

# SunForum™ User's Guide

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THE NETWORK IS THE COMPUTER™

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# Preface

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This manual describes how to install and use the SunForum™ data conferencing software with your Sun™ Workstation™. It is intended for users who want to collaborate over intranets and the Internet with both UNIX® and PC-based participants through data conferencing.

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## How This Book Is Organized

Chapter 1 describes the SunForum product.

Chapter 2 discusses installation requirements and procedures for installing SunForum.

Chapter 3 describes how to use SunForum.

Chapter 4 provides technical information about SunForum.

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# Using UNIX Commands

This document does not contain information on basic UNIX commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for this information:

- *Solaris 2.x Handbook for SMCC Peripherals*
- AnswerBook™ online documentation for the Solaris™ 2.x software environment
- Other software documentation that you received with your system

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# Typographic Conventions

TABLE P-1 Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output.	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
<b>AaBbCc123</b>	What you type, when contrasted with on-screen computer output.	% <b>su</b> Password:
<i>AaBbCc123</i>	Book titles, new words, or terms; words to be emphasized; command-line variable: replace with a real name or value.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be <code>root</code> to do this. To delete a file, type <code>rm filename</code> .

---

# Shell Prompts

**TABLE P-2** Shell Prompts

Shell	Prompt
C shell	%
C shell superuser	#
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

---

# Sun Documentation on the Web

The `docs.sun.com` web site enables you to access Sun technical documentation on the Web. You can browse the `docs.sun.com` archive or search for a specific book title or subject at:

`http://docs.sun.com`

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# Introduction to SunForum

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SunForum is a data conferencing product for Sun workstations. It is based on the T.120 standard, which enables your Sun system to conference over intranets and the Internet with other T.120 products, such as Microsoft NetMeeting and PictureTel LiveShare Plus, version 4.0.

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## SunForum Features

SunForum features enable you to:

- View and control applications shared from other UNIX or PC machines that are based on the T.120 protocol.
- Share local Solaris applications, which can be viewed and controlled by any conference participant.
- Exchange ideas and data using the whiteboard, clipboard, chat, and file transfers.

---

# SunForum and ShowMe 2.0.1 Differences

ShowMe™ 2.0.1 is *not* T.120 compliant and will *not* work with SunForum. ShowMe 2.0.1 is an X window multiplier that creates multiple copies of a window and sends them across the network. SunForum, however, is an extension of the X Server.

The key differences are:

- Both products have whiteboards; however, SunForum features also include the T.126 protocol whiteboard, Internet Locator Server (ILS), a clipboard, chat, and file transfer capability.
- SunForum intercepts mouse and keyboard input, sends the output to a frame buffer, and translates it into the T.128 application-sharing protocol.
- With SunForum, direct graphics access (DGA) applications can be shared.
- SunForum enables you to view PC applications on a Sun system and X Server applications on a PC.
- Because SunForum architecture involves X Server protocol layers, when you are controlling an application during a conference, you have control of the entire desktop of the host.

---

## Online Help

You can read information about SunForum online. You can access help from the Help menu located on any SunForum menu bar.



## Installing SunForum

---

This chapter contains the following topics:

- Installation Requirements
- SunForum CD Directories
- Installing SunForum
- Online Documentation
- Accessing the Localized Documentation

You must be able to become superuser to install SunForum. If you do not know the root password of the system on which you are installing SunForum, contact your system administrator.

---

## Installation Requirements

To install SunForum, you must have the following hardware and software configuration:

- Solaris 2.6 and Solaris 7 operating environment, or a compatible version
- 10 Mbytes of available disk space
- Sun Ultra™ 1 workstation, or more advanced Sun workstation
- A TCP/IP connection

---

**Note** – If there is a network security mechanism between the two machines, T.120 data uses port 1503 and the Internet Locator Server (ILS) uses port 389. Contact your system administrator.

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---

# SunForum CD Directories

**TABLE 2-1** SunForum CD Directories

<b>Directory Name</b>	<b>Description</b>
Copyright	U.S. version of copyright
FR_Copyright	French version of copyright
Docs	HTML and PostScript™ user guide files
Product	Contains the SunForum packages: SUNWdat, SUNWdatr, SUNWdatu, SUNWxxdat.

**TABLE 2-2** SunForum Software Package Directory Location

<b>SunForum Package</b>	<b>Directory Location</b>
SUNWdat	/opt
SUNWdatr	/etc
SUNWdatu	/usr/openwin

---

# Installing SunForum

## ▼ To Remove Previous Software Releases

You must remove any previous releases of SunForum before installing new software packages.

1. **Log out of (exit) the window system.**
2. **Log in as superuser at the command line prompt.**
3. **Remove the previous SunForum software releases by typing:**

```
# pkgrm SUNWdatr SUNWdat SUNWdatu
```

If the pre-release `xdc`s version of this product is installed, type:

```
# pkgrm xdc
```

## ▼ To Install SunForum

1. **Log in to the windowing system (if you are not already in it).**
2. **Become superuser in a shell window.**
3. **Insert the SunForum CD into the CD-ROM drive connected to your system.**
  - If your system is running Volume Manager, it should automatically mount the CD-ROM to the `/cdrom/sunforum_2_0` directory.
  - If your system is not running Volume Manager, mount the CD-ROM as follows:

```
# mkdir -p /cdrom/sunforum_2_0
# mount -F hsfs -r /dev/dsk/c0t6d0s2 /cdrom/sunforum_2_0
```

#### 4. Use `pkgadd` to add the SunForum packages.

##### a. To add the English version only, type:

```
# pkgadd -d /cdrom/sunforum_2_0/Product SUNWdat  
SUNWdatr SUNWdatu
```

##### b. To add the localized SunForum packages, type:

```
# pkgadd -d /cdrom/sunforum_2_0/Product SUNWdat SUNWdatr  
SUNWdatu SUNWXXdat
```

Where the last package entered is the localization package and `xx` indicates the specific language identifier (see the following table).

**TABLE 2-3** Localized Package Names

Language	Package Name
French	SUNWfrdat
German	SUNWdedat
Italian	SUNWitdat
Spanish	SUNWesdat
Swedish	SUNWsvdat
Japanese (ja-EUC)	SUNWjadat
Korean (ko-EUC)	SUNWkodat
Simplified Chinese (zh-EUC)	SUNWcdat
Traditional Chinese (zh_TW-EUC)	SUNWhdat

---

**Note** – Other Asian encodings (non-EUC) may be available. Check your CD-ROM for additional packages.

---

During installation, `pkgadd` may issue a warning prompt and ask whether you want to continue with the installation; type `y` for yes.

**5. When prompted, type the path of your browser.**

If you do not know the path to your browser, go to a different shell window and type the following at your user prompt to display your browser path:

```
% which netscape
or
% which hotjava
```

---

**Note** – HotJava is available on standard installations of Solaris 2.6 and appears as the default browser for SunForum.

---

More prompts are then displayed asking if you want to continue installation until each SunForum package is installed. Type *y* to these prompts.

**6. When prompted to select packages, type *q* to quit `pkgadd`.**

**7. Log out of (exit) your workstation. This will restart your X Server.**

**8. Log on to your window system as user at the main prompt.**

**9. Optional: Set the directory path for SunForum in a file (`.profile` or `.cshrc` files) or shell.**

- This command can be put at the end of a `.cshrc` file or, when using a `csch` environment, typed at your user prompt:

```
% set path = ($path /opt/SUNWdat/bin)
```

- If you choose to run a `sh` or `ksh` environment, type:

```
% path=$path:/opt/SUNWdat/bin
% export path
```

**10. Start `sunforum` to verify installation.**

- To start SunForum if you added SunForum to your user file, type:

```
% sunforum
```

- To start SunForum as an absolute file name (not from your user path file), type:

```
% /opt/SUNWdat/bin/sunforum
```

If you installed SunForum in a directory that is *not* the default (`/opt/SUNWdat`), you must alter the directory paths in these steps to reflect the correct directory.

---

# Online Documentation

The *SunForum User's Guide* is available online.

To view the user's guide,

1. **Choose Help ► Help Topics from any SunForum window.**

This opens the HTML help page.

2. **Click Online Docs at the title bar.**

---

# Accessing the Localized Documentation

The CD contains the localized *SunForum User's Guide* in the following languages:

- French
- German
- Spanish
- Italian
- Swedish
- Japanese
- Korean
- Simplified Chinese
- Traditional Chinese

These language versions are contained in the `/cdrom/sunforum_2_0/Docs/HTML` directory in the following files:

**TABLE 2-4** Names for Translated Documents

Language	Directory Name	File Type
French	<code>fr/</code>	HTML file
German	<code>de/</code>	HTML file
Spanish	<code>es/</code>	HTML file
Italian	<code>it/</code>	HTML file
Swedish	<code>sv/</code>	HTML file
Japanese	<code>ja/</code>	HTML files

**TABLE 2-4** Names for Translated Documents (*Continued*)

Language	Directory Name	File Type
Korean	ko/	HTML files
Simplified Chinese	zh/	HTML files
Traditional Chinese	zh_TW/	HTML files

- **To view a manual that is in HTML format, use a web browser and type the following in the address field:**

```
file://cdrom/sunforum_2_0/Docs/HTML/directory
```

Where *directory* is the directory that contains the HTML files.





# Using SunForum

---

This chapter contains the following topics:

- SunForum Basics
- Using Directories
- Using SunForum
- Using SunForum Whiteboard

---

## SunForum Basics

- To Start SunForum
- SunForum Menus

### ▼ To Start SunForum

1. Type the following at your system prompt:

```
% sunforum
```

---

**Note** – If the SunForum directory is not set in your path, enter the correct path name (that is, `/opt/SUNWdat/bin/sunforum`). See Chapter 2 for more information.

---

The SunForum conference manager is displayed. When you start SunForum for the first time, however, the My Information window is displayed.

My Information

First Name: [ ] Last Name: [ ]

E-mail address: [ ]

City: [ ] Country: United States [ ]

Comments: [ ]

Category:

Personal Use

Business Use

Adults

At startup, log on to the directory server

Server Name: [ ]

Do not list my name when logged on to the directory server

OK Cancel

FIGURE 3-1 My Information Window

## 2. Type your name and email address in the My Information window.

---

**Note** – You *must* enter your name and email address. You cannot collaborate unless this minimum information is entered.

---

The next time you start SunForum, the My Information window will not display automatically. However, you can change the information in the My Information window anytime by choosing Call ► Change My Information to open the information window.

When you close the My Information window, the SunForum conference manager is displayed as the active window.

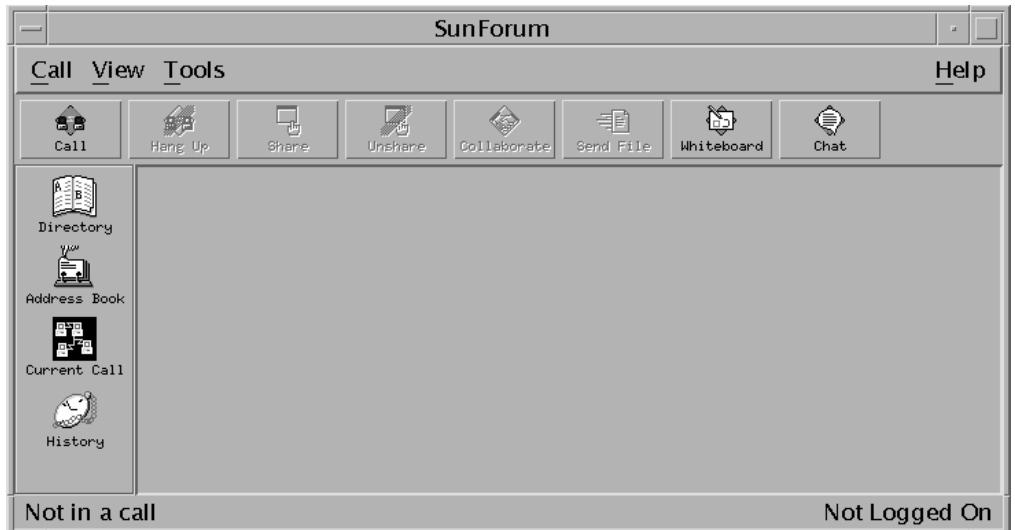


FIGURE 3-2 SunForum Conference Manager

## ▼ SunForum Menus

There are four menus on the SunForum menu bar: Call, View, Tools, and Help.

---

**Note** – You can also use the SunForum conference manager buttons to access most of the functions in the Call, View, and Tools menus. See *Using SunForum* for more information.

---

## Call Menu

TABLE 3-1 Call Menu Descriptions

Menu Item	Description
Place Call	Use to place a call to an indicated address. You can also click the Call button.

**TABLE 3-1** Call Menu Descriptions (*Continued*)

<b>Menu Item</b>	<b>Description</b>
Stop Placing Call	Use to cancel an in-progress call request.
Host Conference	Use to start a conference.
Hang Up	Use to end your call. (Same as clicking the Hang Up button.)
Do Not Disturb	Use to block incoming calls. You may, however, call out.
Log Onto Directory Server	Use to log on to a directory server. You will be prompted for the server name.
Change My Information	Use to make changes to your profile information.
<i>Address listing</i>	Use to call recently accessed addresses.

## View Menu

You can use the View buttons to change these listings viewed in the SunForum conference manager.

**TABLE 3-2** View Menu Descriptions

<b>Menu Item</b>	<b>Description</b>
Directory	Use to view the directory server. It lists who you can conference.
Address Book	Use to display addresses that you have conferenced and added to your address book.
Call Status	Use during a call to view the status of conference participants and the status of the application sharing, whiteboard, and chatting features.
History	Use to list the status of received calls.
Refresh Directory	Use to query the directory server for an immediate update of the directory listings.

**Note** – To remove an item from the Address Book and History lists, select the item and press the Delete key.

## Tools Menu

**TABLE 3-3** Tools Menu Descriptions

<b>Menu Item</b>	<b>Description</b>
Share Application	Use to share your applications with others on the call. A submenu lists the shareable applications you have running on your desktop.
Share	Use to select an application window on your desktop for sharing. (Same as clicking the Share button.)
Unshare	Use to unshare the application. (Same as clicking the Unshare button.)
Collaborate	Use to shift a shared application from view-only to collaborate. When you collaborate an application, you enable others to have control of it. (Same as clicking the Collaborate button.)
Send File	Use to select a file for sending to everyone in the conference. (Same as clicking the Send button.)
Cancel All Sends	Use to cancel sending of files.
Cancel All Receives	Use to cancel receipt of files.
Shared Desktop Viewer	Use to show an overview of all user desktops and the location of shared applications.
Whiteboard	Use to start whiteboard graphical application. The whiteboard automatically starts on other user systems in the conference. (Same as clicking the Whiteboard button.)
Chat	Use to start the chat application. The chat window automatically starts on other user systems in the conference. (Same as clicking the Chat button.)
Share Clipboard	Use to copy and paste clipboard data between systems.
Options	Use to select various features to run automatically. For example, automatically joining an existing conference, accepting incoming calls, and sharing the clipboard in a conference.

## Help Menu

You can access help from the Help menu, located on the SunForum menu bar. Choose Help ► Help Topics for online SunForum information.

---

**Note** – The Help Topics menu is on each of the SunForum window menu bars.

---

## Using Directories

This section contains the following topics:

- To Change Your Directory Information
- To Log On to a Directory Server
- To Refresh the Directory List
- To Automatically Log On to a Directory Server at Startup
- To Remove Your Name from the Directory Server
- To Call Someone in the Directory List
- To Call Someone at a Server Using Their Email Address

## Introduction to Directories

An Internet Locator Server (ILS) directory contains an address listing of people who are currently using SunForum, Microsoft NetMeeting, or ILS-compatible conferencing. This makes it easy to locate and connect to other people, either by simply browsing to see who is currently listed or by looking up a specific person by their email address.

To log on to a directory, you must specify your own details, including name, location, and email address. You are prompted for these details the first time you run SunForum. You can choose whether to list these details for access by everyone; if you do not, then only those people who know your email address will be able to call you via the directory.

### ▼ To Change Your Directory Information

#### 1. Choose **Call** ► **Change My Information**.

The fields that you need to fill in are:

- First Name and Last Name. This is the name used to identify you in a conference.
- email address. This is used to identify you when you are logging on at a directory server.

- **Category.** This is used by ILS servers to narrow down the list of names they see when querying or choosing a directory server.

**2. Change the details as required and click OK.**

The new details will be used the next time you log on to an ILS server. If you are currently logged on to an ILS server, your information is automatically updated.

## ▼ To Log On to a Directory Server

**1. To view the directory listing, choose Call ► Log Onto Directory Server.**

**2. Enter the name of the directory server you want to log on to and click OK.**

When SunForum has successfully logged on to the directory server, the server is automatically queried for other users also logged on to that directory. To view the directory listing, choose Call ► Log.

Public directory servers that you can log on to may include:

- `ils.microsoft.com`
- `ils1.microsoft.com`
- `ils2.microsoft.com`
- `ils3.microsoft.com`
- `ils4.microsoft.com`
- `ils5.microsoft.com`
- `ils.four11.com`
- `ils.business.four11.com`
- `ils.family.four11.com`

To log off from a directory server: choose Call ► Log Off From Directory Server.

## ▼ To Refresh the Directory List

● **Choose View ► Refresh Directory.**

This option can be selected only when the directory list is displayed. See TABLE 3-2 for directory lists.

## ▼ To Automatically Log On to a Directory Server at Startup

1. Choose **Call ► Change My information**.
2. Select **“At startup, log on to the directory server.”**
3. Type the name of the directory server you want to log on to in the **Server Name** field.

The next time you start SunForum, it will log on to the directory server you specified.

## ▼ To Remove Your Name from the Directory Server

1. Choose **Call ► Change My Information**.
2. Select **“Do not list my name when logged on to the directory server.”**

The next time you log on to a directory server, your details will not be visible to users browsing the directory.

If you are currently logged on and your name is displayed when you select this option, SunForum automatically updates your entry at the directory server so that your name is not displayed.

## ▼ To Call Someone in the Directory List

You can call a user shown in the directory list by double-clicking on that entry in the directory view.

---

**Note** – If **Add to address book** in the **Place Call** window (**Call ► Place Call**) is selected, any users you call via the directory list will be added to the address book list.

---



## ▼ To Call Someone at a Server Using Their Email Address

SunForum enables you to call someone who is logged on to a directory server by specifying their email address.

- **Type the name of the directory server they are logged on to and the user email address, separated by a slash (/).**

```
ils.four11.com/bob@acme.com
```

SunForum queries the specified directory server for a user with the email address you entered. If the user is logged onto the directory server, SunForum tries to start a call with them.

---

## Using SunForum

Refer to the SunForum conference manager as you read the procedures in this section.

This section contains the following topics:

- To Make a Call
- To Share Applications
- To Collaborate Applications
- To Transfer Files
- To Chat
- To Transfer Data Using the Shared Clipboard

## ▼ To Make a Call

### Manual Connection

1. **Choose Call ► Place Call, or click the Call button.**

The Place Call window is displayed. The Place Call window enables you to join a conference.

**2. Type the address with which you want to conference.**

There are three types of addresses: IP (internet protocol), machine name (with DNS handler), and ILS address (server and email address).

---

**Note** – There are currently no ILS server products for UNIX.

---

In the Place Call window, you can add the address you are calling to your Address Book. You can also specify a named meeting to join (for example, if you are calling a conference server).

**3. Click OK.**

The view will shift to Call Status if the connection is made, or a prompt will inform you why the attempt was unsuccessful.

## Quick Connection

**1. Choose View ► Address Book, or click the Address Book button.**

**2. Double-click on the address book entry that you want to connect.**

You can also simply click the Directory or History view buttons and double-click the entry you want to connect.

## Ending a Connection

● **Choose Call ► Hang Up, or click the Hang Up button.**

This ends your participation in a conference.

---

**Note** – When you hang up, you may also disconnect others from the conference. This includes all the participants you invited into the conference, or anyone who called you. If you initiated the conference, the whole conference will be terminated. You will get a warning message if you are about to disconnect others by hanging up.

---

## ▼ To Share Applications

When you are using SunForum, the applications on your entire desktop screen can be shared with other conference participants. This results in the following:

- If a controlling user within a SunForum conference moves an application window on their desktop, it is actually moved on the host desktop. Other applications on the host desktop may obscure the window being shared. Also, if a portion of the shared application window is obscured on the host desktop, that same portion is also obscured on the controlling user's desktop.
- Sun and PC desktops in a SunForum conference may have different desktop screen sizes. When a controlling user moves shared windows around on their desktop, the windows may move outside the viewing area of a user in the conference with a smaller desktop screen. A participant with a smaller desktop screen can move (scroll) the active (view) region of the screen by moving the mouse pointer to that area of the desktop where the entire application can be viewed. (To set the scrolling feature, choose Tools ► Options from the SunForum conference manager.)

**1. While in a conference call, choose Tools ► Share, or click the Share button.**

Or, choose Tools ► Share Application to select the application you want to share.

**2. Place your mouse pointer (now a hand symbol) over the desktop application window you want to share.**

**3. Click anywhere in that application window.**

All conference participants can now see that application on their system as if it were running locally. SunForum can share almost any application, including terminal windows, word processors, and CAD design packages. Exceptions include SunForum and applications using certain X extensions that are not supported.

---

**Note** – The window is labeled with the name of the user who shared the application. At this point, only that person can control it; others can only view the output on their desktop.

---

**4. Choose Tools ► Unshare, or click Unshare, to stop sharing the application.**

**5. Click on the application window that was being shared.**

Now, only you can view and control that application.

## ▼ To Collaborate Applications

Once an application is being shared, the Collaborate button is activated and you can open the application to conference participants for collaborative use.

1. **Share an application (see To Share Applications).**
2. **Choose Tools ► Collaborate, or click Collaborate.**

The shared application that was view-only by the conference participants is now open for collaboration.

When you collaborate your shared application, other conference participants can take control. For a conference participant to take control of the shared application, they only need to click on that application on their desktop.

---

**Note** – When another conference participant clicks the shared application window and is then in control of it, they effectively take over your mouse and keyboard. Only one user can be in control at a time. Any other user, including the host, can gain control by just clicking the mouse.

---

3. **To stop collaborating, click Collaborate again.**

The shared application is returned to view-only for the conference participants.

## ▼ To Transfer Files

1. **Choose Tools ► Send File, or click Send File.**

The Select a File to Send window is displayed.

2. **Go to the directory and select the file you want to send.**
3. **Click OK.**

The file is sent to all participants in the conference.

Files sent to you by other conference participants are received automatically. While the file is being received, another window shows the progress of the transfer. When the transfer is complete, the file is saved. The default directory for saving files is `/tmp`. To change the default directory where files are saved, choose Tools ► Options.

## ▼ To Chat

1. **Choose Tools ► Chat, or click the Chat button to start the chat application.**

This also automatically starts the chat application on other user systems in the conference.

2. **Select the recipient of your message.**

- To send to all participants, choose Send to ► Everyone in conference.

- To send to a single participant, choose Send to ► *user name*.

The names of those conference participants who are running chat are listed in the Send to menu.

3. **Type your message in the message field and press Return.**

The message is displayed in your chat window and on the other participants' chat windows.

You can list the date, time, and name with the message. To do this, click View on the Chat menu bar and select or deselect your choice.

You can save chat sessions to file as a record of the conference. You are prompted to do so when you exit the Chat window.

---

**Note** – Though other conferencing products may have T.120 text chatting capability, they may not necessarily work with SunForum chat. Check the chatting status in the SunForum conference manager to see who is running chat.

---

## ▼ To Transfer Data Using the Shared Clipboard

1. **Ensure that Shared Clipboard is enabled on both systems.**

2. **Choose Tools ► Shared Clipboard.**

The Shared Clipboard menu item should be active (checked).

---

**Note** – To automatically enable Shared Clipboard, choose Tools ► Options.

---

3. **Select text from an application (for example, a Command Tool) on one system.**

4. **Choose Edit ► Copy.**

5. **In an application (for example, a text editor) on another system, choose Edit ► Paste.**

---

# Using SunForum Whiteboard

The SunForum Whiteboard enables all conference participants to exchange ideas and graphics. You do not need to be in a conference, however, to use the whiteboard.

There are two types of whiteboards available through SunForum:

- T.126 mode, which allows you to interoperate with any computer system or appliance using the T.126 protocol, regardless of platform software
- SunForum 1.0 mode, which allows you to interoperate with PCs running the base NetMeeting collaboration or PictureTel LiveShare Plus 4.0 products

This section contains the following topics:

- To Select a Whiteboard Mode
- To Draw Graphical Objects
- To Use Text Objects
- To Move and Delete Objects
- To Highlight Text and Images
- To Add Screen Captures to the Whiteboard
- To Import Graphics
- To Export Graphics
- To Use the Remote Pointer
- To Use Whiteboard Stamps
- To Copy to the Clipboard
- To Navigate and Organize Pages
- To Add a New Page
- To Zoom the Whiteboard
- To Lock the Whiteboard
- To Save the Whiteboard Contents to a File
- To Print the Whiteboard Contents

## ▼ To Select a Whiteboard Mode

1. **Choose Tools ► Options.**
2. **Choose the desired whiteboard mode: T.126 or SunForum 1.0 mode.**
3. **Click OK.**

---

**Note** – Once you select a whiteboard in the Options window, this whiteboard will open each time you select Whiteboard from either the Tools menu or from the Whiteboard button on the SunForum conference manager. See To Start the Whiteboard.

---

## ▼ To Start the Whiteboard

- Choose **Tools** ► **Whiteboard**, or click the **Whiteboard** button, from the SunForum conference manager.

The whiteboard mode you selected in the Options window is displayed. This example shows the SunForum 1.0 mode whiteboard.

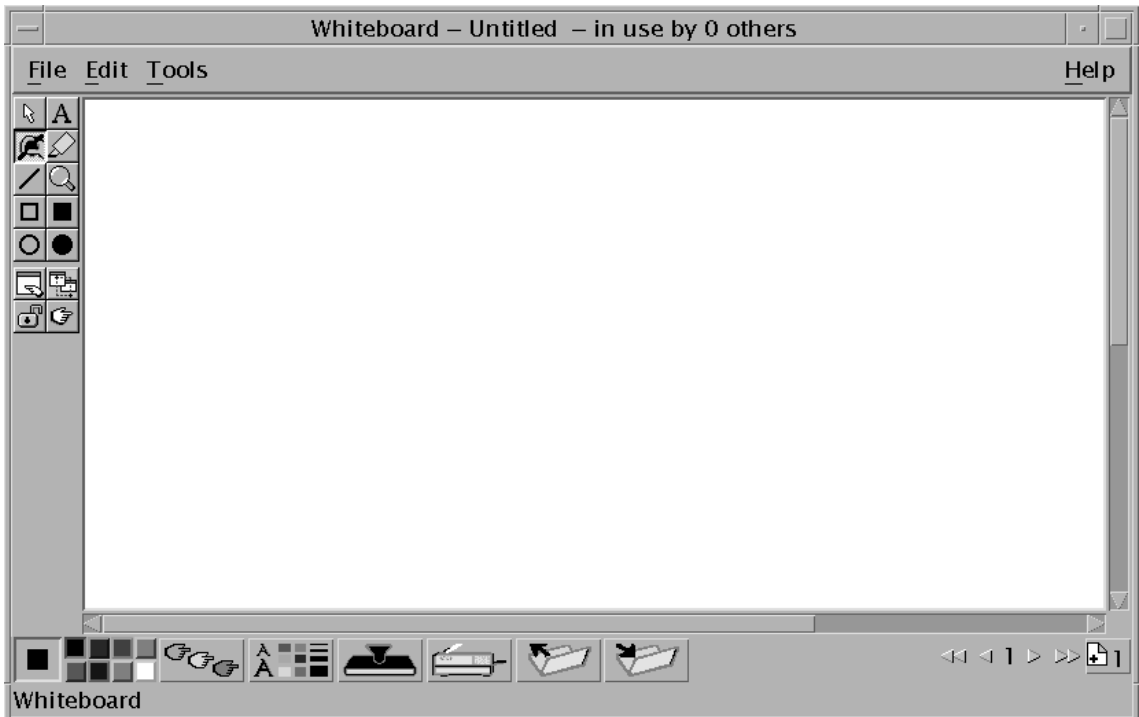


FIGURE 3-3 SunForum 1.0 Whiteboard

# Whiteboard Menus

TABLE 3-4 Whiteboard Menu Bar Descriptions

Menu	Description
File	Use for file handling functions such as New, Open, Save, Import, Export, and Print.
Edit	Use to edit functions such as copy, paste, clearing, deleting, inserting pages, and so on.
Tools	Use to select drawing functions. You can also click the icon on the draw tool panel on the left side of the whiteboard.

## Whiteboard Tool Panel

Familiarize yourself with the whiteboard by experimenting with the drawing features in the drawing tool panel to the left of the whiteboard. You do not need to be in a conference to do this.

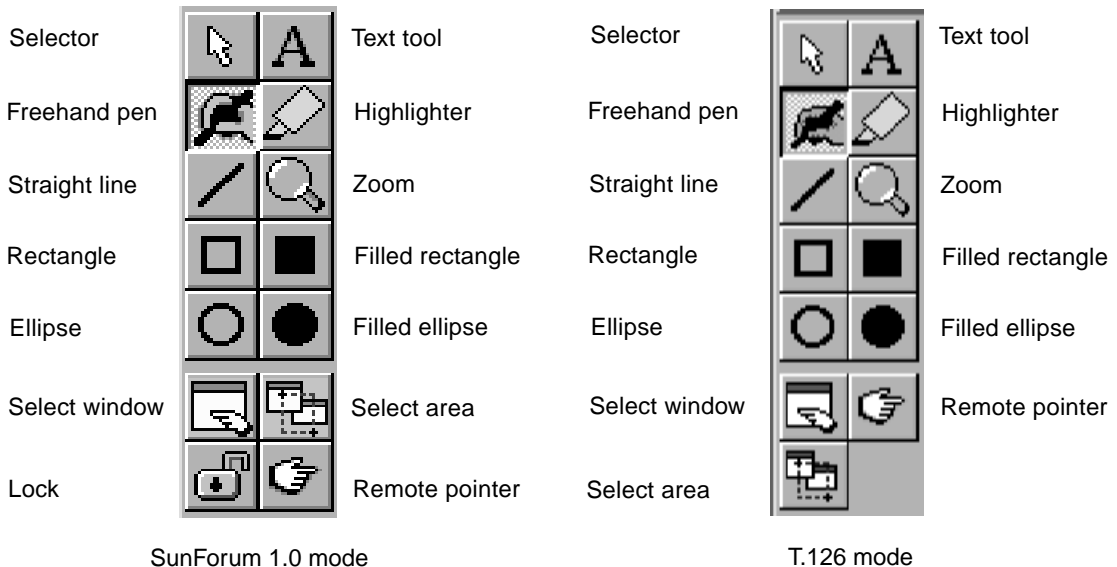


FIGURE 3-4 Whiteboard Tool Panel



## ▼ To Draw Graphical Objects

1. Click the tool type in the whiteboard tool panel.

For example, click freehand pen or choose Tools ► Pen from the menu bar.

2. Choose your pen color and line thickness.

- a. Click the Whiteboard Options button located on the bottom of the whiteboard.

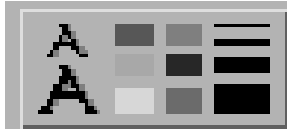


FIGURE 3-5 Whiteboard Options Button

The Whiteboard Options panel is displayed.

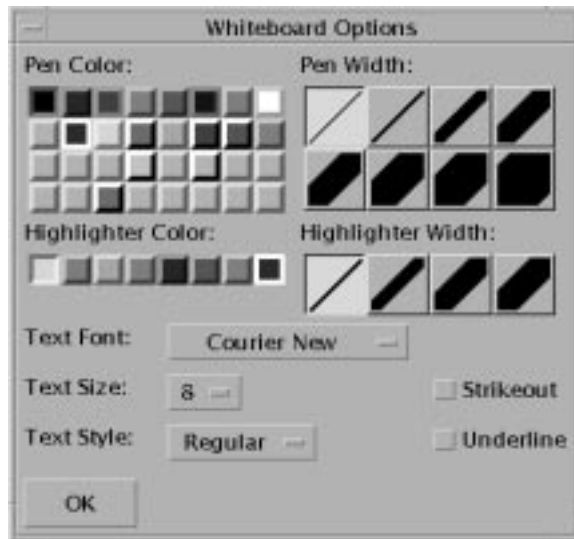


FIGURE 3-6 Whiteboard Options Panel

- b. Choose your pen color and pen width, then click OK.

3. Click and drag your mouse button to draw the object.

As you release the mouse button, the object is seen by all other conference participants.

## ▼ To Use Text Objects

### Creating Text Objects

1. **Click the Text tool button, or choose Tools ► Text.**
2. **Place your mouse pointer in the whiteboard where you want to enter text.**
3. **Click at that location.**  
A text field appears in the whiteboard.
4. **Enter the text and click OK.**

### Editing Text Objects

1. **Click the Text tool button, or choose Tool ► Text.**
2. **Click the text in your whiteboard that you want to edit.**  
A text field appears in the whiteboard.
3. **Edit the text and click OK.**

### Setting the Font and Style of Text Objects

You can set font options in two ways:

- By changing settings in the Whiteboard Options tool before creating a new text object
- By selecting a text object, then changing the settings in the Whiteboard Options tool.
- By selecting a text object, then changing the settings when the text field is visible.

1. **Click the Whiteboard Option button.**  
The Whiteboard Options window is displayed.
2. **Click the Text Font, Text Size, and Text Style menus and choose the font setting.**

---

**Note** – Only a small number of fonts are available to ensure that text objects are able to display on all user systems in the conference.

---

3. **Click OK on the Whiteboard Options window.**

## ▼ To Move and Delete Objects

1. **Click the Selector tool button, or choose Tools ► Selector.**
2. **Click the graphic or text that you want to move or delete.**  
A border is highlighted on the selected object.
  - a. **To move the graphic or text, drag it with the mouse pointer to its new position.**
  - b. **To delete the graphic or text, press Delete on your keyboard, or choose Edit ► Delete.**

---

**Note** – If you delete an object by mistake, you can undelete and retrieve the last deletion by choosing Edit ► Undelete.

---

## ▼ To Highlight Text and Images

1. **Click the Highlight button, or choose Tools ► Highlighter.**
2. **Draw on the whiteboard area you want to highlight.**

## ▼ To Add Screen Captures to the Whiteboard

You can capture the contents of a window, or an area of the desktop, to add to your whiteboard for conferencing.

### Selecting and Capturing a Window

1. **Click the Select window button, or choose Tools ► Select Window.**  
The Whiteboard becomes an icon and the mouse pointer becomes a hand symbol.
2. **Place the mouse pointer on the window you want to add to your whiteboard.**
3. **Click the window.**  
The window is captured and placed in your whiteboard.

---

**Note** – Large graphical objects may take some time to transfer to all participant systems.

---

## Selecting and Capturing an Area of the Screen

1. **Click the Select window button, or choose Tools ► Select Area.**

The Whiteboard becomes an icon and the mouse pointer becomes a pair of crosshairs.

2. **Drag the mouse pointer over the area of your desktop screen that you want to capture.**

The image area is captured and placed in your whiteboard as you release the mouse button.

---

**Note** – Once the image is captured in the whiteboard, you can use the Selector tool to select the image and move or delete it across your whiteboard. See To Move and Delete Objects.

---

## ▼ To Import Graphics

1. **Choose File ► Import.**

The Select a file to import window is displayed.

2. **Specify the file you want to import and click OK.**

The image is added to the current page.

---

**Note** – You need the shareware filter `ghostscript` to import PostScript files into the whiteboard. The location of `ghostscript` is specified in `/etc/opt/SUNWdat/config/dcgx` as `Whiteboard.GSPath`.

---

## ▼ To Export Graphics

1. **Choose File ► Export.**

The Export file window is displayed.

2. **Specify the file you want to export.**

3. **Choose an image format from the Save file as type menu.**

4. **Click OK.**

The contents of the current page is written to the file in the selected format.

## ▼ To Use the Remote Pointer

The remote pointer is a pointing hand that everyone in the conference can see. When you have the Select tool enabled, you can click on the pointer and drag it around, so that you can point out areas of interest on the page.

1. **Click the Remote Pointer button, or choose Tools ► Remote Pointer.**

A hand symbol pointer is displayed on your whiteboard.

2. **Click and drag the remote pointer to move to selected areas of interest.**

## ▼ To Use Whiteboard Stamps

The Whiteboard Stamps window offers a number of images you can “stamp” on the whiteboard. These are user configurable. SunForum enables you to use bitmap files (such as GIF) in user-defined locations.

---

**Note** – The location is `/etc/opt/SUNWdat/config/dcgx`, listed as `Whiteboard.StampFilename.1` through `Whiteboard.StampFilename.12`. You may have more than 12 stamps, however.

---

1. **Click the rubber stamp button.**



FIGURE 3-7 Rubber Stamps Button

The Whiteboard Stamps window is displayed.



FIGURE 3-8 Whiteboard Stamps Window

**2. Click on a stamp image and click OK.**

When you place the pointer in the whiteboard, the pointer is a stamp.

**3. Place the stamp pointer in the whiteboard where you want the image to appear and click.**

The stamp image is displayed.

## ▼ To Copy to the Clipboard

You can cut and paste to and from a clipboard in two ways:

- Using the quick method to copy text
- Using the Edit commands to cut and paste text and graphics

### Using the Quick Method to Copy Text

1. **Select text in the whiteboard (or another text source window) or from another application.**
2. **Place the mouse pointer in the whiteboard and click the middle mouse button to paste the text selection.**

### Using the Edit Commands

1. **Select the text or object you want to copy.**
2. **Choose Edit ► Cut or Edit ► Copy.**
3. **Go to a new whiteboard page and choose Edit ► Paste.**

## ▼ To Navigate and Organize Pages

- **To navigate pages, use the navigation arrows at the bottom of the whiteboard to change pages; or, use the Edit menu to clear, delete, insert, and to go to specific pages.**
- **To organize pages, choose Edit ► Bring to Front or Edit ► Send to Back to move the current page accordingly.**

## ▼ To Add a New Page

- **Click the new page button or choose Edit ► Insert Page, located in the bottom right corner of the whiteboard.**

A new page is added after the current page.



FIGURE 3-9 New Page Button

---

**Note** – Using the menu to insert a page enables you to place the new page before or after the current page.

---

## ▼ To Zoom the Whiteboard

- **Click the Zoom button, or choose Tools ► Zoom.**

This changes the magnification of the whiteboard contents you are viewing.

## ▼ To Lock the Whiteboard

You can lock the whiteboard so that no one else in the conference can make any changes to the contents. To release the lock, click the lock button a second time.

- **Click the Lock button, or choose Tools ► Lock.**

After a short delay, either you will have successfully locked the whiteboard (indicated by the lock “down” position), or you will be notified that it could not be locked. You may not be able to lock it because another user in the conference has already locked the whiteboard or is in the middle of an operation that cannot be interrupted.

---

**Note** – Locking feature cannot be used in a T.120 whiteboard.

---

## ▼ To Save the Whiteboard Contents to a File

- **Choose File > Open.**  
or
- **Choose File > Save (or File > Save As).**

---

**Note** – Since the SunForum 1.0 whiteboard is compatible with Microsoft NetMeeting whiteboard, SunForum can read files created by NetMeeting and NetMeeting can read files created by SunForum.

---

## ▼ To Print the Whiteboard Contents

- **Click the Print button, or choose File > Print.**



**FIGURE 3-10** Print Button

In the print window, specify the printer or file name to print to, and which pages you want to print.

---

**Note** – The printer name must be a valid printer device. SunForum allows you to also specify a networked printer name.

---



## Technical Information

---

This chapter contains the following topics:

- SunForum Architecture
- T.120 Topology
- T.126 Whiteboard
- Using SunForum Through a Network Security Mechanism
- Installing and Using TrueType Fonts With SunForum
- Calling Into a Multipoint Conferencing Unit
- Password-Protected Conferences
- Solving Color Problems
- SunForum Product Support

---

## SunForum Architecture

The SunForum architecture consists of the International Technical Communications Union (ITCU) protocol standard, T.120, which contains a series of communication and application protocols and services that provide support for real-time, multipoint data communications.

The T.120 architecture is a multilayered design, with defined protocols and service definitions between layers. The upper-level layers require the lower-level layers of the architecture to function.

The lower-level layers (T.122 through T.125) specify an application-independent mechanism for providing multipoint data communication services to any application that can use these facilities.

The upper-level layers define protocols for specific conferencing applications, such as T.127 for multipoint file transfer and T.128 for application sharing.

Applications that use these standardized protocols can coexist in the same conference with applications that use proprietary protocols. In fact, SunForum users can use a mix of standardized and non-standardized protocols.

---

## T.120 Topology

In a conference, a hierarchy exists where the person starting the conference is at the top and those joining the conference are underneath. Where a caller is in this topology affects the conference connection of those who joined that particular caller in the conference. This is illustrated in the following figure.

In this example,

- If B hangs up, all those that B called are disconnected as well, leaving A and D in the conference
- If D hangs up, only D is disconnected, leaving A, B, and C in the conference
- If A hangs up, the entire conference ends

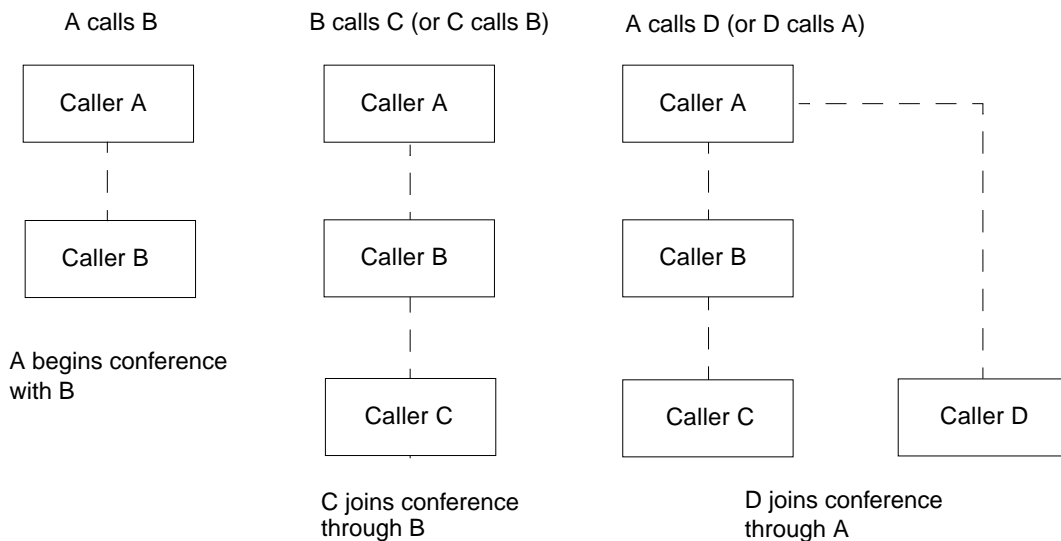


FIGURE 4-1 T.120 Conference Hierarchy

The way you create a conference is to establish one system, the conference *host*, for conference participants to call in. A star (as in a star networking protocol) topology is created where anyone except the host can leave the conference independently. (This host can actually be a dedicated *conference server* machine, running a product such as DataBeam neT.120, which can support several conferences simultaneously.)

---

## T.126 Whiteboard

T.126 defines a protocol for viewing and annotating still images transmitted between two or more applications. This capability is often referred to as document conferencing or *shared whiteboarding*. T.126 readily shares visual information between applications that are running on dramatically different platforms. For example, a Windows-based desktop application could easily interoperate with a collaboration program running on a UNIX workstation. Similarly, a group-oriented conferencing system, without a PC-style interface, could share data with multiple users running common PC desktop software.

T.126 presents the concept of shared virtual workspaces that are manipulated by the endpoint applications. Each workspace may contain a collection of objects that include bitmap images and annotation primitives, such as rectangles and freehand lines. Bitmaps typically originate from application information, such as a word processing document or a presentation slide. Because of their size, bitmaps are often compressed to improve performance over bandwidth-limited communication links.

T.126 is designed to provide a feature-rich set of capabilities required to share information between disparate applications. SunForum, as does other T.126 implementations, only offers a subset of these features. To date, only two other commercially available T.126 products exist. The subset of features in SunForum match those supported in DataBeam's Meeting Tools and Polycon's Showstation IP.

---

# Using SunForum Through a Network Security Mechanism

If you are connected to the Internet via a network security mechanism, or firewall, (as is usual in most corporate/LAN environments), you can use SunForum to communicate with others located both inside and outside the network security mechanism. To enable full external communication,

- Ensure your workstation has its default gateway set to the internal address of the network security mechanism computer.
- Configure the network security mechanism to enable primary TCP connections over the following IP ports:
  - 389 (for communication with Internet Locator Servers)
  - 1503 (for T.120 data)

---

**Note** – If this is not possible with your network security mechanism, you will not be able to communicate with computers outside the network security mechanism: consult your network security mechanism vendor about upgrading to a version compatible with SunForum.

---

- Configure the network security mechanism to map internal IP addresses to external Internet addresses.

---

**Note** – This is not possible with all network security mechanisms. If yours cannot do this, you will be able to call out from inside the network security mechanism, but you will not be able to receive incoming calls from computers outside the network security mechanism.

---

If you are unsure whether you are connecting to the Internet via a network security mechanism, consult your system administrator or Internet service provider.

---

# Installing and Using TrueType Fonts With SunForum

SunForum is designed to take advantage of a TrueType fonts/font server if one is installed on your system (or accessible to your system across a local area network). Solaris 2.6 supports TrueType fonts.

With a TrueType font server installed, SunForum will have more fonts in common with PC systems, resulting in better quality output and improved performance in sharing sessions involving both UNIX and PC systems.

---

# Calling Into a Multipoint Conferencing Unit

SunForum fully supports MCU-hosted conferences, and has been tested with Outreach ConferEase and DataBeam neT.120.

When calling an MCU, specify the address of the MCU as normal. If SunForum detects that the machine called is currently hosting more than one conference, you will be prompted to specify which conference to join. Also, see Password-Protected Conferences.

---

# Password-Protected Conferences

You cannot create a password-protected conference with SunForum.

When you call into a conference that has been designated as password-protected, SunForum will prompt you to specify the password.

Some T.120 implementations incorrectly advertise conferences as password protected, even when no password has been specified. In this case, just click OK without specifying a password; the conference will be established as normal.

---

# Solving Color Problems

If you experience problems with color operations (such as text highlighting) with shared PC applications, try the following:

- If your X Server is running with a Static or DirectColor default visual, switch it to run with PseudoColor or GrayScale. See your X Server documentation for information on how to do this.
- Close any local color-intensive X applications (such as bitmap editors and web browsers) to make more colors available for SunForum.

---

# SunForum Product Support

If you have any problems installing or using SunForum:

- Refer to the written or online documentation included with the software.
- Read the rest of the online help, especially the README page, for a list of known problems with this release.
- Check the up-to-date “Troubleshooting guide” at [www.sun.com](http://www.sun.com).
- If you are unable to find an answer, contact your Sun representative and have the following information available:
  - Your system configuration (system hardware, operating system version, graphics hardware)
  - A complete description of what you were doing when the problem occurred
  - Any core file generated (check the `/opt/SUNWdat` directory)
  - The contents of any error log files generated (called TRC1 and/or TRC2 in the `/var/opt/SUNWdat/trc` directory)

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