XEROX

Shared Document Services 14.0

Installation Guide

Network Administration Library
July, 1995

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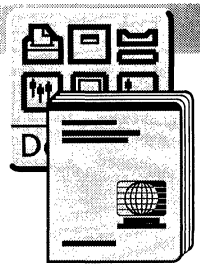

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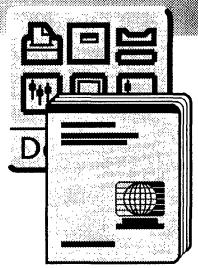
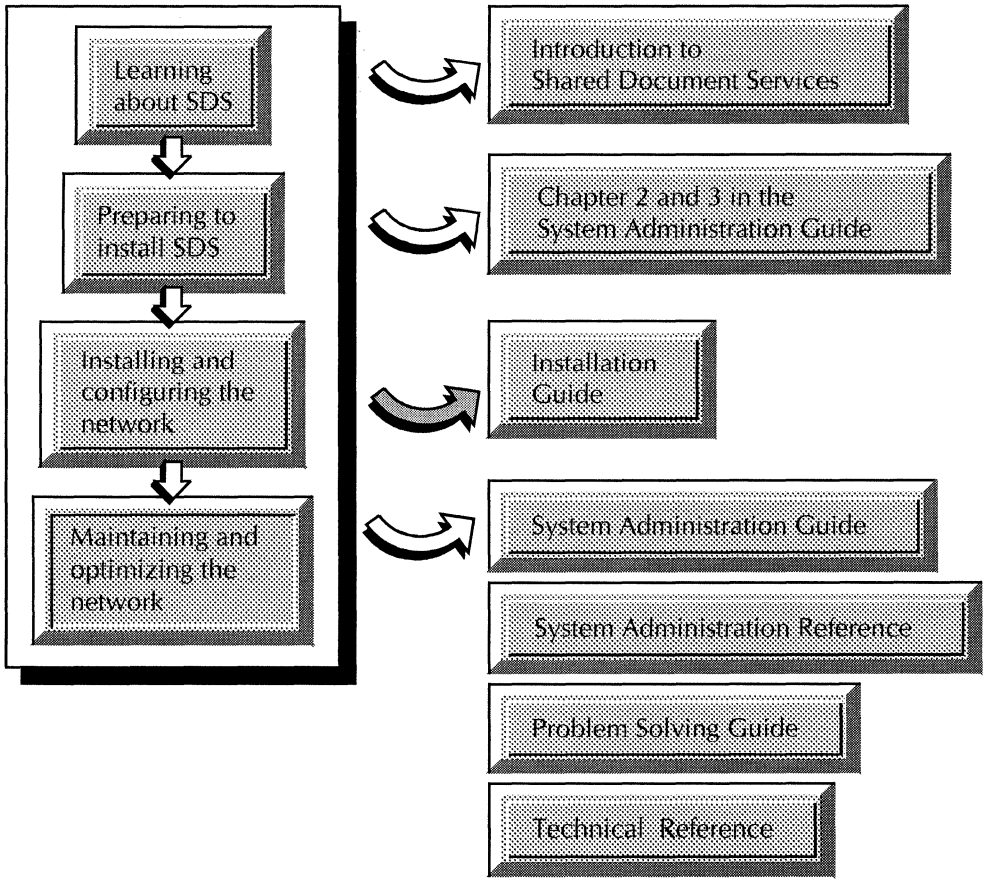


Before you begin

The *Shared Document Services 14.0 Installation Guide* provides step-by-step instructions on how to install Shared Document Services (SDS) version 14.0 using the XSoft Installation and System Administration Tool (XIST), and describes any other steps necessary to start each service. Information is also included for starting the license server and the online documentation.

Roadmap to the Network Administration Library

The Network Administration Library (NAL) is designed to be used in a particular order to set up and maintain a network. The following figure shows the order in which you should use the books. Each book is described in this chapter.



Learning about SDS

If you are unfamiliar with the Shared Document Services (SDS) products, you should read the *Introduction to Shared Document Services*. This manual provides an overview of each of the network services: Clearinghouse Service, File Service, Mail Service, and Print Service.

Also refer to the *Shared Document Services What's new in version 14.0* and the *Shared Document Services 14.0 Release Notes* for up-to-date release information.

Preparing to install SDS

When you are ready to plan your network and resources, turn to chapters 2 and 3 in the *System Administration Guide*. This manual contains worksheets you need to fill out before you install the services. It also contains information you need to control and monitor your network once it is up and running.

Installing and configuring the network

When you are ready to install SDS software, use your completed worksheets and follow the instructions in the *Installation Guide*. This manual contains step-by-step instructions to help you install and set up your initial network.

Maintaining and optimizing the network

Once your network is in operation, use the *System Administration Guide* and the following manuals to maintain user accounts and services:

- If you have problems with your network, you should read the *Problem Solving Guide*. This document describes the error messages you may see on the workstation or server, and how you can diagnose and correct them.

  This manual also describes how to isolate a network problem based on analyzing symptoms and the results of the diagnostic procedures in your server's hardware reference guide.

- If you need help on how to execute a particular command, use the *System Administration Reference*. This document contains step-by-step procedures designed to help you use each command. It is meant to be used as a reference for maintaining your network. Before you use this document, you should have installed and configured your network.

- If you are interested in a more technical review of SDS software, refer to the *Technical Reference Manual*. This document is written for users who want to learn more about the internal operation of SDS.

Shared Document Services Online NAL

The information in the library is also available as a database called the Online NAL. This online version contains all of the information in the hardcopy Network Administration Library, with hypertext references to all associated graphics and items in the database. It also offers the advantage of an electronic indexing and search function so you can quickly locate the information you want.

About this guide

This guide contains the following chapters:

- Chapter 1, "Introduction," provides an overview of installing SDS.
- Chapter 2, "Installing SDS," describes using the XIST utility to install the SDS services.
- Chapter 3, "Initializing services," describes initializing the Clearinghouse, File, Print, and Mail Services on your network.
- Chapter 4, "Installing the License Server," describes licensing the use of SDS and installing a License Server.
- Chapter 5, "Deinstalling services," describes deinstalling SDS from the network.
- Appendix A, "Upgrading SDS from a previous version," contains information you need to upgrade SDS from an earlier version.
- Appendix B, "Maintaining the License Server," contains command and troubleshooting information for maintaining the License Server.
- Appendix C, "Information for System Administrators," contains directory and file information about the SDS installation and XIST.

Conventions

The *Installation Guide* uses the following conventions to help you recognize information.

Notes, cautions, and warnings

✦ **Note:** Notes are hints that assist you in performing a task or in understanding the text.✦

✦ **CAUTION:** Cautions describe actions that might destroy data stored on your network. Make sure you understand the potential impact of the action before you do it.✦

WARNING: Warnings appear immediately before any action that may cause physical harm to you or your equipment. Make sure you understand the warning before you perform the action.

Commands

SDS supports two different types of commands. Each has its own convention.

Commands in headers

SDS commands you select with the mouse (such as commands in windows, option sheets, or property sheet headers) are written with initial capital letters. For example:

Select the Mail Service Add Mailbox command ...

UNIX commands, directory names, and filenames appear in italic type. For example:

the */bin* directory.

Typed-in commands

Commands you type at the command prompt (such as File Service commands, UNIX commands, or TTY commands) are shown in **boldface**. For example:

Type **Add File Drawer** ...

✦ **Note:** UNIX commands are case-sensitive. When you need to use a UNIX command, type it exactly as it is shown.✦

Command Permissions

Many of the UNIX commands described in this guide require superuser, or "root" privileges to execute them. This is indicated in the examples with the default root user prompt (#), for example:

lmhostid

If a command does not require root privileges, the default user prompt (%) is shown, for example:

% **hostid**

UNIX Shells

Several different command-line interfaces, called shells, are available to the UNIX operating system user. The default shell for SUN OS users is the C shell. The C shell is used in the examples in this guide.

If you use a different shell, such as the Bourne shell, the shell environment files and variables used in the examples may be different.

Keys to press

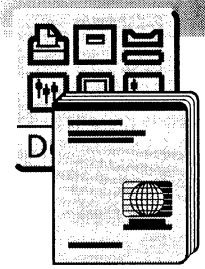
Keys on the workstation keyboard are shown in smaller capital letters, for example:

... and press RETURN.

Variable information

Variable information, such as names and numbers specific to an operation, appears within angle brackets (<>) in italics. For example:

Swap space on <*hostname*> is sufficient.



1. Introduction

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The *Installation Guide* provides step-by-step instructions on how to install Shared Document Services (SDS) using the XSoft Installation and System Administration Tool (XIST), and describes any other steps necessary to start each service. Information is also included for starting the license server and the online documentation.

Once you have completed the basic network installation and initialization described in this guide, you should be able to maintain and modify your system using the *System Administration Guide, System Administration Reference, Technical Reference Manual,* and *Problem Solving Guide.*

Before you begin the installation

For any questions you have along the way, contact your UNIX System Administrator.

Worksheets

Before you begin, you should prepare for the installation by filling out the worksheets in the *System Administration Guide.* These worksheets are designed to help you organize your network, and serve as useful reference sheets for future network configuration and maintenance.

Required information

You should have the following information handy before you install Shared Document Services:

- UNIX root password (you must have superuser privileges for the system on which you are installing software)
- Organization name (supplied by your customer support center)
- Organization password (supplied by your customer support center)

Configuration information

Keep the following system configuration considerations in mind:

- Make sure that there is sufficient disk, memory, and swap space on the workstation(s) where you install SDS software. Refer to the *System Administration Guide* for information about organizing your network servers based on space considerations.
- A CD-ROM drive must be either attached to your local system or available over the network. The CD-ROM that contains the SDS software also contains the XIST utility you use to install the software.
- You must install a License Server and license files, otherwise your SDS network will only operate for a grace period of six days. You only need to install one License Server on your network (but you may install more), then install license files on each workstation that will use the services.
- You must have at least one Clearinghouse Service on your SDS network. If you are creating a new SDS network and are adding the first Clearinghouse Service, you must perform a "Genesis" Clearinghouse Service installation. If you are adding services to an existing SDS network, and you already have at least one Clearinghouse Service running, you do not need to do a Genesis installation.

Installation overview

1. **Make sure you are using one of the following supported workstations with at least a 400 MB disk capacity:**

   - ☐ SPARC1, SPARC1+
   - ☐ SPARC2 (Xerox 6540)
   - ☐ SPARC IPC (Xerox 6520)
   - ☐ SPARC IPX (Xerox 6522)
   - ☐ SPARC 10, Model 20, 30, and 40
   - ☐ SPARC LX
   - ☐ SPARCclassic™

- ☐ SPARC 5
- ☐ SPARC 20

✦ **Note:** Running SDS on a multi-processor configuration is supported if using Solaris 2.4.✦

2. **SDS requires that one of the following Sun operating systems be installed:**

   - ☐ Solaris 2.3 or 2.4
   - ☐ SunOS 4.1.3 or 4.1.4

3. **Install one of the following:**

   — For Solaris, install at least the complete "End User" subset of Solaris 2.3 or 2.4.

   — For SunOS, install the following applications: Networking, Sys, System_V, TLI, and Text.

4. **Install GLOBALVIEW for X Windows (GVX) before you install Shared Document Services, and reboot.**

   Shared Document Services are required for access to Xerox network services. Refer to the *GVX 2.1 Installation Guide* for details about GVX disk and swap space requirements and installation procedures.

5. **Access your CD-ROM drive and start the XIST installation tool.**

   Run the *startxist* script that automatically invokes the XIST) program. Doing this will set all the required environment variables for running XIST. The software automatically provides the correct variables whether you are running Solaris or SunOS.

6. **Use XIST to install and run the License Server.**

   The License Server utilizes the Highland Flexlm license service. It can run on one, three, or five servers. If the Highland Flexlm license service is not already installed, the License Server must be installed using XIST. After installing the license file, you must tell the License Service to read and use this file by running *lmgrd* (located on the license server) using the proper syntax.

   ✦ **Note:** SDS will run without a license for a six-day grace period to allow you time to send in the License Request form (shipped with your software) and obtain the proper license file for your site. ✦

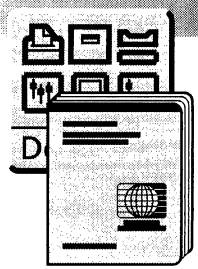
7. **Use XIST to install SDS services and Online Help.**

   SDS software installation includes the installation of one or more of the following services:

   — Clearinghouse Service
   — File Service
   — Print Service
   — Mail Service
   — Time Service Adjust Time Tool

8. **Reboot.**

   After the initial installation of SDS, you must reboot the machine to load and activate the SDS drivers.



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This chapter describes how to use the XSoft Installation and System Administration Tool (XIST) to install and initialize the Shared Document Services (SDS) network. XIST is included in the CD-ROM with the SDS software. The CD-ROM drive can be attached directly to the server you are using (local), or it can be attached to another server on the network (remote).

Starting XIST

Setting access requirements

To install services with XIST, you must be logged in as root. If you are using OpenWindows, you must allow access to your display.

To determine if access to OpenWindows is allowed, enter the following command:

/usr/openwin/bin/xhost

✦ **Note:** The root prompt (#) is shown in the examples to indicate that you should be logged in as root in order to perform the step. If root login is not required, the standard user prompt (%) is shown in the examples.✦

If your workstation/server does not appear in the list of hosts with access, you can add it with the following command:

/usr/openwin/bin/xhost <*hostname*>

or

xhost + (to allow access for all hosts)

✦ **Note:** Starting OpenWindows with the *-noauth* option has the same effect as the *xhost +* command, in that it allows access to all network hosts.✦

Mounting the CD-ROM

If you are installing from CD-ROM, you must have the CD-ROM mounted on your machine (the actual CD-ROM drive may be local or remote).

For example, to mount the CD-ROM on your local machine, enter the following command:

mkdir /cdrom (if it does not already exist)
mount -r -t hsfs /dev/sr0 /cdrom

If a remote machine is exporting */cdrom*, enter the following command:

mkdir /cdrom (if it does not already exist)
mount -r [*remote_machine_name*]**:/cdrom /cdrom**

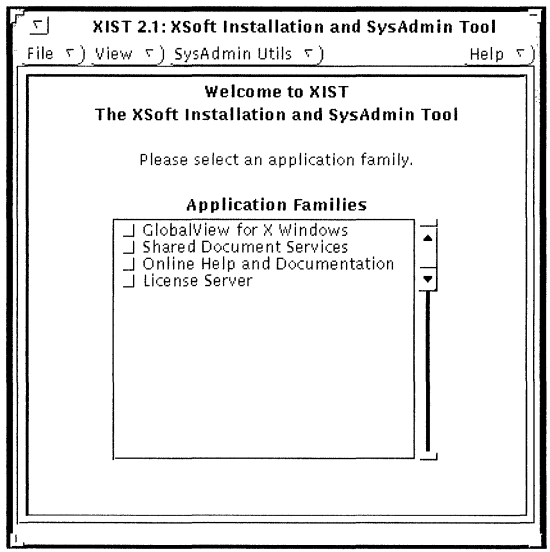
(assuming that the remote machine has the CD-ROM mounted on */cdrom*)

Starting XIST

To start XIST, change to the XIST directory on the CD-ROM and enter the following commands:

cd /cdrom/globalview
startxist

In a few minutes the XIST window appears.



Installing SDS software with XIST

This section contains the procedure for installing SDS using the XIST utility. XIST is accessed from a local CD-ROM.

✦ **Note:** SDS will run without a license for a six-day grace period to allow you time to send in the License Request form (shipped with your software) and obtain the proper license file for your site. To set up a License Server and license your software, refer to Chapter 4, "Installing the License Server."✦

Running XIST

To access and run XIST:

1. Make sure that the local CD-ROM drive is properly connected and accessible. Turn on the Sun workstation. After a few minutes, the UNIX login prompt appears.
2. Login as yourself. Type your login ID and press RETURN. Type your password and press RETURN.
3. Run Openwin 3.3 or X11R5 with OPEN LOOK, or with Motif. For example, to access OPEN LOOK, type:

   /usr/openwin/bin/openwin

   ✦ **Note:** You may need to run xhost after running the window manager. Type the following command in a cmdtool window:

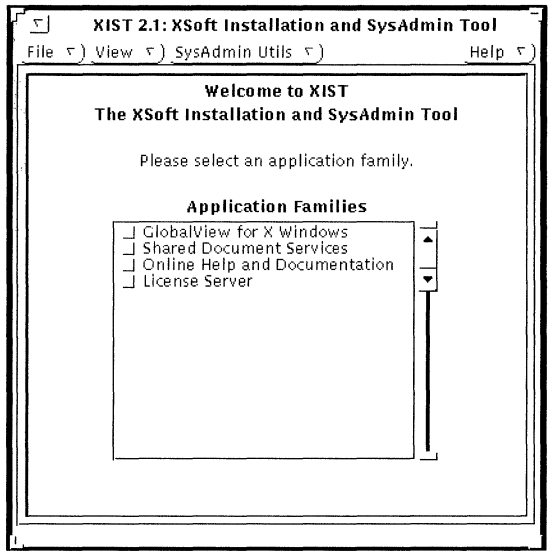
   /usr/openwin/bin/xhost +<*yourmachine name*>✦
4. Open a command tool window (cmdtool or xterm) and login as root. Type **su root** and press RETURN.
5. Type the root password and press RETURN.
6. Place the CD containing the SDS software in the CD tray, and place it in the CD-ROM drive.
7. Change the current directory to the CD-ROM:

   cd /cdrom/globalview

8. Type the following command at the cmdtool or xterm prompt:

   ./startxist

   In a few minutes, the XIST window appears.

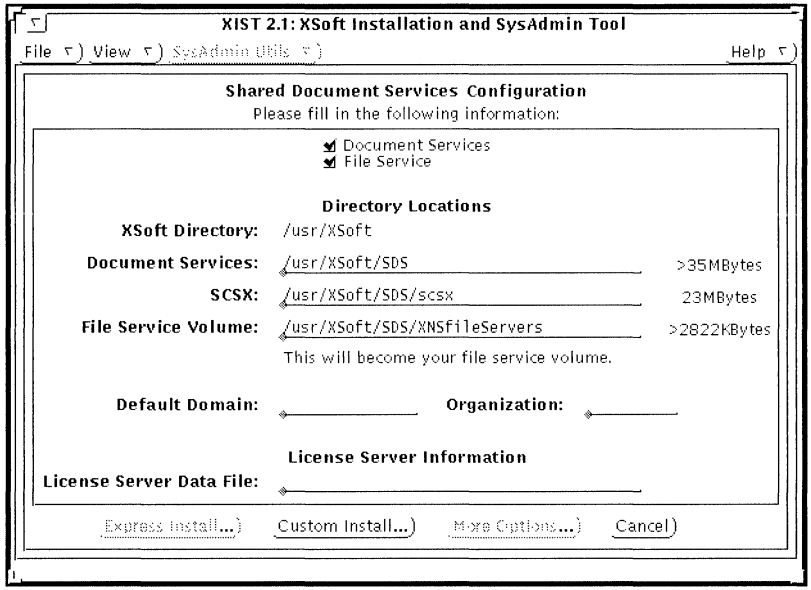


Installing SDS

To install SDS:

9. Select the Shared Document Services option.

   The Shared Document Services Configuration window appears.



10. Select one or both of the following:
    - Document Services, if you are installing any of the Document Services other than the File Service.
    - File Service, to install only the File Service.
11. Make sure that the directory locations are set properly.
12. Enter your default domain and organization names.
13. Enter the source path name for the SDS License Server data file (*license.dat*). Refer to Chapter 4, "Installing the License Server," for more information about the License Server.

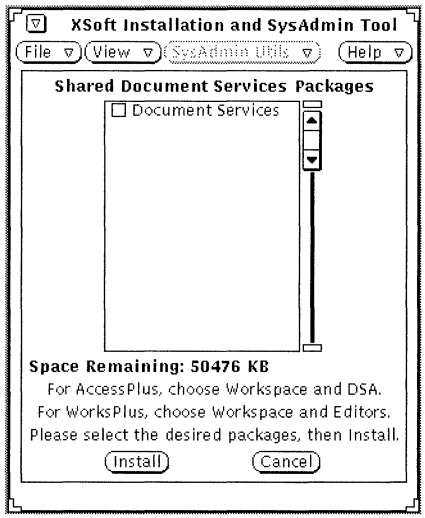
    Do one of the following to specify the source license file path name:
    - For a first time installation, you can use XIST to copy the *license.dat* file to the destination location. Enter the source file location in the Configuration window as requested. This file may be on a floppy disk or a network location. If you are not sure of the correct path name, ask your System Administrator.

- You can use the SysAdmin utility and the GVX: Update License File option to specify the source location of the *license.dat* file. Enter the source file location as requested in the window and proceed as directed by XIST.

14. Select Custom Install.

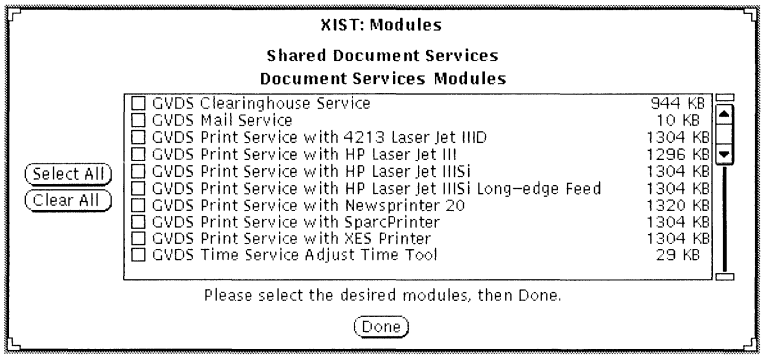
    ✦ **Note:** If you selected to install the File Service only, the installation begins at this point. Skip to step 17.✦

    The Shared Document Services Packages window appears.



15. Select Document Services, then select Install.

The Shared Document Services Modules window appears.



16. Select one or more options from the window, then select Done.

    The installation window appears, indicating the installation progress.

17. When the installation is complete, reboot the operating system. Continue with Chapter 3, "Initializing services," to complete the initialization procedures for each service you installed.

Installing the File Service without GLOBALVIEW or SDS

Use this procedure if you are installing the File Service on a server that is not running GLOBALVIEW (GVX) or SDS. Before you install the File Service without GLOBALVIEW or SDS, you must first customize the kernel.

To customize the kernel for the File Service installation:

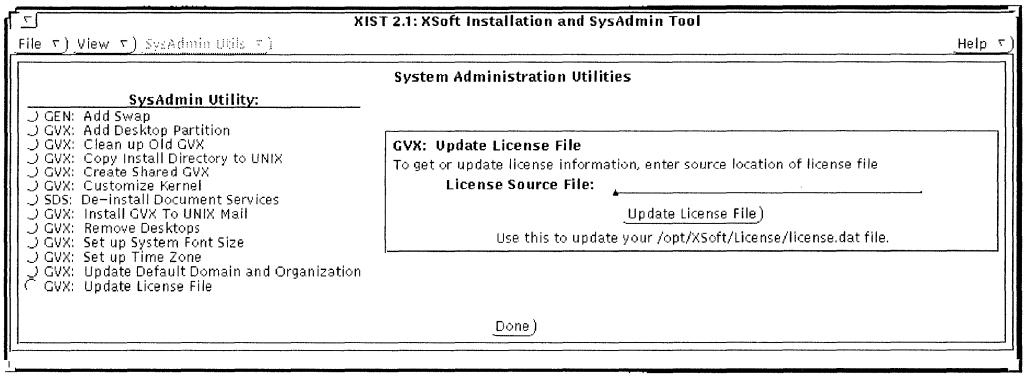
1. Start XIST if it is not already running by entering the following commands:

   # **cd /cdrom/globalview**
   # **startxist**

   The initial XIST window appears.

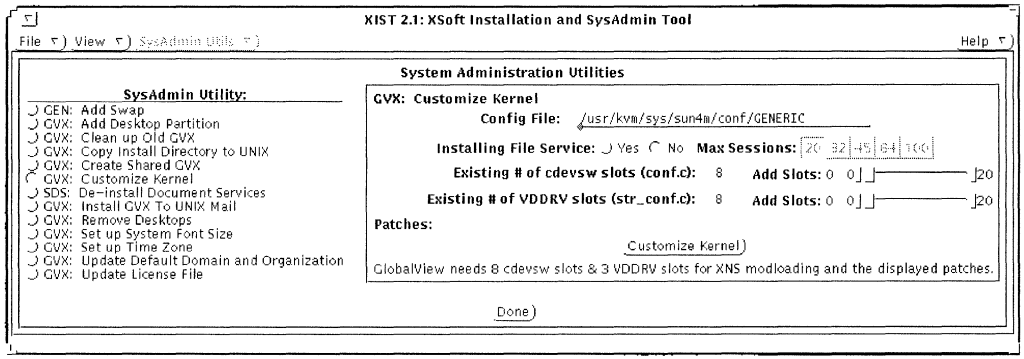
2. Select SysAdmin Utilities.

The System Administration Utilities window appears.



3. Select the GVX: Customize Kernel option.

   The Customize Kernel window appears.



4. Select Yes for Installing File Service.
5. Select the appropriate Max Sessions to configure the File Service.
6. Specify the appropriate number of cdevsw and VDDRV slots.

   GLOBALVIEW needs 8 cdevsw slots and 3 VDDRV slots for XNS modloading. If the number of cdevsw slots is less than 8, add enough slots to equal 8. For example, if the existing number of cdevsw slots is 3, add 5 slots. Similarly, add the required number of VDDRV slots if the existing number of VDDRV slots is less than 3.
7. Select any displayed patches.
8. Select Customize Kernel.

   It will take a few minutes for the kernel customization to complete.
9. Select Done to return to the XIST window.
10. Exit XIST, then exit the X Windows environment.
11. Log in as root.
12. At the UNIX prompt, type **reboot**.

    Continue with the "Initializing the File Service" procedure, in Chapter 3, "Initializing services."

Installing the SDS online help and documentation

The online documentation database for the NAL is included with the software for Shared Document Services. The following procedure shows you how to install online help and documentation using XIST.

To install the online help and documentation:

1. Start XIST if you do not already have it running by entering the following commands:

   # cd /cdrom/globalview
   # startxist

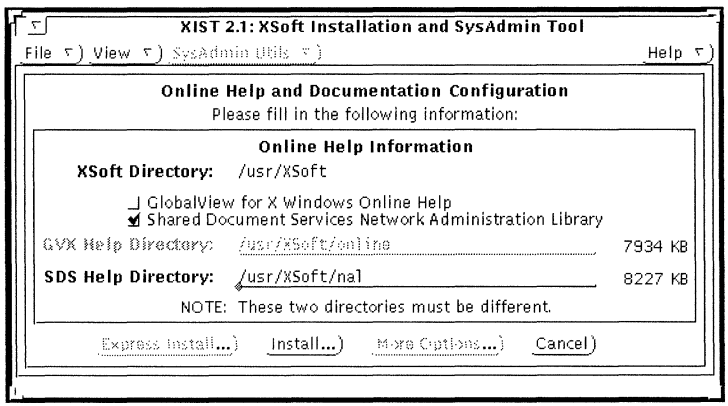
2. From the XIST window, select the Online Help and Documentation option.

   The Online Help and Documentation Configuration window appears.

3. Select the Shared Document Services Network Administration Library option.

4. Type a different SDS directory path if you need to change the default.

5. Select Install to begin the installation.



Initializing the Online NAL

Once you have installed online help, you need to make the path to the *nal* command available to users. You can do this in one of two ways:

- Add an alias
- Add the directory location to the user's *PATH* variable
- Enter the following commands:

  # cd /nal
  # nal

Creating an alias

If your users use a shell that supports the alias feature, you can create an alias to reference the *nal* command.

For example, if a user uses the C Shell (*/bin/csh*) as their login shell, and you have placed the online NAL documentation in the directory */disk2/nal*, you can add the following line in the user's *.cshrc* file:

alias nal /disk2/nal/nal

When the user logs in, typing **nal** at the command line will start the online documentation viewer.

Adding the directory location

You can also add the directory that contains the online documentation (*/disk2/nal* in the above example) to the user's *PATH* variable.

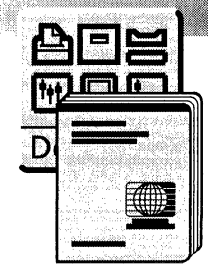
For example, if the C shell user's *PATH* environment variable is set in the following way in their *.cshrc* file:

setenv PATH /bin:/usr/bin:/usr/local/bin

You can add *:/disk2/nal* to the end of that line to create the following:

setenv PATH /bin:/usr/bin:/usr/local/bin:/disk2/nal

The next time the user logs in and types **nal** at the UNIX command line, the *nal* command will be found when */disk2/nal* is searched.



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This chapter describes initializing the services once you have installed them. Refer to the section that corresponds to the service you are initializing.

Initializing the Clearinghouse Service

The following sections describe how to initialize a first or "Genesis" Clearinghouse Service. Refer to "Initializing a second (non-Genesis) Clearinghouse Service" in Chapter 4 of the *System Administration Guide* for information about initializing additional network Clearinghouse Services.

After you have installed the Clearinghouse Service and rebooted the system, you can log in and start GLOBALVIEW (you will have to re-enable host access if it is not done automatically).

To initialize the Clearinghouse Service:

1. When the GLOBALVIEW logon window displays, log on as Clearinghouse Service administrator by typing your fully qualified name and password.

   For example, enter "CHSadmin:pubsnet:ProdEd."

2. Select Start.

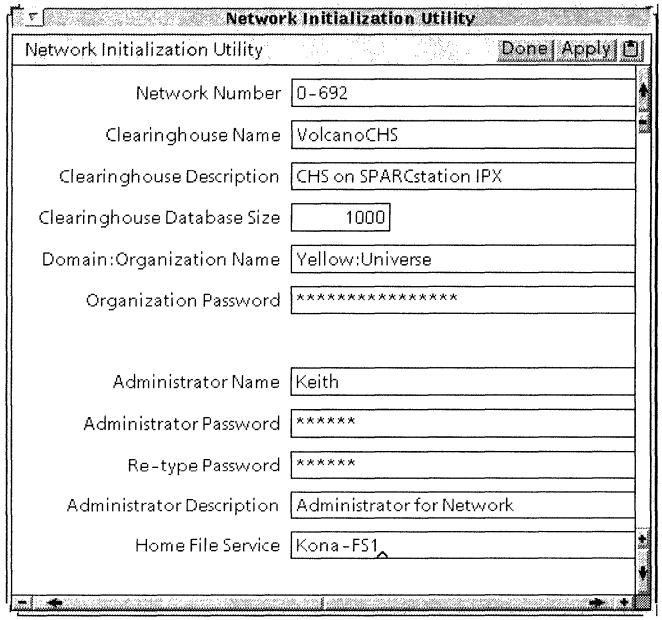
   A message appears indicating that a desktop does not exist.

3. Select Start to create a desktop.

4. Open your Loader icon, located in the Directory folder inside the Workstation divider, and make sure that the Network Initialization Utility is running.

5. Select Initialize Network from the desktop pulldown menu.

The Network Initialization Utility window appears.



The fields are described below. For more information about these fields, see the *System Administration Guide*.

- Network Number—Enter your network number. This is a decimal number in the form 1-234, that you obtain from your customer support center.
- Clearinghouse Name—Enter your Clearinghouse Service name without the domain and organization, for example, "SunOneCHS."
- Clearinghouse Description—Enter a brief description of the Clearinghouse Service, for example, "Initial CHS on pubsnet host sunone."
- Clearinghouse Database Size—Leave this at the default (1000), or enter a different size. See the *System Administration Guide* for more information about Clearinghouse size considerations.

- Domain:Organization Name—Enter the name of the domain and organization, for example, "pubsnet:ProdEd."
- Organization Password—Enter the organization password exactly as supplied by your Xerox representative.
- Administrator Name—Enter the name of the Organization Administrator.
- Administrator Password—Enter the password for the Organization Administrator. This is determined within your organization. You must enter the password twice for verification. The actual password characters are not echoed on the screen.
- Administrator Description—Enter a brief description for the Organization Administrator, for example, "Rodney Smith, x744, rsmith."
- Home File Service—Enter the name of the administrator's home File Service. This is name of a File Service volume, for example, "Users." If you do not know the name of the home File Service at this time, you can leave this field blank and specify it later with the Change User command.

6. Verify that you have entered what you want, then select Apply.

   If there is a problem with the configuration, a message window appears indicating what to correct. When the information has been accepted and the initialization is complete, a read-only window containing the same information appears.

7. Close the read-only window.
8. Select Quit on the Logon Option Sheet.
9. Type **reboot** and press RETURN at the UNIX prompt.

Creating a Service Executive

You can use the the graphical Service Executive (SE) or the command-line interface (SETTY) to configure and monitor services. In this section, you create a Service Executive to graphically interface with the Clearinghouse Service, and add user accounts.

To create a Service Executive:

1. Log on to GLOBALVIEW as the System Administrator.
2. Open your Loader icon and run the SE Executive.

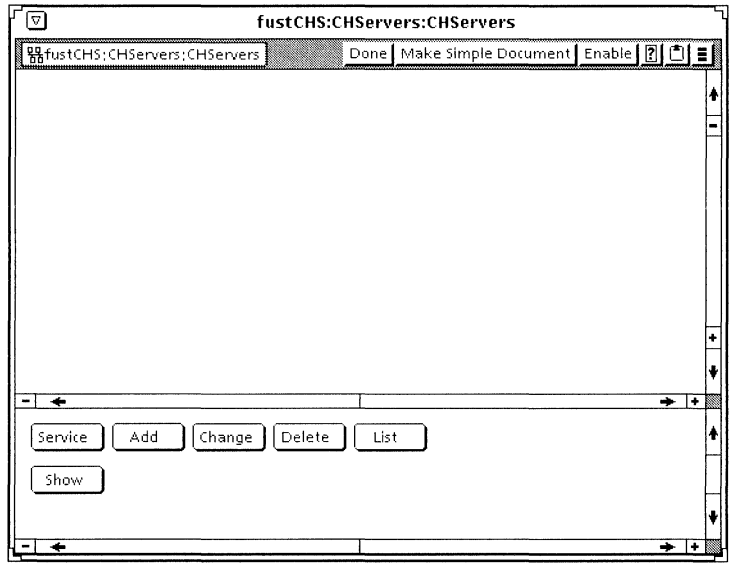
   ✦ **Note:** You may want to set the SE Executive to Autorun.✦
3. Copy a blank Service Executive icon from the Basic Icons folder, located in the Workspace folder of the Directory, to your desktop.
4. Rename the blank Service Executive icon to reflect the name of the service(s) you plan to administer from it.

   For example, enter "CHS on sunhost."
5. Open the Service Executive icon and select the Clearinghouse Service.
6. Enter the fully-qualified name of the Clearinghouse Service.

   For example, enter "sunhostCHS:pubsnet:ProdEd."
7. Select Start.

   The Clearinghouse Service window appears. You only have restricted rights in the Service Executive until you enable.
8. Select the Enable button from the top bar of the window.

   The button changes to read "Disable."

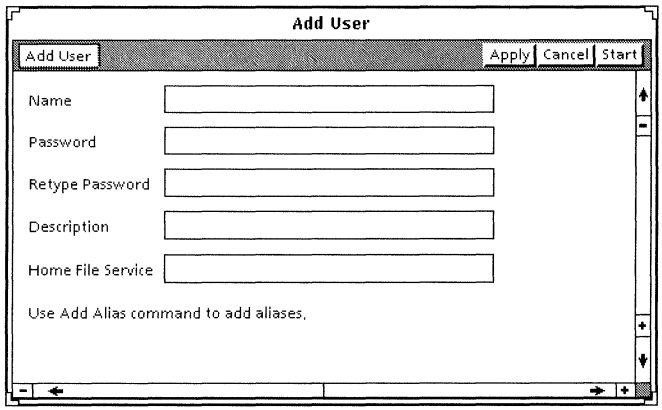


You now have System Administrator rights and can, for example, add users. In addition to whatever user accounts you want to set up now, you should also set up an account for the Postmaster for this network.

To add a user:

1. Select the Add Button, then select User.

   The Add User window appears.



2. Enter the fully-qualified name of the user you want to add.

   For example, enter "Postmaster:pubsnet:ProdEd."

3. Enter a password for the user, then retype the password to verify it.

4. Enter a brief description of the user.

   For example, enter "Postmaster for pubsnet domain."

5. Enter the name of the volume for the home File Service.

   If you already decided on a home File Service volume name when you filled out your worksheets, you can enter that now. Enter the fully-qualified name, for example, "Users:pubsnet:ProdEd."

   ✦ **Note:** If you do not enter the name of a home File Service volume now, you can enter it later with the Change User command.✦

6. Select Start to add the user.

   ✦ **Note:** If you entered a File Service volume name in step 5, a warning message will appear indicating that there is no such File Service. Ignore this message; you will be setting up the File Service in the "Initializing the File Service" section, next.✦

7. You can add additional users by repeating steps 1 through 6. To display a list of existing user accounts, select List Users.
8. Select Done when you are finished.

Initializing the File Service

The File Service interface is a TTY-style interface (SCSX), not the Graphical User Interface (GUI) or the SETTY interface available with the other services. You use the SCSX command line interface to the File Service to initialize it.

To initialize the File Service:

1. Log in as the xnsadm account, either from the UNIX login prompt. Or, if you are already logged in as another account, enter **su - xnsadm** at the UNIX prompt.

   The ">" prompt appears, indicating that you are in the File Service command line, or TTY mode (SCSX).
2. Type **Logon** to log on as the Domain Administrator.
3. Enter your user name and password at the prompts.
4. Type **Enable** to enable your System Administrator privileges.

   The prompt changes from ">" to "!" to indicate that you are enabled and in System Administrator mode.
5. Type **Register Server** to register the File Service name.
6. Enter the fully-qualified name of the server and a brief description.

   For example, enter "sunOne:pubsnet:ProdEd" as the server name, and "file server on fust" as the description.

   ✦ **Note:** The name of the File Service server does not need to be the same name as the UNIX host name, but it may be easier to remember. The server name for SDS and the server name for the File Service must be different, otherwise you will not be able to distinguish between the two.✦

7. Type **Y** at the confirmation prompt.

   A series of messages appears indicating that the registration was validated.

8. Type **Installer** to enter the Installer context and install the File Service.

   The prompt changes to "INST!", indicating that you are in the Installer context, and that you have System Administrator privileges.

9. Type **Install Service**.

10. Enter the number that corresponds to the File Service you want to install.

    A series of messages appears indicating that the File Service was installed and validated.

11. Type **Start Services** and select the File Service.

    A series of messages appears indicating that the File Service was started.

12. Type **Quit Connection** to exit from the File Service TTY mode.

    At this point the File Service is installed, initialized, and running. Continue with the next section to create volumes and file drawers for the File Service.

Creating a volume

This section describes how to create a File Service volume. Note that a user's home File Service is actually a File Service volume.

To create a volume:

1. Log in as the xnsadm account, either from the UNIX login prompt. Or, if you are already logged in as another account, type **su - xnsadm** at the UNIX prompt.
2. Type **Logon**, then enter your name and password.
3. Type **Enable**.
4. Type **File Service** to enter the File Service context.

5. Type **Create Volume** to create the File Service volume.
6. Enter the volume name.
7. Type **Y** or **N** to specify whether you want the volume to be a link to an existing UNIX directory.
8. Type **Online Volume** and enter the number of the volume to make the volume available to users.

   Since you have just initialized a new File Service and created the first volume, there is only one volume to select from when you are prompted for the volume you want to bring online. Because the volume has just been created and has never been brought online before, it is not recognized by the File Service. You are prompted for registration information.
9. Enter a description for the volume.
10. Type **Y** to confirm the File Service registration and bring the volume online.

Adding a file drawer

This section describes how to add a file drawer to the new volume.

To add a file drawer:

1. While logged on and enabled in the File Service context, type **Add File Drawer**.
2. Select a volume.
3. Enter a name for the file drawer.
4. Enter the file drawer owner's name.

   ✦ **Note:** The owner or user must already be registered in the Clearinghouse Service.✦
5. Enter a number for the page limit. The range is from 0 to 2147483647, with 0 specifying no limit.
6. Type **Reset Context** to return to the previous command context, or type **Quit Connection** to exit the File Service TTY mode.

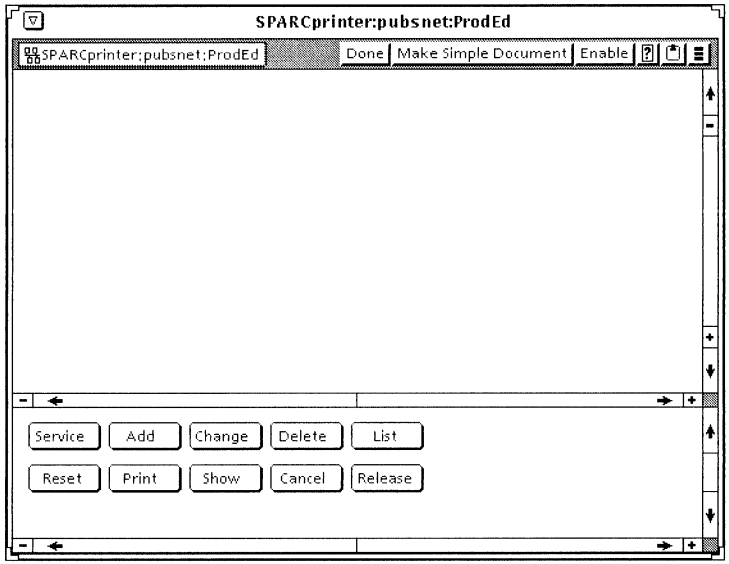
Initializing the Print Service

To initialize the Print Service:

1. Log on to GLOBALVIEW as System Administrator.
2. Do one of the following:
   - Copy a blank Service Executive icon from the Directory folder and change its name to reflect the Print Service you created.
   - If the Print Service is running on a host that already has a Service Executive for another service, you can access it through that Service Executive icon.
3. Open the Print Service Service Executive icon and select the Print Service.
4. Enter the fully-qualified name you want to assign to the Print Service.

   For example, enter "SPARCprinter:pusbnet:ProdEd."
5. Enter a brief description for the printer.
6. Select Start.

   The Print Service Service Executive window appears.



Installing fonts

Use the following procedure to install the standard Interpress fonts.

To install Print Service fonts:

1. Select Stop Service and Done to stop the Print Service.
2. Select either Stop Immediately or After Current Job Completes, then confirm your choice.

   A message appears to confirm that the Print Service has stopped.
3. Select Done.
4. Copy the standard fonts from the CD-ROM to a folder on your GLOBALVIEW desktop by doing the following:

   a. Copy a blank Window to Unix File System (WUFS) icon to your desktop and rename it. The icon is located in the Directory/Workstation/Basic Icons folder.

b. Press PROPS and enter the pathname to the Standard fonts directory.

   For example, if the CD-ROM is mounted on */cdrom*, you would enter */cdrom/InterpressPrinterFonts/Standard*.

c. Copy a blank folder to the desktop and rename it to "Fonts" (or another appropriate name).

d. Open the WUFS icon, select all the fonts inside it, and copy them to the Fonts folder.

5. Load the fonts from the Fonts folder to the Print Service by doing the following:

   a. Open the Print Service Service Executive, select Enable, then select Add Data Files.

   b. Select the following:

      — Printer Data Directory: FNT
      — Source Location: Desktop
      — Pathname: Fonts

   c. Press NEXT. An asterisk (*) appears for the Name option.

   d. Press NEXT again to display the font list.

   e. Select the fonts you want, then select Start.

      It may take a few minutes for the fonts to be added to the Print Service.

6. When the fonts have been added, select Start Service in the Print Service Service Executive.

   Font conversions may take several minutes.

   You or other users can now copy the network printer icon to other desktops and use it. The network printer icon is in *Directory/Network/[org]/[domain]/Printing*.

Initializing the Mail Service

This section describes how to initialize the Mail Service to enable network mailing between users. The Mail Service requires a Postmaster account, and should also include accounts for all users and groups that you support.

To initialize the Mail Service:

1. Logon to GLOBALVIEW as System Administrator.
2. Do one of the following:
   - Copy a blank Service Executive icon from the Directory folder and change its name to reflect the Mail Service you created.
   - If the Mail Service is running on a host that already has a Service Executive for another service, you can access it through that Service Executive icon.
3. Open the Mail Service Service Executive icon and select the Mail Service.
4. Enter the fully-qualified name for the server.

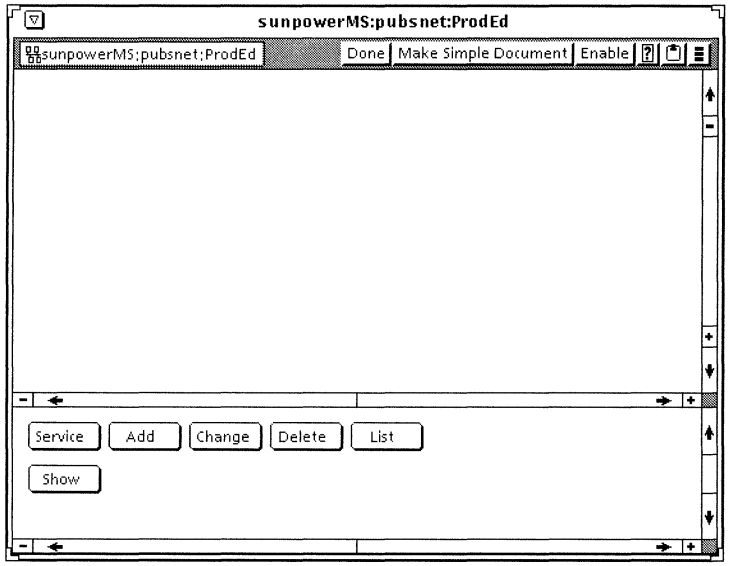
   You may want to choose the same name as the UNIX host name.

   ✦ **Note:** The server name for SDS and the server name for the File Service must be different, otherwise you will not be able to distinguish between the two.✦
5. Enter a brief description for the server.
6. Enter the fully-qualified name you want to assign to the Mail Service.

   For example, enter "Eng. Lab Mail:pusbnet:ProdEd."
7. Enter a brief description for the Mail Service

   For example, enter "Mail server in Eng. lab."
8. Select Start.

The Mail Service Service Executive window appears.



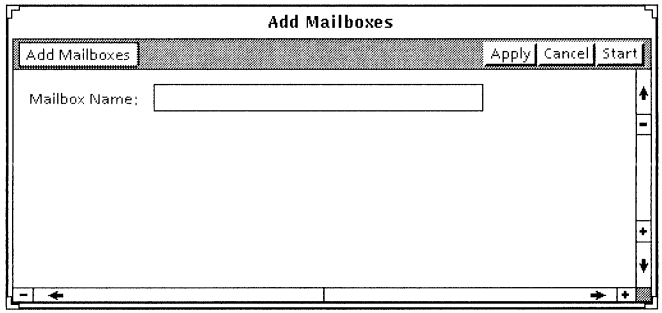
9. Select Enable.
10. Select Service Start.

    The Service Start window appears.
11. Select Initialize New Database.
12. Enter the number of pages (in 512 byte blocks) for the size of the database (between 1500 to 65532).
13. Select Start, then select Confirm to start the initialization.

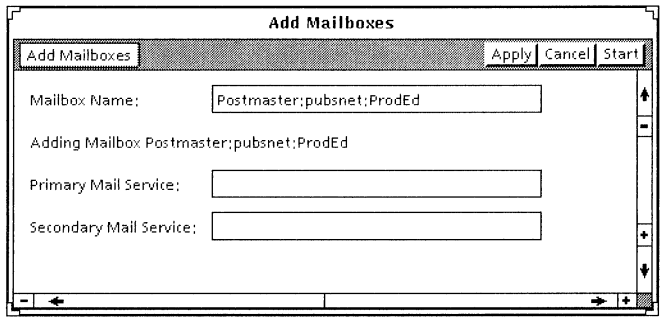
    This may take several minutes.
14. In the Mail Service Service Executive window, select Add Mailboxes.

    You should add a mailbox for at least the Postmaster at this time. You can also add mailboxes for any users you want this Mail Service to support.
15. Select Add Mailbox.

An Add Mailboxes window appears.



16. Press NEXT to display additional fields.



17. Enter the fully-qualified name for the user.

    For example, enter "Postmaster:pubsnet:ProdEd." The user should be registered in the Clearinghouse Service.

18. Enter the name of the primary Mail Service.

    For example, enter "Eng. Lab Mail:pubsnet:ProdEd."

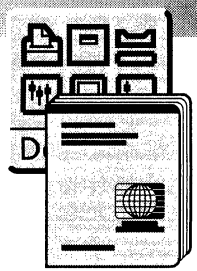
19. Select Start, then select Confirm.

    The user is added.

20. Repeat steps 14 through 19 for each additional user you want to add.

21. Select Done to exit.

    You or the users with mailboxes can now retrieve your inbasket and outbasket to your desktops. The inbasket and outbasket icons are in the Directory/Workspace folder.



4. Installing the License Server

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This chapter describes how to license the use of Shared Document Services (SDS). To enable licensing you must perform the following tasks:

- Obtain a license file
- Make the license file available
- Install the License Server
- Start the License Server.

This chapter also provides the information you need to do the following tasks:

- Update the license file
- Edit system files to make licensing automatic.

This chapter contains the step-by-step procedures you follow to install a single-License Server to support Shared Document Services. For information about maintaining the License Server, refer to Appendix B, "Maintaining the License Server."

Overview

The License Service allows you to enable XSoft software using an industry standard method. The License Service uses licensing software that automates the bookkeeping task of license distribution, and TCP/IP protocols to communicate with the client workstations and provide the necessary authorization tokens. Each initial installation of GLOBALVIEW applications comes with a six-day, free license grace period.

The License Service's license file specifies the number of users allowed to use each feature at a customer site (the number of licenses purchased). This license file is installed at the same node as the License Service and on every local GLOBALVIEW and SDS workstation.

Licensing a feature is transparent to the user (the user does nothing to obtain licenses). Running a licensed feature generates a request for a license. When you first run a licensed feature, the application sends a request for a license to the License Service. If there are licenses available for that feature, the License Service grants the request and allows the application to run.

The advantages are:

- You do not have to license each workstation separately
- The licensing process is completely transparent to the end user.

The license file

All SDS servers require access to an ASCII license file, called *license.dat*. The License Server uses the license file to verify license usage. The workstation uses the license file to locate the License Server.

The license file contains the following information about the licenses at a particular site:

- The host name and host ID of the server node(s) where the license daemons are running
- The name and location of the XSoft vendor daemon (*xsoft_lmd*)
- The number of licenses purchased
- The encrypted codes that validate the license information for each feature.

You need to obtain a license file and make it available to all SDS servers, as described in the following sections.

Obtaining a license file

To obtain a license file for your site, you need to complete the License Enabling Request Form provided with the software, and send it to Licensing Support. You can also obtain a copy of the License Enabling Request Form from your Sales Representative.

Filling out the form requires that you provide information about the server(s) on which you will install the License Server software. This information includes the intended License Server's name and host ID. If you are using a Sun workstation as the server, you can obtain this information by using the UNIX *hostname* and *hostid* commands.

If you are waiting for your license file, you can still install Shared Document Services and the License Server, and use them for six days. If you have not installed the license file after six days, the services will no longer work, and you will have to reinstall the software.

Making the license file available

This section describes what you need to do if you have received your license file but have not yet installed the License Server.

✦ **Note:** If the license file is not available when you install the License Server, a temporary license file is automatically installed. You must then update the temporary license file within six days with the real license file.✦

You can access the *license.dat* file from any of the following locations:

- A floppy disk
- A local directory
- Over an NFS network
- From an XNS file drawer.

When you install SDS, you specify the location of the *license.dat* file, and XIST will copy it to the appropriate license directory location.

For example, if you received your *license.dat* file on floppy disk, you would specify the */pcfs/license.dat* location to XIST.

If you received your *license.dat* file through UNIX mail, you can save the mail in your home directory, delete any mail header information, and then specify the home directory location, for example, */home/john/license.dat*.

If the license file is in an NFS file system, for example, */home/Public*, you would specify */home/Public/license.dat*.

If the *license.dat* file is in an XNS file drawer, you can set the properties of a Window to UNIX File System (WUFS) icon to UNIX format, then move the file to a UNIX directory.

Refer to the section "Installing the License Server," later in this chapter, for an example of specifying a license file location to XIST.

Installing or updating the license file from a floppy drive

If you have a floppy drive available on your net, you can request that the *license.dat* file be sent to you on floppy and use the SysAdmin Utility in XIST to copy the *license.dat* file from the floppy to your License Server or workstation.

Local floppy drive

To install from a local floppy drive:

1. The volume manager must be running. Insert the license file floppy and enter the following:

   For Solaris:

   /usr/bin/volcheck

   For SunOS:

   mount /dev/fd0c /pcfs

   ✦ **Note:** If this command does not work, see your UNIX System Administrator for the correct information.✦

2. Start XIST.
3. Select the SysAdmin button in the XIST window.
4. Select the Update License File option and enter the following path to your floppy drive in the XIST window:

   For Solaris:

   /floppy/floppy0/license.dat

   For SunOS:

   /pcfs/license.dat

5. Select Update License File.

   The SysAdmin utility copies the license file to the correct location.

After installing or updating the *license.dat* file at the License Server, you need to either run the License Service, or, if it is already running, tell it to reread the license file.

To tell the License Service to reread the *license.dat* file, see the instructions for *lmreread* in Appendix B, "Maintaining the License Server." To run the License Service, enter the following lines:

```
% cd /opt/XSoft/License
% ./lmgrd -c /opt/XSoft/License/license.dat
>>license.log &
```

Remote floppy drive

To install from a remote floppy drive:

1. The directory must have been exported. Insert the floppy and enter the following:

   For Solaris:

   /usr/bin/volcheck

   For SunOS:

   mount /dev/fd0c /pcfs

   ✦ **Note:** If this command does not work, see your UNIX System Administrator for the correct information.✦

2. Start XIST.
3. Select the SysAdmin button in the XIST window.
4. Select Update License File and enter the path to the remote drive in the SysAdmin Utilities window. If your net uses NIS, then the path you enter for the XIST SysAdmin utility has the following form:

   For Solaris:

   /net/<machine name>/floppy/floppy0/license.dat

   For SunOS:

   /net/<machine name>/pcfs/license.dat

5. Select Update License File. The SysAdmin utility copies the license file to the correct location.

   ✦ **Note:** If you are not using NIS, ask your License Server Administrator how to connect to the remote drive (edits to the */etc/hosts* and */.rhosts* files may be required).✦

After installing or updating the *license.dat* file at the License Server, you need to either run the License Service, or, if it is already running, tell it to reread the license file.

To tell the License Service to reread the license.dat file, see the instructions for *lmreread* in Appendix B, "Maintaining the License Server." To run the License Service, enter the following lines:

```
% cd /opt/XSoft/License
% ./lmgrd -c /opt/XSoft/License/license.dat >>
license.log &
```

Editing the license file

If you do not have a floppy drive available on the server that you are using, you may have to edit the template *license.dat* file.

If the enabled *license.dat* file is not available when you install the License Service, XIST installs a template *license.dat* file. This file is similar to an enabled *license.dat* file, but does not have the hostname, ID, and the encryption codes that enable the License Server to actually distribute license tokens.

You can obtain the encryption codes using the same procedure for installing the *license.dat* file from floppy (refer to the "Installing or updating the license file from a floppy drive" section, earlier in this chapter). You can also request that the license file information be provided by hardcopy (fax or mail).

To edit the template license file and add encryption codes:

1. Access the OpenWindows Text Editor by clicking the mouse on an empty area of the desktop.

   ✦ **Note:** This procedure is based on accessing the OpenWindows Text Editor; however, you can use any edit tool you are comfortable with.✦

2. Select Programs.
3. Select Text Editor from the submenu.

   The Text Editor opens.

4. Select File.
5. Enter the directory (*/opt/XSoft/License*), and the file (*license.dat*).
6. Select Load File.

7. Select Edit and add the information to match the copy of *license.dat* you have been provided with.
8. Select File to save your edited file.
9. After installing or updating the *license.dat* file, do one of the following:
   - Run the License Service by entering the following commands:

     % cd /opt/XSoft/License
     % lmgrd -c /opt/XSoft/License/license.dat >> license.log &
   - If the License Service is already running, tell it to reread the license file. Enter the following command:

     lmreread -c /opt/XSoft/License/license.dat

Non-floppy install or update through NIS

If you stored your *license.dat* file to a location on your NIS net, you can direct the SysAdmin utility to follow this network path to copy the *license.dat* file. This can be useful if changes are made to the license. Use the SysAdmin utility to make local copies for each workstation and License Server from the one that you edited.

After installing or updating the *license.dat* file at the License Server, you need to either run the License Service, or, if it is already running, tell it to reread the license file.

To tell the License Service to reread the *license.dat* file, see the instructions for *lmreread* in Appendix B, "Maintaining the License Server." To run the License Service, enter the following lines:

% **cd /opt/XSoft/License**
% **./lmgrd -c /opt/XSoft/License/license.dat >> license.log &**

Non-floppy install or update through XNS

If the *license.dat* file is stored in an XNS file drawer, you can move the file to a location on the NIS net by using the Window to UNIX File System (WUFS) icon on any GVX workstation. After the file is on the NIS net, use the process

described in the section, "Non-floppy install or update through NIS," earlier in this chapter to install it. When you move the file, set the WUFS properties for UNIX format.

If your network does not use NIS, then you are using the standalone configuration. You store and move the *license.dat* through XNS net to the correct device and then use the WUFS icon, (with UNIX format selected), to put the file in the */opt/XSoft/License* directory.

License Server configuration decisions

This section describes the following configuration decisions for the License Server:

- Selecting the server
- System resources
- Redundancy.

Selecting the server

Using a License Service requires an on-site, knowledgeable License Server Administrator (LSA). To select a License Server the LSA must choose from workstations that are always available to the net. Do not select a workstation that is on a section of the net that may be isolated (for example, because of a bridge going down), or will be frequently rebooted.

If you are currently using the Highland License Service (Flexlm), you do not need to choose an additional server. You can simply add the XSoft licensing daemon to this server. For standalone configurations, or networks that are not connected by TCP/IP, you must install a License Server on each workstation to run independently (refer to the section "Standalone installation," later in this chapter, for more information).

System resources

On a small network (20 workstation clients or fewer), the License Server system resource requirements will probably not be a major factor when choosing the server. For larger

networks, keep the following License Server system resource requirements in mind:

- All License Server files should be on a locally mounted drive, otherwise the risk of failure and license loss is doubled (the loss of either the License Server or the remote file server could halt licensing).
- The log file is the only output file. Each transaction (checkin or checkout) is represented by a line in the file. Over time this file can become too large and should be routinely deleted or truncated.
- When approximately 60 workstations are connected to the License Server, the available process file descriptors on most systems will be depleted. The *xsoft_lmd* automatically starts another copy of itself if it runs out of file descriptors. Depending on the size of your network, this could affect the number of processes involved.
- Each workstation client served by the License Server uses a socket. If you have hundreds of workstations accessing licenses on the network, you may need to confirm that your server kernel configuration allows for enough sockets.
- The License Server provides very little traffic on the network. Each transaction (checkin or checkout) is typically less than 1 KB of data.
- In general, the License Server uses very little CPU time. However, on a large network you may want to make sure there are adequate CPU cycles available.

Redundancy

The License Server supports the use of redundant servers. The License Server Administrator has the option to run the License Service on one-, three-, or five-server node configurations. If you choose to run three servers, the servers will automatically connect to each other at initialization, establish a quorum, and decide which server will act as the master server.

✦ **Note:** A quorum is two servers in the three server configuration, and three servers in the five server configuration.✦

If the master server goes down, a secondary server will pick up the current license status and connect to the application(s). This is done automatically, is transparent to the user, and does not affect the licenses that are already in use. Nothing will happen if a secondary server goes down, since the master and the other secondary server are still communicating, and a quorum still exists. If the other secondary server goes down, the master will stop distributing licenses, since the quorum no longer exists.

If you do not want to run redundant servers, and the server goes down, the License Server client routines will begin the reconnection intervals. The licenses that are currently in use will not be affected, but no new licenses will be acquired until the server comes back up.

If you choose to install multiple License Servers, you must use XIST to install the servers on either three or five servers, depending on your configuration.

Standalone installation

You normally install the License Service on a server node on the TCP/IP network. For standalone workstations or networks that are not using TCP/IP, you install the License Service at the local workstation. Follow the steps in the "Installing the License Server" section, next. The license file contains only one hostname and host ID, which are the name and ID of the workstation.

Existing Highland Flexlm server

If your site is already using Highland's License Service Manager (Flexlm) from another software vendor, you do not need to install a new and separate License Server for your XSoft applications. You can use one License Server to license software from multiple vendors.

You will, however, need to run separate instances of *lmgrd* since appending other vendor's files with the XSoft *license.dat* file is not recommended. Remember that the port number on the server line in each *license.dat* file must be unique. Also, make sure you are running *lmgrd* version 2.1 or higher.

You can change the environment variable *LM_LICENSE_FILE* to point to multiple *license.dat* files, or you can use the -c

option to direct *lmgrd* instances to different *license.dat* files. Refer to the "Multiple vendor daemons" section in Appendix B, "Maintaining the License Server," for more information.

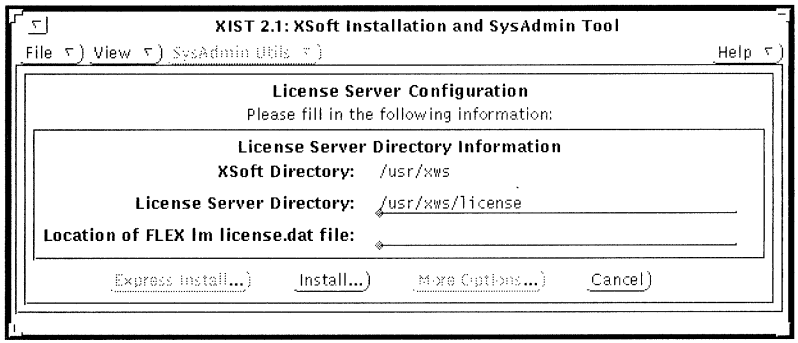
Installing the License Server

You must install the Shared Document Services License Service on each License Server.

To install the License Server using XIST:

1. Start XIST if you do not already have it running.
4. Select License Server from the Application Families menu.

   The License Server Configuration window appears.



2. Enter the path for the *license.dat* file.

   For Solaris 2.3 or 2.4:

   To access the *license.dat* file from a local floppy drive (the volume manager must be running), type the following in a cmdtool or shelltool window:

   /usr/bin/volcheck

   and type the following in the XIST window:

   /floppy/floppy0/license.dat

To access from a remote floppy drive on an NIS net (the volume manager must be running), type the following in the XIST window:

/net/<machine name>/floppy/floppy0/license.dat

For more information on paths for accessing the license.dat file, see the section, "The license file," earlier in this chapter.

If you do not have the *license.dat* file available, this path can be left blank and a template file will be installed. You must install the *license.dat* file before the License Server can distribute licensing tokens. For information on obtaining or installing the *license.dat* file, see the section "The license file," earlier in this chapter.

3. Select Install...

   The Install window appears and displays the progress of the installation.

   A pop-up window appears during the License Server install with the following information:

   - For Solaris 2.3 or 2.4 platforms, when adding a file that automatically starts up the License Server.
   - For SunOS, check that you have the statements in your */etc/rc.local* file if you want to automatically start the License Server during booting.

4. When the installation is complete, select Exit XIST.

During installation the path */opt/XSoft/License* is created and the following files are installed:

- *lmgrd*—License manager daemon
- *xsoft_lmd*—XSoft license daemon
- *license.dat*—Licensing file
- *lmdown*—License manager tool (see Appendix B, "Maintaining the License Server")
- *lmhostid*—License manager tool (see Appendix B, "Maintaining the License Server")
- *lmreread*—License manager tool (see Appendix B, "Maintaining the License Server")

- *lmstat*—License manager tool (see Appendix B, "Maintaining the License Server").

Starting the License Server

You use the *lmgrd* command to start the License Server. When you installed the License Service, the License Server, license file, and several administrative commands were copied to the */opt/XSoft/License* directory path. To access these commands you can either change to this directory, or include it in your command path.

To start the License Server:

1. Enter the following command:

   # cd /opt/XSoft/License

   This places you in the directory that contains the License Service administrative commands.

2. Enter the following command:

   # lmgrd -c /opt/XSoft/License/license.dat > license.log &

   This command starts the license manager program (*lmgrd*), using the specified license file (-c */opt/XSoft/License/ license.dat*), and saves the program output in a log file (*license.log*). The & symbol runs the command in background mode.

   ✦ **Note:** In the above command, a single redirection symbol (>) is used. This overwrites any previously-created *license.log* file with the new log file. If you want to append the new log file output to an old log file, you should use two redirection symbols (>>). Keep in mind that if you specify to append output to this file each time you start *lmgrd*, eventually the log file will become very large, and you will have to periodically delete it or truncate it manually.✦

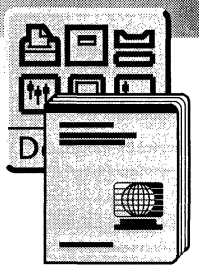
Starting the License Server automatically

The License Server must be started each time the host is rebooted. Unless you want to manually enter the *lmgrd* command each time you reboot, you should place the *lmgrd* command line in a system file that is automatically executed when you reboot.

For example, you can place the following line in your */etc/rc.local* file (for SunOS 4.1.x) to start the license manager daemon when you reboot the system:

/opt/XSoft/License/lmgrd -c /opt/XSoft/License/license.dat > /opt/XSoft/License/license.log &

✦ **Note:** The above example must fit on one line.✦



5. Deinstalling services

Deinstalling services 5-4

You can use the De-install Document Services option on the System Administration Utilities menu to completely remove all files related to a service. If you simply expunge a service, you do not completely remove the service and all associated files from the network.

You can deinstall one service at a time, or all services at once.

Deinstallation does the following tasks that a simple expunge of a service does not do:

- Deletes the service application from the GLOBALVIEW Loader, and deletes all associated applications that other applications do not require.
- Removes the server profile when you select to deinstall all SDS services. This means that if you should reinstall SDS at a future time, old server names and data will not appear.
- Recalculates swap space requirements, and resets the number of threads required to match the requirements of the remaining installed services.
- Removes the */opt/XSoft/SDS* directory, and reclaims disk space.

If you are deinstalling the Mail Service, Clearinghouse Service, or Print Service, you must expunge these services first before you can deinstall them. Expunging does two things:

- Removes the service name from the Clearinghouse Service database and from the network
- Cleans up some of the data files associated with the service.

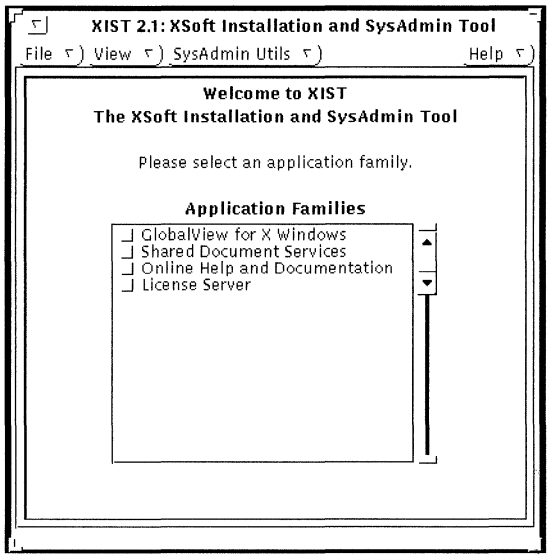
Refer to the *System Administration Guide* for information on how to expunge a service.

Deinstalling services

To deinstall services:

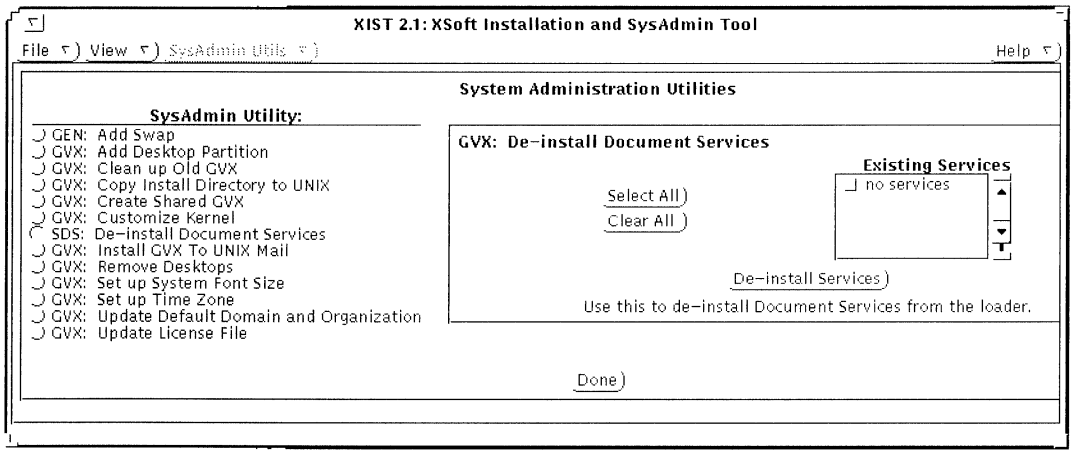
1. Start XIST if you do not already have it running.

   The initial XIST screen appears.



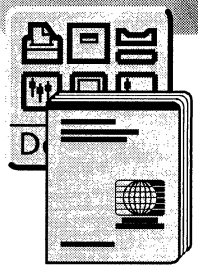
2. Select the SysAdmin Utils button.
3. Select SDS: De-install Document Services.

The System Administration Utilities window appears, listing all services that are installed on the server.



4. Select one or more services to deinstall.
5. Select the De-install Services button to start the deinstallation.

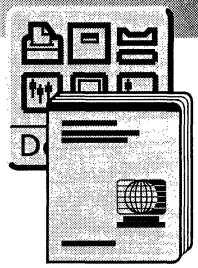
   The message "SDS Deinstallation completed" appears when the operation is done. Information about the number of allocated threads and strip values is displayed, along with messages indicating whether you need to increase or decrease the swap space on the machine.



A. Upgrading SDS from a previous version

Normally, all that is required to upgrade to a new version of Shared Document Services (SDS) is to install the new version. You do this by selecting the Shared Document Services option in the initial XSoft Installation and System Administration Tool (XIST) window. Refer to Chapter 2, "Installing SDS," for complete information about the XIST utility.

Note that if you have used the Cleanup Old XWS option in the XIST System Administration Utilities window for a print server, you will have to reinstall the printer fonts.



B. Maintaining the License Server

This appendix describes License Service maintenance considerations. The */opt/XSoft/License* directory contains the necessary UNIX daemons (background programs), commands, and the license file used by the License Service. The */opt/XSoft/License* directory on the server with the License Server should have the following contents:

- *license.dat*—The license file
- *license.log*—The License Server log file
- *lmdown*—The stop License Server command
- *lmgrd*—The start license manager command
- *lmhostid*—The display license manager server host ID information command
- *lmreread*—The reread the license file command
- *lmstat*—The display License Server status information command
- *xsoft_lmd*—The XSoft license manager daemon ("vendor" daemon).

✦ **Note:** The */opt/XSoft/License* directory on the License Service clients contains only the license file, *license.dat.*✦

Setting the License Server environment variables

This section describes how to set two UNIX environment variables that make working with the License Server easier. You would normally set these variables only for root, since that is the account that can use all the License Server commands.

Setting the path variable

You can set the UNIX path variable to include the location of the License Server commands. If you do not, you will either have to enter the full pathname for the License Server commands, or change the directory (*cd*) to the location of the commands before you can use them.

For example, if your commands are stored in the default directory (*/opt/XSoft/License*), you can enter the full pathname of a command to execute it:

```
# /opt/XSoft/License/lmhostid
```

Or you can change to that directory, then enter the command you want:

```
# cd /opt/XSoft/License
# lmhostid
```

It may be more convenient to set the path variable to include the path to the License Server commands and simply enter the command you need, regardless of your directory location:

```
# lmhostid
```

To set the UNIX path variable to include the location of the License Server commands:

1. Edit the appropriate startup file where the root path is defined to include the location of the License Server commands.

   For example, if root has the following entry in *.cshrc*:

   set path=(/usr/soft/bin /bin /usr/bin /usr/ucb /etc /usr/etc .)

change it to:

set path=(/usr/soft/bin /bin /usr/bin /usr/ucb /etc /usr/etc . /opt/XSoft/License)

✦ **Note:** The above entry should be on one line.✦

2. Then "source" the file by entering the following:

   # **source /.cshrc**

You can now type in the command name without the path information.

Setting the LM_LICENSE_FILE variable

You can set the UNIX *LM_LICENSE_PATH* variable to specify the location of the license file. Because several administrative commands require the location of the license file, this can save you the task of typing in the location each time you use one of those commands.

You specify the location of the license file using the -c option, for example:

lmstat -c /opt/XSoft/License/license.dat -A

If you define the environment variable *LM_LICENSE_FILE* as the license file location, you do not have to enter the -c option with each command. For example, you can put the following line in the root *.cshrc* file:

setenv LM_LICENSE_FILE /opt/XSoft/License/license.dat

Then you can source the file with the following command:

source /.cshrc

Now the License Server commands will execute as if -c */opt/XSoft/License/license.dat* is included on the command line.

License Server UNIX commands

This section describes the commands that are available to the License Server Administrator from the UNIX command line interface.

✦ **Note:** For more information about these commands, refer to your UNIX documentation.✦

License manager (lmgrd)

The license manager daemon, *lmgrd*, is the generic license manager server program. This daemon starts the XSoft *xsoft_lmd* program which handles the actual license requests. The *lmgrd* program reads the license file. You supply the location of the license file when you invoke the daemon (by using the -c option), or the location is supplied if the environment variable *LM_LICENSE_FILE* is set.

The *lmgrd* command produces log output that should be redirected to a file. You can do this with the UNIX redirection facility. For example, when you start *lmgrd*, you can direct the output to a file called *license.log* with the following commands:

```
# cd /xws/license
# lmgrd > license.log &
```

In the above example, any existing *license.log* file will be replaced with the new one. If you want to append the license log information to an existing *license.log* file, use the following command:

```
# lmgrd >> license.log
```

Keep in mind that if you choose to append information, the *license.log* file can get very large. Also note that in these examples, the *LM_LICENSE_FILE* environment variable must be set because the location of the license file is not specified with the -c option.

The -c option is required to specify a path.

XSoft license manager (xsoft_lmd)

The XSoft license manager is the vendor daemon, or the XSoft portion of the standard UNIX License Server. This is a process that is started by *lmgrd*, which handles the actual licensing. You do not have to deal directly with *xsoft_lmd*.

License manager down (lmdown)

Use this command to stop the license manager if you are a member of the *lmadmin* group or group 0. If you use this command, users will use their current license and will not be able to get another until you use the *lmgrd* command. Note that this command will shut down all vendor daemons, not just *xsoft_lmd*.

lmdown -c /opt/XSoft/License/license.dat

License manager host ID (lmhostid)

Use this command to print the host ID of the workstation/server. You can also use the UNIX *hostid* command to get this information.

License manager re-read (lmreread)

Use this command to reread the license file. This is only necessary if the license manager is having problems or if the license file has changed.

The *-c* option allows you to specify a license file, otherwise *lmgrd* will reread the file name it originally read.

lmreread -c /opt/XSoft/License/license.dat

License manager statistics (lmstat)

Use this command to report the status of the license manager and feature usage, show active daemons, and indicate the features used for each station.

lmstat -c /opt/XSoft/License/license.dat -A

Options for *lmstat* include:

-a—Display everything.

-A—List all active licenses.

-c <license_file>—Use *license_file*.

-f [feature]—List all users of specified feature(s).

-I [regular exp]—List all users of the features matching the given regular expression.

-s [server]—Display the status of the specified server node(s).

-S [daemon]—List all users of the specified daemon's features.

-t <timeout>—Override the 10-second daemon timeout.

Troubleshooting

Running a feature generates a request for a license, which causes one of the following:

- The request for a license is granted, and the feature is allowed to run.
- The request for a license is denied.

  ✦ **Note:** During the grace period, the XSoft application will run even if the request is denied.✦

  The request is denied if:

  — There are no licenses available for the specified feature.

  — The connection is lost to the License Server.

  — A license file data mismatch occurs.

  — A license file is corrupt.

  — A license daemon is corrupt.

  The following message appears:

<multinational feature name> cannot run: {License Error I Unix Error} #<error code>

For a description of license error codes, refer to the "Error codes" section, later in this appendix.

Log file

The log file (*license.log*) is the output file that tracks each transaction. Each checkin or checkout is represented by a line in the file. This file, which is found in */opt/XSoft/License*, is another tool that you can use to track problems and monitor the normal functioning of the License Server.

Each line in the log file gives the time of the transaction (in mm/dd hh:mm format), the daemon name, and a message. If the daemon name is followed by an underscore (_) and a number, this indicates a forked daemon. The message indicates if a token is being checked out or in, or being denied. You use this to monitor activity and indicate when you need to increase the number of licenses.

The *license.log* file continues to append new lines. Over time this file gets larger and should be routinely deleted to conserve space.

Missing tokens

When the user terminates GLOBALVIEW, (logs off with the Quit option), the License Service pulls back all licenses that were in use by that workstation. If the end user idles or suspends GLOBALVIEW, all licenses remain with the workstation and are available to that station when GLOBALVIEW resumes.

When accounting for missing tokens, be sure to consider suspended workstations. You can use the *lmstat* utility to help track tokens.

✦ **Note:** The License Service client routines provide a timer handler to support License Service pinging at a specified interval (heartbeat). If GLOBALVIEW is interrupted, the License Service will detect that the heartbeat has stopped and will take back all licenses after the specified interval expires.✦

Multiple vendor daemons

If you are using one License Server to license applications from several vendors, you may have problems if you mix software levels for the vendor daemons. Also, earlier versions of Flexlm has limitations that are not found in the latest

version. If you are not using version 2.1 or later, you need to update your files.

SDS install does not append multiple license files together, and XSoft does not recommend this practice.

Adding license tokens or features

If your company wants to purchase more license tokens or add a feature, Licensing Support will provide you with a new license file. The LSA will be able to install the new license file without having to bring the License Service down. See the section, "The license file" in Chapter 4, "Installing the License Server," for more information.

Glossary

End user—Person using the XSoft application software.

Feature—Entity corresponding directly to a GLOBALVIEW application or another XSoft software application.

Internal Feature Name—Unique feature name that appears in the license file. The License Service uses this name to maintain and distribute licenses. The internal feature name does not translate.

License—Permission to use a feature.

License File—See *license.dat*.

License Server Administrator (LSA)—System Administrator at the customer's site responsible for customizing and monitoring the License Service.

License Service—Service that is responsible for handling requests for licenses. It keeps track of the number of licenses checked out, who has them, and the number of available licenses.

Licensed Feature—Feature, or an application package, that requires a license before it can be used.

license.dat—ASCII file that *lmgrd* uses when it receives requests for licenses to monitor license allocation. This file contains all the information about the licenses at a particular

site, the hostname and host ID of the server node where the license daemons are running, and the name and location of the XSoft vendor daemon *xsoft_lmd*. This file also lists the number of licenses purchased, and the encrypted codes that validate the license information for each feature.

lmdown—Highland utility used to bring down the License Server daemons. Must be a member of *lmadmin* group or group 0.

lmgrd—Highland License Manager daemon. This process runs on the server node and monitors license allocation.

lmhostid—Highland utility used to get the host ID of a workstation.

lmreread—Highland utility used to tell the license daemon to reread the license file when changes have been made.

lmstat—Highland utility used to check the status of the license manager and application licenses.

Server node—Computer system that is running the license manager software, usually a remote server.

Time stamp File—See *timestamp.tmp*.

timestamp.tmp—Time stamp file used to support a six-day grace period for GLOBALVIEW applications after initial install.

xsoft_lmd—XSoft vendor daemon that runs on the server node and handles licensing of all XSoft applications.

Error codes

License Error (-1): NOCONFFILE—Cannot find license file. License data files were not properly installed on the client workstation or the LM_LICENSE_FILE environment variable was not set correctly.

License Error (-2): BADFILE—Invalid license file syntax. The license file may have been modified This XSoft file should not be modified in any way.

License Error (-3): NOSERVER —Cannot connect to License Server.

License Error (-4): MAXUSERS—Licensed number of users already reached.

License Error (-5): NOFEATURE—No such feature exists. An application license name is not in the license file.

License Error (-6): NOSERVICE—No TCP 'license' service exists.

License Error (-7): NOSOCKET—No socket connection to license manager server.

License Error (-8): BADCODE—Encryption code in license file is inconsistent. The license file may have been modified. This XSoft file should not be modified in any way.

License Error (-9): NOTTHISHOST—Invalid host.

License Error (-10): LONGGONE—Feature has expired.

License Error (-11): BADDATE—Invalid date format in license file.

License Error (-12): BADCOMM—Invalid returned data from License Server.

License Error (-13): NO_SERVER_IN_FILE—No SERVER lines in license file.

License Error (-14): BADHOST—Cannot find SERVER hostname in network database.

License Error (-15): CANTCONNECT—Cannot connect to License Server. The license daemon on the remote server is not running.

License Error (-16): CANTREAD—Cannot read data from License Server.

License Error (-17): CANTWRITE—Cannot write data to License Server.

License Error (-18): NOSERVSUPP—License Server does not support this feature.

License Error (-19): SELECTERR—Error in select system call.

License Error (-20): SERVBUSY—License Server busy (no majority).

License Error (-21): OLDVER—License file does not support this version.

License Error (-22): CHECKINBAD—Feature checkin failure detected at License Server.

License Error (-23): BUSYNEWSERV—License Server temporarily busy (new server connecting). Try again.

License Error (-24): USERSQUEUED—Users are queued for this feature. Try again.

License Error (-25): SERVLONGGONE—License Server does not support this version of this feature.

License Error (-26): TOOMANY—Request for more licenses than this feature supports.

License Error (-27): CANTREADKMEM—Cannot read */dev/kmem*.

License Error (-28): CANTREADVMUNIX—Cannot read */vmunix*.

License Error (-29): CANTFINDETHER—Cannot find Ethernet device.

License Error (-30): NOREADLIC—Cannot read license file.

License Error (-31): TOOEARLY—Feature not yet available.

License Error (-32): NOSUCHATTR—No such attribute.

License Error (-33): BADHANDSHAKE—Bad encryption handshake with daemon.

License Error (-34): CLOCKBAD—Clock difference too large between client and server.

License Error (-35): FEATQUEUE—In the queue for this feature.

License Error (-36): FEATCORRUPT—Feature database corrupted in daemon.

License Error (-37): BADFEATPARAM—Duplicate selection mismatch for this feature.

License Error (-38): FEATEXCLUDE—User/host on EXCLUDE list for feature.

License Error (-39): FEATNOTINCLUDE—User/host not on INCLUDE list for feature.

License Error (-40): CANTMALLOC—Cannot allocate dynamic memory.

License Error (-41): NEVERCHECKOUT—Feature was never checked out.

License Error (-42): BADPARAM—Invalid parameter.

License Error (-43): NOKEYDATA—No Flexlm key data supplied in *lm_init*() call.

License Error (-44): BADKEYDATA—Invalid key data supplied.

License Error (-45): FUNCNOTAVAIL—Flexlm function not available in this version.

License Error (-46): DEMOKIT—Flexlm software is demonstration version.

License Error (-47): NOCLOCKCHECK—Clock setting check not available in daemon.

License file format

The license file is an ASCII file that contains all the information about the license features and how they are licensed. The XSoft License File contains three sections: Server, Daemon, and Feature. Each section includes one or more lines of corresponding information. The format is as follows (words in all caps are keywords that must appear in the file):

Server Line Format (1, 3, or 5 lines):

SERVER *nodename id optional-port-number*

- *nodename*—The string returned by the Unix *hostname* command.
- *id*—The string returned by the *lmhostid* command.
- *optional-port-number*—The TCP port number to use.

Daemon Line Format (1 line):

DAEMON *daemon-name path*

- *daemon-name*—The name of the XSoft daemon used to serve some feature(s) in the file.

- *path*—The pathname to the executable code for this daemon.

Feature Line Format (1 line for each feature):

FEATURE *name daemon version exp-date #users code "vendor-string" hostid*

- *name*—The name of the feature.
- *daemon*—The daemon name from a DAEMON line; this specified daemon serves this feature.
- *version*—The version of this feature that is supported (to three decimal places).
- *exp-date*—The expiration date in the dd-mmm-yy format. If the year is set to 0, the feature will never expire.
- *#users*—The number of licensed users for this feature.
- *code*—The encryption code for this feature.
- *"vendor-string"*—The vendor defined string enclosed in double quotes; can contain any 64 characters except a quote.
- *hostid*—The string returned by *lmhostid* or a UNIX command such as *hostid*.

Example license file

The following example license file provides 150 licenses for each feature, and has a set of three License Server nodes.

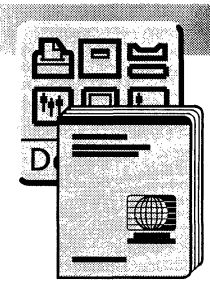
```
SERVER raven 52000729 1700
SERVER macbeth 51005b03 1700
SERVER penterra 55408b3e 1700
DAEMON xsoft_lmd /xws/license/xsoft_lmd
FEATURE GVX_Write xsoft_lmd 1.000 1-jan-99 150 6B36F0A1037131FB5E53 "" ANY
FEATURE GVX_Draw xsoft_lmd 1.000 1-jan-99 150 6BB66001BE52AD86F7A7 "" ANY
FEATURE GVX_Paint xsoft_lmd 1.000 1-jan-99 150 7B9620B1FA43BCCD5E48 "" ANY
FEATURE GVX_Chart xsoft_lmd 1.000 1-jan-99 150 6BE610C128814DD17B60 "" ANY
FEATURE GVX_List xsoft_lmd 1.000 1-jan-99 150 1B76E051AD7023770217 "" ANY
FEATURE GVX_Calc xsoft_lmd 1.000 1-jan-99 150 FB06C08132741C5FF0A5 "" ANY
FEATURE GVX_Equations xsoft_lmd 1.000 1-jan-99 150 DBF6B021345ACE88F9E6 "" ANY
FEATURE GVX_Data_Capture xsoft_lmd 1.000 1-jan-99 150 DB66D0318F43121E6760 "" ANY
FEATURE GVX_Pro_Illustrator xsoft_lmd 1.000 1-jan-99 150 8B166041F035627A8161 "" ANY
FEATURE GVX_Chemical_Illustrator xsoft_lmd 1.000 1-jan-99 150 CB7640F1DBA6302A5B06 "" ANY
FEATURE GVX_ViewCards xsoft_lmd 1.000 1-jan-99 150 2B46A0316CB499A0466A "" ANY
FEATURE GVX_Japanese_Text_Capability xsoft_lmd 1.000 1-jan-99 150 AB9660513DF8B18F367B "" ANY
FEATURE GVX_Chinese_Text_Capability xsoft_lmd 1.000 1-jan-99 150 6B368071E52B646178C5 "" ANY
FEATURE GVX_Arabic_Text_Package xsoft_lmd 1.000 1-jan-99 150 CB46F0F15AEDB7DB6BCB "" ANY
FEATURE GVX_Hebrew_Text_Package xsoft_lmd 1.000 1-jan-99 150 9B56206140CF9267E66D "" ANY
FEATURE GVX_Network_Access xsoft_lmd 1.000 1-jan-99 150 CB06807177A65971AB89 "" ANY
FEATURE GVX_Shared_Books xsoft_lmd 1.000 1-jan-99 150 2BC6C081CC1BE4B75068 "" ANY
FEATURE DocuTeam_Database_Access xsoft_lmd 1.000 1-jan-99 150 8B46F011D66676230197 "" ANY
FEATURE DocuTeam_Graphical_Modeling xsoft_lmd 1.000 1-jan-99 150 ABB670211BCEC7256555 "" ANY
FEATURE Document_Search_and_Retrieval xsoft_lmd 1.000 1-jan-99 150 ABF620E1529A2DBD26CD "" ANY
FEATURE DSR_Administration_Applications xsoft_lmd 1.000 1-jan-99 150 ABF670010DC32FD8DAC2 "" ANY
FEATURE DocuTran xsoft_lmd 1.000 1-jan-99 150 1BD620310FB25448BB62 "" ANY
FEATURE GVDS_File_Service xsoft_lmd 1.000 1-jan-99 150 6BD620312E654EB25D7E "" ANY
FEATURE XRooms xsoft_lmd 1.000 1-jan-99 150 5BF6A0D166A4B088E4EE "" ANY
FEATURE GVDS_Mail_Service xsoft_lmd 1.000 1-jan-99 150 7B6610813653668B4F75 "" ANY
FEATURE GVDS_Print_Service xsoft_lmd 1.000 1-jan-99 150 4B3640417E5D4BDE3E39 "" ANY
FEATURE GVDS_Database_Service xsoft_lmd 1.000 1-jan-99 150 DB66F0C147AF8D0840D9 "" ANY
```

License Enabling Request Form

The License Server Administrator uses a License Enabling Request Form to request the license file to enable XSoft applications. There are two forms:

- License Enabling Request Form for networked licensing
- License Enabling Request Form for non-networked licensing.

Be sure to enter the server information on the appropriate License Enabling Request Form provided with the software or obtain a copy from your Sales Representative.



C. Information for System Administrators

This appendix provides System Administrators with additional information about the XSoft Installation and System Administration Tool (XIST).

This appendix is divided into three main sections:

- The installation process.
- Directories—Describes each directory, file, and program in the installation package.
- GVX Online Help installation considerations—Explains the modifications that XIST makes to the *XKeysymDB* file.

The installation process

When you use XIST to install or upgrade the software, the applications are copied in the NSInterop format (used by WUFS) from the CD to a UNIX directory. When GLOBALVIEW starts up, they are moved from the UNIX directory into the Loader. During startup, GLOBALVIEW automatically checks this UNIX directory and copies any applications it finds there into the Loader before beginning the application autorun process.

When you perform an installation, you use the following XIST windows:

Main XIST window

You select the product family to start the installation. XIST prompts you through the process.

If you choose the SysAdmin button, XIST displays a pop-up option list and you can choose the administration functions you want.

Configuration During installation, a network service can require optional configuration information such as destination UNIX directories, networking information, licensing information, or other configuration options.

Packages With the Custom install, you select the Shared Document Services Package to install.

Modules XIST provides a detailed list showing each service and any possible variations. You can select services individually, select all services, or clear all selections. Dependencies are automatically included to be installed, even if you do not select them.

Feedback Once you have selected configuration, packages, and applications and have selected installation, a feedback window is displayed to show the progress of the installation.

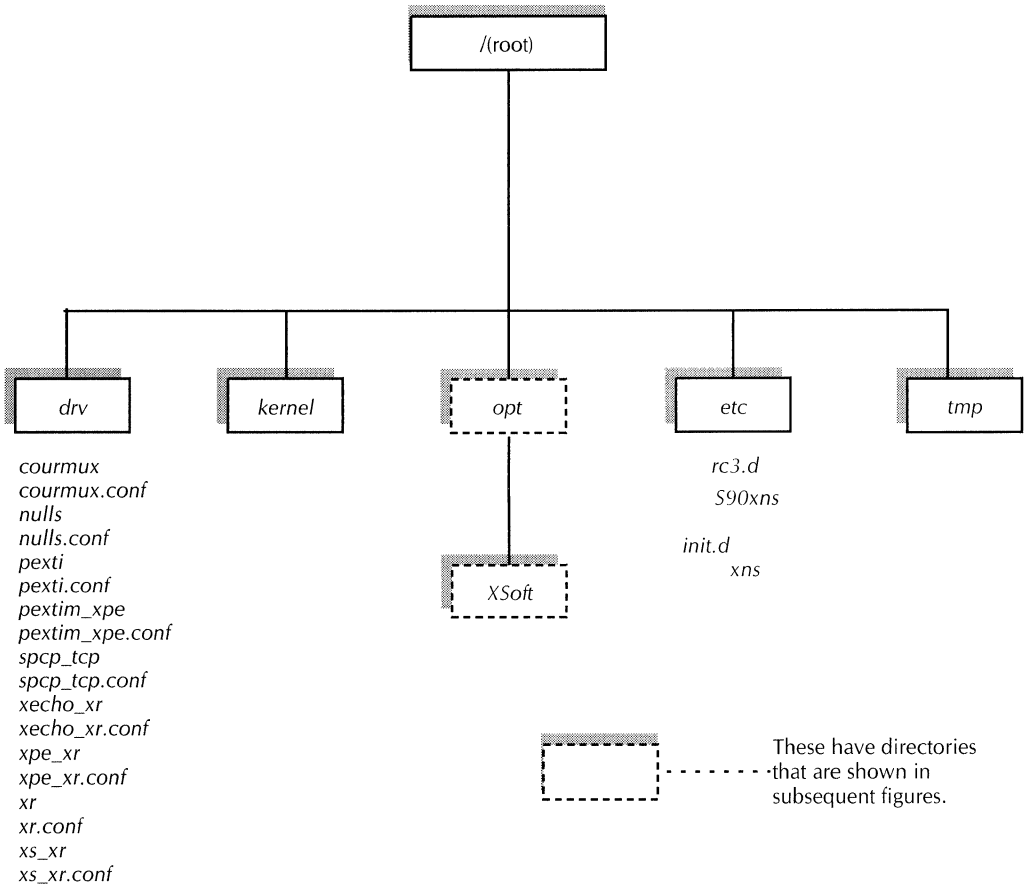
Information By selecting the Installed messages option from the View window, you can display the information window at any time to see feedback during installation. This window is displayed automatically when the installation process is complete.

Directories

Installation software consists of numerous directories, programs, and files in a hierarchical structure. This section shows the software structure and describes each directory, program, and file in the structure.

/(root) directory

The UNIX /(root) directory contains GLOBALVIEW files and directories, as shown in the following figure. The directory must be on a local file system (not remote).



The /(root) directory contains the following five directories:

- *kernel*—A UNIX directory for Solaris 2.3 and 2.4 configurations.
- *drv*—A directory containing the device drivers and programs that implement the XNS communication driver.
- *dev*—For SunOS platforms only

  xnsdrv.o—A device driver that implements the XNS communication driver. The following five programs manipulate the *xnsdrv.o* device driver.

xnsdrv.DEINSTALL—A program that deinstalls the *xnsdrv.o* driver.

xnsdrv.INSTALL—A program that installs the *xnsdrv.o* driver.

xnsdrv.LOAD—A program that loads the *xnsdrv.o* driver.

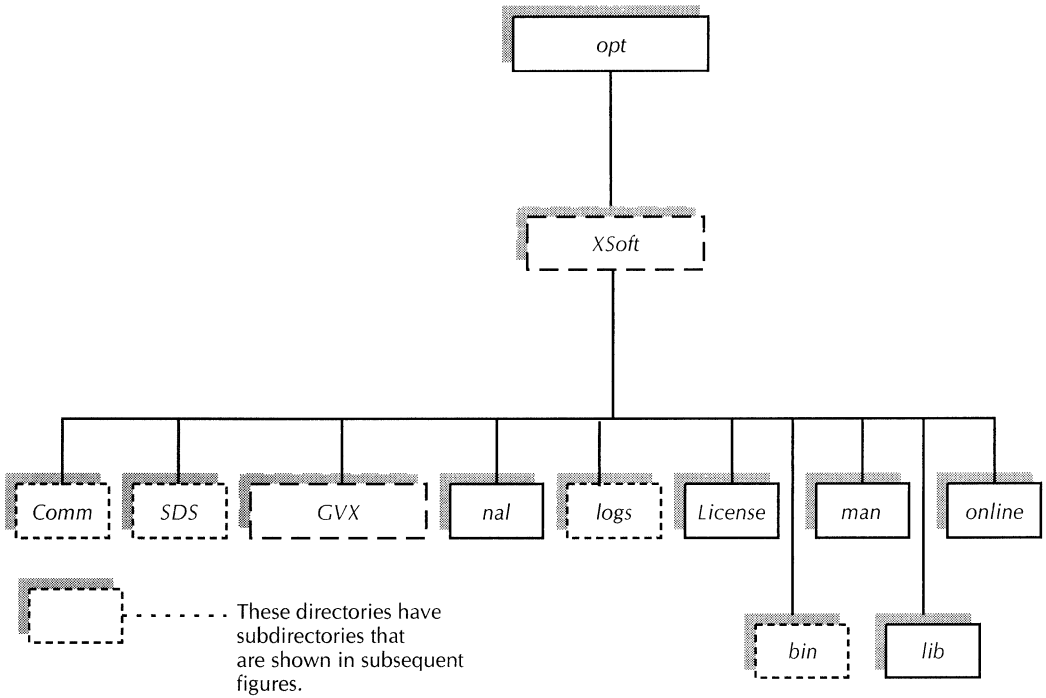
xnsdrv.MKDEV—A program that creates the *xns* device.

xnsdrv.RMDEV—A program that removes the *xns* device.

- *opt*—This can be a UNIX partition or a UNIX directory. The contents of this directory are described in the *opt* directory section of this appendix.
- *etc*—A UNIX directory that contains the rc3.d and *init.d* directories. *S90xns* is a file in *rc3.d,* and *xns* is a file in *init.d.*
- *tmp*—A UNIX directory, usually for temporary storage. This directory should have at least 18 MB of available disk space. During installation, XIST uses this directory to store temporary data files.

opt directory

The *opt* directory contains the *XSoft* directory which contains ten directories, as shown in the following figure.



The *online*, *License*, *man*, *lib*, and *nal* directories are described below. The remaining directories are described in subsequent sections.

online—A directory created to store the GLOBALVIEW online help database.

License—A directory created to store the *license.dat* file and License Server files, if installed.

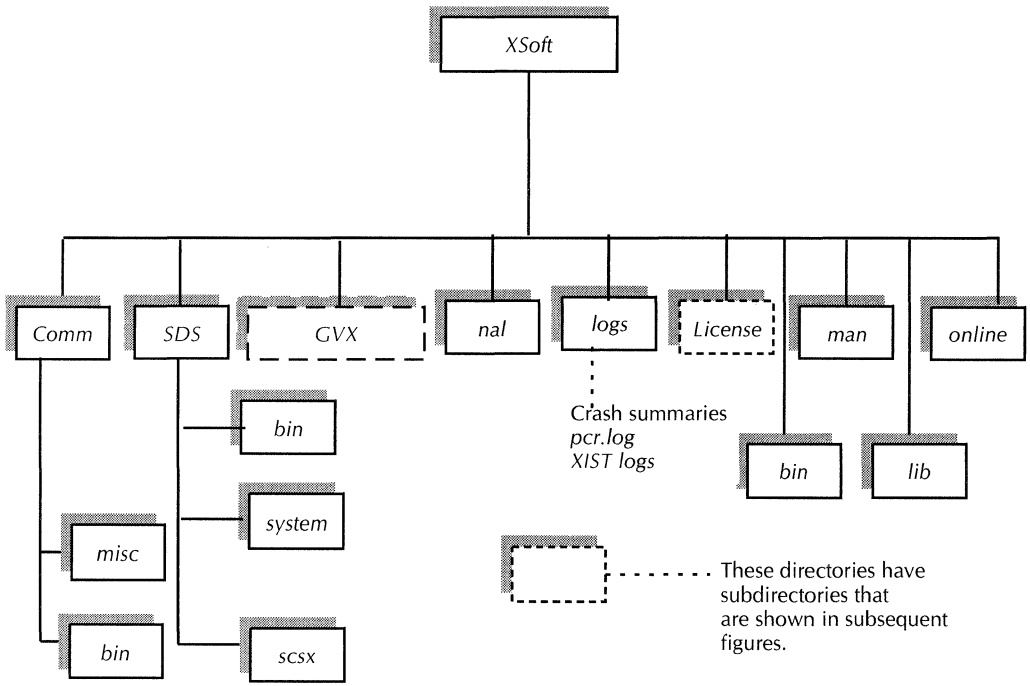
man—A directory (currently empty) that contains manual pages.

lib—A directory (currently empty) that may contain library files that applications may need to link with when they are started.

nal—A directory created to store the Network Administration Library (NAL) database.

XSoft directory

The following figure shows the *XSoft* directory and details of the *logs*, *SDS*, and *Comm* directories.



The *logs* directory contains the following files:

- *xistconfig.log*—A log file that records GVX configuration errors.
- *install.log*—A file used during installation to record which items are installed and when they are installed.
- *XWSCrashSummary*—This file is created after a system crash. It records the condition of the stack and other pertinent information that will aid in recovery after the crash.
- *XWSCrashSummaryPrevious*—If there is a system crash and an *XWSCrashSummary* file already exists, the existing

file is renamed *XWSCrashSummaryPrevious*. A new *XWSCrashSummary* file is then created.

- *pcr.log*—A file that contains detailed information about the internal workings of the currently running instance of GLOBALVIEW.

✦ **Note:** Shared Document Services 12.x **cannot** be installed on a system running GLOBALVIEW for X Windows version 2.0.✦

The *Comm/bin* directory contains information on Shared Document Services. It contains these files for Solaris 2.3/2.4:

- *install.ap*
- *p2552.v1*
- *p3.v3*
- *p32.v1*
- *tihelper*
- *xnssetup.csh*
- *xnsstart*
- *xnstime*
- *xnsup*
- *xnsup.awk*

It contains these files for Solaris 1.1.1 (SunOS 4.1.3/4.1.4):

- *p2500.v1*
- *p3.v3*
- *p2552.v1*
- *p32.v1*
- *pex2500.v1*
- *tihelper*
- *xnsdrv.INSTALL*
- *xnsdrv.o*
- *xnssetup.csh*
- *xnsstart*
- *xnstime*
- *xnsup*
- *xnsup.awk*

The *SDS/bin* directory contains the Shared Document Services application code for the following.

- *gvx.autorun*—A script that supports services that the user wants to run automatically. It continually runs GVX.
- *init_genesis*—A program that is installed with Shared Document Services and creates a services Genesis file.

- *setty_program*—A program for administering Shared Document Services through a command line interface.

The *SDS/system* directory contains the Shared Document Services application code for the following:

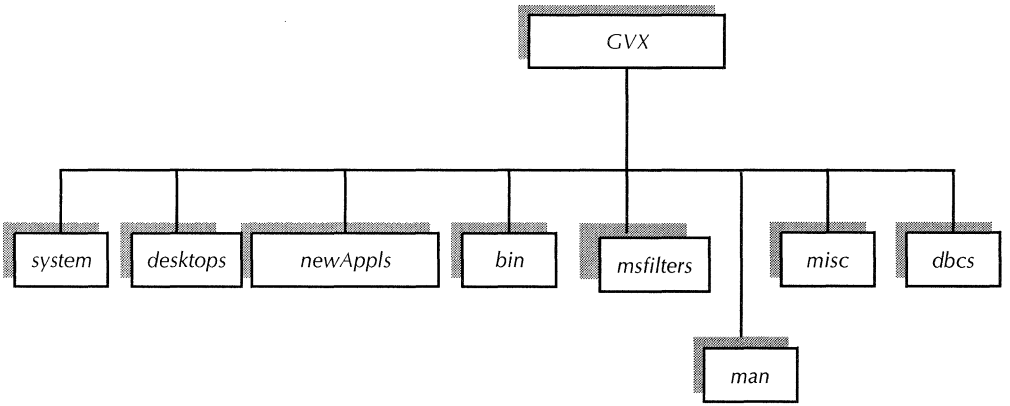
- *XNSusers*—A file containing the list of authorized File Service users. This list is used to confirm that a user has access to the files.
- *xnsfs*—A directory containing the File Service configuration.
- *config*—A file describing the File Service configuration.

The *scsx* directory contains the SCSX application code.

- *bs5800*—A top level directory that must be used. It contains the files needed for File Service and SCSX.

GVX directory

The following figure shows the GVX directory and the eight directories within it.



system—A GLOBALVIEW directory that contains *printing*, *ns*, *bwsdata*, and *bin* directories (these are explained in the next section).

desktops—A GLOBALVIEW directory that contains workspaces.

newAppls—A GLOBALVIEW directory that contains applications that will be installed with the next boot of GVX. These applications are copied from this directory into the Loader when GLOBALVIEW is started.

bin—A GLOBALVIEW directory that contains programs that are needed to run GLOBALVIEW.

msfilters—An optional directory containing Mastersoft Word for Word filters. These filters are third-party conversion software. For example, a filter might convert a document format from WordStar to GLOBALVIEW format.

man—A directory that may contain a manual page.

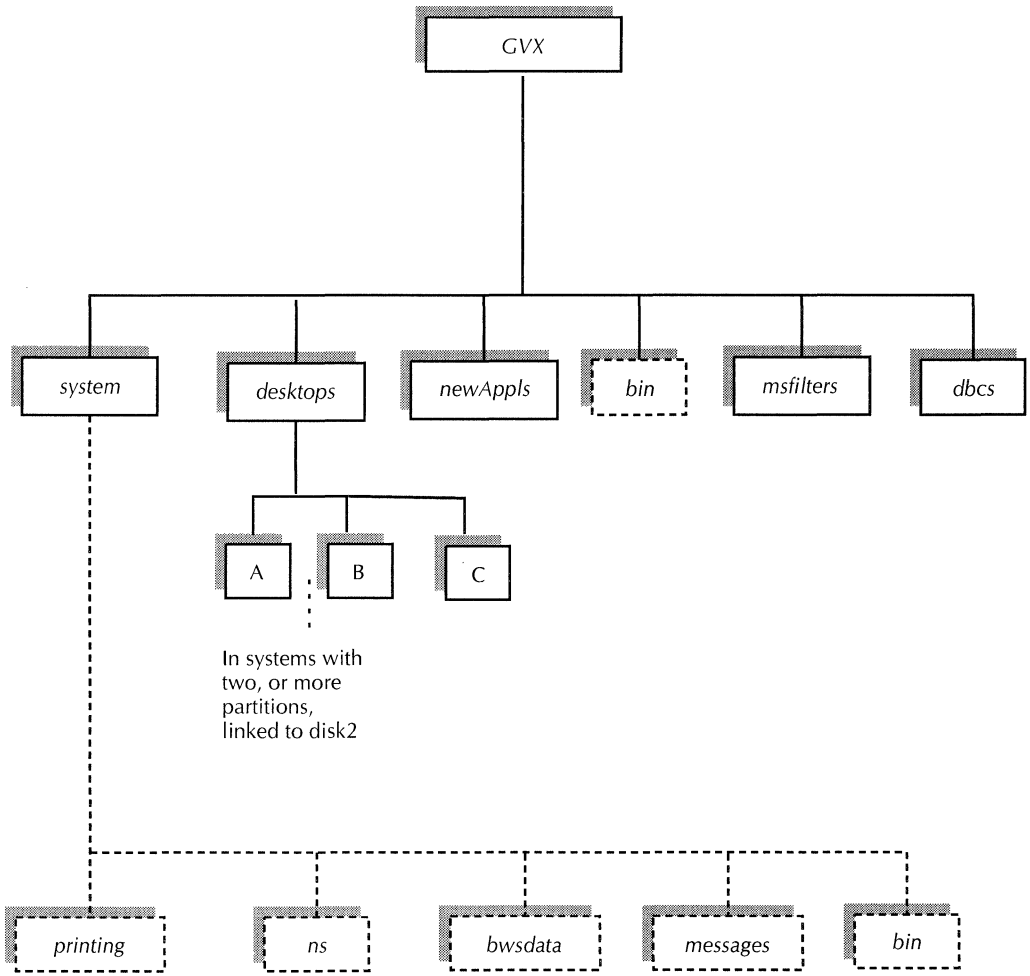
The *misc* directory contains the following files:

- *localTimeZone*—The time zone that has been selected from the data file.
- *localTimeParameters*—A data file containing time zones offset from GMT.
- *timezoneinput.csh*—A program that is referenced by the system. If a local time zone file does not exist, the program will prompt the user to select an appropriate time zone.

dbcs—An optional directory where UNIX executable and data files are stored for use by GV Database Access software.

system directory

The *system* directory contains the directories shown in the following figure.



The */system/printing* directory is created by the Print Service and contains the *printingvol* directory. This is a directory of

printing functions such as fonts, break pages, and other data needed by the printer.

The */system/ns* directory is part of the GLOBALVIEW system volume and contains the Loader. New applications are copied from the *newAppls* directory into this Loader.

The *ns* directory contains the following files:

- *IDMap*—A UNIX directory for GLOBALVIEW files; a map that lists each GLOBALVIEW file.
- *IDLog*—A log of GLOBALVIEW file transactions, used for crash recovery operations.
- *lock*—This locks your */opt/XSoft* directory so that no one can gain access to it via GVX while you are using the workstation.
- *tmp*—A temporary storage area used by *ns*.

The */system/bwsdata* directory contains the following files:

- **.TIPC,*.Icons*—System keyboard and icon files.
- **.brush*—Files containing the brushes used in Pro Illustrator graphics applications.
- *WorkstationProfile*—A data file containing internal software settings for GLOBALVIEW. The settings apply to all GVX users of that machine. It supports such features as icon types, multinational settings, etc. For example, you can set the GLOBALVIEW default language.
- *DefaultUserPalettes/Profile*—The default settings for icon colors. These default colors appear the first time the system is started.
- *ProductFactoring.cache*—A data file used by the old product factoring scheme for backward compatibility.
- *DefaultStartupSW.data*—A BWS data file containing the default settings used for startup software.
- *Software.options*—A data file used by the old product factoring scheme which lists available software options.
- *System.novafont*—A file that contains the system font used for text in the workstation icons.

System/bin is a UNIX directory of executable files and contains the following files:

- *XWSCleanup*—A GLOBALVIEW script that cleans up the system after a crash.
- *GVXPackage*—The actual GLOBALVIEW executable.
- *XWSScript*—Internal script for starting GLOBALVIEW.
- *gvfilelist*—A data file.
- *systemversion*—A file that contains the GLOBALVIEW version number and other software related information.

bin directory

The UNIX *bin* directory of executable files and contains the following files:

- *gethost* and *gethostbyname*—The GLOBALVIEW initiator and the X server use these programs to connect to the X server.
- *gvx*—A program or script that starts GLOBALVIEW. If it is a script, the real initiator is *gvx.initiator*.
- *createGVXUnixMailBoxes*—One of three programs that is installed when the user installs GVX to UNIX mail. Other programs that must be installed when installing GVX to UNIX mail are *gvxdecode* and *gvxsend*.
- *gvxdecode*—One of three programs that are installed when the user installs GVX To UNIX Mail. Other programs that must be installed when installing GVX To UNIX Mail are *createGVXUnixMailBoxes* and *gvxsend*.
- *gvxsend*—One of three programs that is installed when the user installs GVX To UNIX Mail. Other programs that must be installed when installing GVX To UNIX Mail are *createGVXUnixMailBoxes* and *gvxdecode*.
- *backstop_window*—If a system crash occurs and appropriate messages cannot be displayed, this program will open an X window so you can see the crash log.
- *gvx.initiator*—The GLOBALVIEW initiator program.

Links

This section shows the various links used by the system for the following:

- Online Help
- Link to Mastersoft Word for Word
- License

If GLOBALVIEW is installed on */<partition>/XSoft*, an */opt/XSoft* link will be created pointing to the directory installed with GVX.

Each of these links start with the */opt/XSoft* and */<partition>/XSoft* links. */opt/XSoft* is a link in the root directory pointing to */<partition>/XSoft*. */<partition>/opt/XSoft* is a place holder for disk partitions requested by the user. It serves as the root for the GLOBALVIEW directory structure.

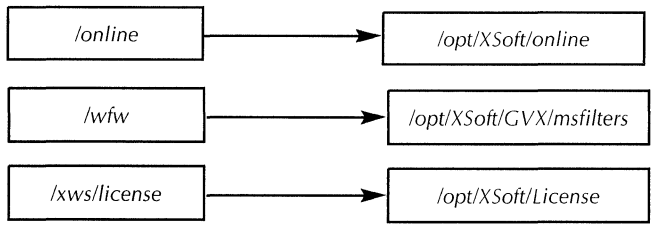
All of the other directories and files shown in the following figures are explained in previous sections.

The following figure shows the links for *online*, */msfilters*, and *License*. These directories are described in previous sections.

/online is a link to */opt/XSoft/online*.

/wfw is a link to */opt/XSoft/GVX/msfilters*.

If */xws/license* exists, then */opt/XSoft/License* is a link to */xws/license*.



GVX Online Help installation considerations

The following sections provide information that the System Administrator should be aware of before installing GVX Online Help.

✦ **Note:** Installing GVX 2.1 Online Help will delete any previously installed version of GVX Online Help.✦

Install dependencies

When you install GVX Online Help, XIST modifies the *XKeysmDB* file in */usr/lib/X11* to include key binding information that Help requires. XIST also creates a symbolic link in */usr/lib/X11/app-defaults/KRSM* to */online/data/KRSM*.

If XIST cannot locate the */usr/lib* directory, or if the directory */usr/lib/X11* or the *XKeysmDB* file are read-only, a message appears indicating that the file cannot be written to and "osf changes" cannot be made. Numerous "osf error" warnings will also appear when GVX Online Help is started. Help appears to function properly but you will not be able to enter data from the keyboard.

✦ **Note:** If you are using Open Windows 2.0, you might still receive widget warnings. However, this does not affect running GVX Online Help.✦

Solving installation problems

If you install on a workstation that has a local copy of X Windows, the *XKeysmDB* file is probably writeable, and the changes will be made during the installation.

If your workstation is "linked" to a single installation of X Windows so other workstations use the same *XKeysmDB* file, then the *XKeysmDB* file is probably read-only.

If the *XKeysmDB* file is not writeable, an error message displays during installation. You can do one of the following:

- Make the *XKeysmDB* file and at least its parent directory writeable, and then install GVX Online Help again.

- Locate the *sun_bind.sym* file in the */online/bin* directory. Append the contents of this file to the *XKeysymDB* file. Create a symbolic link in the */usr/lib/X11/app-defaults/KRSM* directory to */online/data/KRSM*.
- Install GVX Online Help on a workstation with a compatible *XKeysmDB* file, then copy it to the system UNIX *XKeysmDB* file. Create a symbolic link in the */usr/lib/X11/app-defaults/KRSM* to */online/data/KRSM*.

✦ **Note:** The UNIX *XKeysmDB* file only has to be written once. If you reinstall GVX Online Help, you can choose to ignore the error message if you know that the UNIX *XKeysmDB* file has already been modified. However, the file should be rewritten or *sun_bind.sym* appended if "osf" error messages appear when you start GVX Online Help.✦