
uShare for the NeXT

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Getting Started

This chapter provides an overview of uShare services and gives instructions for:

- preparing to use uShare;
- installing uShare software;
- starting uShare Manager.

IPT also offers optional print spoolers and a mail package. The print spooler enables Macintosh users to print to NeXT printers as well as NeXTstations to print to AppleTalk printers. With uMail, Macintosh users can interface with NeXT mail.

Overview of uShare Services

uShare lets your NeXT computer provide services to an AppleTalk network. You control uShare with the uShare Manager application.

uShare Manager

This application lets you configure uShare services and control uShare processes by issuing commands from menus and panels.

File Server Service

This service lets your NeXT computer appear as an AppleShare File Server to Macintosh users and other AppleShare clients. With a uShare file server you can publish portions of your Unix file system as AppleShare compliant, AFP, volumes.

Print Spooler Service

This service lets you spool Macintosh print jobs to Unix printers and Unix print jobs to AppleTalk printers. Macintosh users select uShare spoolers with the Chooser desk accessory, while Unix users use their familiar print tools and commands (or IPT's NetFinder tool for Open Windows).

uMail Service

This service lets Macintosh users participate in the Unix mail system. Macintosh users use IPT's **uMail** Desk Accessory to send and receive mail, while Unix users use their familiar mail tools and commands

Preparing to Use uShare

To install and run uShare, you need the following:

- a NeXT computer running Mach 2.1 extended release (i.e., with support for loadable kernel modules) or higher;
- uShare installation disk(s);
- a uShare Authorization Key
- an AppleTalk network connected to your NeXT computer.

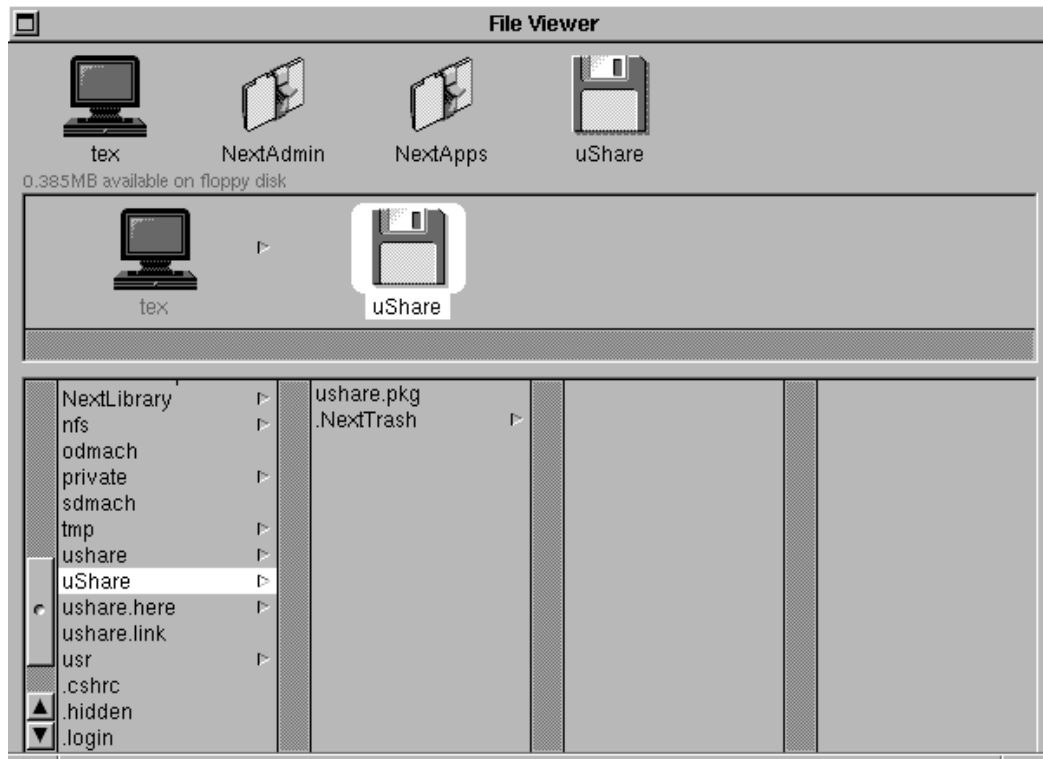
Your uShare Key

In order to provide uShare services to your network, you need a uShare Authorization Key. Your key is unique to your NeXT computer and governs what uShare services you can provide your network.

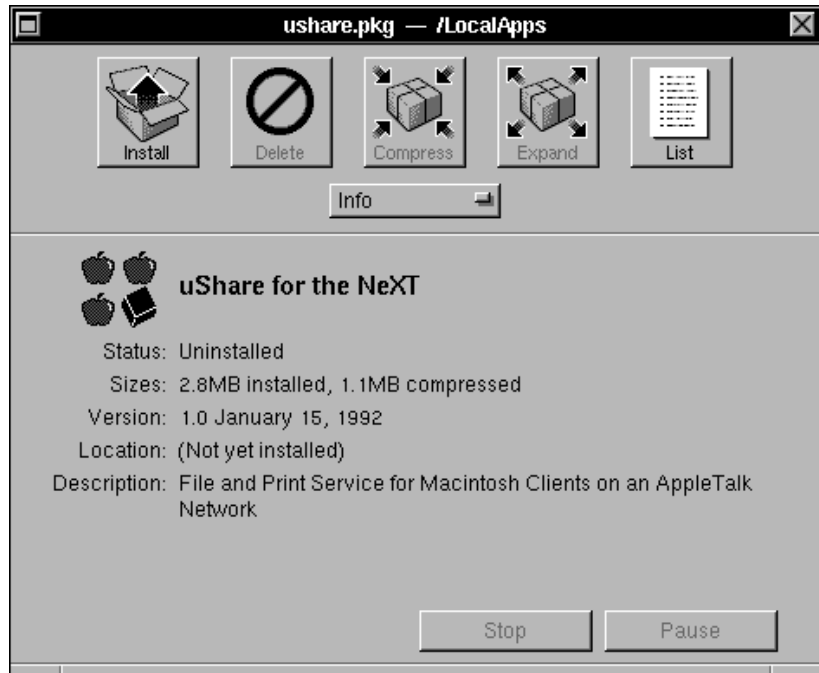
Installing uShare Software

To install uShare software on your NeXT computer:

- 1 Log in to your NeXT computer as root and open the File Viewer panel.
- 2 Insert your uShare installation disk into your NeXT computer's disk drive. A floppy disk icon appears in the File viewer panel.



- 3 Open the *ushare.pkg* file on the floppy disk. The Installer panel appears.

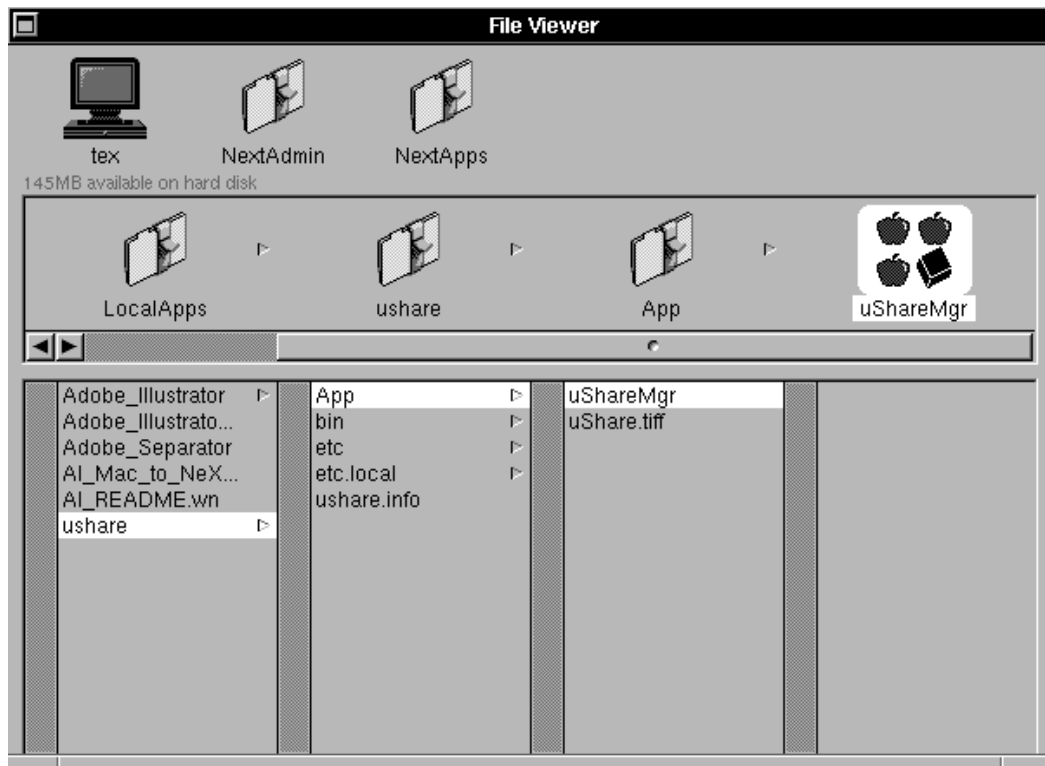


- 3 Click the Install button. A panel appears that lets you choose the directory in which to install uShare software.
- 4 To install uShare in the default directory, */LocalApps.*, click the OK button, or select a different directory and click the OK button.
- 5 When the installer indicates that installation is complete, quit the installer. You can now start uShare Manager.

Starting uShare Manager

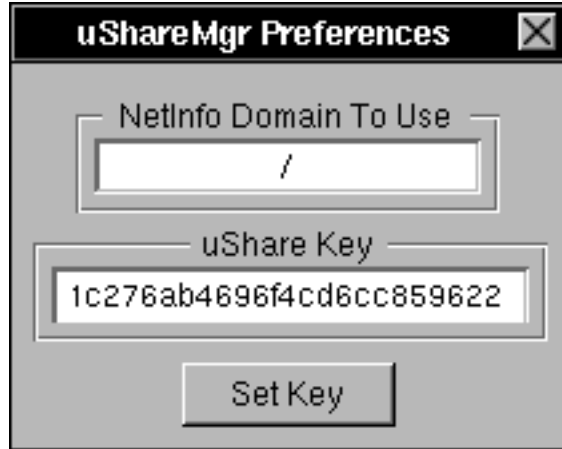
You can start uShare Manager as you do any other application:

- 1 Open the File Viewer panel and locate the uShare Manager application. If you installed uShare Manager in the default directory */LocalApps*, the pathname of the application is */LocalApps/ushare/App/uShareMgr*.



- 2 Start up uShare Manager by opening it from the File Viewer or by dragging its icon to the application dock and double-clicking it. The first time

you start uShare Manager, a panel appears that lets you enter your uShare authorization key.



- 3 Enter your uShare authorization key in the uShare Key field of the Preferences panel and click the Set Key button.

You can now use uShare Manager to start uShare's file server and print spooler processes as described in "Managing uShare Processes" on page 2 of this guide.. The name of your default file server is "uShare@`hostname`." The name of your default print spooler is "NeXT_Printer." Macintosh users can connect to these services with the Chooser as described in Part 5 of this guide.

uShare Manager Procedures

uShare Manager lets you manage uShare services on your NeXT computer. This chapter gives instructions for using uShare Manager to manage:

- uShare processes;
- uShare file servers;
- uShare print spoolers;
- uShare's uMail service.

WARNING

Don't edit uShare configuration files when uShare Manager is running.

Managing uShare Processes

To provide uShare services to your network, you must control processes on your NeXT computer. The commands in uShare Manager's Processes menu and its submenus let you start, stop, and restart uShare processes.

- 1 Click the Processes button in uShare Manager's main menu. The Processes menu appears.



- 2 Click the button in the Processes menu that corresponds to the uShare process you want to control. A Process control menu appears. For example, click the All button to control all uShare processes.



- 3 Click the appropriate button in the process control menu to start, stop, or restart the processes:
 - click the Start button to start the processes;
 - click the Stop button to kill the processes;
 - click the Restart button to kill and then start the processes.

If you want to monitor the output of these commands, open a Console window by clicking the Console button in the Workspace Manager's Tools menu.

Managing uShare File Servers

uShare's File Server service lets you define AppleTalk file servers and publish portions of your NeXT computer's file system as AFP volumes. uShare Manager lets you modify, create, and remove uShare file servers and their volumes.

To manage uShare file servers, click the Server button in uShare Manager's main menu. The Server menu appears.



- Click the Open Server... button if you want to modify an existing file server.
- Click the New Server... button if you want to create a new file server.

The Global Volumes..., Save, Delete..., and Export Homes buttons remain disabled until the Server panel is open.

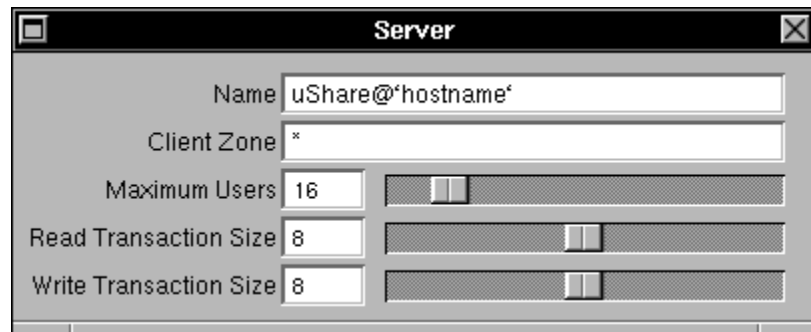
Modifying a File Server

To modify an existing file server, e.g., the default file server “uShare @`hostname`”:

- 1 Choose Open Server... from uShare Manager’s main menu. A panel appears that lets you select a file server.



- 2 Select the file server you want to modify and click the OK button. The Server panel appears, and the Global Volumes..., Save, Delete..., and Export Homes buttons in the Server menu become active.



- 3 Edit the appropriate fields by typing or using sliders. If you want to modify the file server’s list of global volumes, click the Global Volumes but-

ton in the Server menu. If you want to publish as AFP volumes the home directories of your NeXT computer's users, make sure the Export Homes button appears in the Server menu.

- **Name:** the name registered with NBP that appears in the Macintosh Chooser; must be unique on your network and 32 characters long;
 - **Client Zone:** file server is available to clients residing in this zone; default = "*" (all); only "*" or a single zone name are valid;
 - **Maximum Users:** the maximum number of Macintosh users that can simultaneously log in to the server; default = 16; must be set to 128 (as defined by AppleTalk protocol—theoretical limit is 253 sockets/machine);
 - **Read Transaction Size:** values 8 define the number of 576 byte packets per transaction; values 16 define the number of bytes per transaction (setting a value of 1 is the same as setting a value of 576);
 - **Write Transaction Size:** values 8 define the number of 576 byte packets per transaction; values 16 define the number of bytes per transaction (setting a value of 1 is the same as setting a value of 576).
- 4 To save your changes to the server, choose Save from the Server menu, or close the Server panel and answer "Yes" when you're asked to save your changes. To cancel your changes to the server, close the Server panel and answer "No."

Creating a File Server

- 1 Choose **New Server...** from uShare Manager's main menu. The Server panel appears, and the **Global Volumes...**, **Save**, **Delete...**, and **Export Homes** buttons in the Server menu become active.
- 2 Edit the appropriate fields by typing or using sliders. Read "Modifying a File Server" on page 10 of this guide for a description of the Server panel's fields.
- 3 To save your changes to the server, choose **Save** from the Server menu, or close the Server panel and answer "Yes" when you're asked to save your changes. To cancel creation of the server, close the Server panel and answer "No."

Deleting a File Server

- 1 Choose **Open Server...** from uShare Manager's main menu. A panel appears that lets you select a file server.
- 2 Select the file server you want to delete and click the **OK** button. The Server panel appears, and the **Global Volumes...**, **Save**, **Delete...**, and **Export Homes** buttons in the Server menu become active.
- 3 To delete the file server, click the **Delete...** button in the Server menu and answer "Yes" when you're asked to confirm deletion. To cancel deletion, close the Server panel.

Modifying a Global Volumes List

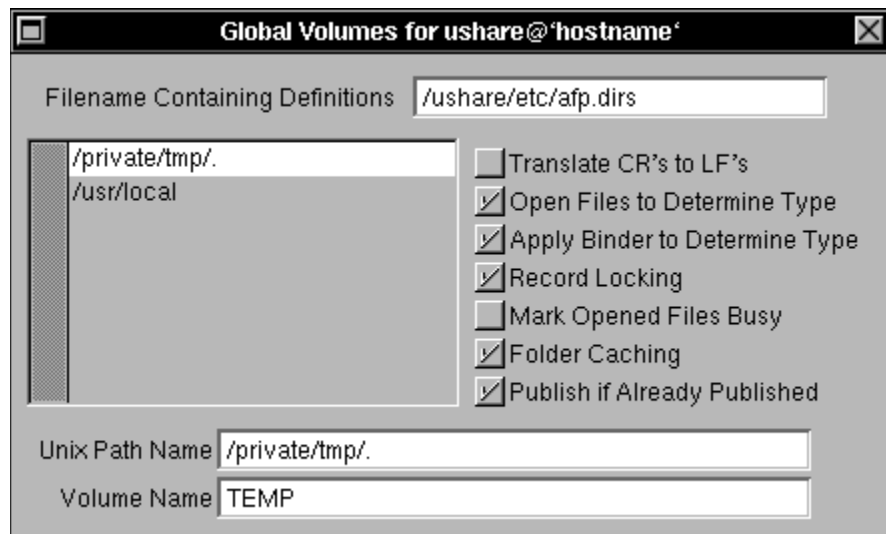
When modifying or creating a file server, you can also modify the file server's list of volumes.

Modifying a Global Volume

- 1 Open the Server panel by modifying or creating a file server.
- 2 Click the Global Volumes button in the Server menu. The Global Volumes menu appears.



- 3 Click the Open... button in the Global Volumes menu. A panel appears that lets you manage the file server's global volumes list.



- 4 Select from the scrollable list the name of the volume you want to modify. The Global Volumes panel is redrawn to display the selected volume's attributes.
- 5 Edit the text fields and click the checkboxes to modify the volume's attributes:
 - **Unix Path Name:** The pathname of the Unix directory you want to publish as an AFP volume.
 - **Volume Name:** The name of the volume seen by AFP clients.
 - **Filename Containing Definitions:** The pathname of the file in which the server's global volumes list is stored.
 - **Translate CRs to LFs:** Macintosh text files have Carriage Return characters at line ends, while Unix text files have Line Feed characters at line ends. Setting this attribute enables automatic translation of these characters when a text file is written to or read from the volume.
 - **Open Files to Determine Type:** Setting this attribute causes the Binder program to read the first 64 bytes of untyped text files on the volume, and assign Macintosh Type and Creator TEXTUNIX. This attribute is currently not implemented.
 - **Apply Binder to Determine Type:** Setting this attribute causes the Binder program to read the file names of untyped files. This attribute is currently not implemented.
 - **Record Locking:** Disabling this attribute is helpful when file systems don't support record locking or when record locking is buggy (e.g. some versions of NFS). System7 Macs can't Trash files when record locking is disabled.
 - **Mark Opened Files Busy:** Setting this attribute prevents clients from deleting open files. uShare sets an flock'd file's "AlreadyOpen" attribute bit for AFP.
 - **Folder Caching:** In order to improve system performance, uShare places information about Macintosh volumes in a temporary storage area, *.rsrc/:#dcache.afp*. Disable this attribute only if your system has a problem with uShare's caching.
 - **Publish if Already Published:** Usually, two or more AFP volumes shouldn't contain the same Unix directory. Setting this attribute allows the same Unix directory to be simultaneously published in multiple AFP volumes.

- 6 To save your changes to the volume, choose Save from the Global Volumes menu, or close the Global Volumes panel and answer “Yes” when you’re asked to save your changes. To cancel your changes to the volume, close the Global Volumes panel and answer “No.”

Creating a Global Volume

- 1 Open the Server panel by modifying or creating a file server.
- 2 Click the Global Volumes button in the Server menu. The Global Volumes menu appears.
- 3 Click the Open... button in the Global Volumes menu. A panel appears that lets you manage the file server’s global volumes list.
- 4 Click the New button in the Global Volumes menu. The Global Volumes panel is redrawn to display a new volume’s attributes.
- 5 Edit the text fields and click the checkboxes to modify the volume’s attributes. Read "Modifying a Global Volume" on page 13 of this guide for a description of the Global Volumes panel’s fields.
- 6 To save the volume, choose Save from the Global Volumes menu, or close the Global Volumes panel and answer “Yes” when you’re asked to save the volume. To cancel creation of the volume, close the Global Volumes panel and answer “No.”

Deleting a Global Volume

- 1 Open the Server panel by modifying or creating a file server.
- 2 Click the Global Volumes button in the Server menu. The Global Volumes menu appears.
- 3 Click the Open... button in the Global Volumes menu. A panel appears that lets you manage the file server’s global volumes list.
- 3 Select from the scrollable list the name of the volume you want to delete and click the Delete button in the Global Volumes menu and answer “Yes” when you’re asked to confirm deletion. To cancel deletion, close the Server panel.

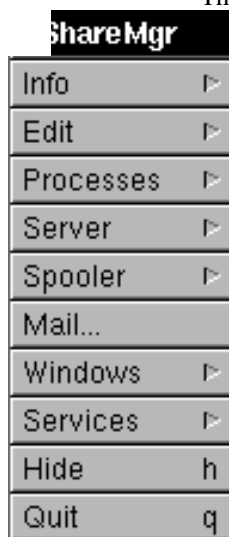
Exporting Home Directories

When modifying or creating a file server, you can also enable or disable exportation of the home directories of your NeXT computer's users.

- 1 Open the Server panel by modifying or creating a file server.
- 2 Click the Global Volumes button in the Server menu. The Global Volumes menu appears.
- 3 Click the Open... button in the Global Volumes menu. A panel appears that lets you manage the file server's global volumes list.
- 4 Look at the Global Volumes menu. If the Export Home Directories button is active, then your file server is currently configured to publish the home directories of your NeXT computer's users. If the Don't Export Home Directories button is active, then your file server is not currently configured to publish the home directories of your NeXT computer's users.
- 5 To toggle your file server's current configuration, click the Export Home Directories button or the Don't Export Home Directories button in the Global Volumes menu.

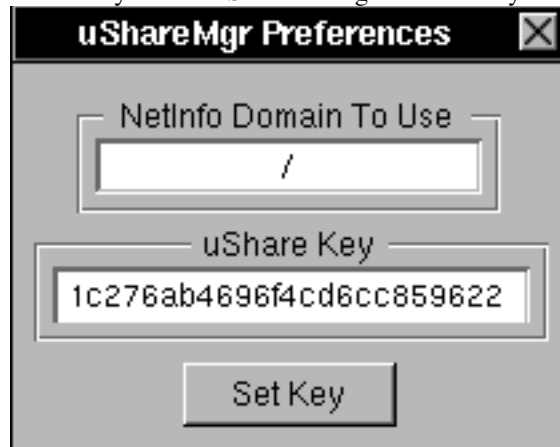
uShare Manager Menus and Panels

This chapter provides an overview of uShare Manager's menus and panels.
The Main Menu



uShare Manager's main menu includes the standard Info..., Edit, Windows, Services, Hide, and Quit commands. The Processes, Server, Spooler, and Mail... commands and the commands in their submenus let you manage uShare services. The Preferences command in the Info... menu can be used to ac-

cess a panel that lets you enter your uShare authorization key. This panel also appears when you start uShare Manager with no key set.



The Processes Menu



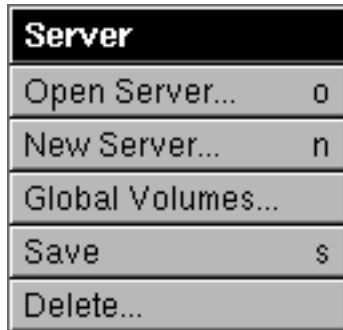
File Server, Print Spooler, Mail Service, and All

These commands open a menu that lets you control the corresponding uShare processes. For example, the File Server command opens a menu that lets you control uShare's File Server process.



- the Start command starts the File Server process;
- the Stop command kills the File Server process;
- the Restart command kills and then starts the File Server process.

The Server Menu



Save

The Save command saves changes made to the Server panel. This command is disabled until the Server panel is open.

Delete...

The Delete... command opens a panel that lets you delete a file server selected in the Server panel. This command is disabled until the Server panel is open.

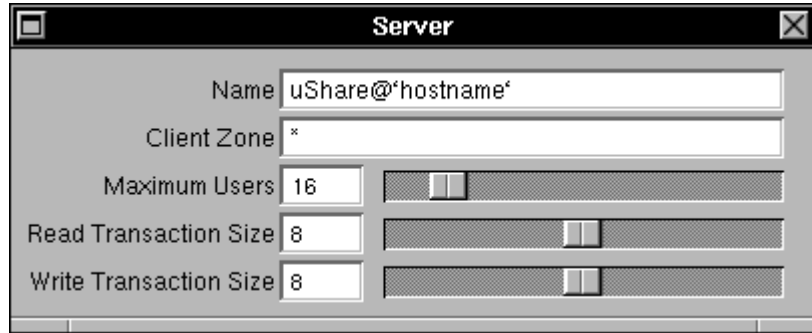
Open Server...

The Open Server... command opens a panel that lets you select a uShare file server for modification.



New Server...

The New Server... command opens the Server panel that lets you define a file server's characteristics.



Global Volumes...

The Global Volumes... command opens the Global Volumes menu.

The Global Volumes Menu



Save

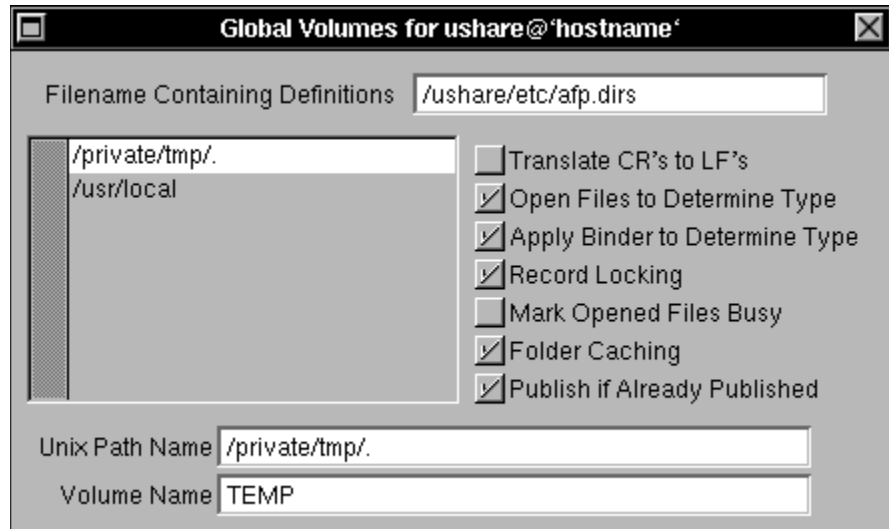
The Save command saves changes made to the Global Volumes panel. This command is disabled until the Global Volumes panel is open.

Delete...

The Delete... command opens a panel that lets you delete a volume selected in the Global Volumes panel. This command is disabled until the Global Volumes panel is open.

Open...

The Open... command opens a panel that lets you define a file server's global volumes list.



New

The New command adds a new entry to the list of volumes in the Global Volumes panel. This command is disabled until the Global Volumes panel is open.

Export Home Directories/Don't Export Home Directories

The Export Home Directories and Don't Export Home Directories commands toggle your file server's exportation of the home directories of your NeXT computer's users. These command are disabled until the Global Volumes panel is open.

Preparing to Use uShare

The uShare family of services adds to your AppleTalk network the powerful processing and networking resources of a NeXT computer. This chapter gives an overview of several issues you must deal with when you use uShare services:

- what you need to use uShare;
- connecting your Macintosh to your network;
- your user account.

What You Need to Use uShare

To use uShare services, you need the following:

- an AppleTalk network with a NeXT computer providing uShare services;
- a Macintosh computer with appropriate client software; if you plan to use uShare's File Server service, for instance, you must install AppleShare Workstation software onto your Macintosh's start-up disk;
- a uMail installation disk; if you plan to use uShare's uMail service, you must install the appropriate software from this disk onto your Macintosh's start-up disk.

For a detailed description of what you need, read the chapters in this guide that describe the uShare services you want to use.

Connecting Your Macintosh to Your Network

Your network administrator should provide you with the following information about connecting your Macintosh to your AppleTalk network:

- how to physically connect your Macintosh to the network;
- what network protocol your Macintosh should use to communicate with the network.

Physical Connection Options

You physically connect your Macintosh to your network by attaching a network cable to one of your Macintosh's network interfaces. There are many types of network cables and interfaces, but you will usually deal with two types: LocalTalk, and Ethernet. Your Macintosh has a built-in network interface called a "LocalTalk port." This LocalTalk port is also your Macintosh's printer port, therefore it is labeled with a printer icon. If you have a Macintosh SE or II, you can install an additional network interface into your Macintosh's expansion slot. The most common type of such an add-on network interface is an "Ethernet port."

If your network administrator instructs you to use a LocalTalk connection, attach a LocalTalk cable to your Macintosh's LocalTalk (printer) port. If your network administrator instructs you to use an Ethernet connection, make sure your Macintosh has an add-on Ethernet port and attach an Ethernet cable to it.

Network Protocol Options

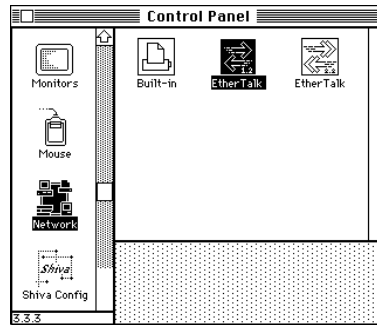
Devices on an AppleTalk network (e.g., Macintosh computers, laser printers, AppleTalk PCs) communicate with each other by sending data over network cables. To insure that the devices understand each others' data, communication over the cables conforms to one or more **protocols** (a protocol is like a language spoken by network devices). The most common protocols used by devices on AppleTalk networks are **LocalTalk**, **EtherTalk Phase 1**, and **EtherTalk Phase 2**. To select your Macintosh's protocol:

- 1 Make sure you have installed the necessary network driver into your Macintosh's System Folder or the Extensions folder in a System7 Macintosh's System Folder.

If you've been instructed to use the LocalTalk protocol, no installation is necessary, because the LocalTalk driver is built-in to your Macintosh. If you've been instructed to use the EtherTalk protocol, you'll need an installation disk (an EtherTalk Phase 2 driver is shipped with System7 installation disks).

- 2 Select the appropriate network driver in your Macintosh's Network Control Panel:

Choose **Control Panel** from the menu, select the **Network** icon, and look at the protocol icons. The Macintosh's current protocol is indicated by the selected icon. You change your Macintosh's protocol by selecting a different icon. In the Network Control Panel below, the **EtherTalk Phase 1** icon is selected:



The LocalTalk icon is usually named "Built-in" or "LocalTalk"—regardless of its name, you can identify the LocalTalk icon because it has a picture of a printer. To distinguish between the EtherTalk Phase 1 and EtherTalk Phase 2 icons, look at the arrows on the icon—Phase 1 has two single arrows, Phase 2 has two double arrows:



Your User Account

Most uShare services require that you have a user account on your NeXT computer. Your network administrator will provide you with information about your user account, the most important elements of which are your:

- **user name**
This is the name you use when you log in to a uShare file server or connect to a NeXT computer via uShare's Virtual Terminal service.
- **password**
This is the secret password you use when you log in to a uShare file server or connect to a NeXT computer via uShare's Virtual Terminal service.
- **home directory**
This is the portion of a NeXT computer's file system in which your private files (e.g., your uMail mail messages, and your uShare virtual disk) are stored.
- **group membership**
This is the set of groups of which you are a member. You must consider your group membership when you set the access privileges for folders on a uShare file server's volumes.

Using uShare File Servers

uShare's AFP File Server service lets you access files that reside on a NeXT computer by running Apple Computer's AppleShare software. This chapter gives instructions for:

- preparing your Macintosh;
- logging in to a uShare file server;
- working with AppleShare volumes;
- disconnecting from a file server.

Preparing your Macintosh

To use uShare's File Server service, you must first do the following:

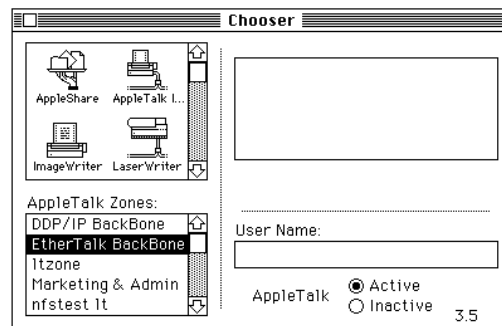
- Use your Macintosh System installation disks to install AppleShare Workstation software into the System Folder of your Macintosh.
- Ask your network administrator for your **Username** and **Password**.
- Ask your network administrator for the name of a uShare file server to which you will log in. The default name of uShare's file server is "uShare@`hostname`," but your network administrator may have changed the file server's name as described in "Modifying your File Server's Name and Attributes" ..
- If your network has AppleTalk zones, ask your administrator for the name of the zone in which the uShare file server resides.

Talk to your network administrator if you have questions about these steps.

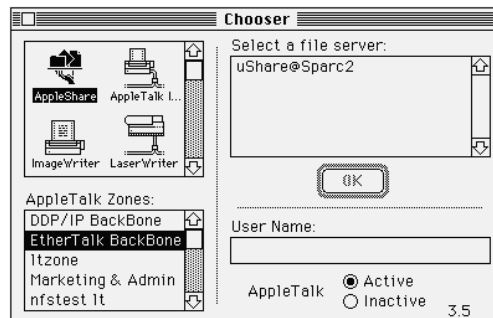
Logging in to a uShare File Server

Use the Chooser desk accessory to log in to a uShare file server and mount AFP volumes.

- 1 Select **Chooser** from the **Apple menu**. The Chooser window appears, with icons for **AppleShare** and possibly for printers and other network services. **AppleTalk zones** may appear.



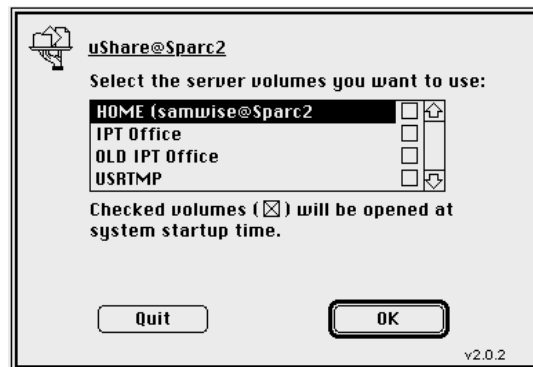
- 2 Select the **AppleShare** icon and a zone (if necessary). A list of available file servers appears.



- 3 From the list of available file servers, select a uShare file server, and click the **OK** button. A login screen appears.



- 4 Enter your user name and password (your password appears as dots so passersby can't read it) and click the OK button. A dialog box appears and present a list of available volumes.



- 5 Select the volume(s) you want to mount and click the OK button. Hold the option key while clicking to select multiple volumes. The number of volumes you can access at one time depends on how much memory your Macintosh has.

You can also click checkboxes of volumes to mount automatically when you start-up your Macintosh. If you click a checkbox, two additional choices appear, **Save My Name Only** and **Save My Name and Password**. If you select the first of these boxes, entering your password upon system start-up will automatically mount the checked volume. If you select the second of these boxes, the checked volume will automatically mount upon system start-up.

WARNING If you select the **Save my Name and Password** option, anyone who starts up your Macintosh will have access to your files.

- 6 Close the Chooser window.
For each volume you selected, an **AppleShare Volume** icon appears on your desktop. Use these icons like any other Macintosh disk.



Summary of Steps: Logging in to a uShare File Server

- 1 Select **Chooser** from the menu. The Chooser window appears.
- 2 Select the **AppleShare** icon and a zone (if necessary). A list of available file servers appears.
- 3 From the list of available file servers, select a uShare file server, and click the **OK** button. A login screen appears.
- 4 Enter your user name and password and click the **OK** button. A dialog box appears and present a list of available volumes.
- 5 Select the volume(s) you want to mount and click the **OK** button.
- 6 Close the Chooser window.

Working with AppleShare Volumes

This section provides a brief introduction to working with AppleShare volumes. Read Apple Computer's *AppleShare User Guide* for detailed instructions. Each AppleShare volume, and each folder on an AppleShare volume, has separate access privileges for its owner, for its group, and for everyone else. Folders on a volume have distinct appearances, depending on the access privileges you have:

- If you own a folder, a black line appears on its tab.



- If you can add things to a folder but can't see its contents, the folder is grey with an arrow above it.



- If you have no privileges, the folder is grey.



By default, when you create a folder on an AppleShare volume, only you, the owner, can See Folders, See Files, and Make Changes. You can view the access privileges of any folder, and change them if you are the folder's owner, by using the **Access Privileges** desk accessory or choosing **Get Privileges...** from the **File** menu.

Disconnecting from a File Server

To disconnect from a uShare file server, drag the icon for each volume you have mounted into the **Trash**. You can also disconnect by restarting your Macintosh.