DAVE™

Mac ♥ PC

Contents

Chapter 7: DAVE Utility   75

Chapter 1

Introduction

How to Use This Manual

This manual is organized in increasingly more detailed sections. **Users may only need to read Chapter 2 - Installation** to begin using **DAVE**. Although DAVE is very intuitive, additional information is provided in the chapters that follow. If you are setting up a peer-to-peer network, refer to the **Installation Roadmap** section later in this chapter. Systems Administrators can find detailed technical information in the **Technical Information Chapter** and in **Chapter 10 - NetBIOS Control Panel**. In addition, **Chapter 12 - Troubleshooting** gives a step-by-step method for diagnosing problems. If you find a term or acronym that you are not familiar with, refer to the **Glossary**.

What is DAVE?

DAVE enables Macintosh users to access Microsoft networks and associated file and print services. DAVE provides Macintosh users with the ability to mount shared directories on Windows NT (Server and Workstation), Windows 95, Windows 98, Windows 2000, and other Macintosh computers.

In addition, Windows users have the ability to use Macintosh file and printer resources. DAVE provides full peer-to-peer file and PostScript print sharing with both PC and Macintosh systems. DAVE gives both Macintosh and PC users simultaneous read and write access to files stored on remote computers without first requiring users to download or copy the files to a local drive.

You will see a number of acronyms in this manual, one that you will see often is "CIFS". DAVE communicates with other systems using what is known as CIFS protocols. CIFS stands for Common Internet File System and is a Microsoft standard method for sharing data and resources. This protocol is also known as Server Message Block (SMB). For traditional Macintosh users, you can think of CIFS as being roughly equivalent to AppleShare, and TCP/IP as being similar to AppleTalk.

DAVE Requirements

DAVE requires the following **hardware** and **software**:

- ❒ Any Macintosh with a 68030 or higher processor
- ❒ Mac OS 7.6 and later versions with a minimum of 16 megabytes of RAM
- ❒ Apple's Open Transport TCP/IP v1.1.1 or later
- ❒ Any hardware required to useTCP/IP
- ❒ CD ROM Drive

DAVE requires at least one of the following **systems**:

- ❒ Windows NT Workstation or Server version 4.0 or later or Windows 2000
- ❒ Windows 95 or 98
- ❒ Other CIFS Compliant Servers (e.g., Samba)
- ❒ Another Macintosh running DAVE

How to Get Additional Support

If you are having trouble getting DAVE to operate properly, please refer to **Chapter 12: Troubleshooting**. You should be able to correct most problems easily.

The best way to report software problems is to do it in writing (email, fax or letter). This method provides a tracking mechanism that ensures a resolution for every problem reported. Additional information on support is provided in Appendix B. All correspondence should be addressed to:

THURSBY SOFTWARE SYSTEMS, INC.
5840 W. Interstate 20
Arlington, Texas 76017 U.S.A.
http://www.thursby.com
Internet support: dave@thursby.com
Internet sales: sales@thursby.com

IMPORTANT: Be sure to complete the registration card enclosed in your distribution kit! TSS will need this information in order to provide you with support and future updates (detailed instructions are provided on the registration card).

Installation Road Map

This section is designed to be a quick reference for people who are setting up a small peer-to-peer network. To configure DAVE so that it works properly on your network, you will need to follow these steps:

1. If you do not have TCP/IP installed and configured on your Macintosh, read the Host Configurations section for Macintosh TCP/IP in **Chapter 3: Configuration**.

2. If you are connecting to a Windows PC and have not yet configured your PC to use Microsoft networking over TCP/IP, read the Host Configurations section for your particular OS in **Chapter 3: Configuration**.

3. After you have configured TCP/IP and can "Ping" the Macintosh from another computer on your network, then you can install DAVE on the Macintosh.

4. To install DAVE, insert the DAVE CD and double-click on the Installer icon. Follow the instructions on the screen. For further details on DAVE installation, see **Chapter 2: Installation**.

5. After installing DAVE and restarting , DAVE Setup Assistant will help you configure DAVE. Refer to **Chapter 2: Installation** for further information about installation.

Chapter 2

Installation

This chapter contains the basic information to take you from opening the package to rebooting the Macintosh after installation.

Installing the Software

NOTE: You will need to close out of all other applications before installing.

Before installing DAVE it is a good idea to configure your Macintosh for use with TCP/IP. You may have already done this if you are using other TCP/IP products such as Netscape or Fetch. **DAVE will not work unless your Macintosh is properly configured.**

It is also a good idea to read the notes in the *Read Me* file that appears when you insert the DAVE media. Double click on this file to read it. The *Read Me* file may contain important changes to this manual and information you may need to know before installation.

The procedures for installing DAVE are quite similar to installation of most Macintosh products:

1. Insert the CD and double click on the installer icon.

2. The DAVE Installer will verify that your system has the required software and disk space available. If you do not have enough disk space the installer will tell you how much you need.

NOTE: If you copy DAVE from another Macintosh, you may not acquire the correct versions.

3. Select install options. "Easy Install" installs the entire DAVE product. "Custom Install" allows you to specify the parts of DAVE you wish to install.

NOTE: Before pressing the "Install" button, verify that the Installer has selected the correct hard drive.

4. Have your license handy so you can enter the information when DAVE begins.

5. Restart your Macintosh. Because key parts of the DAVE product include system extensions, you will need to restart your Macintosh when the installation is completed.

6. After you reboot, the Setup Assistant will display. Follow the directions based upon your configuration needs (see Chapter 3: Configuration for information on configuring DAVE for your computer).

DAVE Setup Assistant

The DAVE Setup Assistant is designed to help you configure DAVE properly for use with your network. The DAVE Setup Assistant explains the information you need to know in a series of panels. As you enter the requested information, click the right arrow at the bottom of the window. You may back up to change settings by clicking on the left arrow.

Most users will be able to configure DAVE using the DAVE Setup Assistant. If so, you can skip Chapter 3: Configuration. If you still do not understand the information requested by the DAVE Setup Assistant, you should read Chapter 3: Configuration for more complete directions.

Chapter 3

Configuration

Host Configurations

The following instructions are guidelines for setting up a variety of computers to work with the DAVE 2.5 software. For more specific information on configuring these products, contact Microsoft, Apple, the Samba users groups, and/or your Systems Administrator.

These instructions are intended for use in an isolated network. If you are already connected to a LAN these instructions may not apply.

Configuring Windows 95 or 98 on the Network

Before configuring your Windows 95 or 98 machine, verify that you have the correct network adapter, cables and any other necessary network hardware.

❒ **Twisted-Pair**
If you connect computers using network adapters and twisted-pair cable you will need a 10Base, a fast Ethernet hub, or a special "cross-over" cable.

❒ **Thin Coax**
If you connect computers using network adapters and Thinnet (BNC/COAX) cable, you must connect the cable to each network adapter using a T-connector with a terminator at each cable end.

After installing the network adapter and connecting the network, reboot your system. Windows 9x may detect the adapter. If it does not detect the adapter, use the "Add New Hardware" tool in the *Control Panel*. After the network adapter is set up, follow these steps to verify that the correct network components are installed:

NOTE: You may need your Windows installation disks.

1. Right click on the "Network Neighborhood" and choose "Properties" on the pull-down menu. If "Network Neighborhood" is not on the desktop, click the "Start" button and select "Settings".

2. Open your *Control Panels* and double-click the "Network" icon.

3. On the "Configuration" tab in the Network Control Panel verify that the following network components are installed:

• Client for Microsoft Networks
• The Appropriate Adapter (see Appendix D-1)
• TCP/IP
• File and Print Sharing for Microsoft Networks

```
Network                                          ? X
 Configuration | Identification | Access Control |

 The following network components are installed:

 🖳 Client for Microsoft Networks
 🖳 NE2000 Compatible
 🖋 TCP/IP
 🖳 File and printer sharing for Microsoft Networks

       Add...        Remove       Properties

 Primary Network Logon:
 Client for Microsoft Networks                    ▼

       File and Print Sharing...

 ┌ Description ──────────────────────────────┐
 │                                            │
 │                                            │
 └────────────────────────────────────────────┘

                              OK        Cancel
```

4. If "Client for Microsoft Networks" is not installed, press the "Add" button.

5. Select the "Client" item and then "Microsoft" from the listing. Now select "Client for Microsoft Networks" and click the "OK" button.

6. If the installed adapter is not in the list of network components, press the "Add" button. Select "Adapters" then Manuafacturer from the listing.

7. Now select the appropriate adapter.

8. If TCP/IP is not installed, press the "Add" button and select the "Protocol" item. Choose Microsoft from the

listing, select "TCP/IP" and click the "OK" button.

9. To configure TCP/IP, select it from the list of components and press the "Properties" button.
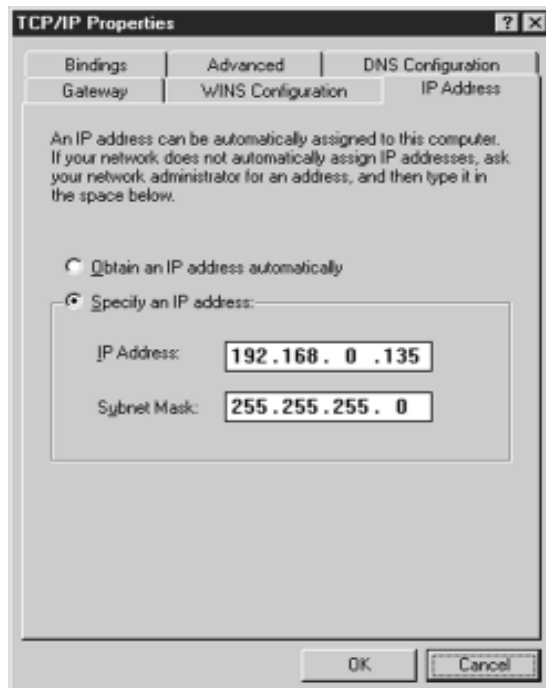
10. On the IP Address tab in the TCP/IP Properties window, select the "Specify an IP address" radio button. Enter the IP address in the "IP address" field and the Subnet Mask in the "Subnet Mask" field (e.g. 255.255.255.0).

11. If "File and Printer Sharing for Microsoft Networks" is not in the list of installed components, click the "Add" button and select the "Service" item and choose "Microsoft" from the listing. Now select "File and Print

Sharing for Microsoft Networks" and click the "OK" button.

12. You can now press the "File and Printer Sharing for Microsoft Networks" button on the Network Control Panel. Select the appropriate boxes and click the "OK" button.

13. On the "Identification" tab in the Network Control Panel enter a name for your computer and your Workgroup. The Workgroup needs to be the same as the one you will enter in your Macintosh NetBIOS control panel. You can also enter a description of your computer (i.e. Autumn's Win95/98 or Bill's NT workstation). Now click the "OK" button.

NOTE: The computer name must be unique for each computer on the network.

14. Restart your computer when you are prompted to do so.

Configuring Windows NT

Before configuring your Windows NT machine, verify that you have the correct network adapter cables and any other necessary network hardware.

❐   **Twisted-Pair**
If you connect computers using network adapters and twisted-pair cable you will need a hub, or a cross-over cable specifically designed to bypass a hub.

❐   **Thin Coax**
If you connect computers using network adapters and Thinnet (BNC/COAX) cable you must connect the cable to each network adapter using a T-connector with a terminator at each cable end.

There are two ways to configure TCP/IP on Windows NT 4.0. You can use the Network Setup Wizard (Method 1) or you can configure it manually (Method 2).

Sharing Resources on Windows

To setup your Windows machine for sharing follow these steps:

1. Double-click the "My Computer" icon on your desktop.

2. Using the right mouse button, click the drive, folder, or printer you wish to share. Now click Sharing from the pull-down menu. The Sharing dialog will display.

3. On the "Sharing" tab, click "Shared As" and type a name for the share in the "Share Name" field.

4. Select the access type you want for this shared resource.

Your Windows computer is now ready to share files with other Windows computers and Macintosh computers using DAVE.

TCP/IP Configuration Method 1 (Wizard)

NT 4.0 must have NT networking installed. This is usually accomplished during the NT installation process. If NT networking was not installed during installation, open the *Network Setup Wizard* by right-clicking on the "Network Neighborhood" and choosing properties from the pull-down menu. The *Network Setup Wizard* will display. The following instructions will guide you through the wizard:

1. If your NT is connected to the network via a network

adapter, select "Wired to the Network" and click the "Next" button.

2. Click "Start Search" to detect your network adapter. After it is detected click the "Next" button.

3. Select the TCP/IP item as the Network Protocol and click the "Next" button. Click "Next" to accept Network Services. Click "Next" again to install selected components. You may need to provide your Windows NT CD at this point. You will now go to the TCP/IP Setup.

If you have a DHCP server, click "Yes". For a simple network, click on "No" to continue the TCP/IP setup. The Microsoft TCP/IP Properties box will display.

4. At the TCP/IP properties box enter a valid IP address. Enter the Subnet Mask and click the "OK" button. The "Default Gateway" is an unnecessary option for simple networks. It is used for establishing a path to other networks.

After clicking the "OK" button you may receive the message:

```
"Microsoft TCP/IP - At least one of
the adapter cards has an empty primary
WINS address.  Do you want to con-
tinue?"
```

Select the "Yes" button.

5. Click "Next" to enable the default services.

6. Click the "Next" button to start the network.

7. You will now need to enter a unique name for your NT system. You can also select a Workgroup name. The

default name is "Workgroup". Click :Next".

NOTE: Make sure you use the same workgroup name for your Macintosh.

8. Click "Finish" to complete the installation process. Reboot when prompted.

TCP/IP Configuration Method 2 (Manual)
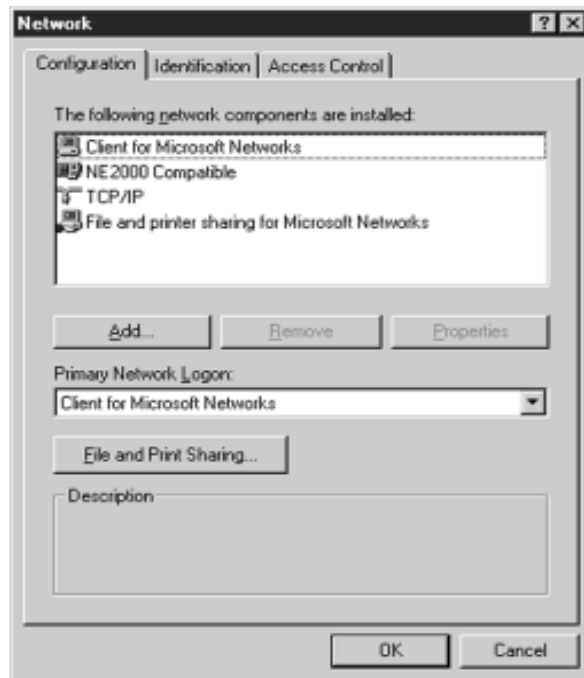
1. To begin configuring TCP/IP manually, right-click on the "Network Neighborhood" and select "Properties" from the pull-down menu. If "Network Neighborhood" is not on the desktop, click the "Start" button and select Settings/Control Panel/Network.

2. In the **Identification Tab**:
• Enter a unique name for the computer in the "Computer Name" field.
• Enter a Workgroup name (the same Workgroup used on the Macintosh) in the "Workgroup" field.

4. In the **Services Tab**, press the "Add" button to add these services:
- Workstation
- NetBIOS Interface
- Server

5. The following services should be listed in the "Network Services" windows:
- Computer Browser
- NetBIOS Interface
- Server
- Workstation

6. In the **Protocols Tab**, press the "Add" button to add TCP/IP protocol.

7. You will be prompted to confirm or deny DHCP servers on your network. If you have a DHCP server on your network, click "Yes". For a simple network click "No" to continue the TCP/IP setup. Click on the properties button to configure TCP/IP.

Do not configure TCP/IP at this time. You will have the opportunity to configure TCP/IP when the network control panel is closed.

8. In the adapters window, click "Add" to add the proper network adapter.

9. Bindings tab: it is not necessary to change the default settings.

10. Click "Close" to close the Network control panel.

11. If you did not choose DHCP, the TCP/IP properties window will appear. At the TCP/IP Properties window select the "Specify an IP Address" radio button and enter a valid IP address. Enter the Subnet Mask in the "Subnet Mask" field (i.e. 255.255.255.0). The Default Gateway is an unnecessary option for simple networks. It is used to establish a path for reaching other networks. Click the "OK" button.

12. Restart your system and Windows NT will be ready to share files with other Windows computers and Macintosh computers using DAVE.

Configuring Open Transport TCP/IP

Select the TCP/IP item in the Control Panels under the Apple Menu. The TCP/IP dialog window will display:
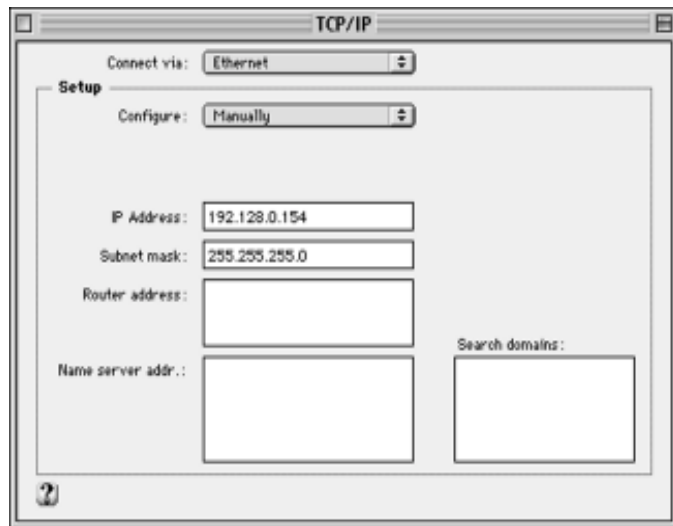
To complete the Open Transport TCP/IP Control Panel
follow these steps:

1. Select "Connect via Ethernet".

2. Select "Configure manually".

3. Enter the IP address.

4. Enter the Subnet Mask (e.g. 255.255.255.0).

5. Close the TCP/IP Control Panel.

NOTE: If you are using a modem for dial-up access to
the Internet you will need to make a new TCP/IP con-
figuration for DAVE. This is easily done by going to the
"File menu" and selecting "Configurations". Make a
duplicate copy of your existing configuration and
rename the copy. Now configure the copy for Ethernet
and save it.
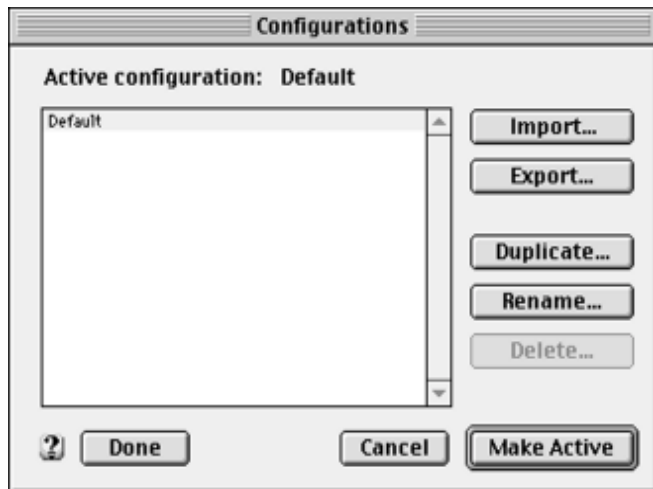
Now you can install DAVE according to the instructions
in this manual.

After installation the DAVE Setup Assistant will launch when you reboot. Follow the directions in each panel displayed.

About TCP/IP

This section is provided as a simple guide for use in configuring TCP/IP on Windows and Macintosh computers. The examples below can be used in your settings if you have a simple network. If you are attempting to connect your Macintosh to an existing TCP/IP network you may need to contact your Systems Administrator for help in determining the correct IP address and subnet mask.

About IP Addresses

For an internal network with no global Internet connections you can assign unique addresses to your computers as long as they conform to the class naming conventions.

The network address range 192.168.0.0 - 192.168.0.255 is reserved by the IANA for use with non-Internet connected networks.

Example: 192.168.0.1 would be a class C address and 1 defines the network host and 192.168.0 defines the network.

Additional hosts would have the same network number 192.168.0 and different host numbers up to 254.

Configuring TCP/IP

NOTE: The numbers 0 and 255 are reserved for the

23

network and are not valid host addresses.

Example: 192.168.0.1 could belong to Joe's 6100/60 PowerPC Macintosh . 192.168.0.2 could belong to Linda's Intel P133 with Windows 95. 192.168.0.3 through 192.168.0.254 could be used for additional machines.

Subnet Masks

For an internal network which will not be physically connected to another network (via a bridge or router) the computers connected together should have the same Subnet Mask.

Example:
Joe's 6100/60 PowerPC Macintosh has:
IP Address :   192.168.0.1
Subnet Mask: 255.255.255.0

Linda's Intel P133 with Windows 95 has:
IP Address :   192.168.0.2
Subnet Mask: 255.255.255.0

All machines on the network have the same network address (for example: 192.168.0) with different hosts (for example: 192.168.0.1 , 192.168.0.2 etc...). All the machines on the network have the same Subnet Mask - 255.255.255.0.

This network configuration does not require IP addresses for Default IP address or routers.

Limitations

DAVE has been tested with Apple's Open Transport PPP v1.0. However, OT PPP does not support MS-CHAP

authentication or dial-back connections. If you need a dialer that supports Microsoft authentication (MS CHAP) contact Network Telesystems (*http://www.nts.com*). Network Telesystems has a product that may be helpful. (This is not an endorsement; Thursby Software Systems does not officially support Network Telesystems.)

PPP Configuration

Configure your TCP/IP so that PPP provides the address. After the PPP connection is working properly, install DAVE, reboot and dial your PPP connection. After dialing, configure DAVE normally.

Samba for UNIX

DAVE has been tested and works with Samba. In fact, the first public demonstration of the DAVE product showed a Macintosh in Redmond, Washington connecting to a Samba server in Australia. DAVE has been tested with Samba version 1.9.17p1 and later versions. Our engineers have worked to make DAVE compatible with Samba, but due to the wide variety of Samba operating systems and versions, we cannot guarantee that DAVE will work for all Samba users.

There are a number of issues to keep in mind when using DAVE with Samba.

1. Use Samba 1.9.17p1 or later. Earlier versions of Samba can cause browsing problems for DAVE users.

2. Use settings that preserve file name case. This is important to Macintosh applications.

```
preserve case = yes
short preserve case = yes
```

3. If you use share-level security (security = share) you may see inconsistent lists of shared resources appearing in the DAVE chooser. Because Samba is sensitive to the name of the user on the client system, DAVE will send the Dial-up Configurations.

The Macintosh user name is supplied to the Samba server when it connects. DAVE gets this user name from 'Owner Name' item on the Macintosh Sharing Setup Control Panel. File sharing does not have to be turned on to set the 'Owner Name' item.

If DAVE users set the "Owner Name" item as their user name on the UNIX host running Samba, they will be able to see their home directory in the resource list. If their home directory does not show up they should check the "Owner Name" field. In most cases, Samba needs the "Owner Name" to be set in order to check passwords. In general, you should set Owner Name" to a valid UNIX user name and always supply the password for that user when accessing a Samba machine. These problems will not occur with Samba running in user-level mode.

NOTE: In share mode you will see the resource list. You are then prompted for a password. In user mode you are asked for a user name, password and domain before seeing the resource list. In share mode you see the list of resources before you enter your user name. That is why DAVE sends the Owner Name' item when it connects.

RAS

DAVE can be used for connecting Macintosh computers to a Windows 95 or Windows NT computer via a dial-up PPP connection.

If you have questions about configuring dial-up networking, contact Microsoft Corporation. Microsoft is the owner of Windows NT and has the resources to answer your questions properly.

PPP is a standard method of connecting to a TCP/IP network via a modem. RAS supports multiple protocols (NetBEUI, IPX/SPX, and TCP/IP). When you set RAS up as a TCP/IP dial-up server, it is in effect a PPP server.

Below are some general guidelines for installing and setting up RAS on NT.

1. Go to the "Service Tab" in the "Network Control Panel", select "Add" and add the "Remote Access Service". You must have a modem already configured in the modem's Control Panel.

A RAS port can be configured to Dial out only, Receive Calls Only, or Dial out and Receive calls. You must have it configured for one of the last two in the RAS setup. When you configure RAS you must also configure its network settings. The RAS Network Settings dialog has two parts:

• Dial out protocols
• Server Settings

2. We are only concerned with the server settings. Verify that the check box labeled "Allow remote client running" is using TCP/IP. Under the encryption settings choose one that your Macintosh PPP dialer will support. If you are using the Freeware extension FreePPP, use the "Allow any authentication including clear text" option. If you are using Open Transport PPP select the "Clear text" option.

3. In the RAS TCP/IP configuration choose between allowing clients access to the *Entire Network* or to a single computer. You must also choose between static IP addresses and DHCP. If you choose Static IP addresses you will need 1+ the number of modem port IP addresses in your pool. If you want to allow your Macintosh to request a specific IP address, click the check box at the bottom of the dialog.

4. Close all dialogs and return to the *Network Control Panel* to complete the configuration.

5. Click on the "Protocols Tab", choose TCP/IP and click on the "Routing Tab". Confirm that the "Enable IP Forwarding" check box is selected.

6. If you want your RAS clients to have access to the *Entire Network*, click the "OK" button until the *Network Control Panel* is closed. Reboot your NT server if you are prompted to do so.

7. Once you have established the Macintosh PPP connection, use a Ping utility to confirm that you have a good TCP/IP connection.

8. Once you have confirmed that TCP/IP is set up properly you can test DAVE over the PPP connection.

Browsing

DAVE defaults to using broadcast messages for browsing. By default, RAS does not allow broadcast messages through the PPP connection. To enable DAVE to work over PPP, modifications must be made. The most common solution is to use a WINS server on your network and to configure DAVE to access that server. WINS is a Microsoft solution that allows Microsoft networking over multiple TCP/IP subnets. Your Net-

work Administrator should have TCP/IP addresses for your WINS servers.

Another solution is to modify the RAS server so that it forwards broadcast messages to the local network. Information about forwarding broadcast messages to the local network should be available in your RAS server documentation.

The final solution is to add the server names and IP addresses to a LMHOSTS file and add the server names in the "Commonly Used Servers" list in the "DAVE Client Setup" window. In this situation you may wish to disable browsing. Only the servers in the "Commonly Used Servers" will appear in your DAVE Client Chooser window.

Chapter 4

Using DAVE

Accessing Files stored on Windows computers

DAVE makes folders shared by Windows computers appear on your desktop as if they were a local disk drive. This tutorial will show you how to share a folder from a Windows computer, locate folders that are being shared on your network, and mount shared folders on your Macintosh desktop.

Sharing a Windows folder with other computers

To share a folder from your Windows PC, simply right-click on the folder you want to share and select "Sharing..." from the pop-up menu.

A dialog will appear that allows you to configure the folder for sharing:
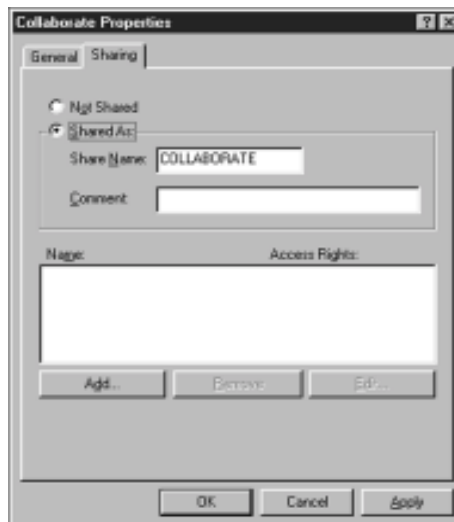
To control access to the shared folder, click the "Add..." button. Select the access type want on the shared folder. Once the folder is shared, it will appear with the shared

folder icons.

Using DAVE to find shared folders on the network

When you install DAVE, the DAVE Client icon is added
to the Macintosh Chooser window. Open the Chooser
from the Apple menu and you will see icons on the left
side of the Chooser window. Locate and select the
DAVE Client icon. You may need to use the scroll bar to
find DAVE Client icon.

About Workgroups

Windows networks are usually organized into
workgroups. Workgroups are sets of computers that
work together or have a logical association based on the
needs of the people using them. Workgroups are some-
times referred to as resource domains in Windows NT
networks and some people refer to them as domains.

When you click on DAVE Client, a list of computers that
are sharing files (Servers) is displayed in the list on the
right side of the Chooser window. The list contains only
computers that are in your workgroup, or that you have
specifically added.

The list contains a special item known as "Entire Network". The "Entire Network" enables you to browse a list of workgroups on your network. You may navigate through the "Entire Network" list by clicking the triangle controls in each list item.

Mounting a shared folder on the desktop.

When you browse for computers that are sharing files using DAVE Client in the Chooser, the computer names appear with a small icon that looks like a computer. You may double click on a computer name to see what folders that computer is sharing. You can click on computer names either in the Chooser window or in the Entire Network window.

When you click on a computer name, a dialog appears that lists all the folders being shared by that computer. You may also see printers that are being shared. To read about using remote printers, refer to Chapter 9 - DAVE Printing.

To mount a shared folder on your desktop, simply double click on the folder name. There are a number of options you may want to use when mounting the volume. See Chapter 6 - DAVE Client for details.

Mounting a shared folder when browsing is slow

If you know the name of a file server and the name of the folder it is sharing, you can mount the folder without browsing. To do this, click on DAVE Client in the Chooser, and then double click on the "Mount Manually" icon in the right-hand list. You may need to scroll down the list to see "Mount Manually".

Sharing your files with Windows computers

With DAVE Sharing, you can share your Macintosh files
with other Macintosh or Windows computers on your
network. You can turn DAVE Sharing on or off, so you
don't have to share files if you don't want to.

When DAVE Sharing is turned on, your Macintosh will
appear in the Windows Network Neighborhood so that
PC users will be able to browse and find your
Macintosh. PC users can then look in the folders you
have chosen to share, and even access Macintosh files
directly with their PC applications.

When you set up DAVE Sharing for the first time, you
need to decide how to keep your files secure from
unauthorized access. DAVE offers two methods that are
very similar to the methods that Windows 95 and 98 use.
Open the DAVE Sharing control panel. You will see
two radio buttons that let you select either Share-Level
or User-level access control. Choose one method
depending on how your network is configured.
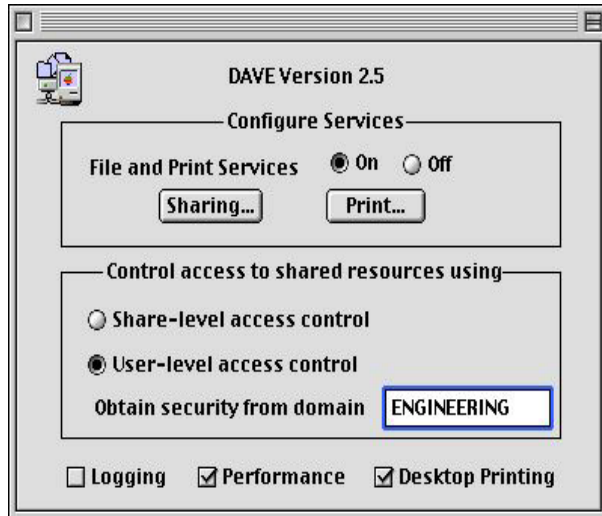
About User-Level access control

You can use user-level access control if your network has at least one Windows NT domain. Windows NT domains provide security services needed by computers on your network. If you do not have a Windows NT domain available on your network, you should skip ahead to "About Share Level access control", since user level control only works with Windows NT domains.

1. To select user level access control, open the DAVE Sharing control panel and click on the "User Level access control" radio button.

2. When User-Level access control is selected, a text

```
┌─── Control access to shared resources using ───┐
│                                                 │
│  ○ Share-level access control                   │
│                                                 │
│  ● User-level access control                    │
│                                                 │
│  Obtain security from domain  ┌──────────────┐  │
│                               │ FINANCE      │  │
│                               └──────────────┘  │
└─────────────────────────────────────────────────┘
```
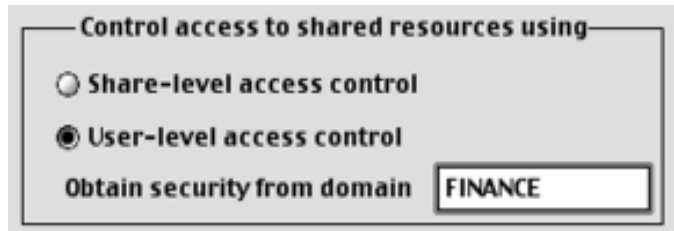
field is added to the dialog that shows which domain to use for security services. DAVE will contact this domain to verify access to the folders you share.

3. Enter the name of the domain you wish to use. DAVE will use the domain you enter to check the identity of people connecting to your Machintosh.

Sharing a folder with User-level security

1. To share a folder on your Macintosh with others on your network, click on the "Sharing..." button on the DAVE Sharing control panel. A dialog will appear listing all the folders you are sharing.

2. Click on the "Add..." button to add a folder to the list of shared resources. If you are not logged into the network, you will need to provide credentials to your domain controller so you can get a list of users and groups that are members of your domain.

3. Enter your username and password for your domain, and click OK. A dialog will display that is similar to standard file open dialogs, except for the "Select" button.

4. Choose a folder, then click "Select" to share it. A dialog will display that lets you choose the groups and users you are going to let access your shared folder.

When the dialog first appears, only groups are displayed.

5. If you wish to see users, click on the "Show Users" button. This may take a while if your domain has many users.
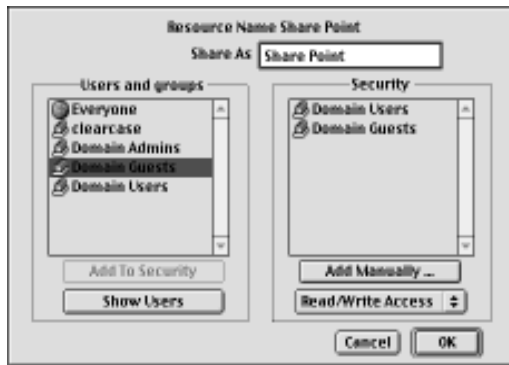
6. To add a user or group, select the name on the left side of the dialog, and click "Add to Security". The name will display on the right side, showing which users and groups will be allowed to access your shared folder.

7. If you select a user or group from the list on the right, the "Add Manually..." button will change to a "Remove" button so you can remove groups from the list.

8. To add a user that is in any domain, click on the "Add Manually..." button. You can use this button if you don't want to show all the users in your domain, or to allow access to a user from a different domain.

9. Enter the user's name and domain, then click OK. Once you have created your access list, you can click OK and your folder will be available for sharing when DAVE Sharing is turned on. You must manually turn DAVE Sharing on and off. Just adding a shared item will not cause DAVE Sharing to become active.

10. When you add shared folders, they will appear in the list of shared resources. You can remove them from the list by selecting a folder, and clicking "Remove". To change the security access list, you can click "Edit...", or click "Info" to see how many users are sharing the folder.

Because you are using User-level access control, you can skip ahead to the "Starting the DAVE Sharing Service" tutorial.

About Share-Level access control

You can use share-level access control with any type of network. This very simple method can be used without Windows NT domain controllers. It lets you control access to each folder using a simple password. If a user knows the password, they will be able to access files in the shared folder. You can assign different passwords for each shared folder.

If you have a Windows NT domain available on your network and want to use it for access control, you should read "About User-Level access control".
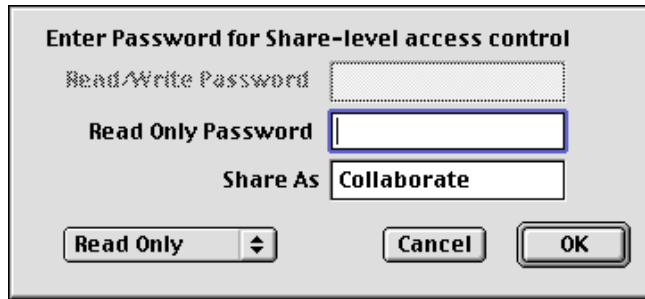
To select share-level access control, open the DAVE Sharing control panel and click on the "Share Level access control" radio button:
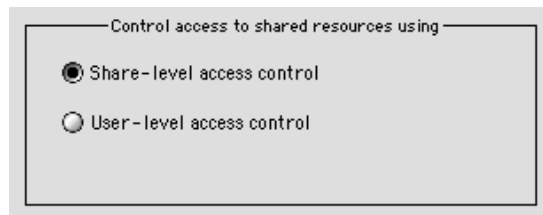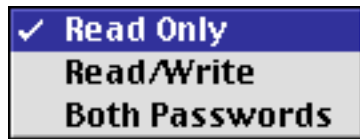
Sharing a folder with Share-level security

1. To share a folder on your Macintosh with others on your network, click on the "Sharing . . ." button on the DAVE Sharing control panel. A dialog will appear listing all the folders you are sharing.

2. Click on the "Add . . ." button to add a folder to the list of shared resources. A dialog will display that is similar to standard file open dialogs except for the "Select" button.

3. Choose a folder, then click "Select" to share it. A dialog will display that allows you to choose paswords for the shared folder.

4. Use the pop-up menu to select one of the three password modes:

• Read Only - Assign one password that grants read-only access.
• Read/Write - Assign one password that grants read-write access.
• Both Passwords - Assign a read-only and a read-write password, and grant access depending on which password is used.

5. Once you have created the access list, you can click "OK" and your folder will be available for sharing when DAVE Sharing is turned on. You must manually turn DAVE Sharing on and off. Just adding a shared item will not cause DAVE Sharing to become active.

Starting the DAVE Sharing Service

To start DAVE Sharing, simply open the DAVE Sharing
control panel and click on the "On" radio button. Your
Macintosh will appear in the Windows Network Neigh-
borhood under the workgroup you enter on the NetBIOS
control panel. The description from the NetBIOS
control panel can also be viewed in the network neigh-
borhood. Once DAVE Sharing is started, users can
connect to your Macintosh and use files in the folders
you have shared. If you reboot, DAVE Sharing will start
automatically.

Sharing a printer with Windows computers

Refer to Chapter 8: DAVE Sharing, "Sharing a
PostScript Printer".

Logging into a Windows NT Domain

NOTE: You must be using a Microsoft Windows NT
Server to use the network log on features of DAVE.

If you have a Domain Controller, you can log on to the
network once and DAVE will remember your authentica-
tion and automatically and transparently use your
network credentials when accessing resources on the
network. This means that you will not need to re-enter
your password for every server you accessing.

How do I log on to my network?

To log on to your network, run DAVE, located in the
Apple menu. If the command pallette appears, click the
first button. If it is not showing, the command is "Log
On...", the first item in the "Access" menu. Enter your
username, password, and domain name. Click the OK
button or press "Return". If logon is successful, DAVE
will remember your credentials and use them for each
server you access.

If logon is not successful, make sure:

• your TCP/IP network is configured correctly
• you are running a supported version of the Macintosh
  Operating System
• you have a unique name for your computer in the
  NetBIOS Control Panel
• your network is using a Domain Controller
• you have correctly entered your username, password,
  and domain name.

Why do some servers still ask me for a password?

If you access a server that does not authenticate through

the domain you logged onto (a stand-alone or a different domain), DAVE will use your domain credentials. If your credentials fail, DAVE will ask for credentials for that particular server.

If the server needs just a password (not a username or domain name), it is using share-level security. See the *About Security* section.

Logging off the network?

To log off your network, run DAVE. If the command pallette appears and the first icon is in the "On" state (selected) click the first icon to log off.

If the first button is not selected or the menu says "Log On...", you are not logged on and therefore cannot log off.

When you log off, DAVE will dismount your network resources and will no longer automatically use your credentials when mounting new resources.

Logging on at boot time?

If you would like to log on to the network every time you start your computer, select the "Logon at Startup" option in the "Options" menu.

If you would like to disable DAVE from operating unless you have logged on, select the "Enforce Logon" item from the "Options" menu while you are logged on. This option can only be changed while you are logged on. If you change your mind, you must log on before deselecting it. Another advantage of enforcing logon is that "mount-at-boot" shares (see *DAVE Client*, Chapter 6 in this manual) will not attempt to mount until you have logged on. This way, even without storing your pass-

word with each mount-at-boot share, the shares mount transparently if they are accessible with your network credentials.

If your password has expired, or will expire soon, DAVE will warn you when you log on and will give you the option of changing your password.

Changing you Network password

To change your network password, launch DAVE from the Apple menu. Log on if you are not already logged on. If the comand pallette appears, click the third button. If it is not showing, the command is "Change Password...", in the "Access" menu. Enter your old password, then your new password twice, and click the OK button or press Return. If the password was successfully changed, DAVE will log you on using the new password.

Receiving Pop-Up Messages

Pop-up messages are sent by Administrators for urgent messages about network availability, by print servers when a printout is finished, and by anyone who wants to send a quick message to another user, computer, or group of computers on the network.

To receive Pop-up Messages, launch DAVE from the Apple menu. If the command pallette is showing, click the last button, or select "Messaging Preferences..." in the "Options" menu. In the dialog that appears, select any of the first three checkboxes to receive messages the way you want to receive them. If you want DAVE to read the messages out loud, you must have the Apple Speech extensions installed on your Macintosh.

Dave may not be able to receive messages using the
default name from this dialog. This may occur if you are
logged on to a different computer with the default name.
If you want DAVE to notify you when it can't receive
messages, check the "Notify when names conflict"
checkbox.

Windows NT will display pop-up messages by default.
In Windows 95 you must be runing the WinPopup
application to receive pop-up messages.

Sending Pop-up Messages

To send a pop-up message to another user or computer,
run DAVE. Select "New Message..." from the "Access"
menu. Enter the name you want to send to in the small
edit box. This can be a user's name, a computer's name,
or a workgroup or domain name. If you are sending to a
workgroup or domain, use the pop-up menu next to the
send button to make that selection.

Enter the text message in the large edit area. When your
message is complete, click the "Send" button. If the
message was sent successfully, the window will disap-
pear. If there was a problem delivering the message,
DAVE will give you an error message. There is no way
of knowing, however, if or when a message has been
read.
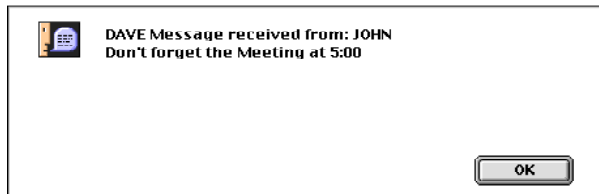
To display your message correctly on a Macintosh, the message should be less than 200 characters long. If the message is being received on a Windows computer, it should not be more than 1600 characters.

Using printers attached to Windows computers

For information on using printers attached to Windows computers, see Chapter 9: DAVE Printing.

Chapter 5

Technical Information

This chapter is a technical overview of DAVE. It is intended to provide users and Systems Administrators with information about how DAVE works.

All NetBIOS Technical Information can be found in Chapter 10: NetBIOS Control Panel.

How DAVE Client Works with the Mac OS File System

DAVE requires the Apple File System Manager extension to manage the use of foreign file systems like DAVE. DAVE allows Macintosh applications to gain access to non-Macintosh volumes using the File Manager. The File System Manager provides a general means by which foreign file systems can be installed, identified and interfaced on the operating system. Macintosh OS 7.5.x ships with File System Manager as part of the operating system.

How DAVE Client Works with NetBIOS

DAVE Client uses the NetBIOS driver that runs over Open Transport to move data between the Macintosh and Windows machines. NetBIOS broadcasts for a Master Browser or a Primary Domain Controller (PDC) and uses the first to find computers in the network and to get a list of other workgroups.

How DAVE Client Stores Apple Files

Apple files have a different structure than files found on Microsoft systems. Windows 95, Windows 98 and some NT machines support a File Allocation Table (FAT) file system. DAVE supports AppleDouble format, a standard developed by Apple Computer, Inc.

AppleDouble format places the Apple data fork in the named file and places its resource fork and finder information in a file with a duplicate name located in a folder called *resource.frk*. This folder is created automatically and is located in the same directory as the named file.

Some Windows NT machines support a file system called New Technology File System (NTFS) that sup-

ports Macintosh files. On these systems, Macintosh files will be stored in the NTFS format and will be accessed using streams.

How DAVE Sharing Stores PC Files

Apple files have a different structure than files found on Microsoft systems. Windows 95, Windows 98 and some NT machines support a File Allocation Table (FAT) file system. When these files are copied to the Macintosh, only the file's data fork will be copied. When a file is copied to a shared DAVE volume on a Macintosh, DAVE Sharing will add the correct type and creator to the file by looking up its extension in the PC Exchange Preferences file. If there is no entry in PC Exchange for an extension, DAVE Sharing will give that file a generic PC icon by setting the type to "TEXT" and the creator to "dosa".

On systems that support NTFS, any Macintosh files copied to the DAVE Shared volume will retain the *resource fork* and finder information.

Name Translation

Apple files have different naming conventions than Windows files. Because DAVE supports all valid Apple file names, users will not notice any difference between Windows volumes and local disk volumes. For users that access Windows files, DAVE performs some translations.

The DAVE Client uses two forms of file name conversions. If the server supports unicode, DAVE Client will use it. All NT machines support unicode, but Windows 95 and Windows 98 server machines do not. DAVE Client will convert certain known illegal characters for these machines. The illegal characters will be translated

to a percent character followed by two characters that are the ASCII representation of the hexadecimal value.

Apple file names can only contain 1 to 31 characters. DAVE Client will use the DOS short name for Windows file names exceeding 31 characters.

Dragging Items to the Desktop

When dragging an item from a shared resource to your desktop, DAVE Client will copy the file to the start-up volume's desktop.

Desktop Database Information

DAVE Client creates a Macintosh desktop database folder on the remote server called *DesktopFolderDB*. This database contains icon information about application icons and application directory paths for Macintosh applications that reside on the server.

If an application path is changed from the directory where it was originally stored, the path information will be lost. To remedy this problem, rename the application to a temporary name and then back to its original name. This will restore the path information.

If the *DesktopFolderDB* folder begins to get very large it is because many Macintosh applications have been copied to the server. This folder can be deleted but all the desktop database information will be lost.

Copying Macintosh Files From Server to Server

When using Windows to copy files from one Windows NT volume using the NTFS file system to another Windows NT volume using the NTFS file system, the Macintosh file structure will be retained. When copying

a Macintosh file from one Windows volume using the FAT file system to another, remember to copy the *data fork* file and the *resourcefork* file. The *resourcefork* file has the same name as the *data fork* file but is located in the current directory in a folder called *resource.frk*. If there is not a folder called *resource.frk* on the destination directory you will need to create one. After copying the *data fork* file to the destination directory, copy the *resourcefork* file to the new *resource.frk* folder.

NOTE: You cannot copy Macintosh files from a Windows machine with a FAT file system to a Windows machine with NTFS or vice versa unless you use DAVE to do the file copy. The Macintosh will correctly handle the *data fork* and *resource fork* files.

Sending Messages to a Windows Server

In order for a Windows 95 server to receive messages sent with DAVE Utility, the WinPopup application must be running. In order for a Windows NT server to receive a message sent with the DAVE Utility, the Messenger Service under the Services Control Panel must be started.

Further Information

CIFS on-line information can be found at http://www.cifs.com and at http://www.thursby.com/cifs.

Chapter 6

DAVE Client

Using Resources on Other Computers

DAVE lets you mount shared resources from other computers as if they were on a local disk. This makes sharing files with Windows and other Macintosh systems running DAVE as easy as using AppleShare. Before you begin sharing files you will want to verify that the Windows computer is configured for sharing. Windows 9x users may want to read the Microsoft help topic *Sharing a folder with other people* or read the *Host Configurations* section in Chapter 3 of this manual. Ask your Systems Administrator for assistance if you have problems verifying share configuration on a Windows machine.

Finding Other Computers on the Network

In order to find a computer on your network you must first know the computer's name. Ask your Network Administrator for a list of computer names if you have problems finding a computer on your own.

To find a list of systems on the network, open the Chooser from the Apple menu. A dialog will display. The DAVE Client icon will appear in the upper left panel of the Chooser window. When you click on the DAVE Client icon a list of computers from your workgroup will appear in the "Select a Server" list on the right. Double click the computer of your choice or select the computer and click the "OK" button.

NOTE: If the workgroup field in the NetBIOS Control Panel is blank only the "Entire Network" and "Mount Manually" items will appear in the "Select a Server" list.

53
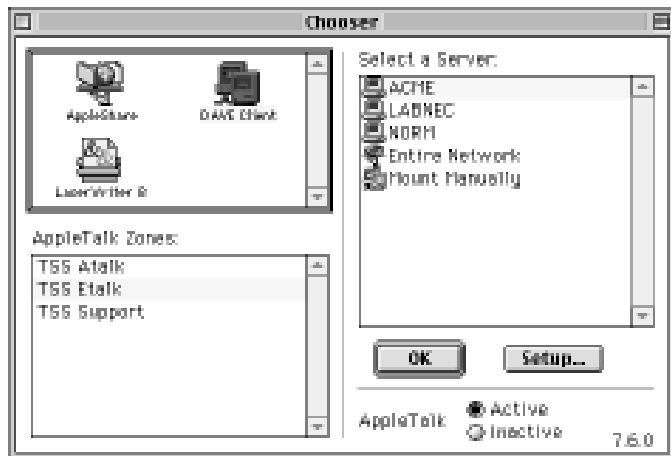
Some networks are so large that the Chooser cannot display all the computers or workgroups in the network. These computers can be accessed manually or by adding them to the list of commonly used servers. Manual access and commonly used servers are described later in this chapter.

If no servers appear in the "Select a Server" dialog or the server you wish to mount is not listed, then you can use "Mount Manually." This is described later in this chapter.

Mounting Shared Resources

After you have double-clicked on a computer from the DAVE Client window, a list of shared resources will display. Depending on the security used by the remote server, you may be prompted for a user name and password. If you do not know your user name, password and domain, ask your Systems Administrator.
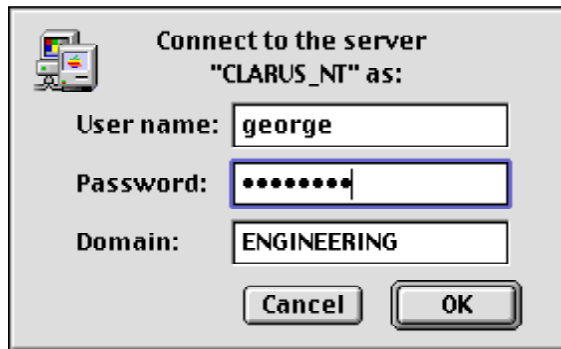
NOTE: If you do not have a Primary Domain Controller (PDC) leave the domain field blank.

After completing the user name, password, and domain fields, select the "OK" button and DAVE will display a list of shared resources.
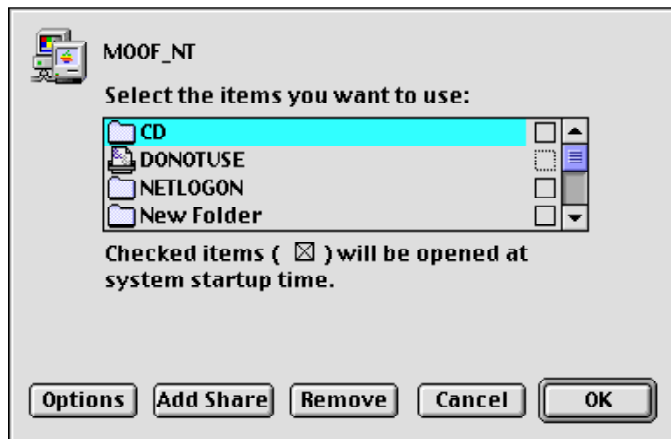
There are two types of resources found in the *Mounting Shared Resources* dialog. The *folder icon* designates a shared file system and the *printer icon* designates a shared printer. Double click a folder icon or select a folder icon and click the "OK" button. An icon repre-

senting the shared resource will appear on your desktop.

NOTE: When selecting a shared printer from the
Mounting Shared Resources dialog, an icon may not
appear on the desktop. To configure a newly mounted
shared printer, see the *Chapter 9- DAVE Print Client.*

If printers do not appear in the *Mounting Shared Re-
sources* dialog, you do not have the DAVE Print Client,
or DAVE Desktop Printing installed or its extension has
been disabled. See Chapter 9 for more information on
the DAVE Print Client.

You can now begin using the shared resource just like
you would use any Macintosh floppy, hard disk or
AppleShare volume.

The Entire Network

Selecting the *Entire Network* icon can be very useful
when there are many workgroups or domains within an
organization. Users may wish to use resources located
in a workgroup outside of their own. To mount a shared
resource in a different workgroup, open the Chooser
from the Apple menu and click the DAVE Client icon.
Double-click the *Entire Network* icon from the "Select a
Server" l4 tN g. A dialog will display.

From the workgroup listing in the *Entire Network* dialog, double click the workgroup. The computers in the selected workgroup will display below the workgroup icon. Select a computer and click the "OK" button.
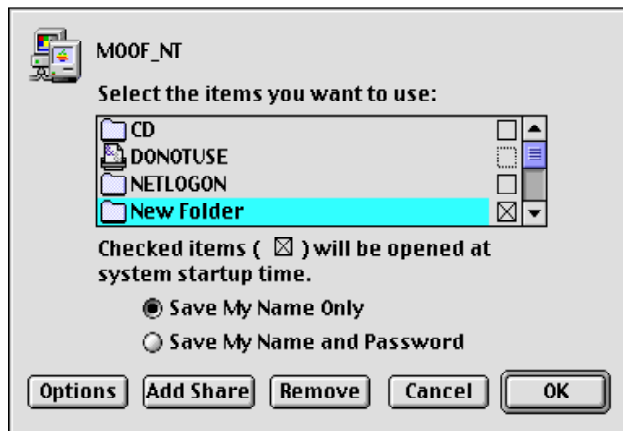
A list of shared resources on the selected computer will

display. Select the shared resource you wish to mount
and click the "OK" button.

NOTE: If you have the "Ask me for volume name"
check box selected in the "Mount a Volume" dialog you
will be prompted for a volume name.

You will return to the Workgroup listing and a resource
icon will display on your desktop. Now you can either
mount another shared resource from the *Entire Network*
listing or click the "Cancel" button to return to the
Chooser.

Mounting Shared Resources at System Start-up

To mount a resource at start-up, select the resource and
the check box to its immediate right. After clicking the
"OK" button, DAVE will remember your selection and
the resource will be mounted at boot.

NOTE: The check box is not available for printers.
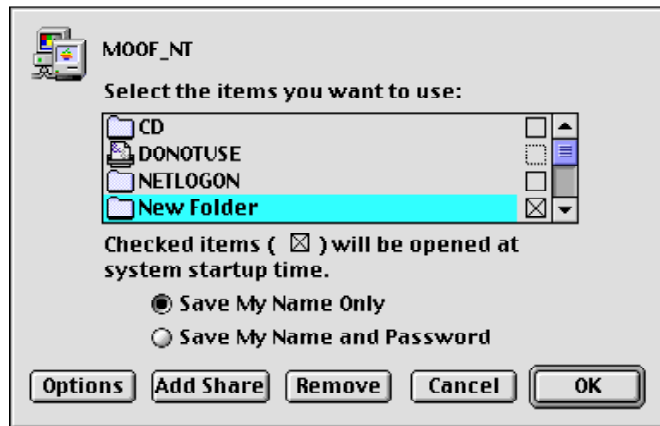
If you choose to mount resources at start-up you can
select one of two security options. Selecting the "Save
My Name and Password" option will save your user

name and password for use when mounting the resource again. This saves you from typing the information again when you restart your computer. If you select the "Save My Name Only" option, your user name will be saved and you will be prompted for a password at system start-up. This second method is considered more secure.

If you are using DAVE on a domain and have chosen the "Logon at Start-up" option, you should also use the "Save My Name Only" option. This will cause shares to be mounted only after a successful logon to your domain. If you use the "Save My Name and My Password" option, the benefits of domain security are negated.

A change to your host server password may cause "Mount at Start-up" to ask you for the resource password. This may occur even after you have selected the "Save My Name and My Password" option. To correct this situation, simply stop "Mount at Start-up" for the share and then turn it back on.

Mount at start-up settings are saved in the DAVE "Client Preferences" and are used for all users on the Macintosh. If you need a more "user-centric" solution, please read about using AppleScript with DAVE in Chapter 7 of this manual.

Another method for mounting a DAVE share at boot is to place an alias of the volume in the Start-up Items folder. More information on aliases is described later in this chapter.

Disabling "Mounting at Start-up"

To stop DAVE from mounting a volume at start-up, open DAVE Client by selecting the DAVE Client icon in the Chooser. Computers from your workgroup will appear

in the "Select a Server List". Double click on the server where the share resides. Now deselect the box to the right of the share and click the "OK" button. When you restart your Macintosh, DAVE will not mount the volume.

If the hosting server is no longer available on your network you will not be able to see the server you wish to stop mounting. In this situation you will need to delete the DAVE "Client Preferences" file located in your "Preferences folder" within your "System Folder". **This is a drastic solution and should only be used as a last resort**. Deleting the "Client Preferences" file will revert DAVE Client back to its default settings. Any shares marked for mount at start-up will be forgotten. Changes to your DAVE Client settings will also be forgotten. Your NetBIOS settings will not be affected or changed.

Adding and Removing Shared Resources

To save time and effort when mounting a shared resource, users may wish to add an extended path to the shared resource. To do this,

1. Double click a computer from the "Select a Server" listing in the Chooser. The shared resources for that computer will display.

2. Now select a share from the shared resource listing.

3. Click the "Add Share" button. The "Adding a Path" dialog will display. Now type the extended path in the provided field and click the "OK" button.

NOTE: The path must already exist on the selected shared resource.

The new extended path will appear at the top of the shared resources list. You can mount the shared resource's extended path directly without having to navigate through its directory hierarchy. For example, consider the following UNC path:

\\SERVER\TEST\TEMP

Assume that you regularly use the DIR3 folder. Normally you would mount SHARE from SERVER and then navigate through DIR1 and DIR2 to get to DIR3. This takes time, especially if DIR1 has many files. To add this share you would enter DIR1\DIR2\DIR3 into the "Add Share" dialog.
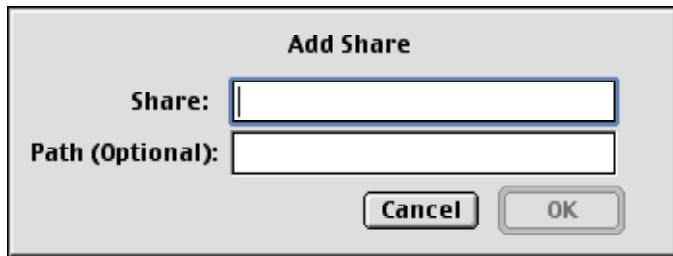
When you mount a shared resource the resource icon will inherit the name of the last folder in the designated path. Use the "Ask for Volume Name" to specify a different name for your desktop icon (see *Shared Resource Options* found later in this chapter). In the resource icon would be named "DIR3".

To remove a shared resource, select the resource and click the "Remove" button. This will remove shared resources that were manually entered with the "Add Share" button. Added shares are remembered in the DAVE "Client Preferences" file located in your "Preferences folder" within your "System Folder".

Shared Resource Options

Clicking the "Options" button in the "Mounting at Start-
up" window will display the "Ask for volume name",
"Disable Desktop Database", "Disable auto-refresh" and
"Use Network Trash" options.

Selecting the "Ask for volume name" option will instruct
DAVE to prompt you for a resource name when you
mount it. The name you type will be used for the
resource icon. DAVE normally defaults to the shared
resource name.

If you select the "Disable Desktop Database" option,
DAVE will not create the *DesktopFolderDB* folder for
the Finder. The Desktop Database enables the Finder to
remember information about applications and their icons
on the shared volume. Disabling the Desktop Database
should speed up slow network connections.

When the "Disable auto-refresh" option is selected,
DAVE will not automatically refresh open windows for
DAVE shares. To manually update the contents of a
window, close the window and then reopen it. This
feature is helpful with slow network connections.

"Use network trash" allows the user to place items in the
trash without having to delete them immediately. After
mounting a shared resource and double clicking on the
resource icon, a window with the files on the shared
resource will display. To delete a file on a shared
resource, drag it to the trash on your desktop. A folder
will be created on the server within the mount point.
This folder will be named "TrashFor[your NetBIOS
name]". When you remount the same share point your
trash will fill up. This folder will remain within the
mount point until it is deleted manually. Network trash
is turned off by default.

These options do not affect the "RESOURCE.FRK" folder. For more information on the RESOURCE.FRK folder, refer to the RESOURCE.FRK folder section at the end of this chapter.
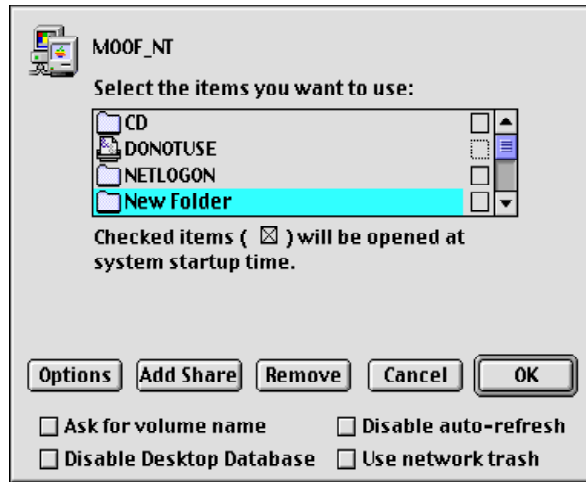
Unmounting Resources

To unmount a DAVE resource simply drag the resource icon into the trash. Alternatively, you can select the DAVE share and choose "Put Away" (command-Y) from the File menu.

Mount Manually

If no servers appear in the "Select a Server" dialog or the server you wish to mount is not listed, double-click the "Mount Manually" item to open the "Mount a Volume" window. Now enter the Server and Share name of the volume you wish to mount. Traditionally, information for the Server and Share fields is entered using UNC format such as \\SERVER\SHARE. DAVE allows you to

enter this information into the separate fields without the accompanying \.
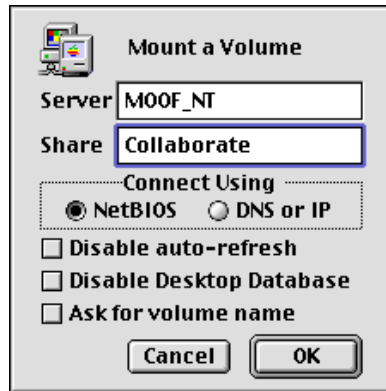
NOTE: Mount Manually can be used to access an administrative or hidden share that contains the "$" character in its name.

You can enter the file server name in the text box labeled "Server" and the folder share name in the text box labeled "Share". You need to know if the file server name you are using is a NetBIOS name or a DNS name. Be sure to click the appropriate radio button. You can also enter the file server's IP address and click the DNS Shares or IP button.

Using Aliases

Making aliases on DAVE is just like making aliases for other files. After selecting the volume you wish to make an alias from, choose *Make Alias* from the File menu.

Using an Alias to Automatically Mount a Shared Resource

You can make an alias for a shared resource so that you can mount the volume without having to use the Chooser

every time to mount it. To do this, mount the resource
using the Chooser.   Now select the resource icon on the
desktop and choose *Make Alias* (command-M) from the
File menu. An alias for the shared resource will appear
on your desktop.

Whenever you wish to mount the shared resource,
double click the alias icon. DAVE will prompt you for
your password and mount the volume after the correct
password is entered. The shared resource can also be
mounted by dropping a folder or file onto the alias icon.

Apple's Apple Menu Options control panel creates a
folder called "Recent Servers". An alias for a DAVE
volume will appear in this folder under the Apple Menu
after the volume has been successfully mounted. Select-
ing this alias will mount and open the DAVE volume.

Using Private Aliases on Your Desktop

When you make aliases of items on a shared resource,
the alias is created in the same folder as the original
item. If you drag the alias to your desktop, an alias copy
will be created on your start-up disk.

Changing DAVE Client Settings

To change your Client settings open the Chooser from
the Apple menu and select the DAVE Client icon. Click
the "Setup" button and the *DAVE Client Setup* dialog
will display:

DAVE Client Version 2.5

Commonly Used Servers

☐ Ask for volume name
☑ Browse Services
☐ Disable auto-refresh
☐ Disable Desktop Database
☐ Use network trash

Editor... SimpleText

Add... Remove Cancel Save
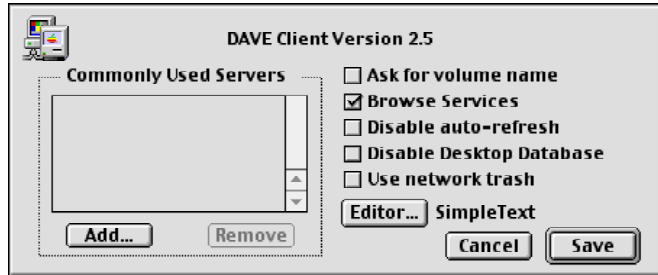
By default DAVE only lists the servers in your workgroup. You can customize your server listing by adding and removing servers on the list.

Other options in the DAVE Client setup window include forcing DAVE to ask for the volume name, Browse Services, disab ling auto refresh, disabling the desktop database, and selecting applications for opening non-Macintosh text (*.txt) files.

The default settings when DAVE is first installed are as shown above. They may be changed systemwide in this dialog box and may be specified for each volume as it is mounted, by clicking on the "Options" button in the Mount dialog.

Making a List of Commonly Used Servers

If you work with only one or two servers you may wish to add them to the commonly used servers list. When doing this you will probably want to turn off the "Browse Services" check box. When "Browse Services" is turned off the Chooser will display only the servers you added manually. This makes using DAVE faster when you have many servers on your network or when

your network is slow.

You may need to add servers to the server list if they do not appear in the Chooser. By default only the servers in your workgroup will automatically appear. You can add servers from other workgroups so that they automatically display in the Chooser. This saves you from searching the entire network every time you wish to mount servers from other workgroups. You can also add servers listed in your LMHOSTS file. This is helpful if those servers are in a different subnet from your Macintosh.

To add a server to the list, open the DAVE Client setup window and click the "Add" button. Type the name of the new server in the provided field and click the "OK" button. To remove a server from the list, simply select the server and click the "Remove" button.

Naming Mounted Resources

☒ Ask me for volume name

You cannot change the name of a DAVE shared volume the same way you change the name of a local disk or floppy. Instead you can assign any name to the volume if you use the "Ask me for volume name" check box in the DAVE Client setup window.

```
                    A DAVE Volume
            Server's Name -  CLARUS_NT

       Volume Name    george

                         Default      OK
```
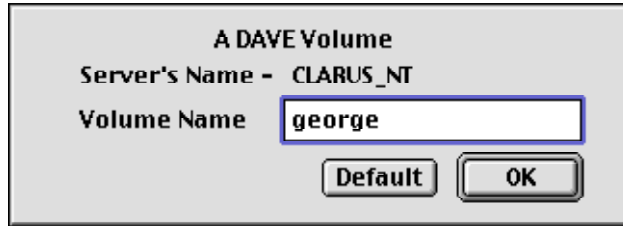
When you select the "Ask me for volume name" check
box, DAVE will ask for a volume name the next time
you try to mount the shared resource. Type the name of
your choice and click the "OK" button. If you make an
alias for a named volume the name will be remembered
when you use the alias.

Browse Services

☒ Browse Services

You can prevent DAVE Client from building a list of
servers by turning off the "Browse Services" check box
in the DAVE Client setup window. If the "Browse
Services" check box is selected, DAVE will use the
Master Browser or the Primary Domain Controller
(PDC) to search for servers. If the "Browse Services"
check box is turned off, the only servers that will display
in the Chooser will be those you added manually. This
also causes the "Entire Network" item to disappear.

Choosing an Editor Application

Editor... SimpleText

The "Editor" button in the DAVE Client Setup dialog
selects the default application for opening text (*.txt)
files. When you double click a file in a shared resource,

DAVE Client will first verify whether or not it is a Macintosh file. DAVE will check for type and creator information. These are 4-character "signatures" which the Finder uses to link files and applications on a Mac. If it is a Macintosh file it will be opened with the application it was created in. If it is not a Macintosh file DAVE Client will search for a match using the PC Exchange preferences. If both of these methods fail and the file ends with ".txt", DAVE Client will open the file with the chosen editor.

DAVE Client uses SimpleText as its editor default. You can change the application by clicking the "Editor..." button and browsing your directories for the application of your choice. Microsoft Word or BBEdit are common editors. Select the application and click the "Select" button. The name of the chosen application will appear next to the "Editor..." button.

Determining Your DAVE Client Version

To determine your DAVE Client Version, open the Chooser from the Apple menu and click the "Setup" button. The DAVE Client version is displayed at the top of the DAVE Client Setup dialog.

Using the Trash on a Shared Resource

After mounting a shared resource and double clicking on the resource icon, a window with the files on the shared resource will display. To delete a file on a shared resource, drag it to the trash on your desktop. The Finder will display the following window:

"0.Toc.doc" cannot be left in the Trash. Do
you want to delete it immediately?

Cancel   OK
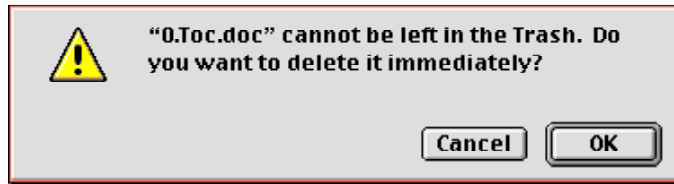
Click the "OK" button if you want to delete the file
immediately. This message will display every time you
delete a file or folder. The finder will only display this
message once per selection.

RESOURCE.FRK Folder

The Macintosh file system is based on two "Forks", the
"Data Fork" and the "Resource Fork". On file systems
like FAT, which do not support multi-forked files, the
Finder needs a location to store resource information. To
facilitate this, DAVE creates a hidden folder on the
DAVE share called "RESOURCE.FRK". This folder is
used to store the resource information for every file in
the enclosing folder. If you copy a file using DAVE, the
link between the resource and data forks is handled
automatically. If you copy a file using a CIFS client
which does not support multiple forks, only the data fork
is copied. Depending on the program, the resource fork
is only used for Macintosh-specific information.

Some file systems like NTFS, Windows NT File System,
can handle multiple forks. DAVE is able to use these
file systems' capabilities directly.

Share names that may not appear in the list of shared folders

Some file servers share folders with long names. When
you browse the shared folders list, DAVE will only
display shared folders with names up to 12 characters

long. If you are looking for a share and it does not appear in the list, the share may have a name longer than 12 characters. You can add the share name to the list manually using the same steps shown in the previous tutorial "*Mounting a shared folder when the files you need are always in a subfolder*". Select DAVE Client in the Chooser, and then browse for the computer that is sharing the folder you wish to mount. Double click on the computer name. If the share list does not contain the share you need and you know the name of the share, click the "Add Share" button to add the share name to the list.

The dialog will expand and show four extra checkboxes across the bottom. You should check both "Disable Desktop Database" and "Diable auto-refresh". You should be sure that "Use network trash" is unchecked. These settings will reduce the amount of work that DAVE needs to accomplish across the network. Disabling auto-refresh will prevent the finder from continually trying to see if the content of the window has changed. If you want to see if a window has changed, you will need to force the finder to update by closing and reopening the window.

About the "Desktop Database"

The Macintosh Finder relies on information stored in a database to locate information it needs to open files and launch applications. This information is usually referred to as the Desktop Database, even though each volume that you mount on your desktop may contain separate information. One example of how the Finder uses the Desk top Database is when you double click on a file. The Finder will determine the type of application that created the file using the file's creator (a four-byte code). The creator information is used as a key to the Desktop Database to look up information about the

application that created the file. The information returned will tell the Finder where the application is stored, and its name.

DAVE supports managing a desktop database for each volume it mounts . By default, DAVE will attempt to create desktop database information when you mount a volume for the first time. DAVE may not be able to create desktop database for all the volumes you mount. The volume may be read-only media such as a CD-ROM or you my not have sufficient privileges to create files on the volume.

When DAVE cannot create or access desktop database information, it won't provide desktop information to the Finder. This is not always a problem for Macintosh users, because the Finder will look in the desktop databases of other volumes, namely your system volume for the information it needs. In general, if your applications are stored on local disks, the desktop database on a remote DAVE volume is not very important. Even when you keep an application's files on the remote volume, the Finder will still be able to find their correct icons and open them with the correct application.

If you keep applications on a remote DAVE volume, and DAVE either cannot or does not manage a desktop database for that volume, you may have one or more of the problems listed below:

• Files will appear in Finder windows using the generic document icon instead of the icon you expect.

• When you double click on a file, the finder may not be able to launch the application that can open it.

DAVE allows you to disable the use and creation of a desktop database on remote volumes. Disabling the

desktop database can improve performance when you copy files to a server, since DAVE does not need to update the desktop database with new Finder information. You may also want to disable the desktop database to prevent DAVE from creating extra files on the remote volume used for storing desktop information. To disable desktop database processing when mounting a volume, click on a shared folder, then click on the "Options" button.

The dialog will expand and show four checkboxes across the bottom. Check the "Disable Desktop Database" check box and click "OK" to mount the shared folder without having DAVE create or access desktop database files on the remote volume.

Chapter 7

DAVE Utility

DAVE

With DAVE you can browse your network and access documents. You can also perform these functions:

• Customize the appearance of the browsing windows for more control.
• Copy files using the Copy Utility
• Use AppleScript to program custom scripts
• Bookmark network locations
• Rename and delete files without mounting

DAVE provides access to many CIFS networking features normally installed in Apple Menu Items. With DAVE you can logon to Windows NT domain security and use multiple resources without having to re-enter your user name and password.

Browsing

DAVE allows you to browse your network looking for the files and folders you need to use. Browsing is very similar to using the "Network Neighborhood" or "My Network Places" on Windows PCs.

Types of View Windows

DAVE displays items in two kinds of windows, network views and folder views. Although both windows are very similar, they have different columns of information and some operations can only be performed in folder windows.
Both wndows display information just like the Macintosh Finder's list view. You can open an item by double clicking (a new window will open), or by clicking the disclosure triangle to expand the item in the same window.
You can close the current window when double clicking by holding down the option key. This is useful to keep from cluttering your desktop with too many windows.

DAVE Network Window:
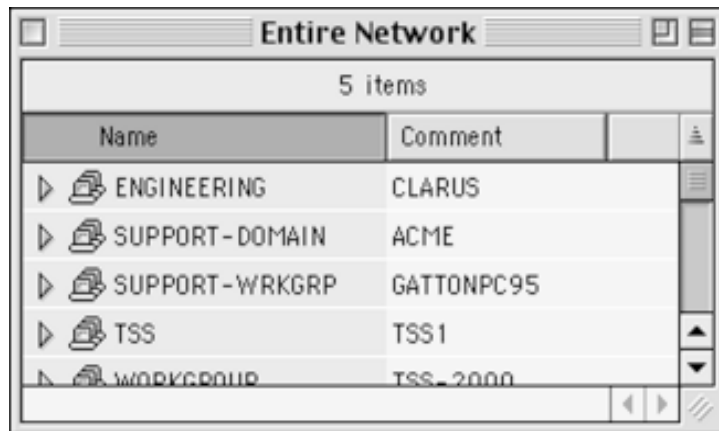
DAVE Folder Window:
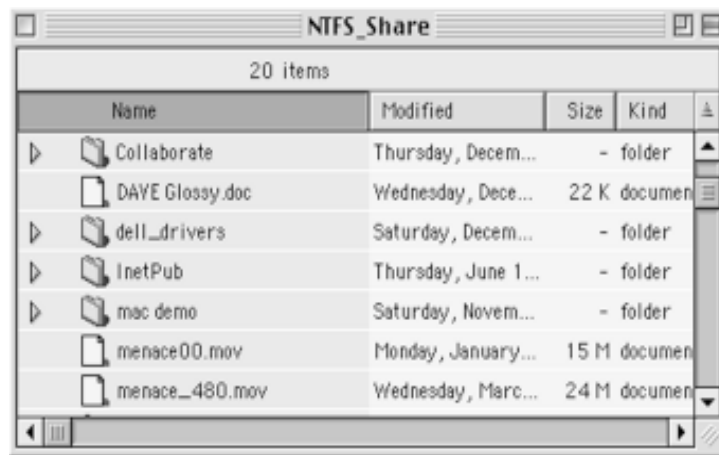
Arranging View Windows

Each DAVE window keeps information sorted in columns just like the Finder does. You can select the column used to sort the list of items by clicking on the button at the top of the column.

To change the sort order, click the sort order button just above the vertical scroll bar at the right of the column heading buttons:

If you want to change the width of a column, hold the cursor over the area between two column heading buttons. A resize cursor will appear. Click the mouse button and drag to change the width of the column to the left of the cursor:

Refreshing A View

DAVE will only list the items on a remote computer when a window is created or when a view is expanded for the first time. It will also update the view when you do things that might change it, such as copying, moving or deleting files. By not updating views automatically, DAVE saves on network traffic and makes your Macintosh more responsive when DAVE is in the background.

To manually refresh a view, select Refresh from the Edit menu.

Viewing Hidden Items

Some items in a view may be hidden so that they don't clutter up the view window or confuse users. If you need to see these hidden items, you can select Browsing Preferences from the Edit menu, and check the show hidden items checkbox.
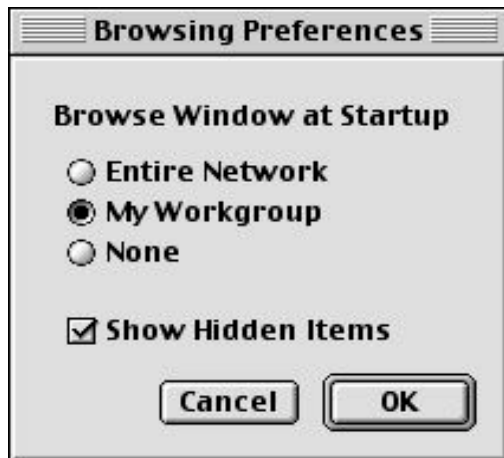
Copying and Moving Files

You can copy files between your Macintosh and the computers you are browsing by dragging and dropping just as you would using the Macintosh Finder. You can drag items from your hard disk by selecting them in the Finder and dropping them on a DAVE browse window.

You can copy files between different computers on your network by dragging items between or inside the DAVE browse windows. Although copying files like this is convenient, it uses up more network resources and is slower than using the remote computers to copy the files directly. You can move files and folders to different locations inside a shared folder by dragging them to the folder you want to place them inside. By default, files will always be moved instead of copied when a move is possible. If you want to

copy the files instead of moving them, hold down the option
key before dropping.

File Name Conversion

Use the "Name Cleaning" Edit sub-menu to turn on name
cleaning. Name Cleaning will automatically convert the
names of files copied from your Macintosh to remote
computers. Converting filenames helps the PC users access
the file. Not all characters that can be used in Macintosh
filenames are allowed on other computers. If the name
matches another name, a number tag is added to the name
before the extension.

When the file name includes unrecognized characters, the
characters will be replaced with an underscore. PC applica-
tions use the string of characters after the last period in the
name to tell what type of information the file contains.
DAVE will add this extension if it is not already there, or if it
is incorrect. You can choose how filename extensions get
assigned with the Apple "File Exchange" control panel.
Refer to your Apple Help information to learn how to use the
File Exchange control panel.

DAVE will also use the File Exchange settings to assign the
correct application and icon to files that are copied from PCs
to your Macintosh. DAVE looks at the filename extension
(characters after the last period in the name) and checks your
File Exchange settings to find the correct application for that
file. DAVE will then set the file's creator and type informa-
tion when the file is copied to a local disk drive.
Sometimes files on PCs have names longer than 31 charac-
ters. These filenames are too long to save on a Macintosh
disk. When you copy a file with a long filename, DAVE will
use the short name.

Controlling What Gets Copied

By default, DAVE will always copy all the information
contained in a Macintosh file to a remote server. Macintosh

files have special attributes used by the Finder such as creator and type information, and many contain resources used for many purposes such as previewing. The most important information in a Macintosh file is usually contained in what is called the data fork. All files that can be used on both Macintosh and PC applications contain all the essential data in the data fork. For example, a JPEG file contains all the picture information in the data fork, but may contain special preview pictures or icons in the Macintosh resource fork.

If you know that the Macintosh resource data is not needed on the PC you are copying files to, you can tell DAVE to only copy the data fork of a file. This can decrease the time needed to copy whole folders and will prevent DAVE from creating extra hidden files on some servers. To select this copy method, choose "Copy Data Fork Only" from the Edit menu. NOTE: You should NOT use "Copy Data Fork Only" if you want to back up your Macintosh files on the PC.

Edit Menu

There are a number of functions you can select from the DAVE Utility Edit menu.

You can:

• Select all items in a window,
• Refresh a window to display recently created files or folders
• Copy only the data fork of a file to save space
• Convert the text at the end of line characters (see section below)
• Set your browsing and messaging preferences

Copying Text Files

Some types of files contain plain text. These types of files are often used for simple documents, HTML and computer source code. Unfortunately, different operating systems store these files in different ways. The biggest difference is how the end of a line of text is stored. On a Macintosh, a single carriage return character is used. On a PC, both a carriage return and a line feed character are used. On UNIX, only a line feed character is used. DAVE can automatically convert text file end of line characters when it copies text files.

To choose this option, select "Convert Text End of Line Characters" under the Edit menu (see image on the following page). To force the end of line character to be a certain type, hold down the command key when you drop the files, and a dialog will appear allowing you to select the type of conversion you need.

Converting Files into BinHex or MacBinary

When Macintosh files are downloaded from web sites or FTP servers, they are often saved in either BinHex or MacBinary format. These formats save all the attributes and data needed to recreate the file on another Macintosh. DAVE provides a handy copying option for copying a file to your local web server or FTP server by automatically converting files into BinHex or MacBinary.

To have DAVE convert files into one of these formats, hold down the command key before you drop the files. The following dialog will display:

```
┌─────────────────────────────────────────────────┐
│ ≡≡≡≡≡≡≡≡≡≡≡≡ Copy Preferences ≡≡≡≡≡≡≡≡≡≡≡≡ │
├─────────────────────────────────────────────────┤
│                                                   │
│  File Copy Format │ Macintosh            │ ♦ │   │
│                                                   │
│  Text File EOL Translation │ None        │ ♦ │   │
│                                                   │
│                          [ Cancel ]  [[ OK ]]    │
└─────────────────────────────────────────────────┘
```
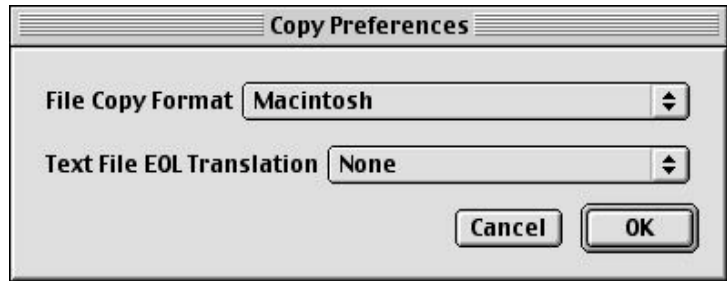
Drop Folders

Sometimes folders are set up so that you can copy files into them, but you can't look inside them. These folders are often called drop folders or drop locations. DAVE can't tell if a folder is a drop folder. If you try to open one, you will get an "Access Denied" type of error. If you know that a folder is a drop folder, you can drop files onto it. Drop folders on Windows systems only support the data fork of Macintosh files. You will usually get errors when copying the file, but these can be ignored.

Renaming Files and Folders

To rename files or folders, simply select the item you wish to rename by clicking on its name. The name will automatically become editable. When you press the return key, or click on a different item, the item will be renamed. Remember that PC applications use the last few characters of the filename to determine what kind of file it is. You can only rename files and folders. You can't rename workgroups, computers or shared folders.

Deleting Files and Folders

You may delete files or folders by dragging them to the trash can. If you prefer, you may select the items you wish to

delete and press Cmd-Delete or select "Delete..." from the File menu.

When you delete a folder, all the files and folders contained inside it will be deleted. Items are permanently deleted, so you should use caution. This can take some time if the folder contains a large number of items. When deleting takes more than a few seconds, a progress dialog will be displayed. Although you can stop a delete operation after the progress window is displayed, many items will have already been deleted.

Mounting Using Browsing

Select a share or a folder, then select "Mount" under the File menu (or Command+M) and the item will be mounted on your desktop.

Creating Folders

You may create a new folder in a view window if that window is viewing a folder or a shared folder. The new folder will be created at the top level of the window. To create a folder inside another folder, you must first open the folder by double-clicking on it.

Getting Properties

You may display the properties of a file or folder by selecting it and choosing "Get Information..." from the File menu. You can view the various date and time information for a file, and its access modes. Files stored on different types of servers usually have different properties available for viewing. Only the actual information returned by the server is displayed. You cannot change the properties of a file.

Using Bookmarks

1. In the browse window, highlight the item you would like to bookmark.

2. In DAVE, select File/Save As. The Save As dialog displays.
NOTE: You can change the name of the item or keep the default name.

3. Browse to the desired location to save the bookmark file.

4. Click Save. A bookmark file will be created. To open the location at a later time, simply double click on the bookmark file.

Domain Log on

NOTE: If you only have Windows 95 or 98 computers in your network, you cannot use the domain log on features.

If you have a Domain Controller on your network and a valid account on that domain, you can use DAVE to log onto the network. Once you have logged on, access is granted to any resources that use the domain controller for authentication. You will not need to re-enter your user name and password to access these resources.

1. To log onto your network using DAVE, select DAVE from the Apple Menu and then select "Log on..." from the menu. DAVE will prompt you for your password and domain name.

2. Enter your password and domain name and click "OK".

NOTE: The menu item will change from "Log On..." to "Log Off".

Domain Logoff

To log off of your network, choose "Log Off" from the menu. All mounted DAVE shares will be automatically unmounted. You will no longer be able to use domain resources via DAVE Client without supplying your user name and password.

Command Pallette

DAVE displays a floating window with icon buttons. These activate the most commonly used commands.

- Logon.../Logoff
- Mount...
- New Message...
- Messaging Preferences...

Clicking on any button is equivalent to selecting the corresponding menu item. Additionally, the first button remains selected while you are logged on. This enables you to see at a glance whether you are logged onto the network. If the button is not selected then you are not logged on.

To close the Command Pallette, click its close box or uncheck the "Show Command Pallette" menu item in the Settings menu.

To show the Command Palette, select the "Show Command Palette" menu item in the Settings menu.

Information Window

DAVE can display helpful network information. This information is useful to network administrators and technical support personnel.

User information shows:

- The user name you last used to logon
- The domain where your user name is defined and that domain's
  controller
- Your computer's workgroup or domain membership
  (not necessarily the same as your user name's domain)
- The workgroup's master browser
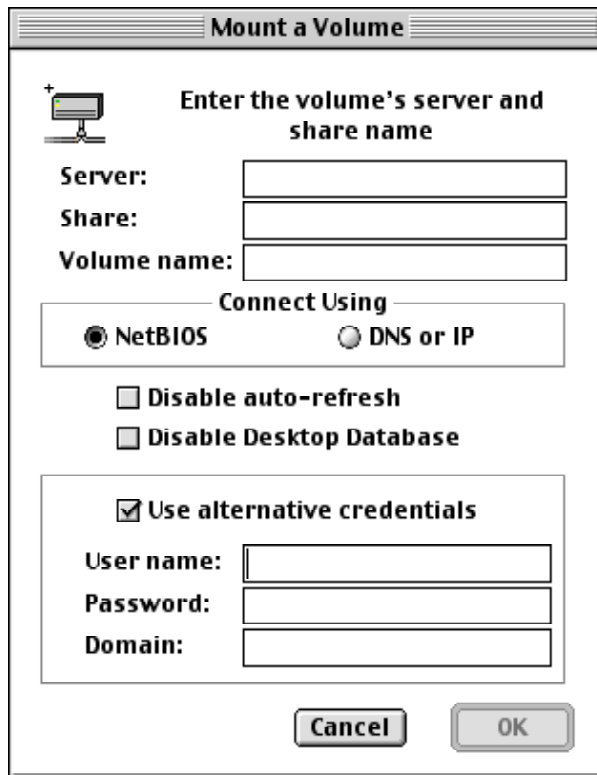
The Domain List shows:

• List of network domains
• List of network workgroups

The User List shows:

• A list of other users in your domain

Mounting Manually

Entering the Server and Share Name

Traditionally, information for the Server and Share fields is entered using UNC format such as \\SERVER\SHARE.

DAVE allows you to enter this information into separate fields without the accompanying \. You can also specify a volume name that is different than the share name. If you do not input a name in the volume name field it will default to the share name.

Mounting by IP, DNS or NetBIOS

You may wish to mount a share by its IP address or DNS name. To do this, click on the "Connect Using DNS or IP" radio button. Choose the "Connect Using NetBIOS" radio button if you are entering the NetBIOS name.

"Disable auto-refresh" button

If you select the "Disable auto-refresh" button, DAVE will not automatically refresh open windows for DAVE shares. To manually update the contents of a window, close the window and then reopen it. This feature is helpful with slow network connections.

"Disable desktop database" button

If you select the "Disable Desktop Database" button, DAVE will not create the DesktopFolderDB folder for the Finder. The Desktop Database enables the Finder to remember information about applications and their icons on the shared volume. Disabling the Desktop Database should speed up slow network connections.

"Use Alternative Credentials"

If you wish to use credentials different from those used to log on the network, select the "Use Alternative Credentials" button.

Domain Options

If you want DAVE to request your logon information when starting your Macintosh, select the "Logon at Start-up"

option from the Access menu. This option places a document named "DAVE Start-up" in your "Start-up Items" folder. DAVE will automatically quit after a successful logon at start-up. To remove the file from the "Start-up Items" folder, deselect the "Logon at Start-up" option.

The "Enforce Logon" option in the Access menu prevents the DAVE Client or DAVE Print Client from accessing shared resources without first logging onto the domain. This option cannot be changed without being logged onto the network.

Mounting at Boot with DAVE Client

If "Enforce Logon" option is turned on and you have mount at boot volumes, they will not mount until you are logged on. If logon is unsuccessful, the share will not be mounted and you will be prompted for your logon information.

NOTE: If you have not turned on the "Enforce Logon" option, the DAVE Client will mount each resource normally and you will be prompted for security information as needed.

Domain Printers

Domain authentication is also used for printer security. This is helpful if your Macintosh is used by more than one person. You must be logged onto the network to print using DAVE Printing. This information will be stored by that gateway for future print jobs. To prevent your security information from being stored by the Print Client, turn on the "Enforce Logon" option. For more information on DAVE Print Client, please read Chapter 9 of this manual.

Popup Messages

DAVE works directly with the Windows WinPopup service. It can be used for sending and receiving messages on your network. This can be very useful for Network and Systems Administrators who want to notify users about changes in

server status. It is also useful for notifying users about print job completion. NT Administrators can use DAVE to broadcast messages.

NOTE: By default DAVE will not receive messages from the network.

To begin receiving messages using DAVE, select DAVE from your Apple menu and then select the "Messaging Preferences" item from the Edit menu. Check the "Display received messages" option in the DAVE "Message Preferences" and select the "Ok" button.

DAVE will receive messages sent to your computer's name if that name is not already used. You may also choose an alternate name by specifying in the "Default Name" field. If you are not logged onto the network, messages sent to your alternate name will still be received.

DAVE handles messages two ways:

1. Selecting the "Display Received Messages" checkbox in the Message Preference dialog enables DAVE to pop-up incoming messages in a "Message Received" window.

After you have read your message, select the OK button and the message will be discarded.

2. DAVE also receives messages when the "Read Messages Aloud" check box is selected. In order for this option to work you must have Speech Manager installed on your Macintosh. For more information on the Speech Manager, read Appendix D of this manual.

If you select both the "Display Received Messages" and the "Read Messages Aloud" check boxes, the Message Received window will display first. When you close the window DAVE will read the message aloud. If you select the "Beep when message received" check box, DAVE will play your system alert when messages arrive.

If you do not want to receive messages, simply turn off the "Display Received Messages" and the "Read Messages Aloud" check boxes and click the "OK" button. When these options are turned off the message reception removes DAVE message listening software from memory. Your selections will be saved and used when restarting your Macintosh.

Warning Messages

If the user name set in your preferences is already in use on your network, you may get an error message when you start your Macintosh. This message will notify you that messages sent to your user name will not be received. If you are logged onto several machines in your network and you are using the same user name for each machine, only one of the machines will receive messages for that user name.

The NetBIOS name you choose for your computer may be identical to another user's user name. If this occurs, messages sent to your computer name may be directed to the other user. You will get a warning message when you start your Macintosh if this occurs. If you do not want to see these warning messages, turn off the "Notify when names conflict" check box in the DAVE Message Preferences dialog.

Sending Messages

DAVE can be used to send messages to other users in your network. To begin creating a message, select DAVE from the Apple Menu and then select "New Message" from the Access menu.

To send messages to individual users or computers, select "User or Computer" in the pull-down menu at the top of the "Composing a Message" window. These messages are sent only to the user or computer named in the "To:" field.

You can also send messages to all the computers in a

workgroup or domain by selecting "Workgroup" from the pull-down menu. These messages are sent to all the computers in the workgroup or domain named in the "To:" field.

NOTE: When using DAVE, a message cannot be received from the same Macintosh that sent it. If you are sending a message to your own workgroup you will not receive that message.
When you have typed your message, click the "Send" button. If you want to send the same message to more than one user or computer, hold down the command key when you click the "Send" button. This will prevent the "Composing a Message" window from automatically closing. Now you can enter a new name in the "To:" field and click "Send". To cut and paste text into the Message window use the Edit menu.

Please be aware of the following message size limits:

- A Windows computer will truncate received messages greater than 1,600 characters.
- A Macintosh computer will truncate received messages to 255 characters.

AppleScript

DAVE supports mounting and unmounting shared resources using AppleScript scripts. You can create your own logon scripts, return information about a user, server, or domain and send pop-up messages to other users.

To view the DAVE AppleScript Dictionary follow these steps:

1. Run Apple's Script Editor

2. Choose "Open Dictionary" from the File menu

3. Now choose DAVE located in your Apple Menu Items folder in your System Folder. DAVE Dictionary will display.

Preferences" item from the Settings menu. Check the "Display received messages" option in the DAVE "Message Prefer-ences" and select the "OK" button.

Chapter 8

DAVE Sharing

DAVE lets you share your files and PostScript printers with other CIFS (Common Internet File System) networking clients such as Windows 95, Windows NT and other Macintosh systems running DAVE. With DAVE Sharing installed on your Macintosh, Microsoft clients will see DAVE Sharing resources in their Network Neighborhood and Macintosh computers will see DAVE Sharing resources in the Chooser. By default, components for DAVE Sharing are installed by the DAVE Installer, but not turned on.

Required Components

DAVE Sharing consists of four parts:

- DAVE Sharing Extension - A background application located in the Extensions folder
- DAVE Sharing - A control panel
- Shutdown DAVE Sharing - An application located in the Shutdown items folder
- DAVE Sharing Preferences - A preferences file located in the Preferences folder
- DAVE Sharing Contextual Menu

Each component must be in a specific location in your System Folder in order to function properly. The DAVE Installer will place these files in the correct location for you.

DAVE Sharing Extension

DAVE Sharing Extension is a background only application and does not appear in the Application menu or the Finder's About window. To confirm that DAVE Sharing Extension is running, check the "File and Print Services" radio button in the DAVE Sharing Control Panel.

DAVE Sharing

DAVE Sharing Extension

As a background application, DAVE Sharing Extension does not have a user interface. To make changes to the configuration of DAVE Sharing Extension, use the DAVE Sharing control panel.

DAVE Sharing

DAVE Sharing is a control panel located in the Control Panels folder under the Apple Menu. This is where you can configure DAVE Sharing and view its current status.
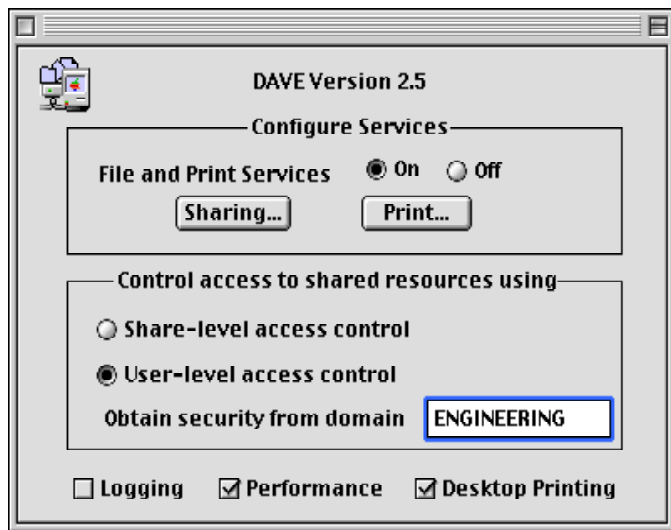
To activate DAVE File Sharing, click the "On" radio button under the Configure Services section in the DAVE Sharing Control Panel.

WARNING: Shutting down DAVE Sharing without properly notifying attached users to save their work and disconnect may result in data loss. If no users are connected to your Macintosh a warning will not be issued.

Share-level/User-level Access Control

Before sharing files or printers for the first time, you should

decide whether you want to use "Share-level" or "User-level" access control. Share-level access control allows you to assign a "Read-Only" password, a "Read-Write" password, or "Both" passwords for each folder that you wish to share. Users wishing to use the shared resources will need to know the correct password for each resource. User-level access control uses the Windows NT domain's list to authenticate users. Users must have accounts in the domain before they can use shared resources on their Macintosh. To change between access control modes, click the appropriate radio button in the "Control access to shared resources using" section of the DAVE Sharing Control Panel. Changing modes will stop sharing and all sharing configurations will be removed.
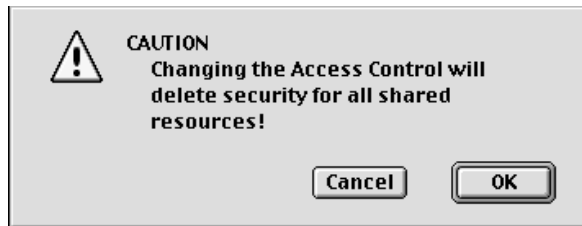
If you select User-Level access control you must provide the name of the domain used to authorize access to your shared folders. This is usually the name of your current domain. Enter this into the "Obtain security from domain" field.

DAVE Sharing - Share-level

To share a folder with CIFS clients, open the DAVE Sharing Control Panel and click the "Sharing..." button. A listing of shared folders will display.
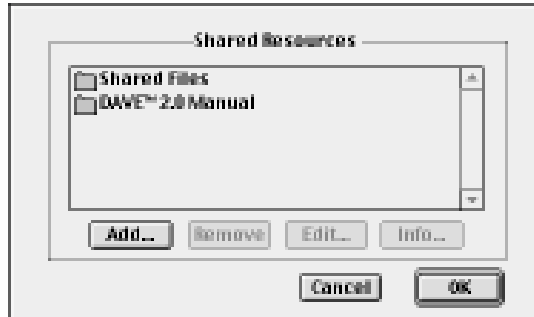
Click the "Add..." button and select the folder from the dialog. To select the passwords for the chosen folder, click the pull-down menu located in the lower left corner of the password window. If you select "Read-Only", users will only be able to view files. If you select "Read-Write", users will be able to view and make changes to files. If you select "Both Passwords", users will have rights based on the password they enter.

You can also leave either password blank. This allows users to share resources without entering a password.

NOTE: Some CIFS clients may implicitly attempt a blank password and be granted access without prompting the remote user.

In the "Share As" field enter a name for the shared resource. It should be limited to 12 characters so that all CIFS clients can use it. Click the "OK" button to return to the Shared resources dialog. Confirm your changes and the folder will

be available to other users.

To make a change to the shared resource, select the share name in the Shared Resources dialog and then click the "Edit..." button. This will return you to the security screen where you can edit the security information. Click the "OK" button to return to the Shared Resources dialog.

To stop sharing a folder, select the share name from the Shared Resources dialog and click the "Remove" button. After confirming removal, the folder will no longer be available to other users.

You can click on a share and then click on the "Info..." button to view information about that share. This will show you the folder's real name, the share name, and the number of current connections. To confirm changes, click the "OK" button.

User-level Sharing

To share a folder using Domain authentication, open the DAVE Sharing Control Panel and verify that the "User-level access control" radio button is selected. Now verify that the

Domain name is entered in the "obtain security from do-main" field. Click the "Sharing..." button to display the list of shares and then the "Add..." button to select the folder that you wish to share. Now click the "Select Button". If you are not currently logged on to your domain you will be prompted for a user name and password.

The "User-level security" dialog will now display. A list of groups from your domain will appear on the left side of the dialog. (To show individual users in the domain, click the "Show Users" button.) A list of groups and individual users with permission to access your share will appear on the right. To edit the name of the share, simply enter a new name in the "Share As" field, located at the top of the dialog.
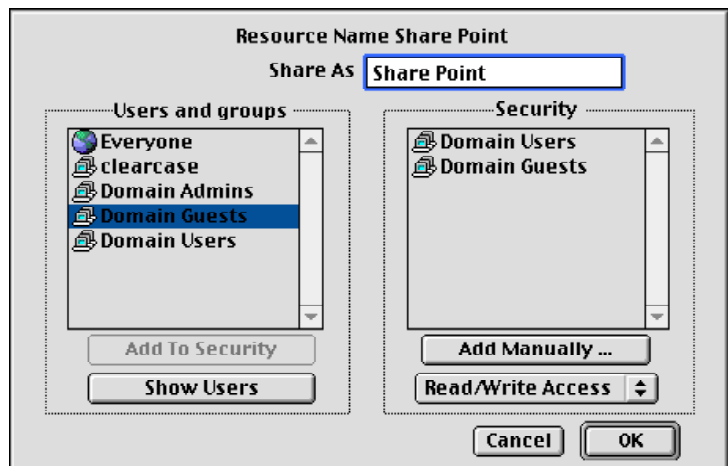
To give a specific user or group access to the shared folder, double-click on a name from the "Users and groups" panel or click on a name and select the "Add to Security" button.

The selected name will appear in the "Security" panel.

If you click the Show Users button, it will list all users in the domain in the left column.

The Read/Write access pull-down menu will allow you to add users with read/write or read only level access.

If you select the Everyone icon in the left hand column, everyone in the domain will have the selected access.

To manually add a user you must know the user name and domain name of the user or group you wish to add. This will allow you to authenticate against trusted domains. To add a user manually, click the "Add Manually" button located in the security panel. Enter the Name and Domain in the provided fields and click the "OK" button.

If you want to remove a user, click on the user's name. The "Add Manually" button will change to the "Remove User" button. Select the "Remove User" button and the selected user will be deleted from the list.

When you are finished adding users you must click the "OK" button in the User-level security dialog to save your changes.

Sharing Removable Media

DAVE can be used to share removable media such as floppy disks, CD-ROMs or Zip Diskettes. When a CIFS client connects to your Macintosh, DAVE will verify that the volume is available before advertising it to the client. If the volume is not mounted it will not appear in the list of shared folders. It will become available the next time it is mounted.

If you try to configure a share when a volume is unavailable, the DAVE Sharing Control Panel will display the "Unavailable Share Point" message.

The share point E.T.O. #24 is no longer a valid share point and should be removed from the shared resource list.

OK
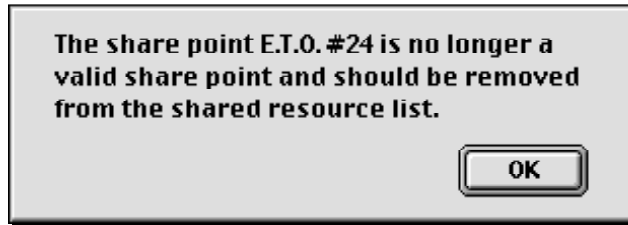
Using DAVE Sharing in a Macintosh Only Network

In a Macintosh-only environment users will not be able to use the Browse Service option provided by the DAVE Client. Turn off the Browse Service option in the Setup window of DAVE Client. There are two ways to access DAVE Shares in a Macintosh-only network.

1. Go to the DAVE Client Setup window and add the DAVE Macintosh manually. You can use its IP address or NetBIOS name for the chosen Macintosh.

2. Use the Mount Manually command from the DAVE Client Chooser window. You must enter its name or IP address each time.

3. Use the mount manually command in the DAVE Utility application (or command+M). Once mounted, you may make an alias to any shared folders you want to use frequently.

DAVE Sharing and File Names

Some Windows applications require that file names have a DOS 8.3 name. DAVE Sharing will return both a long name and a short name for every file. If the Macintosh file name is 12 characters or less the short and long names will be the same. If the file name is over 12 characters DAVE Sharing will mangle the name in order to force-fit into the short name.

All short names will retain their dot extension. A DAVE

mangled name will have the tilde character in the name. There is a possibility that short mangled names will match a normal Macintosh file name. To prevent this, files containing the tilde mark should be removed from DAVE Shares.

Checking to see who is using your shared folders

If you want to see if anyone is using the folders you are sharing, open the DAVE Sharing control panel. Select the status item from the Setup menu. The status window displays:

Logging Sharing Activity in a File

This dialog will show you how many people are currently connected to your Macintosh, and what they are sharing. The rejected connections counter is implemented when invalid usernames or passwords are received, or if the user is not in the access list (User-level security only).

If you want to track who uses the folders you share, click on the Logging checkbox on the DAVE Sharing control panel:

When using "Logging", DAVE Sharing will create a log file in your System Folder. You can view this file with SimpleText or any other application that can open a text file. You can also open the file with a network browser, such as Navigator or Internet Explorer.

Below is an example of the log:

Node BUSTER   started a session on Mon Jan 5 14:30:21 2000
Node BUSTER   stopped a session on Mon Jan 5 14:30:23 2000

The "DAVE Log" file can be opened with SimpleText or any other application that can read text files.

Allowing DAVE Sharing to use more Macintosh Resources

DAVE Sharing is designed to use as little CPU resources as possible, allowing you to use your Macintosh without having to wait because someone is using your shared files. To enable users faster access to files, click the "Maximize Performance" check box on the DAVE Sharing control panel.

When you select "Maximize Performance", DAVE Sharing executes requests from the network before allowing the CPU to perform requests from local applications.

Sharing a PostScript Printer

There are two ways to share a printer: sharing desktop printers or sharing non-desktop printers. If LaserWriter 8.6.5 or later is installed on the Macintosh, sharing printers off of the desktop is the only method available.

Sharing Desktop Printers

To share a desktop printer, enable desktop printing on the main control panel and select the "Print" button. The following dialog will display:

1. This dialog will list all of the printers you are currently

sharing. To add a new printer, click the Add button. The Desktop Printer dialog box will display:

Desktop Printers

Dogbert

[Cancel] [OK]
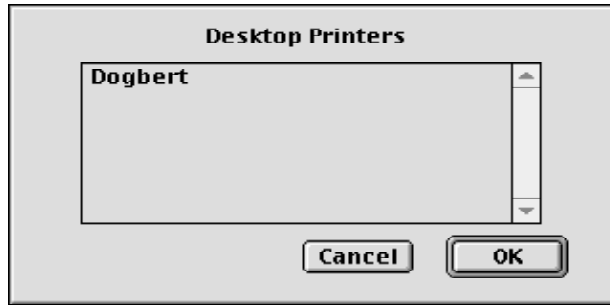
2. The Desktop Printers dialog will display a list of all the desktop printers set up for your machine.

3. Select a printer and click "Ok". You may share all of your desktop printers.

Sharing Non-Desktop Printers

Only one non-desktop printer may be shared at a time. It must support PostScript and be visible to the Apple LaserWriter driver in the Chooser via AppleTalk. To share these printers, click on the "Print..." button in the DAVE Sharing Control Panel. The "Share a Printer" dialog will display. If you already have a printer shared, the "Add..." button will be replaced by the "Edit..." button.

Printer Resources

Shared Printer :   Dogbert

Shared Name :   Dogbert

[Edit] [Remove] [Cancel] [OK]

Click on the "Add..." or the "Edit..." button to display a list of available printers on your network. Choose the printer you wish to share. After selecting your printer you may

assign security for that printer. This is done using the same method as security for folders with one exception, the printers cannot be Read-Only. You can assign security for printers in the same way you assigned security for folders.

NOTE: Printers cannot have "Read-Only" security.
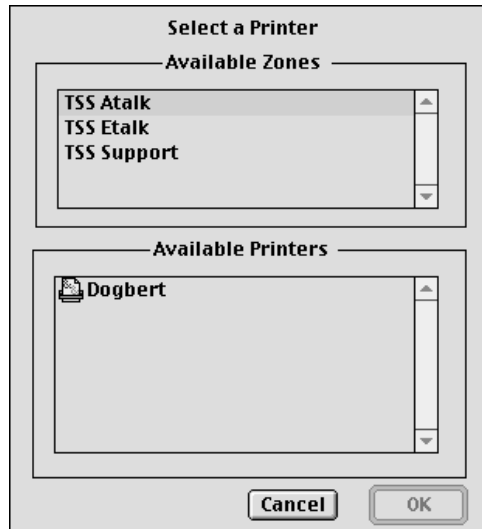
To stop sharing a printer, select the "Delete" button. Click the "OK" button to save your changes. When CIFS clients print to your shared printer the print job will spool to the "DAVE Print Spool" folder located in your Preferences Folder or directly to the desktop printer folder. Each print job will have a unique name in this folder. Deleting a file from this folder will cancel the print job.

DAVE Sharing Print Queue Status

To see the status of print jobs os users printing through your computer, access the DAVE Sharing Print Queue Status window. To do this, open the DAVE Sharing Control Panel and choose "Print Queue" from the setup menu. You can suspend and resume print queue processing as well as clear all jobs from the queue. If desktop printing is enabled, use

the desktop printer's window to perform these functions.

Shutdown DAVE Sharing

Shutdown DAVE Sharing is an application that instructs
DAVE Sharing to quit gracefully. It is normally stored in
your Shutdown Items folder within your System Folder.
When you shutdown your Macintosh the Finder will run
Shutdown DAVE Sharing. Shutdown DAVE Sharing will
then check to see if your Macintosh is being shared over the
network. If so, you will be prompted for the number of
minutes DAVE Sharing should wait before quitting. This
will give you time to notify users that your system will be
disconnected.

There are currently DAVE connections,
how many minutes until they are
disconnected.

0

Cancel   OK

Type and Creator Information

When non-Macintosh clients create files on a DAVE volume,
those files will not have the Macintosh Finder information
needed to properly display the files' icon. When a file is
saved on a shared DAVE volume, DAVE Sharing will add
the correct type and creator by looking up the file's extension
in the Internet Configuration settings. If there is no exten-
sion entry in the Internet Configurations, DAVE Sharing
Extension will give the file a generic PC icon by setting the
type to "TEXT" and the creator to "dosa".

Byte Range Locking

If AppleShare file sharing is not turned on byte range
locking will not work.

Chapter 9

DAVE Printing

DAVE enables Macintosh users to print to shared
PostScript printers on a Microsoft network. If your
Macintosh uses LaserWriter 8 version 8.6.5 or later, DAVE
provides a simple way of accessing remote printers
directly from a desktop printer. This method of printing
is referred to as DAVE Desktop Printing, and is very
simple to configure and use.

If you have an older version of MacOS or LaserWriter 8,
DAVE will install the DAVE Print Client control panel
on your Macintosh. This method of printing is more
complex, but does not rely on desktop printing.

Regardless of what DAVE printing software is installed,
you begin configuring access to a remote printer by
locating the printer using DAVE Client in the Chooser.

Selecting a Shared Printer Resource From the Chooser

To mount a shared printer resource using the Chooser
you must first select a server from the server listing in
the Chooser. For instructions on selecting a server in
your workgroup, see Chapter 3 of this manual. After
following the instructions in *Finding Other Computers
on the Network* and *Mounting Shared Resources*, return
to this section and continue.

Now that you have selected a server, a dialog will
display. If the printer icons in the Shared Resource
listing are grayed out the DAVE Printing is not installed.
Please review the Installation chapter of this manual.
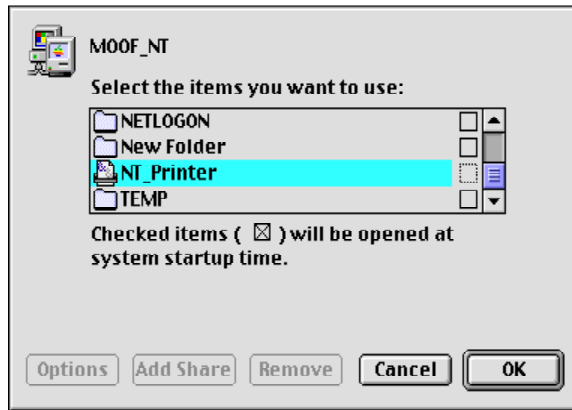
If DAVE Desktop Printing is Installed
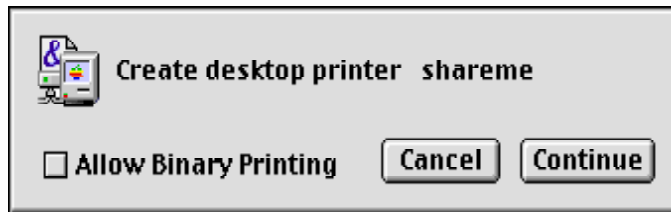
If you click continue, then a desktop printer will be created on the desktop and set to be the default printer.

NOTE: If you do not have a default printer setup, you will need to go into the chooser and select the LaserWriter 8 (then close the chooser).

To select the PPD file to use with your printer, select the printer on your desktop, then choose "Change Setup" from the "Printing" Finder's menu. Click the "Change..." button to select the correct PPD files.

NOTE: If you are finished configuring your printer, the rest of this chapter does not apply to DAVE Desktop

108

Printing.

If DAVE Print Client is installed

Double click the preferred printer from the Resource listing or select it and click the "OK" button.

If the server is using shared level security you may be prompted for a password. Type your password in the designated field and click the "OK" button. If you do not know your password, ask your Systems Administrator. A dialog asking for Printer Name and PPD verification will display.
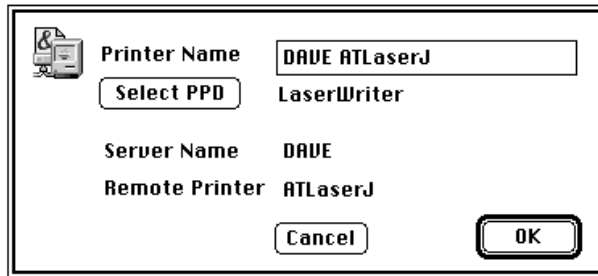
If the default PostScript Printer Description (PPD) is not correct, click the "Select PPD" button. A Printer description dialog will display. Select the appropriate PostScript printer description and click the "Open" button. If you are unsure of the correct PostScript printer description, ask your Systems Administrator.

109

```
┌─────────────────────────────────────────────────────┐
│  ┌────────────────────────┐      ┌─ Hard Disk 258    │
│  │ 🗁 Printer Descriptions ▼│                          │
│  ┌──────────────────────────┐┌─┐  ┌──────────────┐   │
│  │📄 Acrobat Distiller (PPD) ││⇧│  │     Eject     │   │
│  │📄 Color General           ││ │  └──────────────┘   │
│  │📄 General                 ││ │  ┌──────────────┐   │
│  │📄 LaserWriter             ││ │  │    Desktop    │   │
│  │📄 LaserWriter 16/600 PS   ││ │  └──────────────┘   │
│  │📄 LaserWriter 16/600 PS Fax││ │  ┌──────────────┐   │
│  │📄 LaserWriter II NT       ││⇩│  │    Cancel     │   │
│  └──────────────────────────┘└─┘  └──────────────┘   │
│                                    ┌──────────────┐   │
│                                    │     Open      │   │
│                                    └──────────────┘   │
└─────────────────────────────────────────────────────┘
```
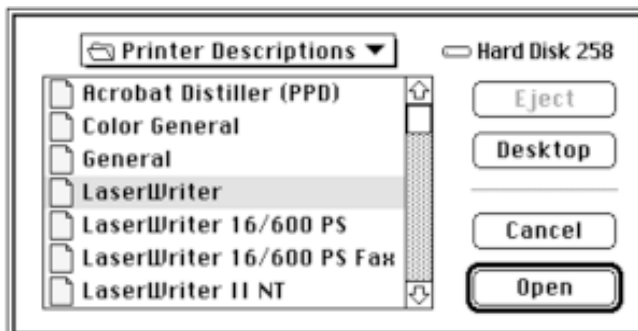
The PostScript Printer Description dialog will close and you
will return to the Printer Verification dialog. If the Printer
Name and the Printer Description are correct, click the "OK"
button. The Printer Verification dialog will close and you
will return to the Chooser. You have now mounted a shared
printer resource. To select your new printer, turn to the
Determining Your Computer's Current Zone section later in
this chapter.

NOTE: After mounting a shared printer resource a Printer
Resource Icon will not display on your desktop.

Selecting a Shared Printer Resource From the DAVE Print Client

The DAVE Print Client enables you to add new printers, edit
print gateway settings, and remove print gateways. To open
the DAVE Print Client, select the DAVE Print Client item
from the Control Panels item under the Apple menu.
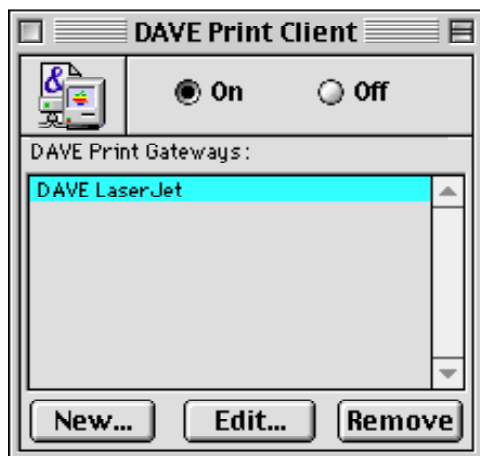
DAVE Print Client On and Off
To set the Print Client state use the "On" and "Off" selections.
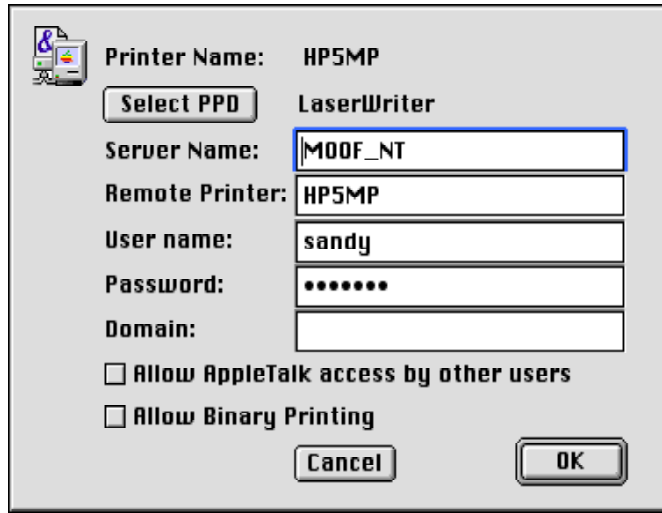
Removing a Print Gateway
To remove a Print Gateway select it and click the "Remove" button.

Editing a Shared Printer Setup
To edit a shared printer's settings, select the shared printer you wish to edit and click the "Edit" button on the DAVE Print Client Control Panel. The Edit Shared Printer Settings dialog will display.

Edit the settings and select the "OK" button. If you have entered the correct information the dialog will close and you will return to the DAVE Print Client Control Panel. If you are unsure of the correct settings, ask your Systems Administrator.

Adding a Printer
To add a printer gateway, click the "New..." button on the DAVE Print Client Control Panel. A dialog will prompt you for information about the printer you wish to add.
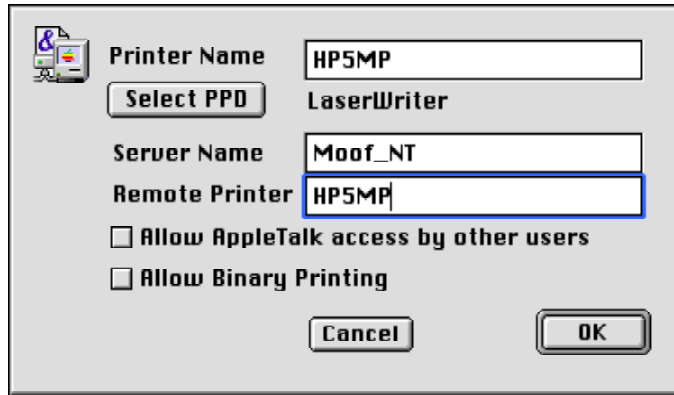
Type the Printer Name in the "Printer Name" field. The Printer Name is the name that will appear in your Print Gateway. You can type any name you prefer but it should be descriptive and it must not be a name already in use on your network. Type the name of the remote server in the "Server Name" field and the name of the remote shared printer in the "Remote Printer" field. If you do not know the information for these fields, ask your Systems Administrator or try adding the printer via the Chooser.

If the default PPD is not correct, click the "Select PPD" button and choose the correct PostScript Printer Description. If you are unsure of which PostScript Printer Description is correct, ask your Systems Administrator.

Click the "Open" button and you will return to the New Printer Specifications dialog.

Now that you have typed the requested information and selected the correct PPD, click the "OK" button. If you have entered a printer name that is already in use on your network an error message will display.
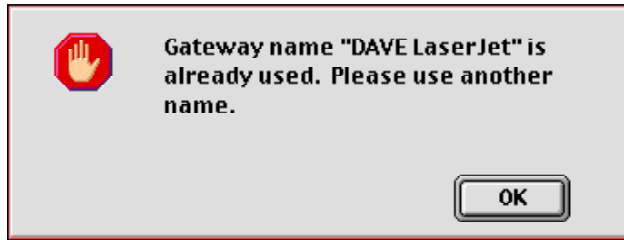
The printer will now appear on your AppleTalk network and will be
broadcasted to other Macintosh computers in the local zone. If you want to allow other Macintosh computers to print on your gateway, select the "Allow AppleTalk access by other users" check box. If you do not want to use the AppleTalk protocol on your network you will need to install *Apple's Remote Only*. For more information *Apple's Remote Only* see Appendix D of this manual.

Binary Printing

Most PC systems have printers connected to their parallel printer port. PC parallel port hardware is capable of passing binary data to the printer, but most printers including Hewlett-Packard printers, do not accept binary data. If you send a PostScript job that contains binary data to one of these
printers, it will print out many pages of garbage. Some Macintosh applications let you choose to not print binary data, but if you have embedded postscript in your print job, such as a placed picture, you may still have binary

data.

To prevent you from accidentally printing many pages of garbage, DAVE Print Client will not pass binary data to the print spool. You can override this by clicking on the "Allow Binary Printing" checkbox. You should only select
this option if you know that the PC will accept binary data. Most RIP software available for PCs will accept binary data.
Click "OK" and type a name in the "Name" field that is not already in use. After typing a new name, click the "OK" button. If the remote server is using share-level security you may be prompted for a password.
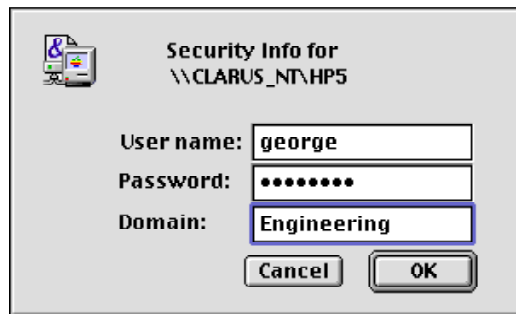
Type your user name, password and domain and click the "OK" button. If you do not have a Primary Domain Controller (PDC), leave the domain field blank. You will return to the DAVE Print Client Control Panel.

NOTE: After mounting a shared printer resource a Printer Resource Icon will not display on your desktop.

Close the DAVE Print Client Control Panel. Now you are ready to select your new printer. To select your printer, continue with the *Determining Your Computer's Current Zone* section.

Determining Your Computer's Current Zone

Before selecting your printer from the Chooser you must first determine your computer's current zone.

If you are using MacTCP, select the Network item from the Control Panels under the Apple menu. Your computer's current zone will be displayed in the pull-down menu marked Current Zone.
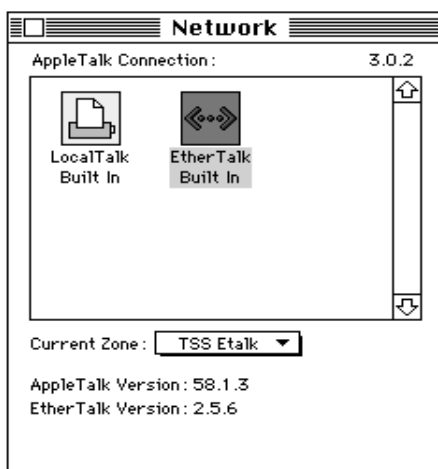
If you are using Open Transport, select the AppleTalk item from the Control Panels under the Apple menu. Your computer's current zone will be displayed in the pull-down menu marked Current Zone.
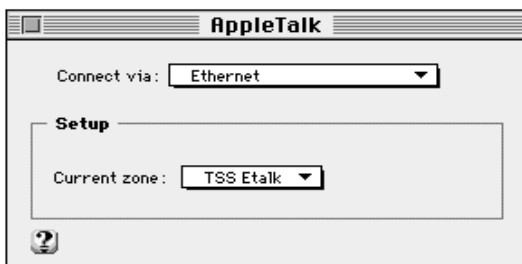
Selecting Your New Printer

Now that you have mounted the shared printer resource you can choose the printer you wish to use. To do this, open the Chooser from your Apple menu. Select a LaserWriter icon and then choose your computer's current zone from the AppleTalk Zone listing. After selecting your computer's current zone, a list of PostScript printers, including the printer you just added, will display in the "Select a PostScript Printer" listing.

NOTE: Use LaserWriter 8.3.4 or later for best results. Some older LaserWriter drivers do not support the Adobe Document Structuring Conventions Standard.
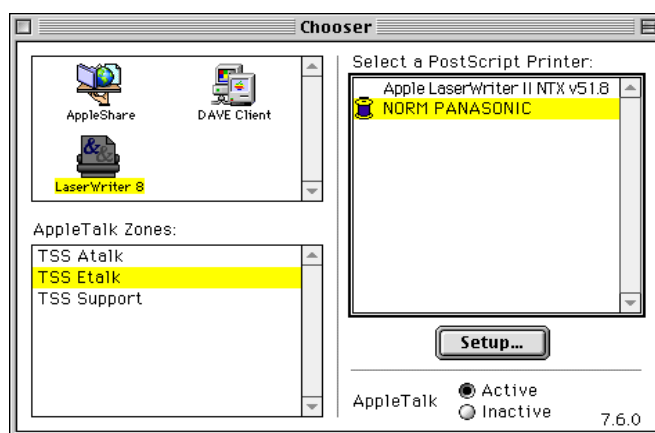
After selecting your new printer, close the Chooser. You can now print to your chosen printer. To change your printer simply repeat the directions in this section.

Chapter 10

NetBIOS Control Panel

NetBIOS Control Panel

This section was written so that users and Network Administrators can better understand the NetBIOS Control Panel functions.

NetBIOS is a network layer that provides a common and transparent way for applications and services to communicate. NetBIOS stands for "Network Basic I/O System". NetBIOS on PCs and Windows systems works with many different types of networks. This keeps applications from having to know how to communicate with each new type of network protocol.

NetBIOS provides a number of services to applications. Applications use NetBIOS names to identify their services to the network or to locate services they need to use. NetBIOS provides applications with connection-oriented and connectionless services. NetBIOS names are limited to 16 bytes, and conventions used in Microsoft networking use the last byte to identify different service types. This means that computer names are limited to 15 bytes.

DAVE provides a NetBIOS driver that uses TCP/IP to communicate on a network. Because the DAVE NetBIOS driver follows the Internet conventions described in RFC 1001 and 1002, it works with other vendors' NetBIOS implementations. In order to use DAVE to communicate with Windows systems, those systems must also have NetBIOS drivers that work with TCP/IP. Windows NT and Windows 95 come with TCP/IP compatible NetBIOS drivers. Even though Windows NT and Windows 95 come with TCP/IP they may not be configured to use TCP/IP with NetBIOS. Before you can get DAVE to operate correctly you need to check your Windows network configuration to verify that it is using TCP/IP. For additional information on configuring

TCP/IP on Windows computers see the *Host Configurations* section in Chapter 3 of this manual.

Because NetBIOS over TCP/IP is implemented by a number of vendors and the RFCs provide for many options, configuring NetBIOS can be a complicated process. The DAVE NetBIOS driver ships with the most common settings as defaults but allows you to change many different parameters. You probably won't need to change many settings to get DAVE working on your network.

NetBIOS over TCP/IP operates in one of four major modes referred to by the letters B, P, M and H. Most networks only use B or H mode. By default, DAVE uses B or broadcast mode. This mode works in most small LANs and does not require any special settings. You should check with your Network Administrator to see if you need to operate in H mode. The H mode is used on networks that have multiple subnets, and requires you to enter the address of a WINS server before DAVE will operate properly.

As an added feature, DAVE provides support for NetBIOS configuration using DHCP (Dynamic Host Configuration Protocol). If you want to use DHCP to configure DAVE from a Windows NT DHCP server, you must be using Open Transport and your Macintosh must be configured to use DHCP in the TCP/IP control panel.

Using the NetBIOS Main Control Panel

Users and Systems Administrators can customize network settings by accessing the NetBIOS Control Panel located in the Control Panels folder under the Apple menu. Because NetBIOS runs over TCP/IP, make sure you have TCP/IP configured before you can open the control panel. The NetBIOS Control Panel will only

open after a valid NetBIOS license has been entered. Before opening the NetBIOS Control Panel for the first time you will need to have your license number handy. If you do not know or cannot find your license number you will not be able to configure NetBIOS.

NOTE: To verify or change your license information, choose "About NetBIOS" from the Apple menu. Your license information displays.

The NetBIOS Control Panel is where users can change their network settings. Users can set their computer name, workgroup and computer description, designate their Windows Internet Name Server (WINS), obtain information about their network, and execute various network administrative tasks.
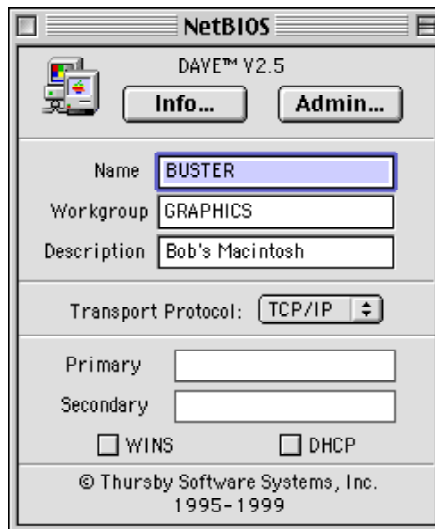
Info Button

The "Info" button can be selected to enter the Information Panel described later in this chapter.

Admin Button

The "Admin" button can be selected to enter the Administrator's Options Panel described later in this chapter.

Name Field

The Name field contains the NetBIOS computer name. This field must be completed in order for DAVE to operate. The name can be up to 15 characters long and can be any name you choose provided that it is not already in use on the network. When you "TAB" out of the Name field the NetBIOS driver will verify that your computer name is unique on the network.

Workgroup Field

The Workgroup field contains the NetBIOS workgroup or domain name. The name can be up to 15 characters long. This is the default workgroup that the DAVE Client browses and the default location where other CIFS clients see your Macintosh.

Description Field

The Description field contains a description that is meaningful to the user. This field's completion is not mandatory but recommended. It can be up to 255 characters long and should describe the computer in use. Examples are "Steve's Macintosh" or "Bill's Computer". This information is used also by DAVE Sharing.

Transport Protocol Pull-down Menu

You can use this menu to control how DAVE uses your network. Normally, TCP/IP should be selected to allow DAVE to use your current TCP/IP network settings. To prevent DAVE from using your network, you may select "Off." Using the "Off' setting is convenient if you use a laptop or if you switch your TCP/IP between Dial-up and LAN configurations.

WINS Check Box

The WINS check box enables WINS access. The Primary WINS field must be completed if the WINS check box is selected. If the NetBIOS mode is set on B and you then select WINS on the Main control panel the mode automatically changes to H. Anytime you turn off WINS the mode automatically changes to B. Mode B is the only mode that does not use WINS. See the *Administrator's Panel* section later in this chapter.

Primary WINS Field

The Primary WINS field is for use when accessing a Windows Internet Name Server (WINS) on your network. Ask your Systems Administrator if this field is appropriate for your computer. If WINS is available, type its name or IP address in this field.

Secondary WINS Field

The Secondary WINS field should only be filled in if a Primary WINS is entered. Ask your Systems Administrator if you have a secondary WINS on your network. If a backup WINS is available, type its name or IP address in this field.

DHCP Check Box

The DHCP check box enables the Dynamic Host Con-
figuration Protocol (DHCP). When the DHCP check
box is selected the NetBIOS driver broadcasts a DHCP
message to the network. If a DHCP server is available
and it recognizes your computer's IP address, it will
determine a primary WINS server and NetBIOS mode
for your computer. These fields will be automatically
updated. If the server replies with any mode except B
the WINS check box will be selected.

While DHCP is selected the WINS check box and fields
will be disabled. When the DHCP check box is turned
off the WINS check box and fields will be re-enabled but
the DHCP determined WINS settings will not change.

If DHCP is selected and the NetBIOS driver fails to find
your WINS information. Select the "Use Anyway"
button. Each time NetBIOS is initialized it will check
for WINS information.
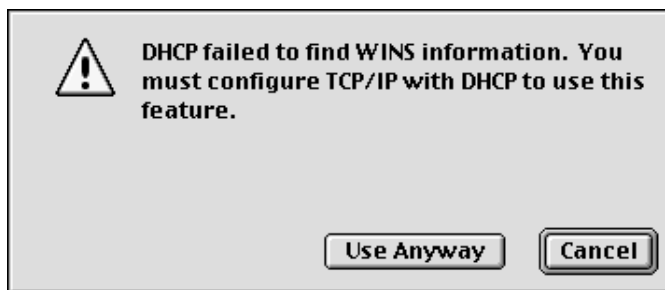
Locking NetBIOS Settings

You can lock the NetBIOS settings so other users cannot
change them. To lock the settings, select "Lock Set-
tings…" from the Edit menu. You will be prompted to
enter an administration password. Once the NetBIOS

124

settings are locked, users may view them but not change them. To change the settings, select "Unlock Settings…" from the Edit menu, and enter the password you selected when you locked the settings. The settings will be temporarily unlocked until you exit the NetBIOS control panel.

To permanently remove the administration password, unlock the settings, and then select "Lock Settings…" from the Edit menu. Clear out both passwords in the dialog that appears and click "OK". The administration password will be removed and the panel will remain unlocked.

Information Panel

The Information Panel displays when the "Info" button on the Main control panel is selected. It can be used to display information like the NetBIOS driver's internal name and session tables, or the names tables from remote nodes. This panel is roughly comparable to the DOS command "NBTSTAT", available in Windows 95 and Windows NT. To close the Information Panel click the "Done" button.

Local Names Table

The Information Panel opens using the Local Names Table.
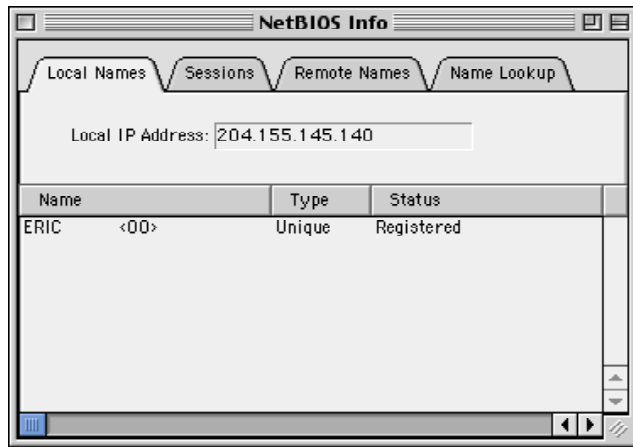
The Local Names Table displays all the local names.

Sessions Table

You can view the Session information by selecting the "Sessions" tab at the top of the Information Panel.

The Sessions Table displays information about active and pending sessions. The information includes local name, state, in/out, remote host, input and output. The following lists the definitions for each field in the Sessions Table:

Local Name - The name of your computer.

State - The status of your computer's connections. The status will be a "Connected" or "Listening" state.

In/Out - The connection direction. "In" is an inbound connection and "Out" is an outbound connection.

Remote Host - The name of the computer that your computer has a connection with.
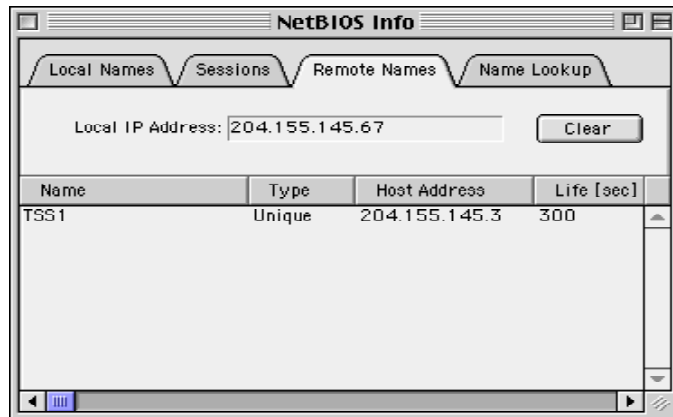
Input - The number of bytes that the connected computer has transferred to your computer.

Output - The number of bytes that your computer has transferred to the connected computer.

Note: To view the Remote Host, Input and Output information, you must use the scroll at the bottom of the Sessions Table.

Remote Names Table

You can view the remote name information by selecting the "Remote Names" tab in the NetBIOS Info window at the top of the Information Panel.

The Remote Names table displays the names currently in the name cache. The settings for cache timeout are in the *Administrator's Panel* described later in this chapter.

Name Lookup

To display a remote computer's name cache, select the "Name Lookup" tab in the NetBIOS Info window at the top of the Information Panel. The table will display at the bottom of the Information Panel.

After you have typed the correct remote computer name into this field, select the "Find" button. The NetBIOS driver will search for the typed name. If the computer is found it will be queried for the names in its name cache. The names in the remote node's cache will then be displayed. The table will also display the "Type" and "Status" of each name.

If the name entered in the Name Lookup prompt cannot be found, a "Name not found" message will display in the Name Lookup table.
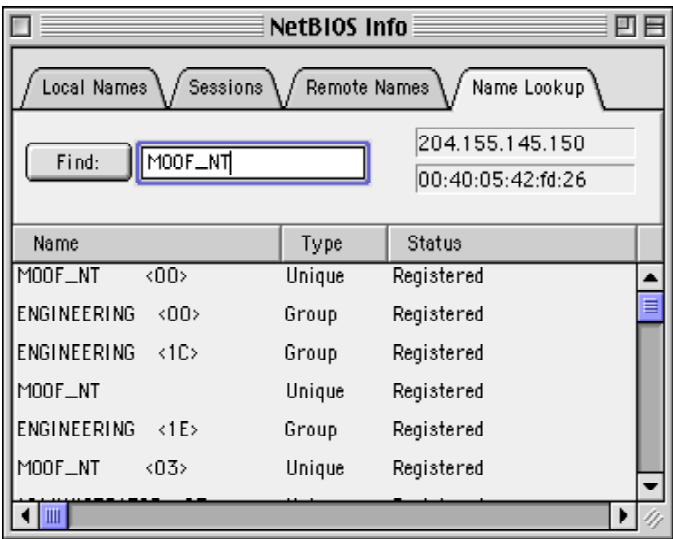
The Name Lookup Table can be very useful if you are

attempting to learn whether or not a remote computer is acknowledging your computer on the network.

To display another remote computer's name cache, type its NetBIOS name or DNS name into the remote name field and click "Find". Repeat this process for any computer on your network. You can also lookup a remote computer by its IP address. If the name you have entered begins with a number, DAVE will assume that it is an IP address. The following lists the definitions for each field in the Remote Names table:

Name - The names of computers in the remote computers name cache not followed by a number representing the type of service (i.e. "<20>") associated with that name denotes that you can connect to it.

Type - Lists either "Unique" or "Group". "Unique" signifies the name of a single computer. "Group" signifies the name of a workgroup or domain.

Status - "Registered" signifies that the computer name is a registered name on the network.

License

To change your NetBIOS License, select "Change License . . ." from the File menu to display the NetBIOS license entry dialog.

```
┌──────────────────────────────────────────────┐
│ ═══════════ DAVE™ License Entry ═══════════   │
│ ┌ License Code ╲┌ License Server ╲            │
│ │                                             │
│    Name:          [_____]  │
│    Organization:  [_____]  │
│    License Code:  [_____]  │
│                                               │
│                        [ Cancel ]  [  OK  ]   │
│                                               │
└──────────────────────────────────────────────┘
```
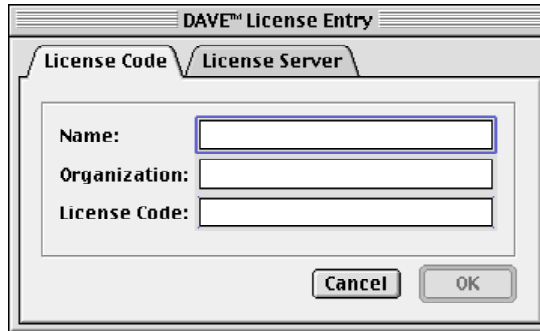
If you are using the DAVE License manager software, click the "License Server" tab and enter the name or IP address of your license server.

NOTE: The DAVE License Manager is available separately from Thursby Software Systems.

Administrator Panel

To display the Administrator panel, select the "Admin" button on the NetBIOS Control Panel. The Administrator panel allows the user to configure various NetBIOS settings that affect the performance of the NetBIOS driver.

WARNING: USE THE ADMINISTRATOR PANEL WITH CAUTION! HAPHAZARD USE OF THIS PANEL COULD HAVE ADVERSE EFFECTS ON NETBIOS PERFORMANCE.
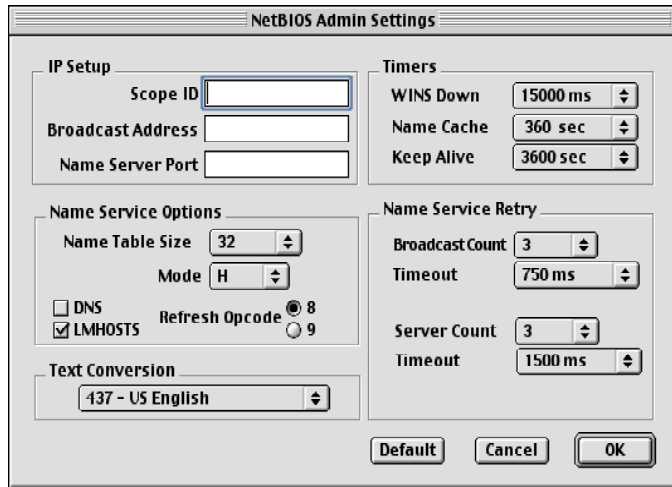
There are many options on the Administrator Panel. We will discuss each of them on the following pages.

Administrator Options

The Name Table Size Pull-down menu determines the number of names that can be stored in the name table. The name table consists of local and cached names. A large Name Table Size requires more memory but allows for more cached names. This minimizes time spent on name queries and reduces network traffic. The optional values are: 16, 32, 64, 25 and 128. The default is 32.

The Mode Pull-down menu sets the NetBIOS mode for the local node. There are four modes to choose from:

B - NetBIOS does not use a WINS server. Instead it obtains network information by broadcasting datagrams on the subnetwork. DAVE will not find other computers in different subnets in this mode.

P - NetBIOS does not broadcast but obtains network information by sending directed datagrams to the WINS server.

M - NetBIOS obtains network information by first broadcasting datagrams on the subnetwork. If no answer is obtained NetBIOS uses the WINS server to resolve the name.

H - NetBIOS obtains network information by first using the WINS server. If no answer is obtained NetBIOS broadcasts datagrams on the subnetwork.

The NetBIOS mode default is dependent upon the WINS settings on the Main control panel. See the WINS Check Box section in this chapter. If a Primary WINS is set, H mode is the default. If a Primary WINS is not set, B mode is the default.

The IP Setup determines how your computer interfaces with other computers on your IP network.

Scope ID - If your node is part of a NetBIOS scope, the Scope ID will be appended to your NetBIOS name during any transactions with other nodes. The default value is no Scope ID.

NOTE: Computers with different Scope IDs will not recognize each other on the network. Use this option with caution.

Broadcast Address - NetBIOS will use this address to broadcast datagrams to all nodes on the network. You must enter a valid broadcast address in this field. This has all ones or zero bits for the host address according to your subnet mask. The network number must be a valid net number. The default value is the node's default IP

broadcast address.

Name Server Port - The Name Server Port is the UDP
port NetBIOS uses to send and receive NetBIOS name
service datagrams. The default name server port is 137.
The NetBIOS driver assumes that the NetBIOS
Datagram Service port number is the Name Server port
number plus 1. The default NetBIOS Datagram service
port number is 138. The NetBIOS Session Service port
number is assumed to be the Name Server port number
plus 2. The default NetBIOS Session Service port
number is 139.

Like Microsoft's version of NetBIOS, this version of
NetBIOS allows you to change the Name Server Port
value. Microsoft's versions of NetBIOS use the default
port numbers mentioned above and will be expecting
any connecting nodes to use the same defaults.

WARNING: DO NOT CHANGE THE NAME SERVER
PORT NUMBER UNLESS YOU ARE ABSOLUTELY SURE
OF YOUR CHANGES.

The Timeout values are used to determine the amount
of time NetBIOS waits before performing certain
actions.

WINS Down - The time, in milliseconds, that the NetBIOS
driver waits before attempting to connect to a WINS server.
This attempt will only occur if there was a previous attempt
that failed. Optional values are 7500, 15000 and 30000. The
default value is 15000 (15 seconds).

Cache - The time, in seconds, a remote name remains in the
names table. Optional values are 60, 180, 360, 900 and 1800.
The default value is 360 (6 minutes).

Keep Alive - The time, in seconds, that NetBIOS sends Keep
Alive packets to the client about its current sessions. The

NetBIOS Keep Alive packets are a secondary effort due to TCP sending Keep Alive packets and notifying NetBIOS of all bad sessions. Optional values are 1200, 1800, 3600, 5400 and 7200. The default value is 3600 (1 hour).

Server Query specifies how the name server interacts with the NetBIOS Name Service datagram.

Count - The number of times the NetBIOS driver sends the same datagram to the name server. Values are from 1 to 10. The default value is 3. If the server replies that it has received the datagram, no more packets will be sent.

Timeout - The time, in milliseconds, the NetBIOS driver waits before sending the same datagram. Values are 750, 1500, 3000 and 15000. The default value is 1500 (1.5 seconds).

Broadcast Query specifies how the NetBIOS driver broadcasts name server datagrams over the local network.
Count - The number of times the NetBIOS driver broadcasts the same datagram over the local network. Values are from 1 to 10. The default value is 3.

Timeout - The time, in milliseconds, the NetBIOS driver waits before broadcasting the same datagram. Values are 375, 750 and 1100. The default value is 750 (.75 seconds).

The Refresh Op parameter specifies the operation code (OPCODE) that NetBIOS uses in name refresh packets. NetBIOS sends a message to the name server on an unspecified time to time basis. This message notifies the name server that your NetBIOS name is still connected to the network. The name server replies and sets an allotted time in which your name is still valid. Before the time has elapsed, NetBIOS sends the message again.

Most NetBIOS implementations use OPCODE 8. However, some implementations use OPCODE 9. The default value is OPCODE 8.

The Domain Name System (DNS) check box is used for name resolution and specifies whether the Domain Name Resolver is used. When the DNS check box is selected, NetBIOS uses the DNS to resolve names. NetBIOS will only use the DNS after Windows Name Server (WINS), broadcasting and the LMHOSTS file have failed to resolve them. DNS is a fail-safe so that NetBIOS resolves names that were not resolved by other methods. It is most useful when searching for an IP address of a server outside your local network.

The LMHOSTS (LAN Manager Hosts) check box is used to resolve names that were not resolved by the Windows Name Server (WINS) or broadcasting. When the LMHOSTS check box is selected NetBIOS refers to the LMHOSTS file. NetBIOS will only use the LMHOSTS file after WINS and broadcasting fail to resolve the name. The DAVE installer adds a file named "LMHOSTS sample" that you can edit with SimpleText. The LMHOSTS file must be saved as "LMHOSTS" and is located in the Preferences folder within the System folder.

The LMHOSTS file contains mappings of IP addresses to computer names (which are NetBIOS names). NetBIOS accesses the LMHOSTS file asynchronously, allowing it to be used for name resolution at all times. You can use SimpleText or any other text editor to create and edit the file. Each entry should be placed on a separate line and the IP address should begin the first column followed by the corresponding computer name. The IP address and computer name should be separated by at least one space or tab. Commands such as "#PRE" or "#DOM" can also be specified for each entry. If a

name request is made for a name ending in hex 1C or hex 1B, and the name matches the "DOM:" specifier, then the name is resolved.

Example:

198.137.241.30 SERVERNAME1 #PRE
198.137.241.40 SERVERNAME2 #PRE #DOM:COMPANYDOMAIN
198.137.241.50 SERVERNAME3
198.137.241.60 SERVERNAME4

This example resolves SERVERNAME1<00> and SERVERNAME1<20> to 198.137.241.40, and also resolves COMPANYDOMAIN<1C> and COMPANYDOMAIN<1B> to 198.137.241.40.

The "DOM:" works differently from Windows. Windows platforms can put multiple "DOM:" entries in LMHOSTS for the same domain. The Windows machine is supposed to select the nearest one. DAVE always selects the first one unless the "#PRE" command is used. Later entries are ignored. If both the "#PRE" and "#DOM:" commands are used the domain is cached with a <1C> type.

Putting "#DOM" entries in the LMHOSTS file will not cause them to appear as a DAVE Client Chooser item. This would only be useful to DAVE users in the following circumstances:

• There is a "#DOM" entry that matches the workgroup in the NetBIOS control panel. DAVE uses the corresponding IP address as the browse master.
• The user is logging onto a domain and there is a "#DOM" entry for that domain. DAVE Access gets the corresponding IP address.
• DAVE Sharing gets the name resolved when accessing

a domain controller in user-level mode.

For further information on the LMHOSTS file see the LMHOSTS Sample file in your Preferences folder. Additional information is available from *Microsoft - Chapter 4, Setting Up LMHOSTS, in the TCP/IP-32 for Windows for Workgroups 3.11 - Microsoft Development Library*.

Text Conversion

DAVE supports local character sets, including Windows code page 437 for US English and some Western European systems. Code page 850 is included for many European or Latin American users, and 932 is supported for Japanese Shift- JIS users. You need to have the Apple Text Encoding Converter, version 1.4 or later to take advantage of these text conversions. Your selected conversion method should match the OEM Code Page that the Windows computers on your network are using.

You can also set DAVE to work with the old 2.0 conversion method. This is useful if you have other Macintoshes running DAVE 2.0 that you share files with, or if you have created a large number of files with DAVE 2.0 and find that their names do not display properly with the new code page conversion selected.

DAVE also displays computer names, domain names and usernames properly using the code page conversion you have selected.

The Dave Installer installs the Apple Text Encoding Converter automatically if you need it.
Use this menu to select a text conversion method to support the code page conversion method to support the code page conversion in use on your network. We recommend rebooting after changing this menu setting to prevent memory fragmentation.

Chapter 11

Control Strip and Location Manager

About the Control Strip

The Control Strip provides a quick and easy way to change some of your computer's settings. For example, you can use it to turn file sharing on or off and to adjust the computer's speaker volume.

DAVE Control Strip Module

The DAVE Control Strip is a convenient way of accessing many of the features found in DAVE.

Click on the DAVE Control Strip to access the menu:

NetBIOS NetworkingeEnabled:

NetBIOS Networking disabled:

```
Open NetBIOS
Open DAVE Sharing
Open DAVE

Disable NetBIOS Networking

Turn DAVE File Sharing on

Log Off
Update Finder Window
```

DAVE Location Manager Manager

You can create different groups of system software settings known as locations for you computer using the Location Manager control panel in your Control Strip.

If you use your computer in different places, you can use the DAVE Location Manager to keep a group of settings for each location.

If you connect to a network using different methods, such as TCP/IP, PPP and AppleTalk, you can create a group of settings for each kind of network connection.

If your computer is shared by several people who use different settings, you can set up each user's settings as a separate group.

Setting up Multiple DAVE Locations

1. Select **Control Strip/Location Manager/Open Location Manager**. The **Location Manager** dialog box displays.
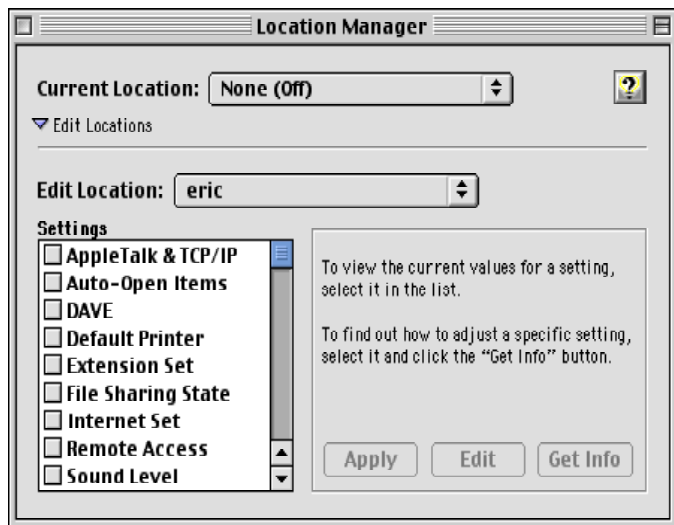
2. Click **File/New Location** and enter the name of the location you want to create and click Save.

3. Select the new location from the **Current Location** drop down.

4. Select DAVE in the **Settings** dialog box and click the checkbox next to "DAVE".

5. Click the **Apply** button to add the current setting to the DAVE location.

6. To prevent DAVE settings from changing when switching to a different location, make sure the checkbox next to "DAVE" is unchecked for the new location.

Chapter 12

Troubleshooting

NOTE: Check our website (http://www.thursby.com/support) for the latest in technical support solutions.

This chapter contains basic information on troubleshooting the most common problems. Additional support references are also listed in this chapter (i.e. books, website, phone support, email support, etc.)

You may have trouble getting DAVE to work on your Macintosh. Most problems are easily solved and are usually due to your Macintosh's configuration.

DAVE depends on the following items:
- Proper network cabling
- Proper or **Open Transport TCP/IP** configuration
- Correct license information provided to DAVE

DAVE Error Messages

Some error messages have specific numbers associated with them. If you have received an error message that does not have a number associated with it, look up the error in the alphabetized list in this section.

If you have received an error message that has an error number associated with it, look that error up in the numbered list in this section first. If the error is not listed, check the alphabetized list later in this section.

Connecting from a Windows computer to a Macintosh:

If any problems exist when trying to connect from Windows to a particular Macintosh, follow these steps to determine the problem. These steps require you to know the TCP/IP address and NetBIOS name of the Macintosh.

Details:

This information is helpful for customers using Windows and receiving the following error:

\\<Macintosh> is not accessible.

The computer or sharename could not be found. Make sure

143

you typed it correctly, and try again.

Solution:

The following test assumes the TCP/IP address of the the Macintosh is "192.168.0.1" and the name of the Macintosh is "MAC". Replace these as necessary for your network. These commands are entered from a DOS prompt (in Windows 9x, choose Start | Programs | MS-DOS Prompt).

- Test TCP/IP

```
C:\ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=2ms TTL=255
Reply from 192.168.0.1: bytes=32 time=2ms TTL=255
Reply from 192.168.0.1: bytes=32 time=1ms TTL=255
Reply from 192.168.0.1: bytes=32 time=1ms TTL=255
```

- Test NetBIOS over TCP/IP

```
C:\> nbtstat -A 192.168.0.1

        NetBIOS Remote Machine Name Table

   Name                Type          Status
   -------------------------------------------
   MAC            <00>  UNIQUE      Registered
   MAC            <20>  UNIQUE      Registered
   WORKGROUP      <00>  GROUP       Registered

   MAC Address = 08-00-07-16-0A-07
```

NOTE: One of the listed names should be followed by "<20>" signifying that sharing is enabled on the Macintosh.

- Test name resolution:

```
C:\> nbtstat -a MAC

        NetBIOS Remote Machine Name Table

   Name                 Type         Status
   ---------------------------------------------
   MAC             <00>  UNIQUE       Registered
   MAC             <20>  UNIQUE       Registered
   WORKGROUP       <00>  GROUP        Registered

   MAC Address = 08-00-07-16-0A-07
```

NOTE: This should list the same information as the previous test.

If the above tests were successful, you should be able to access the Macintosh from Windows. If you can't see the Macintosh in the Network Neighborhood, use Start/Find/Computer and enter the NetBIOS name for the Macintosh. Once found, you can open the computer icon to access the shared folders and printers.

Connecting from a Macintosh to a Windows computer

If any problems exist when trying to connect from the Macintosh to a particular Windows computer, follow these steps to determine the problem. These steps require you to know the TCP/IP address and NetBIOS name of the Windows computer.

Details:

This information is helpful for customers using DAVE Client and reporting Error #5 or Error #20.

145

Solution:

- Test TCP/IP

Using a utility such as OTTool, ping the Windows computer using the TCP/IP address. The utility is available for download from the following location:

ftp://ftp.thursby.com/Utilities/Neon_Software OTTool10.sea.hqx

To ping, open OTTool, enter the TCP/IP address of the Windows computer in the box provided, and click the Ping button. If any packets are 'received', ping was successful. If no packets are 'received', ping failed.

- Test NetBIOS over TCP/IP

Open the NetBIOS control panel, click Info..., select Display Remote Names..., enter the TCP/IP address of the Windows computer, and click Find. You should receive a name table for the remote computer. One of the names should be followed by <20> signifying that the remote computer is sharing files.

- Test name resolution

Open the NetBIOS control panel, click Info..., select Display Remote Names..., enter the NetBIOS name of the Windows computer, and click Find. You should receive a name table for the remote computer (this is the same table from the previous test). Again, one of the names should be followed by <20> signifying that the remote computer is sharing files.

If the above tests were successful, you should be able to access the remote computer using DAVE Client. If you receive an error immediately after selecting DAVE Client in the Chooser, do the following:

click Setup...
check "disable Browse Services"
click Add...

enter the NetBIOS name of the Windows computer
click OK
click Save

The name will appear in the Chooser. Select it and click
OK.

How do I test TCP/IP connectivity from a PC?

After you have configured TCP/IP on two computers, one of
them being a PC, you can use the "ping" command on the
PC to test the connection. To do this in Windows, open a
DOS prompt and enter the following command:

```
ping <address>
```

Where <address> is the TCP/IP address for the computer you
are trying to connect to. The message "Reply from..."
signifies success. The message "Request timed out." or
"Destination host unreachable." signifies failure. Here is an
example of a successful ping command:

```
C\:> PING 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<10ms TTL=255
Reply from 192.168.0.1: bytes=32 time<10ms TTL=255
Reply from 192.168.0.1: bytes=32 time<10ms TTL=255
Reply from 192.168.0.1: bytes=32 time<10ms TTL=255
```

How do I test TCP/IP connectivity from a Macintosh?

After you have configured TCP/IP on two computers, one of
them being a Macintosh, you can use a Macintosh utility to
test the connection. Some utilities are available from the
support section of the Thursby Software Systems web site
(*http://www.thursby.com/support*). A few of the tools you

will find are listed below:

- **OTTool v1.0 (Neon Software)** - To use this utility, launch *OTTool*, enter the TCP/IP address of the remote system and click "Ping". Because of a bug in *OTTool* you will need to click 'Done' and then "Ping" again. If the received count increments, the connection is good. A received count of zero means there is a problem.

- **MacTCP Ping v2.0.2 (Apple Computer)** - To use this utility, launch *MacTCP Ping*, enter the TCP/IP address of the remote system and click "Start Ping". A "success" response means the connection is good. The "timeout" response means there is a problem.

- **AGNetTools v1.0 (The AG Group, Inc.)** - To use this utility, launch *AGNetTools* and click your mouse to dismiss the splash screen. Under "Tool", choose "Ping...", enter the TCP/IP address of the remote system and click "Ping". A green "check mark" in the received column means the connection is good. A red "X" in the received column means the connection has failed.

How do I test sharing from a PC?

Once you have configured and tested TCP/IP, verify that the computer you would like to connect with is sharing directories. In Windows, open a DOS prompt and enter the following command:

```
nbtstat <address>
```

Where <address> is the TCP/IP address for the computer you are trying to connect to. A response of "Host not found." means that the remote computer did not respond and can not be reached using DAVE Client. If the command is successful you will receive a list of names. A name followed by

<20> means the remote computer is sharing files and should be reachable using DAVE Client or by using Microsoft's Network Neighborhood.

NOTE: This command can be used from the same PC that is being tested.

Here is an example of a successful "nbtstat" command:

```
C:\> nbtstat -A 192.168.0.1

   NetBIOS Remote Machine Name Table

Name                Type        Status
          ─────────────────────────-
NORM          <00>  UNIQUE      Registered
WORKGROUP     <00>  GROUP       Registered
NORM          <03>  UNIQUE      Registered
NORM          <20>  UNIQUE      Registered
WORKGROUP     <1E>  GROUP       Registered
ADMIN         <03>  UNIQUE      Registered

MAC Address = 00-00-1B-3B-18-5D
```

How do I test sharing from a Macintosh?

Once you have configured and tested TCP/IP, verify that the computer you would like to connect with is sharing directories. To do this, launch the *NetBIOS Control Panel*, click "Info..." and select "Name Lookup" tab from the "NetBIOS Info" window. Enter the TCP/IP address of a remote computer and click "Find:". A response of "<Name> not found." means the remote computer did not respond. If the command is successful you will receive a list of names. A name not followed by brackets (i.e."<20>") means the computer is sharing files and should be reachable using DAVE Client or by using Microsoft's Network Neighborhood.

Can I use DAVE over PPP Connections?

Although DAVE uses TCP/IP which can be used over PPP, DAVE does not directly interact with any PPP services. All of the features of PPP (password encryption, dialback, etc.) are part of the PPP software unrelated to TCP/IP or DAVE.

Apple's Open Transport PPP has some limitations when using Microsoft's Remote Access Service (RAS) as compared to a Microsoft RAS Client. For example, OT/PPP does not support "encrypted authentication" or "call back"in some versions of Open TRansport. To use OT/PPP with Microsoft RAS, configure RAS to "Allow any authentication including clear text" and choose "No Call Back" in Remote Access Admin for the selected user.

Some non-Apple PPP clients support encrypted authentication and call back. Products that provide PPP clients for the Macintosh include:

- TunnelBuilder by Network TeleSystems (http://www.nts.com)
- LinkUPPP by FCR Software, Inc. (http://www.fcr.com)
- FreePPP by FreePPP Group, Inc.
- Some versions of Open Transport

Contact the product's manufacturer for more details.

Configuration

To configure DAVE for use over PPP you must first configure PPP. If you haven't been using PPP for other applications, take time to test PPP before installing DAVE. See *How do I test TCP/IP from a Macintosh?* in this chapter.

Once the PPP connection is configured and working prop-

erly, install DAVE. After the required reboot, dial the PPP
connection then configure DAVE normally.

Configuring the RAS server portion is beyond the scope of
this document. No special RAS configuration is necessary
except for the limitations listed above. If your RAS server is
not already configured, information on this topic can be
found using the "Help" utility on *Windows NT Server*.

Browsing

Browsing is the ability to see remote computers on your
network automatically. By default, DAVE uses broadcast
messages for browsing. By default, RAS does not allow
broadcast messages over the PPP connection. To get DAVE
to browse using PPP some modifications must be made.

• One solution is to use a WINS server on your network
and configure DAVE with the WINS server's address.
WINS is the Microsoft solution that allows successful
Microsoft networking over multiple TCP/IP subnets.

• Another solution is to modify the RAS server so that it
forwards broadcast messages to the local network. This
information should be available in your RAS server docu-
mentation.

• The third solution is to disable the DAVE browsing
feature and to keep a list of the remote computer names you
wish to use. To do this, open the Chooser, select *DAVE
Client* and click "Setup". Deselect the "Browse Services"
option and add your remote computer names in the "Com-
monly Used Servers" list. In this configuration only the
servers you have added will appear in your Chooser list.
You may also need to create a LMHOSTS file with an entry
for each remote computer. See Chapter 10, NetBIOS
Control Panel for details on LMHOSTS.

151

NOTE: Although this configuration is limited to the computer names found in the "Commonly Used Servers" list, it has the least amount of traffic over the PPP connection and can make for faster remote computer selection.

- A fourth solution is to use the "Mount Manually" option in DAVE Client. With this option you can connect using the remote computer's TCP/IP address and the share name. See Chapter 6, *DAVE Client* for details on "Mount Manually".

Can I access shares in another subnet or over the Internet?

If your network is configured with multiple TCP/IP subnets or you are accessing shares across the Internet, a special configuration is necessary for DAVE to work. This is because the default DAVE configuration uses TCP/IP broadcast messages to find information about the network. Those broadcasts are limited to your local TCP/IP subnet.

Windows Internet Name Service (WINS) is Microsoft's solution to networking with multiple TCP/IP subnets. If you have a WINS server on your network you should configure NetBIOS with WINS server information. This method helps to avoid common browsing problems in DAVE Client (Error 5 and Error 20). If you do not have WINS the following information may help you understand and correct problems you may encounter.

Using DAVE Client there are three basic steps to accessing a remote computer:

1. Getting a list of computer names
2. Getting the TCP/IP address for a particular computer
3. Attempting to establish a connection to a computer

Getting a list of computers to display in the Chooser is called

'browsing'. In the default configuration, this list is obtained by sending a broadcast message requesting the master browser service for the workgroup defined in NetBIOS. If this request fails, "Error 5" is usually reported. Without WINS browsing cannot be used properly over multiple subnets.

One alternative to browsing is to manually enter a list of computers. This list of computer names is entered in DAVE Client and will always be available even when browsing does not work properly. To do this, open *DAVE Client* and click Setup. The left half of this window is titled *Commonly Used Servers* and is a list of computer names that will display when DAVE Client is selected. Click "Add" to add a name or select a name and click "Remove" to remove one. If browsing does not work on your network, disable "Browse Services" to avoid an "Error 5".

Another alternative is to use *Mount Manually* to make a connection to a seldom used computer. In this configuration the computer name does not need to be entered in the *Commonly Used Servers* list.

Once a list of computers is available, the user selects a particular computer name. In the default configuration, the remote computer's address is obtained by sending a broadcast message that requests the TCP/IP address associated with the computer name. If the request fails "Error 20" is usually reported. There are a number of ways that NetBIOS can obtain a TCP/IP address.

- **Name Cache** - NetBIOS first checks to see if the computer name has already been used. If so, NetBIOS uses the previously obtained address. Entries can be added to the name cache manually by using entries from the "LMHOSTS" file with the "#PRE" option. See Chapter 5, *NetBIOS Control Panel* for details on LMHOSTS.

- **Broadcast** - If NetBIOS is configured to use broadcast (the default) a broadcast message is sent. This is limited to the local subnet.

- **WINS** - If NetBIOS is configured to use WINS a request for the address is sent to the WINS server.

- **DNS** - If the computer's NetBIOS name matches the TCP/IP (DNS) name of that computer, NetBIOS can be configured to obtain the TCP/IP address using DNS. To do this, open the *NetBIOS Control Pane*l, select "Admin". and select the DNS check box. In this configuration, "name to address" resolutions will be sent to DNS if other options fail. If the NetBIOS name of a computer does not match the DNS name and DNS is used to obtain the TCP/IP address, DAVE Client will report "Error 20".

- **LMHOSTS** - If the TCP/IP address cannot be resolved from the network options listed above, NetBIOS will check the LMHOSTS file (if it exists) for an entry matching the remote computer name. See Chapter 5, *NetBIOS Control Panel*, for details on LMHOSTS.

- **Mount Manually** - If the Mount Manually option is used the remote computer's TCP/IP address can be entered and used directly. In this process the address is already given and the computer name does not need to be resolved.

Once a TCP/IP address is obtained for the remote computer, DAVE will attempt to establish a connection. DAVE should operate the same on a multi-subnet network or across the Internet as it would on a single-subnet network.

Can I use DAVE on a LAN and still dial an Internet service provider?

Apple's TCP/IP is limited to one interface at a time. Be-

cause of this limitation, configuring TCP/IP for dial-up will cause a failure in TCP/IP connections using Ethernet. IPNlink by Sustainable Softworks (http://www.sustworks.com) is a third-party product that allows PPP and Ethernet TCP/IP connections simultaneously. Contact the product's manu–facturer for more details.

Can I use DAVE to connect to non-Windows plat-forms?

Although DAVE formally supports only Microsoft plat-forms, many CIFS implementations exist that may work properly with DAVE. Some examples of other CIFS imple-mentations include:

- Digital's Pathworks
- IBM's OS2/Warp
- SCO's VisionFS
- Network Appliance's Filer
- SAMBA

See the "README" file and our web site <http://www.thursby.com> for the latest information related to this topic.

Can DAVE print to non-PostScript printers?

No. DAVE only supports printing with Apple's LaserWriter print drivers (PostScript only).

Can I turn off AppleTalk and still use DAVE?

Most DAVE users can turn off AppleTalk and still use all of DAVE's features. The only exception is for printing with versions of MacOS earlier than 8.5. These versions will use the DAVE Print Client .

DAVE Print Client uses LaserWriter 8 which requires
AppleTalk. If you are not using DAVE Print Client,
AppleTalk can be disabled.

If you are using DAVE Print Client but would like the
AppleTalk protocol removed from your Ethernet network,
you can configure the AppleTalk Control Panel to use printer
port, modem port, or Apple's "Remote Only" virtual
AppleTalk port. This configuration keeps the AppleTalk
protocol off Ethernet and keeps DAVE configured printer
names from being listed in other Macintosh Chooser lists.

The "Remote Only" extension is included in the "Extras"
folder for both OT 1.1.1 and OT 1.1.2. The current version
is 2.1. Place this item in your Extensions folder within the
System Folder. After rebooting, open the AppleTalk Control
Panel and select "Remote Only" as the AppleTalk
connection.

Can DAVE access PC compatibility cards?

DAVE will work with a PC compatibility card in all cases
with one exception. DAVE cannot connect to a PC card in
the SAME Macintosh and access PC files within a container
file. DAVE is able to mount any device on a remote
Macintosh PC card. It is also able to mount any device on
the same Macintosh PC card that is not a container file
including floppy disks, CDs, PC formatted hard drive
partitions, and PC formatted removable media. Future
versions of the Macintosh OS may remove this limitation.

How can I add three-character extensions to my Macintosh file names?

NameCleaner is a shareware utility that enables the
Macintosh OS to manipulate file names and types. It is

especially designed to help move files to-and-from foreign file systems such as MS-DOS, Windows 3.x, Windows95, Windows NT, NetWare and Unix.

More details and a downloadable version of NameCleaner can be found at the Sig Software home page (http://www.sigsoftware.com).

How can I get more speed out of DAVE?

DAVE does a lot of work that the PC does not have to do and has Finder information and resource forks. This means to execute the same operation, DAVE has to accomplish at least 2 to 3 times more work than the PC. The same applies to directories. If you are connecting over the Internet you can turn off the "Desktop Database" and "auto-refresh" options. This should help increase the speed of DAVE.

We believe the future Mac OS may help this problem. The Macintosh Finder is a single thread process that does everything synchronously. DAVE has been designed to work asynchronously.

Is DAVE year 2000 compliant?

DAVE has been properly designed to convert date and time formats between the Apple Mac OS, Windows NT and Windows 95. There is nothing special about the representation of the year 2000 in the DAVE product or any of the related operating systems that would cause the DAVE software to fail in that year.

Numbered Errors:

```
A NetBIOS error has occurred (Case 3).

The NetBIOS driver reported that TCP/IP
is not currently running. Verify that
either MacTCP or Open Transport is in-
```

```
stalled and running.
```

Cause:
This error is reported when DAVE Client is selected but NetBIOS is unable to open the TCP/IP drivers. Here are some specific causes for this error message:

- TCP/IP is configured as inactive.
- TCP/IP is configured for PPP and the PPP connection is not established.
- A hardware problem (cable connection, etc.) is keeping TCP/IP from loading.

Resolution:
Open the TCP/IP Control Panel. This should report a separate error message that may explain why TCP/IP is not available. Verify that TCP/IP is working before using DAVE. See the Troubleshooting section on how to test TCP/IP in this chapter.

Error #:   1

```
The DAVE Sharing Extension could not
start because no PDC could be found.
```

Cause:
When starting, DAVE Sharing Extension could not find a Primary Domain Controller (PDC) or a Backup Domain Controller (BDC) in the domain entered in the DAVE Sharing Control Panel.

Resolution:
Verify that the domain entered in the DAVE Sharing Control Panel is correct and that either a PDC or BDC is available on your network. Also verify that the PDC and BDC are reachable using TCP/IP. See the section on how to test TCP/IP connectivity in this chapter.

Error #: 2/-53

```
The remote server reported an error.

The remote volume is not ready or the
share name is wrong.  Please check and
make sure that the volume is on-line or
the share name you typed in is correct.
```

Cause:
This error is reported when the DAVE Client attempts to
mount a volume and the remote computer reports that the
volume doesn't exist. Here are some specific causes for this
error message:

- The item is no longer shared on the remote computer.
- The share name was entered incorrectly when Mount
Manually was used.

Resolution:
If you are opening an alias of a volume when receiving this
error, use the Chooser to mount the volume and recreate the
alias after you are successful. If you are using Mount
Manually when receiving this error, verify that the share
exists on the remote computer.

Error #: 4

```
The DAVE Sharing Extension could not
start because the DAVE Sharing Prefer-
ences file could not be opened.
```

Cause:
When starting, DAVE Sharing Extension encountered an
error while trying to open the DAVE Sharing Preferences
file. Here are some specific causes for this error message:

- DAVE Sharing Preferences has been opened by another

application.
- DAVE Sharing Preferences is corrupted.
- DAVE Sharing Preferences is locked.

Resolution:
If possible, restore the DAVE Sharing Preferences file from backup. If that is not possible, find the file DAVE Sharing Preferences in the Preferences folder within the System Folder and throw it away. Open the DAVE Sharing Control Panel and reconfigure DAVE Sharing.

Error #:   5

```
A NetBIOS error has occurred

Your Master Browser is no longer responding to our
requests.  Make sure the Master Browser is still
running and you have the correct workgroup name
defined in NetBIOS.
```

Cause:
Browsing is the ability to choose a server from a list of available servers on the network. The heart of browsing is a service that runs on Windows called Master Browser (or sometimes called Browse Master). This service keeps track of the computers that are available on the network in each workgroup, domain, protocol, subnet, etc. For more information on Master Browsers, see your Microsoft documentation.

When a user selects DAVE Client in the Chooser, DAVE attempts to locate the Master Browser for the NetBIOS workgroup/domain. If this fails,Error #5 is displayed. If you use a WINS server, check that the workgroup domain name exists on your WINS server. If not, the following is a good test for a simple network.

Resolution:
Because Error #5 can often be the first sign of network problems, here are a few important steps to verify that your network is working properly:

Hardware - Check that your network connection is working by selecting the AppleTalk control panel and selecting Ethernet. If this is successful, reselect the original setting. If this fails, check cabling and other hardware components.

Network Protocol - Check that TCP/IP is working using a ping utility. Windows products have a ping command that can be used from a command prompt. The command is

•   ping <TCP/IP Address>

where <TCP/IP Address> is the TCP/IP address of the Macintosh.

Macintosh utilities can be downloaded from the Internet. We have a ping utility that works with Open Transport that can be downloaded from the following URL:

•   ftp://ftp.thursby.com/Utilities/Neon_Software/ OTTool10.sea.hqx

If a ping test fails, check the TCP/IP configuration on both machines.

Once TCP/IP has been tested and is working properly, check the following settings in the NetBIOS control panel:

•   WINS - If you are using WINS, verify that the WINS server is reachable by using a ping utility. If you are not using WINS, the Macintosh should be in the same Workgroup and IP subnet as a Windows computer on the network. Verify that the Windows computer is reachable by using a ping utility.

•   Workgroup - Verify that the name you've entered in the Workgroup field of the NetBIOS control panel is the name of a Domain or Workgroup on your network. As an alternative, leave the workgroup field blank. With this configuration, select DAVE Client in the Chooser and open Entire Network; this should provide a list of available workgroups.

•   Scope ID - If a Scope ID is being used on the Microsoft Network, verify that the correct Scope ID is correctly entered in the Administrator Options window of the NetBIOS control panel.

NOTE: Most networks use a blank Scope ID!

The Test:

Open the NetBIOS control panel, click in the 'Name' field, press TAB to highlight the 'Workgroup' field, and press 'delete'. Close the NetBIOS control panel and save changes.

Now open Chooser and select DAVE Client. You should NOT receive any errors at this point.

NOTE: If you receive an error at this point, either the previous step was not successful or the NetBIOS Preferences file is corrupted. You can delete the NetBIOS Preferences file, reboot, and reconfigure NetBIOS to correct this problem.

Select 'Entire Network' and click OK.
•   If you receive a window of workgroups, you can use DAVE Client in this configuration or you can add one of the listed workgroups to the NetBIOS control panel. At this point, the browsing problem is solved.
•   If you receive Error #5, no computer on your network responded to our master browser request.

Always, a good comparison for DAVE is Windows 95/98

configured with TCP/IP as the ONLY protocol (without
NetBEUI or IPX/SPX). In this configuration, the Windows
Network Neighborhood should list the same
computers as DAVE Client.

As an alternative, DAVE can be used without browsing. To
configure this, open Chooser, select DAVE Client, click
Setup, disable 'Browse Services' and add the name of the
remote computer in the 'Commonly Used Servers'
list. Saving this configuration will allow you to select that
name in the Chooser. If this connection fails, refer to
documentation on the error

```
A NetBIOS error has occurred.
```

```
Your Master Browser is no longer re-
sponding to our requests.  Make sure the
Master Browser is still running and you
have the correct workgroup name defined
in NetBIOS.
```

Cause:
DAVE Client broadcasts a message requesting information
about the workgroup/domain entered in NetBIOS. If a
response is not received this error is displayed.

Resolution:
Because Error #5 can often be the first sign of network
problems, here are a few important steps to take in order to
verify that your network is working properly:

• Hardware - Check that your network connection is
working by selecting the AppleTalk Control Panel and
selecting Ethernet. If this is successful, re-select the original
setting. If this fails check cabling and other hardware
components.

• Network Protocol - Check that TCP/IP is working by
using a ping utility. Windows products have a ping com-

163

mand at a command prompt. Macintosh utilities can be downloaded from the Thursby Software Systems web site. If ping fails verify the TCP/IP configuration on both machines.

Once it is confirmed that TCP/IP is working properly, check the following DAVE configurations:

- WINS - If you are using WINS verify that the WINS server is reachable by using a ping utility. If you are not using WINS the Macintosh should be in the same Workgroup and IP subnet as a PC on the network. Verify that the PC is reachable by using a ping utility.

- Workgroup - Verify that the name you've entered in the Workgroup field of the NetBIOS Control Panel is the name of a Domain or Workgroup on your network. As an alternative leave the workgroup field blank. With the field blank, select DAVE Client in the Chooser and open Entire Network; this should provide a list of available Workgroups.

- Scope ID - If a Scope ID is being used on the Microsoft Network, verify that the correct Scope ID is correctly entered in the Administrator Options window of the NetBIOS Control Panel.

- If possible, verify that browsing works properly from a PC with TCP/IP installed as the only network protocol. Do this by opening the Network Neighborhood. If you cannot see the computer you are trying to reach, check the configuration of Microsoft Networking on the remote computer.

As an alternative, DAVE can be used without the browsing function. Open DAVE Client, click "Setup", disable the "Browse Services" option and add the remote computer in the list of "Commonly Used Servers". Saving this configuration will allow you to select that computer from the Chooser. If this connection fails refer to documentation on the new error reported.

Error #:   7/-53

```
The remote server reported an error.

The remote volume is not ready or the
share name is wrong.  Please check and
make sure that the volume is on-line or
the share name you typed in is correct.
```

Cause:
This error is reported when the DAVE Client attempts to
mount a volume and the remote computer reports that the
volume is not ready. The remote share is on removable
media and the media has been ejected.

Resolution:
Verify that the directory being shared is currently available
on the remote computer (i.e. if the share is a CD verify that
the CD is inserted).

Error #:   20

```
A NetBIOS error has occurred

The Computer Name selected is not recognized
by the network or does not match the remote
computer.  Please verify that both the Com-
puter Name and the Scope ID you are using
are correct for the remote machine.
```

Cause:
Once DAVE Client obtains a NetBIOS name for a remote
computer, it must find a TCP/IP address that is associated
with that name and make a connection. If the TCP/IP
address cannot be found, if the remote computer does not
respond, or if the remote computer denies the
connection, DAVE Client returns this error.

Here are some specific causes for this error message:

•   The remote machine is down.

•   You connected to the remote machine earlier and DAVE cached the IP address. Since then, the machine's IP address has changed (either manually or using DHCP) causing DAVE to attempt a connection to the wrong address.

•   The NetBIOS name of the remote machine does not match the NetBIOS name being broadcast by the Master Browser.

•   The DNS name is different then the NetBIOS name and DNS is used to obtain the IP address of the remote machine.

•   Too many TCP/IP hops (routers) exist between DAVE and the remote machine.

•   The Scope ID of the Macintosh (Control Panels, NetBIOS, Admin...) does not match the Scope ID of the remote computer.

NOTE: Most networks use a blank Scope ID!

Resolution:
Follow these steps to correct this error:

•   Restart your Macintosh.

•   Open the NetBIOS control panel, select Info..., and choose Name Cache.

•   If the name of the remote machine is listed, it may be incorrectly defined in LMHOSTS.

•   Attempt to connect to the remote machine (if successful,

problem resolved).

• Open the NetBIOS control panel, select Info..., and choose Name Cache.

• If the remote computer name does not appear, a TCP/IP address could not be found for that name. Check that the machine is reachable from another PC. You may want to configure LMHOSTS with this computer's name and TCP/IP address. See the NetBIOS section of the user manual for details on LMHOSTS.

• If the remote computer name does appear, the IP address was found but connection failed.

• Ping the IP address to verify TCP/IP works.

• If TCP/IP works, compare the NetBIOS name of the PC to the name DAVE Client displayed in the Chooser. Also, compare the Scope ID of the PC to the Scope ID in the Admin... section of the NetBIOS control panel.

NOTE: Most networks use a blank Scope ID!

Error #:   98

```
A NetBIOS error has occurred.

The NetBIOS driver reported that TCP/IP
is not currently running.  Verify that
either MacTCP or Open Transport is in-
stalled and running.
```

Cause:
This error is reported when DAVE attempts to access the NetBIOS drivers when the TCP/IP drivers are not available. Here are some specific causes:

- TCP/IP settings have been changed or another configuration has been selected.
- The Macintosh computer has been put to sleep. Some Macintosh
computers stop TCP/IP when the Macintosh is put to sleep. TCP/IP
connectivity is reestablished when the machine wakes up.

Resolution:
- Close and reopen the Chooser and then re-select DAVE Client.

Error #:   2424

```
The NetBIOS driver is not working.
Please open the NetBIOS Control Panel in
the Control Panels folder for more in-
formation.
```

Cause:
This error is reported when DAVE attempts to open the NetBIOS drivers when TCP/IP is not loaded. Here are some specific causes for this error message:

- TCP/IP has been configured as inactive.
- TCP/IP is configured for PPP and the PPP connection is not established.
- A hardware problem (cable connection, etc.) is keeping TCP/IP from loading.

Resolution:
Open the TCP/IP Control Panel. This should report a separate error message which may explain why TCP/IP is not available. Verify that TCP/IP is working before using DAVE. See the section about testing TCP/IP in this chapter.

Unnumbered Errors

Error Message:

```
A copy of DAVE™ running with your serial
number has been detected on the network.
```

Cause:
The DAVE copy protection scheme checks for other DAVE
products using the same serial number. If one is detected
DAVE will display this error message and unregister the
product. Sometimes a WINS server can cache the name
used in our copy protection scheme. This causes DAVE to
display this error improperly.

Resolution:
If you use WINS and believe this error is being displayed
improperly, instruct your Network Administrator to remove
all names starting with the characters "..DAVE.." from the
WINS server. Then launch NetBIOS and
reenter your license information. If the problem returns the
error is most likely correct. Find and correct the serial
number problem and then reenter the correct license infor-
mation.

Error Message:

```
A login error was reported.

To access any servers you must login to
the network.  Please login using "DAVE
Access" before attempting to access a
server.
```

Cause:
This error is displayed when DAVE Client attempts to
connect to a server when DAVE is configured for "Enforce
Logon" and the user has not logged on.

Resolution:

169

Use DAVE to logon to the network before using DAVE Client.

Error Message:

```
Because of a communication error, "Docu-
ment" could not be printed on the
printer "PrinterName".
```

Cause:
This error is reported when Desktop Printing attempts to access a printer and receives a communications error. If you are accessing a DAVE Print Client printer, here are some specific causes for this error:

- The printer is no longer shared.

- The password for the printer has changed.

- The remote computer sharing the printer is no longer reachable.

Resolution:
Open the DAVE Print Client Control Panel, edit the defined printer with the problem and click OK to save the entry. If any errors are displayed, follow instructions for those errors. If no errors are displayed the problem should be resolved.

Error Message:

```
Because of a communication error, "Docu-
ment" from "Application" could not be
printed on printer "PrinterName."  Try
again?
```

Cause:
This error is reported when PrintMonitor attempts to access a printer and receives a communications error. If you are

accessing a DAVE Print Client printer, here are some specific causes for this error:

- The printer is no longer shared.
- The password for the printer has changed.
- The remote computer sharing the printer is no longer reachable.

Resolution:
Open the DAVE Print Client Control Panel, edit the defined printer with the problem and click OK to save the entry. If any errors are displayed, follow instructions for those errors. If no errors are displayed the problem should be resolved.

<u>Error Message:</u>

```
Cannot connect to server "ServerName".
Please check the server name.
```

Cause:
This error is reported when DAVE Print Client attempts to access a shared printer and cannot communicate with the remote computer. Here are some specific causes for this error message:

- The remote computer is down.
- The remote computer's NetBIOS name has changed.
- The remote computer name is mistyped.
- The remote computer is no longer reachable using TCP/IP.

Resolution:
Verify that the remote computer name you entered is correct. Verify the remote computer is reachable using TCP/IP. See the section on how to test TCP/IP connectivity for details.

<u>Error Message:</u>

```
DHCP failed to find WINS information.
```

Cause:
Dynamic Host Configuration Protocol (DHCP) offers dynamic configuration of IP addresses on a network. Some DHCP servers can be configured to provide WINS information also. Selecting DHCP in the NetBIOS Control Panel causes NetBIOS to query WINS information from the DHCP server. This error is reported when DHCP is checked but NetBIOS could not get WINS information from the DHCP server.

Resolution:
Your DHCP server is probably not configured with WINS information. Enter WINS information manually. If you would like to use this feature, have your Network Administrator modify your DHCP server to include WINS information.

<u>Error Message:</u>

```
DHCP failed to find WINS information.
You must configure TCP/IP with DHCP to
use this feature.
```

Cause:
Dynamic Host Configuration Protocol (DHCP) offers dynamic configuration of IP addresses on a network. Some DHCP servers can be configured to provide WINS information also. Selecting DHCP in the NetBIOS Control Panel causes NetBIOS to query WINS information from the DHCP server. In order for this to work, the Macintosh TCP/IP must be configured to obtain an IP address using DHCP. This error is reported when DHCP is checked but TCP/IP is not configured for DHCP.

Resolution:
If your Macintosh TCP/IP is not configured to use DHCP,

enter the WINS information manually.

Error Message:

```
DNS could not resolve primary WINS.
```

Cause:
Primary and Secondary WINS addresses should be entered
in IP dotted-decimal form or IP Domain Name System
(DNS) form. If the address is not dotted-decimal (i.e.
192.168.3.38), NetBIOS attempts to find the address in DNS
form (i.e. wins.thursby.com). It does this by requesting the
information from the DNS using the TCP/IP settings. If the
request fails this error is reported.

Resolution:
Verify that you are entering the correct WINS information.
Also verify that the correct DNS information is entered in
the TCP/IP.

Error Message:

```
DNS could not resolve secondary WINS.
```

Cause:
Primary and Secondary WINS addresses should be entered
in IP dotted-decimal form or IP Domain Name System
(DNS) form. If the address is not dotted-decimal (i.e.
192.168.3.38), NetBIOS attempts to find the address in DNS
form (i.e. wins.thursby.com). It does this by requesting the
information from DNS using the TCP/IP settings. If the
request fails this error is reported.

Resolution:
Verify that you are entering the correct WINS information.
Also verify that the correct DNS information is entered in
the TCP/IP.

<u>**Error Message:**</u>

```
Error while getting security list. Can
not connect to domain controller.
```

Cause:
When attempting to configure a DAVE share, the DAVE
Sharing Control Panel could not find a Primary Domain
Controller (PDC) or a Backup Domain Controller (BDC) in
the domain entered.

Resolution:
Verify that you entered the correct domain in the DAVE
Sharing Control Panel and that either a PDC or BDC is
available and reachable using TCP/IP. See the section on
how to test TCP/IP connectivity for details.

<u>**Error Message:**</u>

```
NetBIOS Internal Error.
```

Cause:
This error is reported when the NetBIOS Control Panel is
unable to open the NetBIOS driver. This error usually
indicates a corrupted NetBIOS file.

Resolution:
Reinstall the NetBIOS software from the DAVE installation
diskette.

<u>**Error Message:**</u>

```
NetBIOS is not loaded.  See installation
manual.
```

Cause:
This error is reported when the NetBIOS Control Panel

attempts to open the NetBIOS drivers and fails.

Resolution:
Reinstall the NetBIOS software from the DAVE installation
diskette.

<u>Error Message:</u>

```
Please insert disk "VOLUME."
```

Cause:
This error is reported when a DAVE share has been
mounted. The remote volume is removable media and the
media has been ejected.

Resolution:
Pressing command-period will close this error. Verify that
the remote computer has the proper media mounted before
attempting to access the share from DAVE.

<u>Error Message:</u>

```
Print Gateway "PrinterName" Failed.
Can't connect to the remote server.
Please check to be sure it is operating
properly.

SMB Server Communication Error.
```

Cause:
This error is reported when DAVE Print Client attempts to
access a shared printer and cannot communicate with the
remote computer.

Resolution:
Click "Edit" and click "OK" to save the entry. If any errors
are displayed, follow instructions for those errors. If no

errors are displayed the problem should be resolved.

Error Message:

```
"PrinterName" is not a valid resource
name.  Be sure the Remote Printer name
is correct.
```

Cause:
This error is reported when DAVE Print Client attempts to access a shared printer and the name entered for the "Remote Printer" is incorrect. Here are some specific causes for this error message:

- The "Remote Printer" name is mistyped.
- The remote printer is no longer being shared.

Resolution:
On the remote computer verify that the printer is being shared and the printer name is correct. Make the appropriate changes in the DAVE Print Client printer configuration.

Error Message:

```
The DAVE Client failed to add either
your NetBIOS name or domain to the net-
work.  Check with your System's Adminis-
trator and make sure that you have the
correct node and group name.
```

Cause:
In order for DAVE to function, certain names have to be registered on the network. The registration of one of those names failed. The most common cause of this problem is that NetBIOS has not been configured.

Resolution:
Open the NetBIOS Control Panel and verify that you've

entered a name and workgroup.

<u>Error Message:</u>

```
The disk "VOLUME" cannot be used, be-
cause the server is no longer connected.
```

Cause:
This error is reported when a DAVE share has been mounted and the
connection has been broken. Here are some specific causes for this error message:

- The item is no longer shared on the remote computer.
- The remote computer has been shut down or has crashed.
- A network problem has occurred and the remote computer is no longer reachable.

Resolution:
Attempt to remount the share. A quick solution is using 'Recent Servers' under the Apple menu. If the reconnection fails see the section on testing TCP/IP and other possible problems.

<u>Error Message:</u>

```
The domain name you have typed in for
security is not responding!
```

Cause:
When attempting to configure a DAVE share, the DAVE Sharing Control Panel could not find a Primary Domain Controller (PDC) or a Backup Domain Controller (BDC) in the domain entered.

Resolution:
Verify that you entered the correct domain in the DAVE

Sharing Control Panel and that either a PDC or BDC is available and reachable using TCP/IP. See the section on how to test TCP/IP connectivity.

Error Message:

```
The shared disk "VOLUME" could not be
opened, because it is not in any drive.
```

Cause:
This error is reported when a DAVE share has been mounted. The remote volume is removable media and the media has been ejected. This error usually follows the "Please insert disk VOLUME". error after the user has canceled the dialog by pressing command-period.

Resolution:
Dismiss the error by clicking the "OK" button. Make sure the remote computer has the proper media mounted before attempting to access the share from DAVE.

Error Message:

```
The shared disk "VOLUME" could not be
opened, because the server is no longer
connected.
```

Cause:
This error is reported when a DAVE share has been mounted and the connection has been broken. Here are some specific causes for this error message:

Resolution:
Attempt to remount the share. A quick solution to this is using "Recent Servers" under the Apple menu. If the reconnection fails, see the Troubleshooting section for details on testing TCP/IP and other possible problems, or see

details on the error reported.

Error Message:

```
You have entered an incorrect license.
Please try again.
```

Cause:
This error is reported when an incorrect license code is entered. Here are some specific causes for this error message:

- The license code has been mistyped.
- The current date on the Macintosh is incorrect.

Resolution:
Verify that the Macintosh date and time are set correctly.
Re-enter the key paying particular attention to 0s and Os, 1s
and Is, and other characters that may look similar. If your
key was e-mailed, copy the key to the clipboard before
launching NetBIOS and then paste the license code into the
proper field.

Appendix A:

Software License Agreement

This SOFTWARE LICENSE AGREEMENT made by and between **Thursby Software Systems, Inc.** (hereinafter "AUTHOR") and the **purchaser of the license** (hereinafter "CUSTOMER"):

AUTHOR has proprietary software including documentation identified as **DAVE™** (hereinafter LICENSED PROGRAM");

Both parties hereto agree as follows:

1.   GRANT
AUTHOR grants to CUSTOMER a royalty-free, nontransferable and nonexclusive license to copy and use the LICENSED PROGRAM.

2.   LICENSE TERMS
CUSTOMER shall have the right to use the LICENSED PROGRAM or any portion thereof on a Computer System (hereinafter "SYSTEM") located at the CUSTOMER's site.

For this purpose, the CUSTOMER may:
a) Transfer the LICENSED PROGRAM from one computer to another provided that the LICENSED PROGRAM is used only on one computer at a time.

b) Copy the LICENSED PROGRAM for the purpose of (i) using the LICENSED PROGRAM on the SYSTEM; and (ii) for archive or emergency restart purposes.

3.   COPIES
a) The CUSTOMER agrees to reproduce and include the AUTHOR's copyright notice and any other proprietary legends thereon on all copies, in whole or in part, of the LICENSED PROGRAM or any modification thereof in any form.
b) Except as provided in Paragraph 2, no right to reprint or copy the LICENSED PROGRAM in whole or part is granted.
c) Upon termination of the license herein granted, CUSTOMER shall deliver to AUTHOR or destroy all copies, including partial copies, of the LICENSED PROGRAM in whatever form in its possession. In the event that such copies are destroyed, CUS-TOMER shall certify such destruction to AUTHOR in writing within thirty (30) days of such termination or expiration.

4.   SECURITY
The CUSTOMER agrees not to disclose, provide, transfer, sublicense, or otherwise make available the LICENSED PROGRAM or any portion whatsoever, including but not limited to flow charts, logic diagrams, object codes, source codes, and technical documentation, to any person other than CUSTOMER or AUTHOR personnel without prior written approval of AUTHOR. Furthermore, CUSTOMER agrees that it will not store on any media or otherwise use said LICENSED PROGRAM or portions thereof such that any third party through any data processing network or other means may gain access to said LICENSED PROGRAM.

5.   TITLE
No title to or ownership of the LICENSED PROGRAM or any parts thereof is transferred to CUSTOMER. CUSTOMER shall do nothing inconsistent with AUTHOR's title in the LICENSED PROGRAM.

6.   WARRANTY
AUTHOR warrants that at the time of delivery of the original Software supplied to the CUSTOMER, and for a period of ninety (90) days thereafter, that the original software will perform in accordance with the specifications described in this manual. The AUTHOR does not warrant that the Software will meet all of CUSTOMER's requirements or will operate uninterrupted or error-free.

7.   TERMINATION
 In the event that CUSTOMER neglects or fails to perform or observe any of its obligations under this Agreement, or if any assignment shall be made of its business for the benefit of creditors, or if a receiver, trustee in bankruptcy or similar official shall be appointed to take charge of all or part of its property, or if it is adjudged a bankrupt, AUTHOR may immediately terminate this agreement and all licenses granted hereunder.

If after repeated efforts AUTHOR is unable to make the software operate as warranted, the CUSTOMER may terminate the license(s) of DAVE and receive a refund of the License Fee(s) paid.

8.   ASSIGNMENT
This Agreement and the licenses granted hereunder may not be assigned, sublicensed, or otherwise transferred by the CUSTOMER without prior written consent from AUTHOR.

9.   DISCLAIMER AND LIMITATION OF LIABILITY
THE CUSTOMER SHALL HAVE THE SOLE RESPONSIBILITY FOR ADEQUATE PROTECTION AND BACKUP OF ITS DATA USED IN CONNECTION WITH THE LICENSED PROGRAM. IN NO EVENT WILL AUTHOR BE LIABLE FOR (i) SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES OR (ii) ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA, OR PROFITS, RERUN TIME, INACCURATE INPUT OR WORK DELAYS, OR ANY DIRECT PROPERTY DAMAGE ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT OR

THE USE OR PERFORMANCE OF THE LICENSED PROGRAM, WHETHER IN
ACTION, IN CONTRACT, OR TORT INCLUDING
NEGLIGENCE.

THE EXTENT OF AUTHOR'S LIABILITY UNDER THIS WARRANTY SHALL BE
LIMITED TO SUPPLYING AS SOON AS PRACTICABLE CODE CORRECTIONS
WHICH AUTHOR DETERMINES TO BE NECESSARY, PROVIDED THAT WRIT-
TEN NOTICE OF A CLAIMED PROBLEM IS RECEIVED BY AUTHOR WITHIN
THE WARRANTY PERIOD.

10.   GENERAL

This Agreement supersedes all prior agreements concerning the subject matter herein and
may not be changed or terminated except by a written communication signed by the party
against whom the same is sought to be enforced. If any of the provisions of this
Agreement are invalid under any applicable statute or rule of law, such provisions or
portions thereof are to that extent deemed to be omitted.

This Agreement shall be governed by the laws of the State of Texas.

Appendix B:

Support and Maintenance

How to get Additional Support

Although a maintenance support contract may be purchased by those who may require extended services past the initial ninety day warranty, we have tried to make the support system simple for new customers.

The best way to report software problems is to do it in writing. We support facsimile reporting as well as e-mail from the Internet. The use of electronic mail avoids the possible confusion that occurs during some phone conversations and provides a tracking mechanism for each of us to ensure that every reported problem is addressed. Our Internet support address is dave@thursby.com.

For the ninety days after purchase, TSS will provide you with unlimited written problem reporting. Although unlimited written problem reporting is supported during this time period, we must restrict support related phone calls to a maximum of 4 calls per license without additional support charges.

If you telephone us for support, please indicate that you are calling for DAVE support and that this is your first support call. Our receptionist or support secretary will take your registration information and provide the information to our support group. We must have your serial number and software version number. If your problem is critical, please indicate this at the time of your call so that it will be given the proper priority.

Please mail or fax your registration card to us as soon as possible. By being a registered user you will be automatically notified of new product updates and enhancements. Customers under a support contract will receive these updates at no additional charge.

Additional support information may be obtained by contacting our sales department.

Appendix C:

Glossary

AppleDouble

A standard method of storing Apple resource and data forks in two files. Used in non-Apple file systems that lack the concept of a resource fork. The data fork is stored in one file while the resource fork is stored in a separate file.

Backup DomainController (BDC)

A Windows NT Server that receives a copy of the domain's security policy and domain database from a Primary Domain Controller (PDC). A BDC will assume the role of the PDC if the PDC fails.

Broadcast

A method of sending the same information to multiple recipients using User Datagram Protocol (UDP). DAVE uses broadcasting to locate Windows servers.

 CHAP

Challenge Handshake Authentication Protocol is a protocol used by Microsoft RAS to negotiate the most secure form of encrypted authentication supported by both server and client.

Chooser

An Apple utility used to choose services and devices that Macintosh users need. Used to select file servers, printers, fax devices, etc.

CIFS

Common Internet File System. A protocol that provides an open cross-platform mechanism for client systems to request file services from server systems over a network.

Client

A computer that accesses shared network resources provided by another computer (called a server). See Server.

DAVE

DAVE is a Macintosh application that uses TCP/IP to access Microsoft networks. DAVE is very much like any other TCP/IP application and uses the TCP/IP stack in the very same way.

DNS

Domain Name Service. A service and protocol used with TCP/IP to determine network numbers from names and vice versa.

Domain

For IP numbers and also for services such as mail exchangers. The domain concept provides a hierarchy of authorities for naming.

Domain Name

The name by which a domain is known to the network.

FAT

File Allocation Table. A table or list maintained by some operating systems to monitor the status of various segments of disk space used for file storage. Often used to refer to DOS, Windows and Windows 95 file systems.

File

A named set of records stored or processed as a unit.

File System

A collection of files organized using a particular method. File systems can have many different forms such as Apple's HFS,UNIX, DEC's RMS, Windows' FAT, NTFS, etc.

Fragmentation

A process used by IP to break large packets into smaller ones when forwarding them to media with a smaller packet size (MTU).

FSM

File System Manager. A Mac OS system extension that allows Macintosh applications to access non-Apple file systems such as NFS.

Gateway

A network routing device used to forward packets to systems that are not on a local network. A gateway connects networks or systems of different architectures.

ICMP

Internet Control and Monitoring Protocol. A special control protocol that operates in the IP layer. Used to test connectivity (Ping) and to report errors.

IP

Internet Protocol. This is the routing layer protocol for TCP/IP.

LMHOSTS

A file commonly used to locate remote computers for Microsoft networking file, print and remote procedure services and for domain services such as logons, browsing, replication, etc.

MTU

Maximum Transmission Unit. The maximum size packet that can be sent over a given media.

MTU Path Discovery

A method used by some IP implementations to dynamically determine the MTU between two communicating nodes. Requires routers that support ICMP error responses.

NetBIOS

Network Basic I/O System. A networking software interface for the IBM personal computer and compatible systems that provides datagram and connection oriented communication and name service to applications.

NTFS

Windows NT File System. An advanced file system designed for use specifically within the Windows NT operating system. It supports file system recovery, extremely large storage media and various features for the POSIX subsystem. It also supports object-oriented applications by treating all files as objects with user-defined and system-defined attributes.

Open Transport

Apple's standard architecture for networking and communication.

187

Provides Macintosh applications with a transport independent interface.

Ping

A procedure that checks connectivity between two systems by sending a special protocol message between them. The IP protocol will use an ICMP ECHO message to perform this test.

Primary Domain

Controller (PDC) A Windows NT Server that authenticates domain logons and maintains the security policy and the master database for a domain. See Backup Domain Controller.

PPD

PostScript Printer Description. A listing of PostScript printer capabilities in a standardized format.

PPP

Point to Point Protocol is a protocol that allows other protocols to communicate over a serial connection. This includes, but is not limited to, TCP/IP.

Print

The process of sending a file to a local or remote printer for hard copy output.

RAS

Remote Access Service. Using RAS, users in remote sites can use a modem to connect to their Windows NT network as if their computers were directly connected to the network. A Microsoft RAS server can be used for PPP dial-up on Macintosh computers.

RFC

Request For Comments. The name of a series of notes that contain surveys, measurements, ideas, techniques, and other observations, as well as proposed and accepted TCP/IP protocol standards. RFCs are edited but not referred. They are available on-line from the Network Information Center (www.internic.net).

Router

A device that relays packets between two communicating systems. Routers are very useful for connecting dissimilar network media such as LocalTalk and Ethernet.

Server

Refers to a computer that shares its resources with network users. See Client.

Share Level Security

Server security in which a password is entered for every sharepoint on the server.

Shared Resource

Any device, data, or program that is used by more than one other device or program. For Windows NT, shared resources refer to any resource that is made available to network users, such as directories, files, printers and named pipes.

SMB

Server Message Block. A protocol which allows a set of computers to access shared resources as if they were local. SMB is a subset of CIFS.

Subnet

A method used to further divide a network number so that it can be used for multiple network numbers. How the network number is divided is determined by a subnet mask.

Subnet Mask

The subnet mask tells the IP software on a node what part of an IP address is the network number, and what part is the node number. It provides a finer division of the 32 bit IP address than the standard class A, B, and C addresses.

TCP

Transmission Control Protocol. This is the connection oriented transport for TCP/IP.

TCP/IP

Transport Control Protocol / Internet Protocol. TCP/IP is a protocol that allows dissimilar machines to communicate with minimal work. The TCP/IP protocol can travel on many different types of connections including Ethernet, Token Ring, and even over a serial connection using PPP.

UDP

User Datagram Protocol. This is the standard connectionless transport protocol for TCP/IP. NFS clients and servers generally use UDP for all operations.

User Level Security

A security method where access to resources is authenticated through a Domain Controller (PDC or BDC).

Volume

The term used for Apple HFS file systems. This term may be used interchangeably with "file system".

Appendix D:

Additional Software

Apple File Exchange

Before mounting a shared resource you should designate application programs for particular DOS suffixes. For example, you may wish to instruct your Macintosh to use Netscape for files with .HTM suffixes or to use Microsoft Word for files with .DOC suffixes. To specify the application for these DOS files, open your File Exchange Control Panel (*figure D-1*) from the Apple menu.

NOTE: If you do not know the suffix for a file on a Windows machine, ask the Windows user. If the Windows user is unsure of the suffix use MS-DOS to display the file's name and suffix. Depending on your view options, the suffixes may or may not appear in Windows Explorer or File Manager.

Notice the DOS suffixes listed in the far left column. The applications assigned to open the DOS suffixes are listed in the middle column and the document types are listed in the far right column. If you have these items included in your File Exchange Control Panel, the files will appear in the shared resource with the application's icon and will open with the application program.
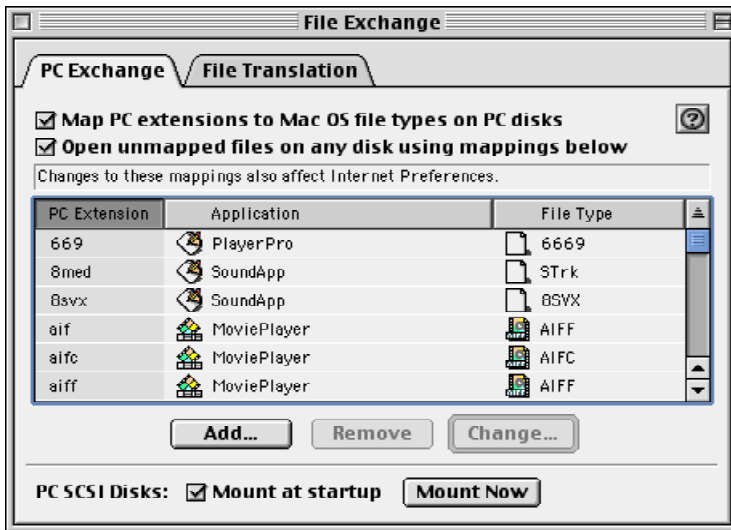
To remove an item from the File Exchange Control Panel, simply select the item and click the "Remove" button.

To add a suffix and the application it uses, click the Add button. A dialog will display. Type a suffix in the DOS Suffix field and browse your directories for the application of your choice. When you have found the application that you wish to use with the designated suffix, select it and click the OK button.
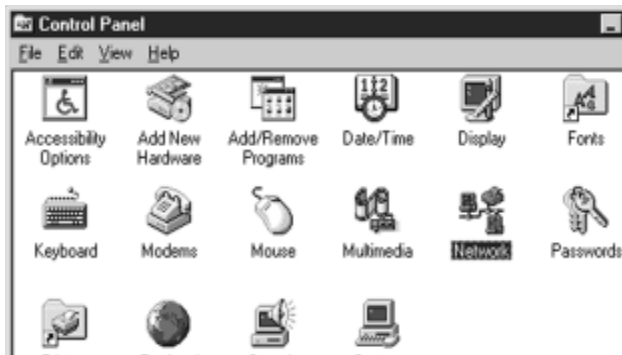
The new item will appear in the File Exchange Control Panel.

To change an item from the File Exchange Control Panel, select the item and click the "Change..." button. The "Assign an application to a DOS suffix" dialog will display. You can change the suffix or the application and click the "OK" button to apply your changes.

Apple Remote Only

DAVE users must have AppleTalk in order for DAVE Print Client to work. If you are not using AppleTalk on your network, configure the Macintosh AppleTalk port on an unused printer port. You can also use Apple's "Remote Only" virtual AppleTalk port. In this situation AppleTalk would be advertised but not seen on the network.

The "Remote Only" extension is included on recent versions of Mac OS shipping on CD. The Mac OS installer does not automatically install the extension but it can be found by searching the CD. "Remote Only" can

also be downloaded from Apple's Internet web site (http://www.apple.com). It is part of the Open Transport Extras.

Place the "Remote Only" extension in the "Extensions" folder located in the "System" folder. Configure AppleTalk so that it uses "Remote Only" as the AppleTalk connection.

The "Remote Only" extension serves several purposes:

- Keeps LAN traffic free of AppleTalk
- Allows alternative uses for printer, modem and serial ports
- Enables DAVE printing without the presence of an AppleTalk network

AppleScript and the Script Editor

AppleScript is a system scripting extension for the Mac OS. With the script editor you can create scripts to automate many system functions. In recent versions of Mac OS, Script Editor is installed by default. Use your Extensions Manager Control Panel to see if AppleScript is installed. The Script Editor is installed into your Apple Extras folder.

To create a new script, open the Script Editor and begin typing. The following is a sample script that you can use to test Apple Script.

```
Display Dialog "Hello World"
```

Type the sample script into the Script Editor and run it. When run, a dialog with the message Hello World should display. You can save this script as an application that runs when double-clicked.

Microsoft Windows NT Services for Macintosh

Services for Macintosh is a Windows NT service. When this service is running, Windows files saved to directories shared by Services for Macintosh will automatically receive type and creator information based on the DOS file name extension. Files with an unknown extension will automatically receive a generic icon. This seems to disable PC Exchange due to the file having a valid, albeit generic, icon when PC Exchange first encounters it.

You can edit Services for Macintosh settings by running the File Manager application. To do this, select the "Run" option from the Start menu and run the WINFILE.EXE file. The File Manager Window will display. Choose the "Associate..." command from the "MacFile" menu. The MacFile information is stored in the registry in the following subkey:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MacFile

For more information on Windows NT, the File Manager, RegEdit or Services for Macintosh, please contact Microsoft Corporation.

Index

A

B

C

F

File Allocation Table (FAT) 70
File and Print Services 93
File Names 100
File Sharing 94
File System

Finder 65, 72, 73, 96, 108
Folder icon 58

G

Gateway 186
Glossary 2

H

Hidden folder 73
Host Configurations 5

I

Info Button 122
Information Panel 125, 126, 127, 128
Installation 2, 5
Internet conventions 119
IP address 123, 124, 129, 135
IP broadcast address 132
IP network 132
IP Setup 132
IPX/SPX (DAVE does NOT work with this)
ISP (Internet Service Provider)

J

no entries

K

Keep Alive 133

Printer icon 55
Printer Name 109, 110, 113
Printer Resource Icon 110, 115
Printer Specifications 114
Printer Verification 110
Private alias. *See* alias
Private Aliases 65

Q

no entries

R

RAS (Remote Access Service) 26
Read-Only 95, 96, 104
Read-Write 93, 96
Recent Servers 64, 177
Refresh Op 134
Remote Host 127
Remote Names 128
Remote Names Table 128
Remote Only 190
Remote Printer 113
Removable Media 99
Resource icon 61, 62, 65, 69
Resource name 62
RESOURCE.FRK 70
Router 189

S

SAMBA 3
Scope ID 132
Secondary WINS field 123
Security 98, 99
Selecting Your New Printer 116
Server Name 113
Server Query 134
Sessions Table 125, 126, 127
Share a Printer 103
Share As 96, 98
Share level 94, 95

W

WARNING 130, 133
Windows Internet Name Server 121, 123
Windows Name Server 135
WINS 120-122, 124, 132, 135
WINS Down 133
WINS information 124
WINS server 132
Workgroup 56, 58-60, 66, 67 122
Workgroup icon 57

X

no entries

Y

no entries

Z

Zip Diskettes 99
Zone 110, 115-117