Installation*. Explains how to install and operate the DECserver 900 hardware.
- *DECserver Network Access Software Installation* (MS-DOS, OpenVMS, OSF/1, ULTRIX, or UNIX). Explains how to install the network access software on your operating system.
- *Network Access Server Management*. Explains how to perform management tasks for various Digital access servers.
- *Network Access Server Commands*. Describes the command set.
- *Network Access Server Problem Solving*. Provides troubleshooting information.

Chapter 1

NetRider Client for Macintosh Installation

Overview

Introduction

This chapter explains how install the NetRider Client for Macintosh software.

In This Chapter

This chapter contains the following information:

- Product overview
- System requirements
- Installing the software
- Next steps

Product Overview

Introduction

NetRider Client for Macintosh is a client software application that allows Macintosh users to connect to remote networks through the use of the Point-to-Point protocol (PPP) . It is used in conjunction with a DECserver network access server. With a modem, users can “dial in” to a remote network and access both AppleTalk and TCP/IP services simultaneously.

The software can use all the communication features of the Macintosh, including the Communication ToolBox and the same Connection Control Language (CCL) scripts used in Apple's AppleTalk Remote Access (ARA). NetRider Client for Macintosh is integrated with the native AppleTalk protocol stack included with each Macintosh and notifies active connections when the link is closed down.

Unsupported Utilities

NetRider Client for Macintosh includes some additional utilities and applications for your convenience, many of which are shareware. Unless otherwise specified, Digital Equipment Corporation does not support these utilities. If you keep and use shareware for more than a few weeks, you should pay the appropriate author(s).

ISDN Support

NetRider Client for Macintosh can be used over ISDN lines with the AT&T 5ESS switch type.

System Requirements

Hardware Requirements

To install NetRider Client for Macintosh, you need the following:

- A Macintosh SE or later model.
- A minimum of 1 MB of disk space on the system disk.
- 4 megabytes of Random Access Memory (RAM).
- A Hayes-compatible modem, 9600 baud minimum, and a "hardware handshaking" modem cable. A faster modem is recommended for improved performance.

Software Requirements

To install and use NetRider Client for Macintosh, you need the following:

- One or more installation diskettes labeled **Installation Disk**. The diskette labeled **Netscape** contains the Netscape World Wide Web browser. Its installation is optional.
- Macintosh System 7.1 software or later.
- MacTCP.

  If MacTCP is not installed on your Macintosh, NetRider Client for Macintosh installs it for you automatically. If MacTCP is already installed, NetRider Client for Macintosh updates it to its latest revision, if necessary.
- On the remote network, a Digital network access server running AppleTalk, IP, or both protocols.
- IP and gateway network addresses and domain name server information provided by your system or network administrator.

More Information

For complete information on supported hardware and software, refer to the Software Product Description (SPD) document supplied with your kit.

Installing the Software

Before You Start

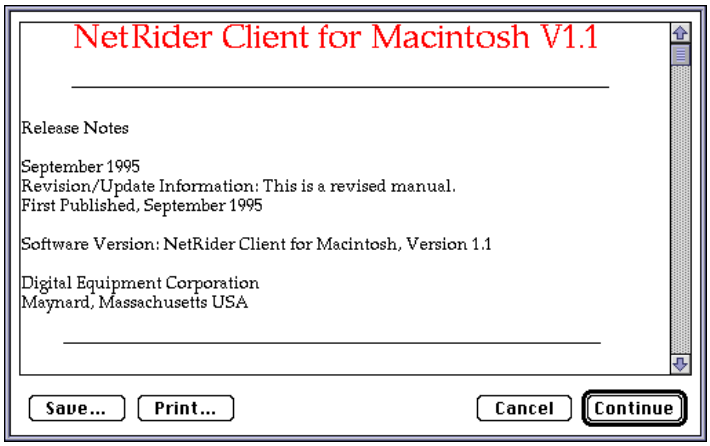
Before you begin installation, check that the installation diskette is write-protected. Also make sure your Macintosh has the appropriate system software installed (System 7.1 or later).

Procedure

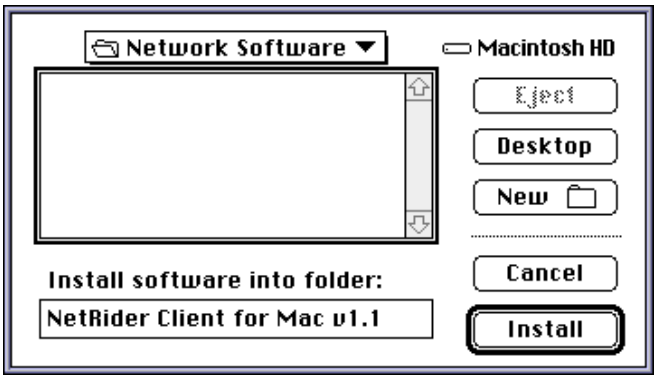
Do the following to install the software:

Step	Action
1	Do one of the following: a) If installing from diskette, insert **Installation Disk 1** into a drive and double-click the **NetRider Client for Mac** diskette icon. b) If installing from a file server, double-click the **NetRider Client for Mac** folder icon. The **NetRider Client for Mac** window appears.
2	Double-click the **NetRider for Mac v1.1 Installer** icon. A NetRider splash screen appears.

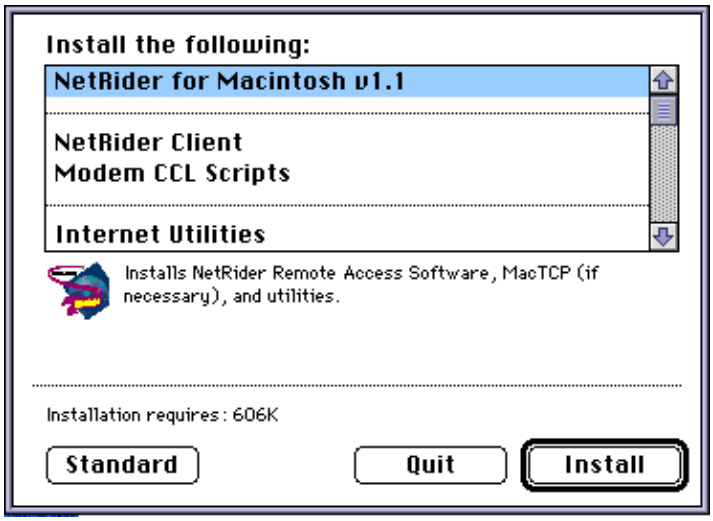
Step	Action
3	Click **Continue**. The release notes appear:



4	Read the release notes and, if desired, save and/or print them by clicking the appropriate buttons.
5	Click **Continue** when you are finished with the release notes. An installation dialog box appears:

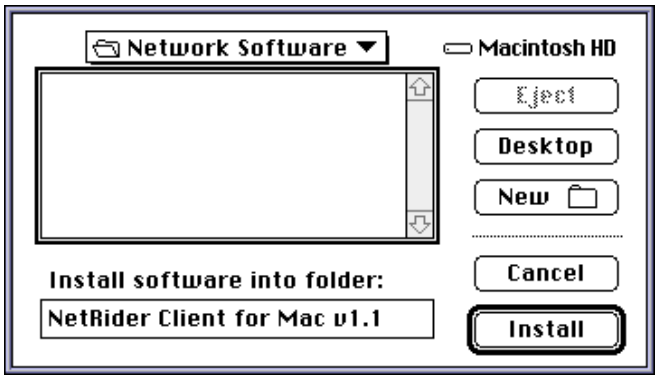
Step	Action
6	Do one of the following: a) Click **Install** to perform a standard install. b) Click **Custom** to perform a custom install and go to step 10.
7	Click **Yes** when the next screen appears.
8	A file dialog box appears:  Specify the folder into which you want to install your software and click **Install**.
9	When a message appears informing you that installation was successful, click **Restart**. Go to step 13.

Step	Action
10	If you perform a custom install, the following dialog box appears:



Select the component you want to install by clicking on the item. To select more than one component, hold down the **Command** key while clicking. Click **Install** when finished.

11 A file dialog box appears:



Specify the folder into which you want to install your software and click **Install**.

Step	Action
12	When a message appears informing you that installation of the custom item(s) you selected was successful, click **Quit** if you are finished. You may need to restart your Macintosh depending on which item(s) you custom installed.
13	When you restart the system, check that the following files are installed in their proper locations.

File(s)	Location
NetRider Client for Mac	NetRider Client for Macintosh folder on your hard disk.
PPP Init	Extensions folder in your System Folder.
PPP Adev	Extensions folder in your System Folder.
PPP Mdev	Extensions folder in your System Folder.
MacTCP Control Panel*	Extensions folder in your System Folder.
Generic CCL scripts**	Extensions folder in your System Folder (several files).

* MacTCP is installed only if not already present and up-to-date on your system.
**Most users never need the generic CCL scripts because they can use the default scripts provided with many modems. Users who want to customize scripts can refer to Appendix A for detailed information.

Next Steps

Configure Your Software

Once you have installed the software, you need to configure it. The table that follows lists the steps you should take.

Step	Described in...
Configure MacTCP	Chapter 2
Configure AppleTalk	Chapter 2
Create a connection document	Chapter 3
Configure modem settings	Chapter 3
Configure PPP settings	Chapter 3
Configure TCP/IP settings	Chapter 3
Save connection document	Chapter 3

After you configure the software, you can then make your network connection as described in Chapter 4.

Chapter 2

Protocol Configuration

Overview

Introduction

Before you can connect to a remote network, you must configure the TCP/IP and AppleTalk protocols.

In This Chapter

This chapter contains the following information:

- Configuring MacTCP
- Configuring AppleTalk

Configuring MacTCP

Before You Configure

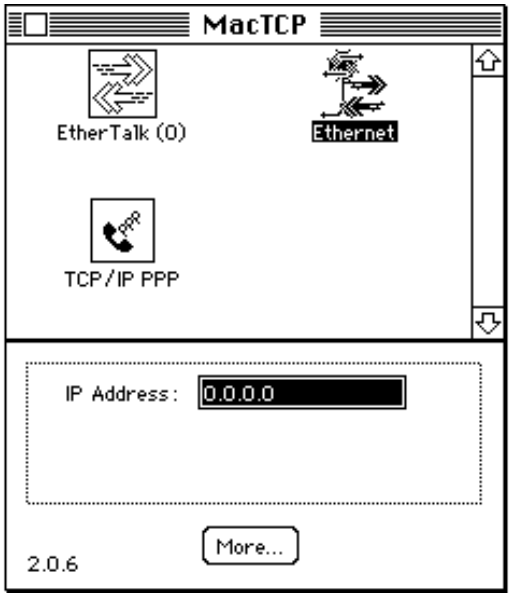
Obtain the following information from your system or network administrator and fill in the blanks accordingly:

- The method of obtaining your IP address. Find out whether you must enter your address **Manually** or whether it is assigned by a **Server** automatically:_____
- The IP address of your Mac, if you enter it manually:_____
- Your gateway address, if required:_____
- The domain name and the IP address of the default domain name server:_____

Procedure

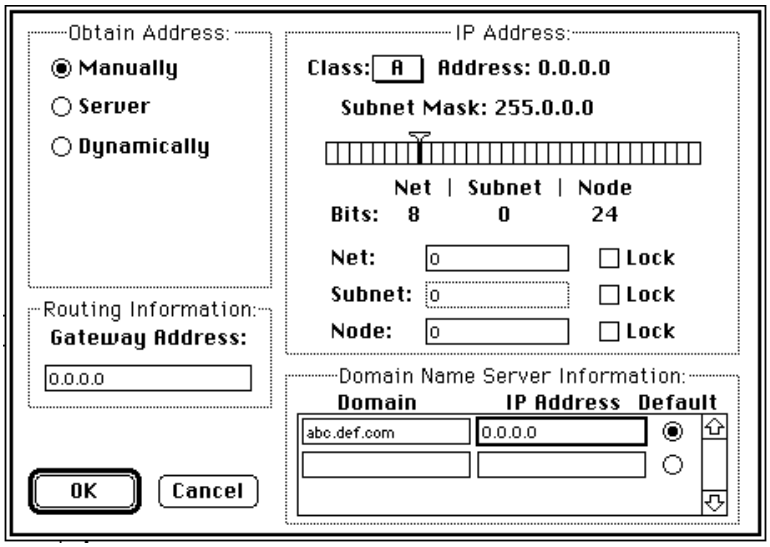
Do the following to configure MacTCP:

Step	Action
1	Select **Control Panels** from the Apple menu.
2	Double-click the **MacTCP** icon. The **MacTCP** window appears:



3	Click the **TCP/IP PPP** icon in the **MacTCP** window to select it and enter your IP address in the **IP Address** field. For server addressing, leave this field set to **0.0.0.0.** Selecting TCP/IP PPP disables the other protocols, which in this example are EtherTalk and Ethernet.

Step	Action
4	Click **More...** to display the MacTCP configuration window:



In steps 5 through 8, use the information you gathered in the "Before You Configure" section.

5 In the **Obtain Address** box, click either **Manually** or **Server**.

- Click **Manually** if you want to set your IP address to the one you entered in the MacTCP dialog.
- Click **Server** if you want the remote network to negotiate your IP address and automatically set MacTCP during each connection.
- The **Dynamically** option is not available for NetRider Client for Macintosh.

6 Do not change any parameters in the **IP Address** box.

7 In the **Routing Information** box, enter **Gateway Address**.

Step	Action
8	In the **Domain Name Server Information** box, enter the IP address of your primary name server in the **IP Address** field and its associated domain in the **Domain** Field. Click the **Default** button.
9	Click **OK** to save all settings.
10	Close the **MacTCP** control panel.
11	If a screen appears prompting you to restart your Mac to effect changes, click **OK** and restart your Mac.

Next Step

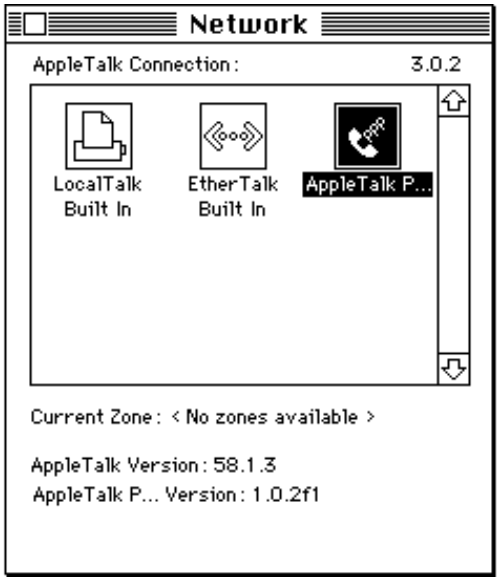
If you want to configure an AppleTalk connection, follow the steps in the Configuring AppleTalk section.

Configuring AppleTalk

Procedure

Do the following to configure AppleTalk:

Step	Action
1	Select **Control Panels** from the Apple menu.
2	Double-click the **Network** icon to display the **Network** window:



3	Click the **AppleTalk PPP** icon in the **Network** window to select it. A warning appears informing you that changing your AppleTalk connection interrupts current services and asks whether you want to change the connection.
4	Click **OK** to change your connection to **AppleTalk PPP**.
5	Close the **Network** window.

Next Steps

Do the following:

Step	Action
1	If you have not already done so, configure your TCP/IP connection as described in the previous section.
2	Close the **Control Panels** window.
3	Create a connection document as described in Chapter 3.

Chapter 3

Creating a Connection Document

Overview

Introduction

This chapter explains how to create, save, and edit the connection document that you use to connect to remote networks.

In This Chapter

This chapter contains the following information and procedures:

- Connection document description
- Open a new connection document
- Specify authentication parameters (optional)
- Provide dial-in information
- Configure modem settings
- Configure PPP settings
- Configure TCP/IP settings
- Saving the connection document
- Editing a connection document

Connection Document Description

What is a Connection Document?

A connection document is a NetRider Client for Macintosh file you create for your modem and for the remote network to which you want to connect. The file contains preferences information, such as your modem type and connection type.

NetRider Client for Macintosh uses a connection document to record the information it needs to connect to the desired remote network. After you create, configure, and save a connection document, you can launch NetRider Client for Macintosh automatically with the recorded settings by double-clicking the connection document icon. Chapter 4 contains more information on making a connection.

Steps to Create a Connection Document

1. Launch NetRider and create a new connection document
2. Specify authentication parameters (optional)
3. Provide dial-in information
4. Configure modem settings
5. Configure PPP settings
6. Configure TCP/IP settings

Open a New Connection Document

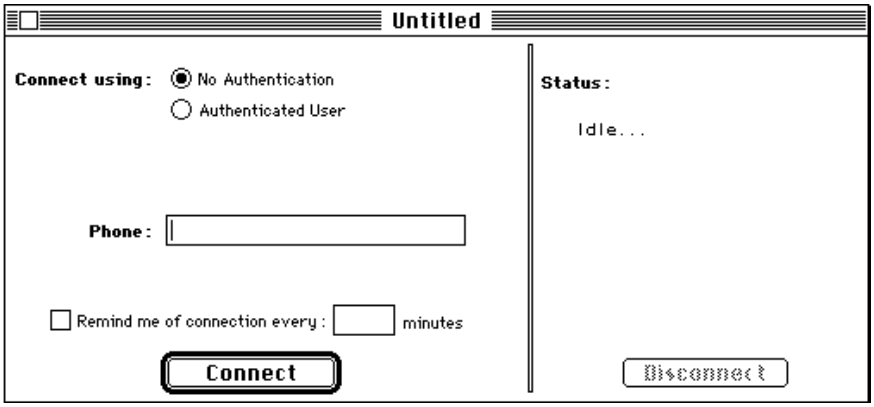
Before You Start

To connect to a remote network using NetRider Client for Macintosh, you must first create a connection document that configures the PPP system driver for your modem. Before you attempt to create the document, check that your network connections are properly configured, as described in Chapter 2.

Launch the Application

Launch NetRider Client for Macintosh by double-clicking its icon, or select **New Connection** from the **File** menu if NetRider Client for Macintosh is already running.

An untitled connection document appears:



Specify Authentication Parameters (Optional)

About Authentication

NetRider supports two types of authentication called PAP and CHAP. Your system manager can tell you if authentication is enabled on the server to which you are connecting and can tell you whether PAP or CHAP is enabled. You specify either PAP or CHAP when you configure your PPP settings (see the Configure PPP Settings section). The characteristics of PAP and CHAP are as follows:

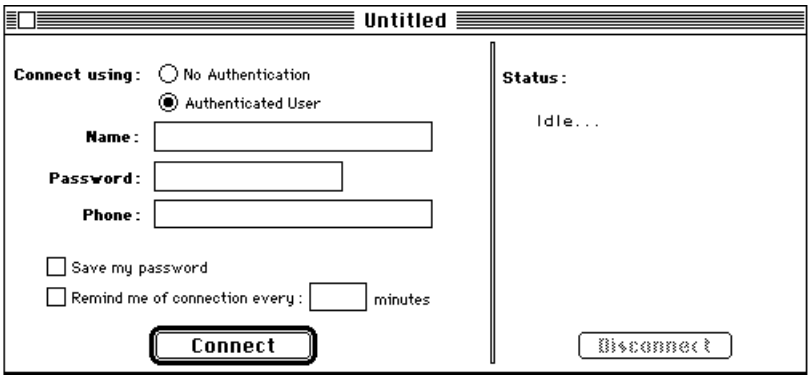
Type	Description
PAP (Password Authentication Protocol)	Enables your Macintosh to identify itself to a remote network. After an initial link is established, your Macintosh sends the remote network an ID/Password pair in plain text. If the remote network accepts the pair, the connection is made. If the remote network does not accept, the connection is dropped.
CHAP (Challenge-Handshake Authentication Protocol)	Enables your Macintosh to identify itself to a remote network. After an initial link is established, the remote network sends a challenge that prompts your Macintosh to calculate a response. If this response matches the response that the remote network calculates, the connection is made. If they do not match, the connection is dropped. CHAP is considered more secure than PAP, because no confidential information is passed in plain text.

Note that you specify the type of authentication (PAP or CHAP) when you configure your PPP settings (see the Configure PPP Settings section).

Procedure

Step	Action
1	Do one of the following: a) If you want to connect without authentication, click the **No Authentication** button. b) If you want to require authentication before making a connection, click the **Authenticated User** button. Your server must support authentication.

Step	Action
2	If you selected **No Authentication**, you are finished with the authentication portion of your connection document. If you selected **Authenticated User**, the connection document window changes to include **Name** and **Password** fields and a **Save my password** check box as shown in the following figure:



Do the following:

a) In the **Nam**e field, enter your user name for the server to which you want to connect.

b) In the **Password** field, enter your user password for the server. Your password is masked by dots.

c) Check **Save my password** to save your password in the connection document, if this is not a breach of your site's security policy.

Provide Dial-In Information

Introduction

You need to enter dial-in information in the **Phone** field of an open connection document.

Procedure

Step	Action
1	In the **Phone** field of your connection document, enter the sequence of digits the modem must dial to connect to the server.
2	Click the **Remind me** check box to be notified of an idle connection. In the **minutes** field, enter the number of minutes you want NetRider Client for Macintosh to wait before displaying a reminder.

Configure Modem Settings

Introduction

Configure your modem settings as follows:

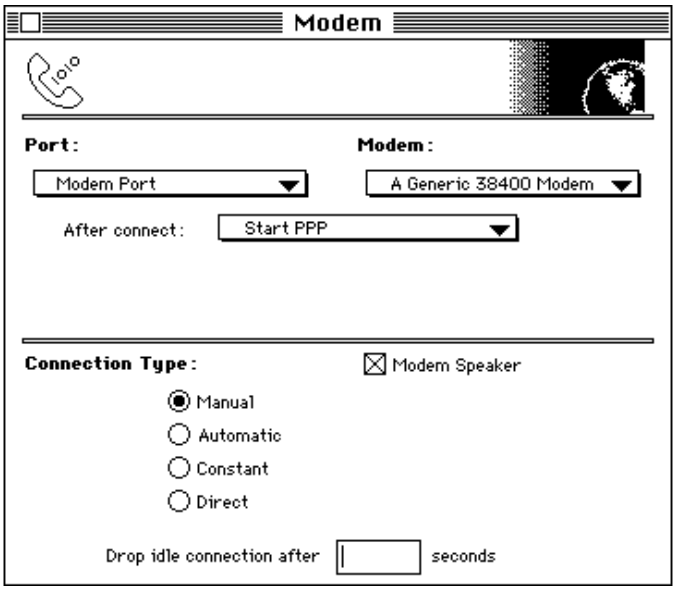
1. Open the **Modem** window from an open connection document
2. Select port
3. Select CCL script
4. Select after connect action
5. Select connection type
6. Save configuration

Open Modem Window

Open the **Modem** window as follows:

Step	Action
1	If the connection document is not already open, open it now from the **File** menu.

Step	Action
2	Select **Modem** from the **Configure** menu at the top of the screen to display the **Modem** window:



Select Port

From the **Port** pull-down menu, select the port to which your modem is attached.

Select CCL Script

From the **Modem** pull-down menu, select the type of modem you are using. The CCL script for your modem automatically appears as the default in the **Modem** field. All CCL scripts located in your **Extensions** folder are displayed in the pull-down menu.

Select After Connect Action

From the **After connect** pull-down menu, select the action you want NetRider Client for Macintosh to take after establishing a connection:

Option	Description
Start PPP	NetRider Client for Macintosh begins the PPP session after it connects.
Show terminal window	NetRider Client for Macintosh displays a terminal window after it connects. Your response at that time will be to press **[Enter]** until you see the server's login banner and password prompt. Note that if a login password is defined on the server, selecting **Show terminal window** is the only way to connect to the server. Select **Show terminal window** only if you want to log in to the server manually and enter the **CONNECT PPP** command at the server's prompt (the default DECserver prompt is typically **Local>**).
Attempt UNIX login	After it connects, NetRider Client for Macintosh displays user name and password prompts for a UNIX login. The **Modem** window changes to include **User name** and **Password** fields. The contents of these fields are used to log in to the UNIX system automatically after a connection is made.
Attempt Comm Server login	Automates a connection to your terminal server. The **Modem** window changes to include **User name**, **Password**, **Prompt**, and **Command** fields.

If You Select Attempt UNIX login

If you select **Attempt UNIX login**, you must also do the following:

Step	Action
1	In the **User name** field, enter your user name for the server to which you want to connect.
2	In the **Password** field, enter the password associated with your username. Note that the password is case-sensitive.

If You Select Attempt Comm Server login

If you select **Attempt Comm Server login**, you must also do the following:

Step	Action
1	In the **User name** field, enter your user name for the server to which you want to connect.
2	In the **Password** field, enter the password associated with your username. Note that the password is case-sensitive.
3	In the **Prompt** field, enter the prompt characters the server returns when a connection is made. Note that the typical prompt returned by DECserver systems is **Local>**.
4	In the **Command** field, enter the command expected by the server at the prompt. Your System Administrator will tell you what you need to enter in the **Prompt** and **Command** fields for your server.

Modem Speaker

Click to uncheck the **Modem Speaker** box if you do not want to listen to your modem's speaker during a connection attempt.

Configure Connection Type

Specify a connection type by selecting **Manual**, **Automatic**, **Constant**, or **Direct**. The four options you have and their effects are as follows:

Option	Effect
Manual	Start and stop the remote network connection manually. The **Modem window** displays the **Drop idle connection** field.
Automatic	Connect to the remote network automatically whenever there is information to be sent. The **Modem** window displays the **Drop idle connection** field. Note that Automatic connection is recommended for use with the Dial on Demand feature of NetRider Client for Macintosh (see the "Dial on Demand" section that follows).
Constant	Maintain a constant connection to the remote network. The link immediately redials if a connection is dropped for any reason. The **Drop idle connection** field is hidden.
Direct	Specify that no modem is involved and that client and server are directly connected by a serial line. The PPP driver restarts the PPP session immediately if it is terminated. The **Drop idle connection** field is hidden.

The Drop Idle Connection Field

If the **Drop idle connection** field is present, use it to specify the number of seconds NetRider Client for Macintosh waits before dropping an idle connection.

Save Configuration

To save your modem settings, close the **Modem** window.

Configure PPP Settings

Introduction

Configure your PPP settings by doing the following:

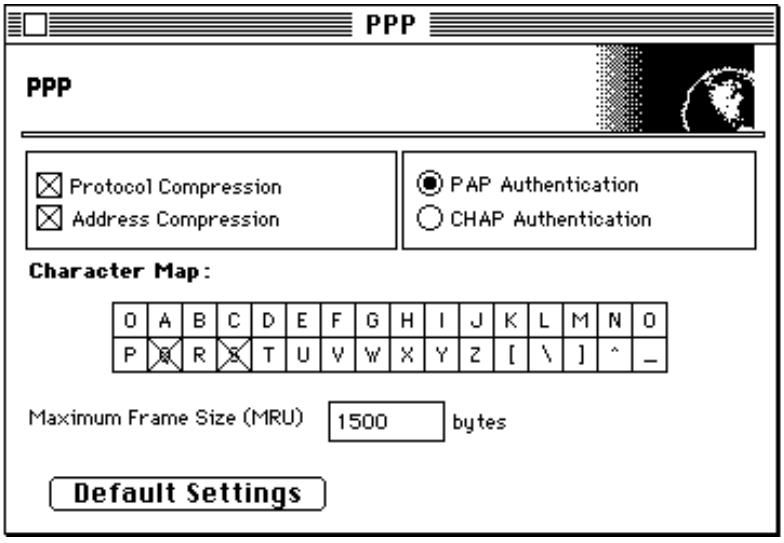
1. Open the **PPP** window from an open connection document
2. Select compression
3. Select authentication
4. Select character map
5. Select PPP message size
6. Save configuration

Open PPP Window

Open the **PPP** window by doing the following:

Step	Action
1	Open the desired connection document from the **File** menu if you have not already done so.

Step	Action
2	Select **PPP...** from the **Configure** menu. The **PPP** window appears:



Select Compression

Step	Action
1	Uncheck **Protocol Compression** if the server to which you want to connect does not support compression of the PPP protocol. Digital's network access servers support both protocol field and address field compression.
2	Uncheck **Address Compression** if the server to which you want to connect does not support compression of IP addresses.

Select Authentication

If you select the **Authenticated User** option in your connection document, you also enable the authentication radio buttons in the **PPP** window. If this is the case, select an authentication protocol by clicking either **PAP Authentication** or **CHAP Authentication**. Your system manager can tell you what type of authentication, if any, is enabled on your server.

Set Character Map

Boxes in the **Character Map** effectively specify the control characters for XON/XOFF, or software flow control, if enabled by the server. The default settings are ^Q and ^S. Click to check a box and select a control character. Or click to uncheck a box and deselect it. Generally, you do not need to change the defaults. Check with your system manager to be sure.

Select PPP Message Size

In the **Maximum Frame Size** text field, enter the maximum size of any single PPP message to be transmitted by your modem (1500 bytes is the default).

Save Configuration

Step	Action
1	If you want to reset all parameters in the **PPP** window to their default settings, click **Default Settings**.
2	Close the **PPP Configuration** window.

Configure TCP/IP Settings

Introduction

Configure your TCP/IP settings by doing the following:

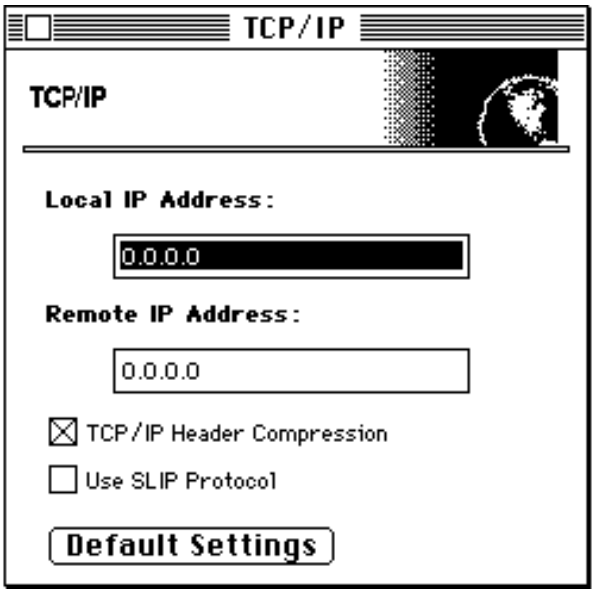
1. Open the **TCP/IP** configuration window from an open connection document
2. Specify IP addresses
3. Specify compresion
4. Select SLIP, if applicable
5. Save configuration

Open TCP/IP Configuration Window

Open the **TCP/IP** window by doing the following:

Step	Action
1	Open the desired connection document from the **File** menu (if you have not already done so).

Step	Action
2	Select **TCP/IP** from the **Configure** menu to display the **TCP/IP** window:



Specify IP Addresses

Do the following to specify your local and remote IP addresses:

Step	Action
1	In the **Local IP Address** field, enter the IP address of your Macintosh if you are using manual addressing.
2	You can leave the **Local IP Address** and **Remote IP Address** fields as 0.0.0.0 if the **Server** option of the **Obtain Address** box is selected in the **MacTCP** window.

Specify Compression

Uncheck **TCP/IP Header Compression** if the server to which you want to connect does not support the compression of headers.

If You Use SLIP

Check **Use SLIP Protocol** to disable PPP and enable the SLIP protocol to be used over the modem connection for TCP/IP connections only. You cannot use AppleTalk over a SLIP connection.

Saving the Configuration

Do the following to save the configuration:

Step	Action
1	If you want to reset all parameters to their default settings, click **Default Settings** box.
2	Close the **TCP/IP** window.

Saving the Connection Document

Procedure

Do the following to close and save the connection document:

Step	Action
1	From the **File** menu, select **Save As...**
2	Give the connection document a name and click **Save**.
3	Close the connection document window.

Dial On Demand

You can save your connection document on the desktop, in your **NetRider Client for Mac** folder or in your **Startup Items** folder. If you save the document in your **Startup Items** folder in your **System** folder, you can take advantage of NetRider Client for Macintosh's Dial on Demand feature.

The Dial on Demand feature, which becomes active as soon as you turn on your Macintosh, configures PPP at boot time and starts a connection when you try to access a network service. You can store only one connection document in the **Startup Items** folder at a time.

Closing Without Saving Settings

Many of the configuration windows do not have **Cancel** buttons to undo undesired changes. If you make changes to the settings of a connection document that you want to undo, close the document without saving the changes. When you reopen the document, the settings are unchanged.

To close a connection document without saving changes, do the following:

Step	Action
1	Click the close box in the upper left corner of the connection document window. Apple's standard **Close** dialog appears.
2	Click **No** in the **Close** dialog to indicate that no changes are to be saved. The connection document is closed, and no changes are saved.

Editing a Connection Document

Introduction

Once you have configured a connection document and saved it, you can change it.

Procedure

To edit a connection document, do the following:

Step	Action
1	From the **File** menu, select **Open Connection** to display Apple's standard **Open File** dialog.
2	Double-click a configured connection document. Or select a connection document and click **Open**.
3	Perform whatever edits are necessary.
4	Select **Save** or **Save As...** from the **File** menu to save your changes. Or close the connection document window and click **Yes** when asked to save your changes. Click **No** if you do not want to save your changes.

Chapter 4

Remote Network Connections

Overview

Introduction

This chapter explains how to connect to remote networks using NetRider Client for Macintosh connection documents and how to monitor connection activity and check status.

In This Chapter

This chapter describes how to do the following:

- Launch the application
- Display connection status
- View the activity log
- Monitor AppleTalk status

Launching the Application

Introduction

NetRider Client for Macintosh uses the information in a connection document to connect to a specified remote network. If you implemented the Dial on Demand feature, your connection document is located in your **Startup Items** folder.

Note that you can make successful connections only if you already configured all appropriate parameters for this document as described in Chapter 3.

Procedure

Step	Action
1	Do one of the following: a) Select **Open Connection** from the **File** menu and choose the previously configured connection document you want to use from Apple's standard **Open File** dialog. b) Double-click the icon of a previously configured NetRider Client for Macintosh connection document.
2	When the selected document opens, click **Connect** to establish a connection to the remote network. During a connection, status messages are displayed in the right side of the connection document window.
3	If you must drop your modem connection at this point, click **Disconnect**.

Action After Connection

NetRider Client for Macintosh uses the information you entered in the **Modem** window to determine the action it takes after your modem connects to the remote network.

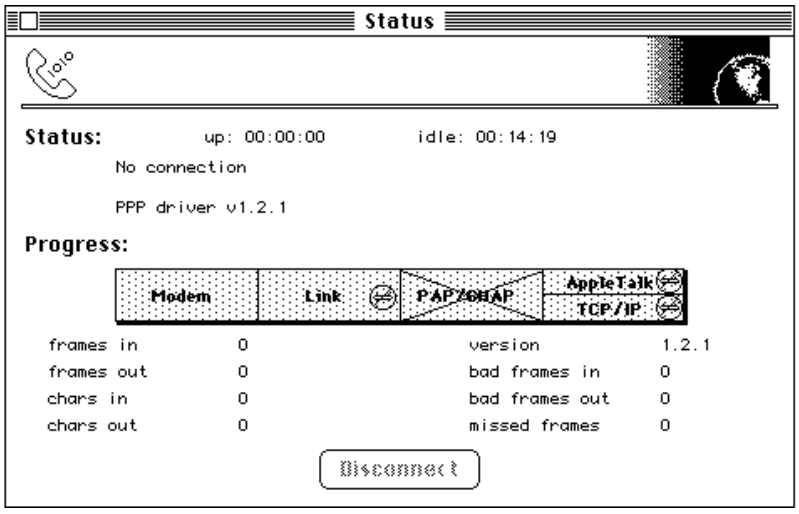
Once you have established a connection, you can then run your application software.

Displaying Connection Status

Procedure

Do the following to view status information about your connection:

Step	Action
1	Do one of the following: a) Select **Open Connection** from the **File** menu and choose the previously configured connection document you want to open from Apple's standard **Open File** dialog. b) Double-click the icon of a previously configured NetRider Client for Macintosh connection document.
2	When the selected document opens, click **Connect** to establish a connection to the remote network.
3	Select **Status** from the **Status** menu to display the progress of your connection. A **Status** window appears, such as:



Step	Action
4	If you must drop your modem connection at this point, click **Disconnect** in the **Status** window.
5	Click the close box to close the **Status** window.

Bad Frames

If the percentage of bad frames in or bad frames out in the Status window is more than 10% of your frames in or frames out, have your system administrator check your modem for problems.

Viewing the Activity Log

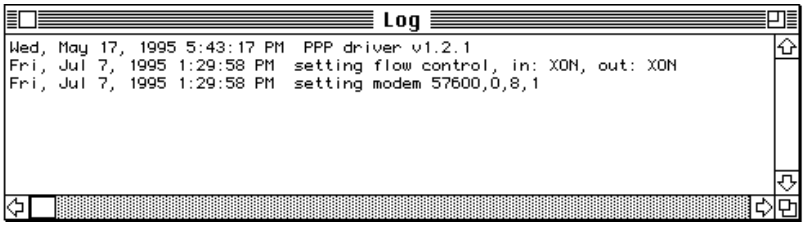
Introduction

Your activity log is a file that NetRider Client for Macintosh generates to record the history of each connection the software makes until the next time you restart your Macintosh. The information in the log is useful, for example, to determine where a connection failed or how certain configuration parameters, such as timeouts, affect your connection.

Procedure

Do the following to display the activity log:

Step	Action
1	Whenever your connection document is open, select **Activity Log** from the **Status** menu to view the **Log** window. The window displays information on the connections you have made with NetRider Client for Macintosh:



Step	Action
2	Do any of the following, as needed: • Use the size box to adjust the window's size, and use the scroll bars to view text that does not fit in the window. • Select **Print** from the **File** menu if you want to print the contents of this activity log. • Select **Save** or **Save As...** from the **File** menu if you want to save the contents of this activity log. Note that if you do not save your activity log, the information in the log is erased the next time you restart your Macintosh.
3	Click the close box to close the **Log** window.

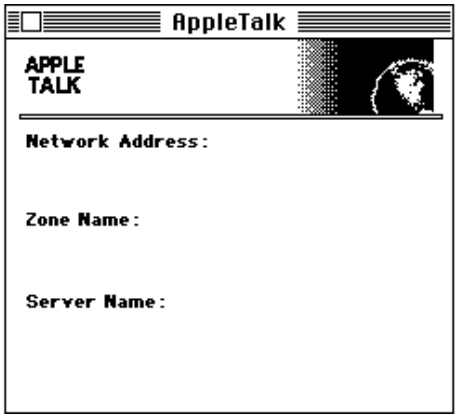
Monitoring AppleTalk Status

Introduction

AppleTalk routing must be available for your AppleTalk PPP connection to work. Your system administrator knows whether your server supports AppleTalk routing.

Procedure

Do the following to display AppleTalk status:

Step	Action
1	Open a previously configured connection document and click **Connect** in the Connection Document window to connect to the remote network.
2	Select **AppleTalk** from the **Configure** menu to display the **AppleTalk** status window, which contains information about your address, zone, and server: 
3	Close the **AppleTalk** window. The connection document window reappears.

Chapter 5
Troubleshooting

Overview

Introduction

This chapter describes error messages and provides troubleshooting information for NetRider Client for Macintosh software.

In This Chapter

This chapter contains information on the following:

- Connection errors
- Connection status
- CCL scripting errors
- Miscellaneous errors
- Sample problems and solutions

Connection Errors

Login Failed

Explanation

You tried to login but could not.

User Action

Make sure you entered the correct passwords (using the proper case) and check the activity log for more possible causes. Or, to log into the server manually, select **Show terminal window** from the **After connect** pull-down menu in the **Modem** window.

Modem Error; Modem Not Responding

Explanation

This can occur for many reasons. One may be if the modem is used in rapid succession between applications or connections. For example, if the modem is used for five sequential connection attempts when the destination is busy, or there is a mismatch between actual and specified modem types.

User Action

Try turning the modem off and then back on, check that it is connected and configured properly, and then try making the connection again.

No Carrier

Explanation

The remote network that your modem is dialing is not transmitting a signal.

User Action

Be sure that the correct phone number is entered in the **Phone** field of the active connection document window. If the remote modem does not respond, or if you still receive the message, make sure that the number you entered returns a high-pitched squeal when you call from your telephone.

No Dial Tone

Explanation

No dial tone is present.

User Action

Check that the modem is plugged in on a valid telephone line.

PPP Not Installed Properly or Application Could Not Find PPP Driver

Explanation

Cannot establish PPP connection.

User Action

Check that your NetRider Client for Macintosh files are in the proper folders (see Chapter 1) and reboot your Macintosh.

Serial Port Already In Use

Explanation

You tried to use a serial port that was already in use.

User Action

Close the application that is using the same port as your modem. Or check that the correct port is selected in the **Modem** window.

Remote Modem Did Not Answer

Explanation

The remote network that your modem is dialing did not answer and your connection was dropped.

User Action

Try reconnecting at another time.

Stalled

Explanation

You may see this message if the modem cable is the wrong type or is not connected properly.

User Action

Check that the correct cable is properly connected. Then try making the connection again.

Timeout; Modem Not Responding

Explanation

The remote network that your modem is dialing did not respond and the timeout parameter was reached, which caused your connection to be dropped.

User Action

Try reconnecting at another time.

Connection Status

Idle Timeout

Explanation

The server did not respond to your machine within the appropriate amount of time, so the connection was automatically dropped.

User Action

Try making the connection again.

Resetting Modem

Explanation

This message is displayed after a connection is closed or busy.

User Action

Try making the connection again.

The Line Is Busy

Explanation

The line your modem is using to call the remote network is busy.

User Action

Try reconnecting at another time.

CCL Scripting Errors

Bad Command In Modem CCL Script

Explanation

There is a command in the CCL script that the modem does not recognize.

User Action

Open your CCL script, make sure all commands are legal, and try the connection again.

Bad Parameter In Modem CCL Script

Explanation

There is a parameter in the CCL script that the modem does not recognize.

User Action

Open your CCL script, make sure all parameters are legal, and try the connection again.

Can Not Open Script Larger Than 32KB

Explanation

Your CCL script is too large for NetRider Client for Macintosh to open.

User Action

Try opening it up in a text editor, such as Apple's SimpleText, and edit it down to less than 32K. Use NetRider Client for Macintosh to open the script after decreasing the file's size.

CCL Script Error

Explanation

There is an error in the CCL script.

User Action

Open your CCL script, make sure all parameters and statements are legal, and try the connection again.

Error in Modem CCL Script

Explanation

There is an error in the CCL script.

User Action

Open your CCL script, make sure all parameters and statements are legal, and try the connection again.

No @ANSWER In Modem CCL Script

Explanation

There is no @ANSWER statement in the CCL script you are using.

User Action

Open the script, add the appropriate @ANSWER statement to your script, and try the connection again.

No @HANGUP In Modem CCL Script

Explanation

There is no @HANGUP statement in the CCL script you are using.

User Action

Open the script, add the appropriate @HANGUP statement to your script, and try the connection again.

No @ORIGINATE In Modem CCL Script

Explanation

There is no @ORIGINATE statement in the CCL script you are using.

User Action

Open the script, add the appropriate @ORIGINATE statement to your script, and try the connection again.

CCL Script Failed to Compile

Explanation

There is text in the CCL script that the script interpreter does not recognize.

User Action

Open your CCL script, make sure all parameters and statements are legal, and try the connection again.

Miscellaneous Errors

Can Not Open Log File Larger Than 32KB

Explanation

Your activity log is too large for NetRider Client for Macintosh to open.

User Action

Reboot the Macintosh to create a new activity log.

No Phone Number

Explanation

There is no phone number entered in the active connection document window.

User Action

In the **Phone** field of the active connection document, enter the number of the remote network you want your modem to call and try making the connection again.

Target Label Undefined

Explanation

This is caused by CCL script syntax errors.

User Action

Be sure that all matchstr or jump statements reference existing labels.

Terminal Window In Automatic Connection Mode

Explanation

The terminal window may not be used when in automatic connection mode.

User Action

Open the **Modem** window and check whether the **Automatic connection type** and **Show terminal window** options from the **After connect** pull-down menu are both selected. Deselect one of these options and try making the connection again.

Too Many Pages To Print

Explanation

The CCL script is too long to be printed.

User Action

Try setting your printing parameters to print selected pages or pieces of the script at a time.

Sample Problems and Solutions

Cannot Establish a Connection

You have configured your connection document and have clicked its **Connect** button but are unable to make a connection with your remote network.

Solution

There are many reasons why a connection attempt might fail, but here are two important things to check:

- Make sure you are using a hardware handshaking modem cable. Most modems sold within the past year will come with one of these, but check with your modem vendor to be sure. Pinouts for a hardware handshaking cable are as follows:

Mac Function	RS-232 Function	Mac Pin	DB-25 Pin
RxD (receive)	Receive Data	5	3
TxD (transmit)	Transmit Data	3	2
Ground	Ground	4 & 8	7
HSKi	CTS	2	5
HSKo	RTS & DTR	1	4 & 20
GPi	CD	7	8

- Make sure you enable CTS/RTS flow control. Do this by entering an appropriate command for your modem in the modem initialization portion of your CCL script.

Have Connection, But Cannot Launch Application

You made a connection but cannot launch an application that requires TCP/IP. The message: “This is not an available IP address” appears.

Solution

Open the MacTCP control panel and check that the **TCP/IP PPP** icon is selected. Click **More** and make sure that either **Server** or **Manual** addressing mode is selected. If **Manual** is selected, make sure that the address specified in the MacTCP window is not being used by another person.

Have Connection, But Cannot Get Login Prompt

You have a connection (no IP or AppleTalk negotiated), but you cannot get a login prompt from the server.

Solution

Check that your CCL script is setting your modem port to a baud rate appropriate for the DECserver to which you are trying to connect. Also, check to see if the DECserver is in dedicated PPP mode. If it is, open the **Modem** window and make sure **start PPP** is selected in the **After connect** pulldown menu.

Applications Requiring IP Services Do Not Run

You made a successful connection to a remote network, but you cannot get applications requiring IP services to work. You receive error messages that indicate that someone else is using this IP address, the MacTCP drivers are not loaded properly, or that it could not get this address.

Solution

This may indicate a problem with MacTCP. Open your activity log and look for the IP address that was negotiated. Make sure this address is the same as the address in the MacTCP configuration window. If the two addresses are different, you may need to reconfigure MacTCP. Reconfigure MacTCP, reboot your Macintosh for any configuration

changes to take effect, and try another NetRider Client for Macintosh connection.

Cannot Open Connection Document

Every time you try to open a connection document that is in the **Startup Items** folder, the application quits.

Solution

This is a result of the **Dial on Demand** feature. NetRider Client for Macintosh cannot tell whether the machine was just restarted or not. Move the connection document out of the **Startup Items** folder, modify it, and then move it back into the **Startup Items** folder.

Automatic Connect Timing Out

When you have a connection document set to **Automatic** and launch an application that requires an IP address, the application times out.

Solution

The time it takes for the driver to call the server and connect is usually longer then the application using the address is willing to wait. Once the connection is made and the status is displayed in the connection document window, try the application again.

Zones and Services Not Visible

You have an AppleTalk connection up but cannot see any zones or services.

Solution

Make sure **AppleTalk PPP** is selected in the **Network** control panel. Also, make sure an AppleTalk router is available on the network to which you want to connect. Use the remote DECserver's **SHOW APPLETALK** command to verify proper AppleTalk operation.

Activity Log Does Not Print

You want to print your activity log, but when you select **Print** from the **File** menu, nothing happens.

Solution

Go to the Chooser and be sure that you have a printer selected.

Appendix A

CCL Scripts

Overview

Introduction

This appendix briefly explains how to modify and create Connection Control Language (CCL) scripts. For more detailed information, consult the *AppleTalk Remote Access Modem Developer's Guide*. You can obtain the Guide from the Apple Programmers and Developers Association by calling 1 (800) 282-2732 (in the US only) or sending AppleLink electronic mail to APDA.

In This Chapter

This chapter contains the following information:

- CCL Script Description
- Modifying Scripts
- Creating Scripts
- CCL Strings
- CCL Statements
- Serial Port Commands
- Script Flow Control Commands
- Iteration Commands
- User Notification Commands
- Pattern Matching Commands

CCL Script Description

What is a CCL Script?

The Connection Control Language is used to write modem scripts. Each type of modem requires a modem script to send commands from the Macintosh to the modem.

CCL scripts are text files designed to dial and answer particular modems and are usually provided by your modem vendor. They can be exchanged between machines, and they can be printed. Check your modem installation diskettes to determine which CCL script you need.

NetRider Supplied Scripts

NetRider Client for Macintosh includes several scripts to control different kind of modems. These scripts appear in a menu in the **Modem** window when you configure your connection. Choose the script whose name most closely matches the product name of the modem. If you fail to get a connection with this particular script, you can try one of several generic scripts. Designed for Hayes-compatible modems that operate at 57600, 38400, and 9600 baud, these scripts should work with most available high-speed modems. If none of the scripts work, speak to your service provider or system administrator.

How Scripts Work

CCL scripts execute in one of three possible modes: originate, answer, or hangup. Each mode has a separate entry point. When a call is initiated, the script runs in originate mode. When call answering is enabled, the script runs in answer mode. When terminating a connection, the script runs in hangup mode. Note that because NetRider Client for Macintosh does not answer calls, the answer mode does not apply. Information regarding the answer mode, such as **@ANSWER**, is provided for technical accuracy and compatibility with AppleTalk Remote Access CCL scripts.

Note

The sections that follow describe the creation and modification of CCL scripts using NetRider's interface. However, any text editor can be used.

Modifying Scripts

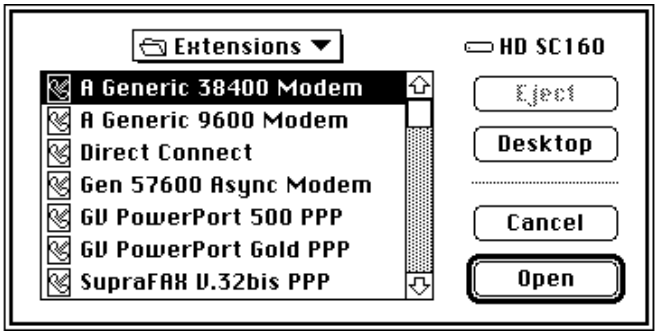
Introduction

Because NetRider Client for Macintosh and your modem manufacturer provide default CCL modem scripts, there is usually no need to modify CCL scripts. However, if no script is provided for your particular modem, or if you have special requirements, you can modify a default script or create a new one using the information in this appendix and in the *AppleTalk Remote Access Modem Developer's Guide.*

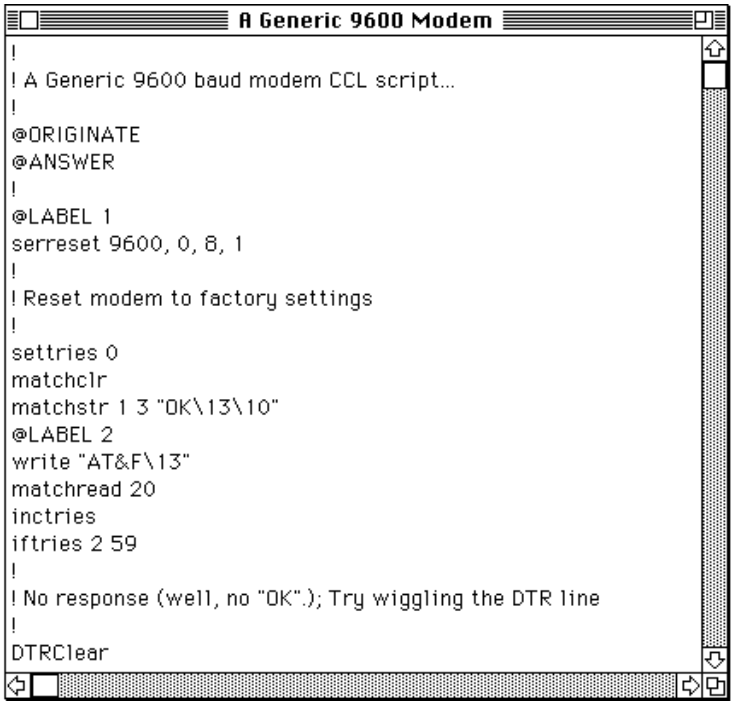
Procedure

Do the following to modify a CCL script:

Step	Action
1	Select **Open CCL Script** from the **File** menu to display Apple's standard **Open File** with a list of available CCL scripts:



Step	Action
2	Select a CCL script and click **Open** to open it. Click **Cancel** to close the window without opening a CCL script. A window similar to the following appears:



3	Edit the text, using the **Cut**, **Copy**, and **Paste** commands of the **Edit** menu as appropriate.
4	If you want to print a CCL script, open the script and select **Print** from the **File** menu.

Creating Scripts

Introduction

If neither NetRider Client for Macintosh nor your modem manufacturer provides a CCL script for the modem you are using, you can create a script using the information in the following sections and in the *AppleTalk Remote Access Modem Developer's Guide.*

Procedure

Do the following to create a new CCL script:

Step	Action
1	Select **New CCL** from the **File** menu.
2	When you see the standard text editing window labeled Untitled, use the conventions in the sections that follow to enter the text. Use **Edit** menu commands as necessary.
3	Select **Save** from the **File** menu to save the CCL script.
4	Name the CCL script, select the location where it is to be saved, and click **Save**. Click **Cancel** to close the window without saving the script. The name of the CCL script is displayed at the top of the window.

Using the New Script

To use the script you have created in a connection document, select the script from the pop-up menu in the **Modem** window.

CCL Strings

What Are Strings?

Strings are groups of characters used in CCL scripts. They are enclosed in quotes (" "). A **varString** contains parameters for modem setup, such as the phone number to dial and speaker setting while dialing. Defined varStrings are the following:

varString 1	phone number
varString 2	modem “speaker on” flag

Special Characters

The following special characters are allowed within strings:

\13	substitutes a carriage return (hex 0D) into the string
\00	substitutes a null character (hex 00) into the string
\\	substitutes the \ character (hex 53) into the string.
\^	substitutes the ^ character into the string
\"	substitutes the " character into the string
^1	substitutes the phone number into the string
^*	substitutes the ASK string into the string

The ^ character is used to reference a varString to substitute into the string.

CCL Statements

What are CCL Statements?

CCL statements are the elements of a CCL script. There is one CCL statement per line of a script, which is stored as a text file. A CCL statement can be a label, a comment, or a command.

CCL Labels

Labels begin with an at sign (@) and continue until the end of the line. They denote a point in the script that is the target of a jump from another part of the script. There are two kinds of labels: symbolic and numeric. Symbolic labels contain the at sign followed by a word. Numeric labels contain the at sign followed by a number.

Labels can be one of the following keywords or a label of the form @number, which references a numeric label in the script. You can then reference this label from other script commands such as JUMP, JSR, and IFTRIES. A script can have up to 128 labels, numbered 1 through 128. To specify label 30, include the command @LABEL 30 in the script.

Label	Description
@ANSWER	Marks the point in the script where execution begins in answer mode.
@HANGUP	Marks the point in the script where execution begins in hangup mode.
@ORIGINATE	Marks the point in the script where execution begins in originate mode.

CCL Comments

CCL comments begin with an exclamation mark (!) and continue until the end of the line.

CCL Commands

CCL commands start with a word (the command name) and are followed by arguments on the rest of the line. Blank lines are ignored. There are five categories of CCL commands:

- Serial Port Control Commands
- Script Flow Control Commands
- Iteration Commands
- User Notification Commands
- Pattern Matching Commands

Serial Port Commands

DTRCLEAR

Clears the DTR (Data Terminal Ready) signal on the RS-232 interface.

DTRSET

Sets the DTR signal on the RS-232 interface.

FLUSH

Empties all characters from the serial input buffer.

HSRESET

Sets the serial flow control options. Note that the PPP protocol ignores XON/XOFF because it is unable to process these characters. The options are provided to ensure backward compatibility with AppleTalk Remote Access CCL scripts.

Syntax

Use the following syntax for the HSRESET command:

```
HSRESET outputXON/XOFF outputCTS XON XOFF inputXON/XOFF inputDTR
```

Parameters

The following table lists the parameters for the HSRESET command:

Parameter	Value	Function
outputXON/XOFF	0	Disables XON/XOFF handshaking for output.
	1	Enables XON/XOFF handshaking for output.
outputCTS	0	Disables CTS hardware handshaking for output.
	1	Disables CTS hardware handshaking for output.

Parameter	Value	Function
XON	0	Disables the XON character
	1	Enables the XON character
XOFF	0	Disables the XOFF Character
	1	Enables the XOFF Character
input XON/XOFF	0	Disables XON/XOFF handshaking for input.
	1	Enables XON/XOFF handshaking for input.
input DTR	0	Disables DTR hardware handshaking for input.
	1	Disables DTR hardware handshaking for input.

Enabling CTS Hardware Handshaking

To enable CTS hardware handshaking for output, you would use the following command: **HSRESET 0 1 0 0 0 0**. You must specify values for all command parameters.

LBREAK

Generates a long break (3.5 seconds) on the serial output.

SBREAK

Generates a short break (233 milliseconds) on the serial output.

SERRESET

Configures the serial driver, providing values for baud rate, parity, databits, and stop bits. Specifying a zero value for any of the parameters causes the default value to be used.

Syntax

Use the following syntax for the SERRESET command:

```
SERRESET baudRate parity dataBits stopBits
```

Parameters

The following table lists the parameters for the SERRESET command:

Parameter	Values Allowed
baudRate	300, 1200, 2400, 4800, 9600 (default), 19200, 38400, or 57600
parity	1 for odd parity, 2 for even parity, 3 for no parity (default)
dataBits	5, 6, 7, or 8 (default)
stopBits	1 for 1 stop bit (default), 2 for 2 stop bits, 3 for 1.5 stop bits

To specify 9600 baud, no parity, 8 databits, and 1 stop bit, use the following command: **SERRESET 9600, 3, 8, 1**. Note that proper operation of PPP requires 8 databits, no parity, and 1 stop bit.

SETSPEED

Sets the asynchronous serial interface speed to the specified speed. Use SETSPEED to set speeds other than those allowed in SERRESET. For example, to set the speed to 14400, use the following command: **SETSPEED 14400**.

WRITE

Writes the specified message, a quoted string, to the serial driver. For example, the following command sends the message variable string 1 and carriage return to the serial driver: WRITE "ATDT^1\13".

Script Flow Control Commands

EXIT

Terminates execution of the script and returns a result. If the script completes successfully, the result returned is zero. If the script fails for any reason, the result returned is a CCL error code. You can specify a desired error code. For example, the command **EXIT -6022** causes the script to exit and return the error result code -6022 if a busy signal is encountered. The following table summarizes error codes.

Code	Meaning
-6007	There is at least one script open.
-6008	The script was canceled.
-6009	The script contains too many lines.
-6010	The script contains too many characters.
-6011	The script was not initialized.
-6012	There is a cancel in progress.
-6014	There was an exit with no error.
-6015	There is a label that is out of range.
-6016	There was a bad command.
-6017	The end of the script was reached with no Exit found.
-6018	The match string index is out of bounds.
-6019	There was a modem error and the modem is not responding.
-6020	There is no dial tone.
-6021	There is no carrier.
-6022	The line is busy.
-6023	There is no answer.

JSR

Causes script execution to jump to the subroutine specified by the label, saving the address of the line following the JSR command. At a RETURN command, execution resumes at the line following the JSR command.

You can specify the label at which execution continues. For example, the command **JSR 50** specifies that execution continues at the subroutine marked by label 50.

JUMP

Causes script execution to continue at the specified label. You can specify the label at which execution continues. For example, the command **JUMP 60** specifies that execution continues at label 60.

IFANSWER

Causes execution to continue at the specified label, if the script is running in answer mode. You can specify the label at which execution continues. For example, the command **IFANSWER 20** specifies that execution continues at label 20.

IFORIGINATE

Causes execution to continue at the specified label, if the script is running in originate mode. You can specify the label at which execution continues. For example, the command **IFORIGINATE 20** specifies that execution continues at label 20.

IFSTR

Compares two strings. If the strings are equal, the script continues execution at the specified label.

Syntax

Use the following syntax for the IFSTR command:

```
IFSTR varStringIndex jumplabel compareString
```

Parameters

The following table lists the parameters for the IFSTR command:

Parameter	Value
varStringIndex	Index of the varString with which to compare.
jumplabel	Label to jump to, where execution continues.
compareString	String with which to compare the varStringIndex string

To specify that execution should jump to label X if the modem speaker on flag equals 1, use the following command: **IFSTR 2 X "1"**.

PAUSE

Causes script execution to stop for a specified period of time. You specify the time to pause in tenths of a second. For example, the following command causes script execution to pause for 2 seconds: **PAUSE 20**.

RETURN

Terminates a subroutine. Script execution continues with the line following the last JSR command executed.

Iteration Commands

DECTRIES

Decrements the internal try counter by one.

IFTRIES

Compares a parameter with the internal try counter. If they are equal, the script continues execution at the specified label.

Syntax

Use the following syntax for the IFTRIES command:

```
IFTRIES numTries jumplabel
```

Parameters

The following table lists the parameters for the IFTRIES command:

Parameter	Value
numTries	Number to compare against the internal try counter.
jumplabel	Label to jump to, where execution continues.

To check whether the internal try counter is 7, and if so jump to label 80, use the following command: **IFTRIES 7 80**.

INCTRIES

Increments the internal try counter by one.

SETTRIES

Initializes the internal try counter to the specified value. To set the number of tries to 3, use the following command:
SETTRIES 3.

User Notification Commands

ASK

Displays a dialog to obtain information from the user when the script is initialized. You may need the ASK command if your telephone system uses special telecommunications equipment.

Syntax

Use the following syntax for the ASK command:

```
ASK maskflag "message"
```

Parameters

The following table lists the parameters for the ASK command:

Parameter	Value
maskflag	1 or true indicates that the user's input is masked with dots; 0 or false indicates that the user's input is displayed as normal text.
message	Prompt displayed in the dialog for the user.

For example, to prompt the user for a password, try the following command: **ASK true "Enter your password"**.

NOTE

Sends messages to the internal activity log. Optionally, you can set the message level to specify where the message should appear.

Syntax

Use the following syntax for the NOTE command:

```
NOTE msgStr msgLevel
```

Parameters

The following table lists the parameters for the NOTE command:

Parameter	Value
msgStr	Message string
msgLevel	1 sends the message to the activity log only.
	2 sends the message to the **Status** window only (default).
	3 sends the message to the activity log and **Status** window.

For example, to send the message "Dialing" to the activity log only, you would use the following command:
NOTE "Dialing ^1".

USERHOOK

Causes the script to perform a special action. USERHOOK passes an opcode parameter (1 or 99) to the internal hook, so this hook can perform more than one function. Specifying **USERHOOK 1** marks a connection as active when a call is answered and a ring is indicated by the modem. Specifying **USERHOOK 99** causes a terminal window to be displayed.

Pattern Matching Commands

MATCHCLR

Clears all match strings. The CCL interpreter has an internal buffer that holds up to 16 strings identified with the MATCHSTR command. The buffer holds this information until it is erased with a MATCHCLR command. You should use MATCHCLR at the beginning of every modem script to clear the buffer.

MATCHREAD

Reads input from the serial driver and compares the input to the current match strings. If a match is found in the specified time, execution continues at the label of the matching match string. Specify the time allowed for a match in tenths of a second. For example, the following command searches for a match within 4 seconds: **MATCHREAD 40**.

MATCHSTR

Specifies a string to match incoming characters against. If a stream of consecutive incoming characters matches the string, script execution continues at the specified label. Sixteen possible match strings exist.

Syntax

Use the following syntax for the MATCHSTR command:

```
MATCHSTR matchNum matchlabel matchStr
```

Parameters

The following table lists the parameters for the MATCHSTR command:

Parameter	Value
matchNum	1 to 32
matchlabel	Label to jump to, where execution continues.
matchStr	A string (1-255 characters) against which to compare.

Use the following command to match the string "OK\13\10" with match string 1: **MATCHSTR 1 8** "**OK\13\10**". If the strings match, execution jumps to label 8.

Glossary

activity log

A file that NetRider Client for Macintosh generates to record each connection NetRider Client for Macintosh makes until the next time your Macintosh is restarted.

answer mode

One of three executions of a CCL script. When call answering is enabled, the script is in answer mode. See hangup mode, originate mode.

AppleShare

An application developed by Apple Computer, Inc. that gives a Macintosh the ability to function as a file server.

AppleTalk

A multimedia network architecture developed by Apple Computer, Inc. for use on Macintosh and other computers and peripherals.

asynchronous transmission

A form of data transmission, used mostly by modems, that sends information a single character at a time, with variable time intervals between characters.

ATCP

AppleTalk Control Protocol.

authentication

A process used to verify a piece of data. In NetRider Client for Macintosh, authentication describes the process of authorizing users to connect to remote networks. See CHAP, PAP.

baud

A term used to refer to the number of characters transmitted per second, measured in bits per second (bps).

boot disk

See startup disk.

CCL (Connection Control Language)

A computer language used to write modem scripts necessary to establish connections.

CCL script

A file written in the Connection Control Language that contains information, such as commands, necessary to connect your modem to the remote network. See CCL.

Challenge-Handshake Authentication Protocol

See CHAP.

CHAP (Challenge-Handshake Authentication Protocol)

A protocol that provides a way for a machine (the client) to identify itself to a remote network (the server).

After an initial link is established, the server sends a challenge that prompts the client to calculate a response. If the client's response matches the response that the server calculated, the connection is established.

If the two do not match, the connection is terminated. This protocol is considered more secure than the Password Authentication Protocol (PAP) because no confidential information is passed in plain text from the client. See PAP.

character

Any symbol that has a widely understood meaning and can convey information. Some characters (such as letters, nmbers, and punctuation) can be displayed on the monitor and printed on a printer.

character map

An option in NetRider Client for Macintosh that allows users to substitute characters that cannot be transmitted through the modem with characters that the remote network recognizes and replaces with the correct characters once the information has passed successfully over the link.

checkbox

A small box associated with an option in a dialog. When you click the checkbox, you change the option or affect related options.

Chooser

An Apple Menu item that allows the user to select printers, file servers, or network devices.

client

A program or machine that requests services from a network or server.

client-server

The relationship between hosts on a network where the client is the originator of a request and the server is the responder.

comm server (communications server)

A device that connects a local area network to a wide area network or telecommunications network. In NetRider Client for Macintosh, the comm server is a Digital network access server that connects the local area network to your Macintosh.

command

A type of statement found in CCL scripts that begins with a word (the command name) and is followed with arguments on the remainder of the line. See CCL script, comment, label, statement.

comment

A type of statement found in CCL scripts that begins with an exclamation mark (!) and continues until the end of the line.

connection

An association that is established between machines to convey information.

Connection Control Language

See CCL.

connection document

A NetRider Client for Macintosh file created and configured for particular modems and remote networks. NetRider Client for Macintosh uses these files to record preferences and information such as IP addresses and modem types.

Dial on Demand

A feature in NetRider Client for Macintosh that is implemented by placing a previously configured connection document into the Startup Items folder in your System Folder. This action configures PPP at boot time and begins a connection when you attempt to access a network service.

Domain Name Server (DNS)

An on-line distributed database responsible for mapping host names to their respective IP addresses. Also referred to as the Domain Naming System.

driver

Software that links a standard operating system interface and a peripheral device.

DTR

Data Terminal Ready.

flow control

The process that determines the rate at which information is transferred from one device to another. Also called handshake.

handshake

See flow control.

hangup mode

One of three executions of a CCL script. When terminating a connection, the script is run in hangup mode. See answer mode, originate mode.

INIT (Initiate)

A routine that is run when your Macintosh is started or restarted. Often memory resident, INITs are used to load and activate drivers and system routines.

IP (Internet Protocol)

See TCP/IP.

IP address

The 32-bit address assigned to a host communicating over the Internet using TCP/IP. It consists of a network address and the host's address. Also called an email address.

IPCP

Internet Protocol Control Protocol.

label

A type of statement found in CCL scripts that begins with an at sign (@) and continues until the end of the line. See CCL script.

MacTCP

A software driver written by Apple Computer, Inc. for the Macintosh Operating System that implements many TCP/IP protocols.

modem (modulator/demodulator)

A device that converts serial digital data from a transmitting terminal to a signal suitable for transmission over telephone lines. The modem also converts the telephone signal (analog) into a serial digital signal for use by another computer or terminal.

modem port

An interface on the back of the computer that is suitable for modem connection.

modem speaker

The speaker located in a modem that allows you to hear the signals involved in the connection, that is, the high-pitched squeal.

opcode (operation code)

The basic, low-level instructions that control the actions a computer is to take.

NCSA

National Center for Supercomputing Applications.

originate mode

One of three executions of a CCL script. When a call is initiated, the script is run in originate mode. See hangup mode, answer mode.

PAP (Password Authentication Protocol)

A protocol that provides your Macintosh (the client) a way to identify itself to the remote network (the server). After an initial link is established, the client sends the server an ID/Password pair in plain text. If the server recognizes the pair, the connection is established. If it does not accept the pair, the connection is terminated. See CHAP.

parity

The evaluation of the quality of similarity or equivalence used as a method for error checking.

Password Authentication Protocol

See PAP.

PPP (Point-to-Point Protocol)

A standard that allows multiple LAN protocols to be used simultaneously over a modem line or other serial connection. Using PPP, the same connection that provides connectivity for one protocol can be used to provide connectivity for multiple protocols. Since PPP is a standard, the same manufacturer's equipment or software is no longer necessary for both ends of the connection. PPP can be used for single user dial-in or for LAN-to-LAN connections.

Serial Line Internet Protocol

See SLIP.

serial port

The connector for a peripheral device that uses a serial interface, commonly a modem.

server

A machine or program designed to provide a service to a network. A server communicates with a client to handle the client's input and output needs.

SLIP (Serial Line Internet Protocol)

A specification for using the Internet protocol over a low-speed asynchronous serial line.

statement

A line found in CCL scripts that is a command, comment, or label. See CCL script.

string

A data structure consisting of a sequence of characters, usually user-readable text.

stop bit

A bit that signals the end of a character in asynchronous transmission.

TCP/IP (Transmission Control Protocol/Internet Protocol)

Two communication protocols used to connect dissimilar systems. The IP protocol controls routing data, and the TCP protocol controls transferring data.

varString

A string that contains parameters for modem setup, such as the phone number and whether the modem's speaker is on or off during dialing.

XON/XOFF (Transmitter On/Transmitter Off)

A method of inband flow control used when a computer is sending information to a slower device. Printers often use XON/XOFF handshaking. When the buffer is almost full, XOFF (Control S or ^S) is sent to the host, which suspends output until the printer, or other attached device, sends an XON (Control Q or ^Q). See flow control.

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