SunForum™ 3.1 Software User's Guide

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Preface

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

How This Book Is Organized

Chapter 1 describes the SunForum product.

Chapter 2 deescribes how to use the SunForum software.

Chapter 3 provides technical information about SunForum.

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 Handbook for Sun Peripherals*
- AnswerBook2™ online documentation for the Solaris™ 2.x operating environment
- Other software documentation that you received with your system

Typographic Conventions

Typeface	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output.	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output.	`% su` `Password:`
AaBbCc123	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 *User's Guide*. These are called *class* options. You *must* be `root` to do this. To delete a file, type `rm` *filename*.

Shell Prompts

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

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CHAPTER 1

Introduction to SunForum

SunForum™ 3.1 software is a conferencing product for Sun™ computer systems. It is based on the T.120 and H.323 standards, which enables your Sun system to conference over intranets and the Internet with other T.120 and H.323 products.

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 transfer facilities.
- Use audio and video communications via the H.323 protocol.
- Configure a Lightweight Directory Access Protocol (LDAP) server as a SunForum directory server.

Online Help

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

CHAPTER 2

Using SunForum

This chapter contains the following topics:

- "SunForum Basics" on page 3
- "Using Directories" on page 9
- "Using the SunForum Software" on page 11
- "Using the SunForum Audio and Video" on page 16
- "Using the SunForum Whiteboard" on page 23

SunForum Basics

▼ To Start the SunForum Software

- **Type the following at your system prompt:**

```
% sunforum
```

Note – If the SunForum directory is not set in your path, enter the correct path name (for example, `/opt/SUNWdat/bin/sunforum`).

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

FIGURE 2-1 My Information Window

- **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 the SunForum software, 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 completing the My Information window, the Configuration Wizard window is displayed for configuring audio / video.

When complete, the SunForum conference manager is displayed as the active window.

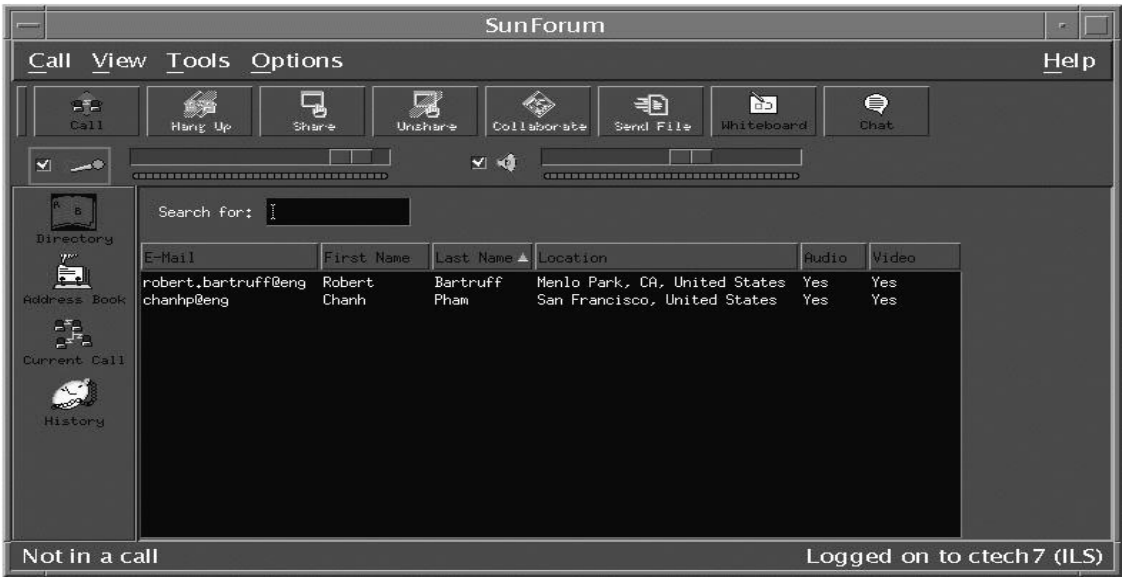

FIGURE 2-2 SunForum 3.1 Conference Manager

SunForum Menus

There are four menus on the SunForum menu bar: Call, View, Tools, Options, 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 the SunForum Software for more information.

Call Menu

TABLE 2-1 Call Menu

Menu	Description
Place Call	To place a call to an indicated address. You can also click the Call button.
Stop Placing Call	To cancel an in-progress call request.
Host Conference	To start a conference.
Hang Up	To end your call. (Same as clicking the Hang Up button.)
Do Not Disturb	To block incoming calls. You may, however, call out.
Create SpeedDial	To create speed dial files for use in your address book or for exchange with other users.
Run In Background	To allow SunForum to continue running in the background when you exit.
Log On To Directory Server	To log in to a directory server. You will be prompted for the server name.
Change My Information	To make changes to your profile information.
Address listing	To call recently accessed addresses.
Exit	To exit or place in background the current SunForum session.

View Menu

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

TABLE 2-2 View Menu

Menu Item	Description
Compact View	To turn the Conference Manager into menu bar.
Always On Top	To cause the Conference Manager window to always be on top.
Directory	To view the directory server. It lists who you can conference with.
Address Book	To display addresses that you have conferenced with and added to your address book.

TABLE 2-2 View Menu *(Continued)*

Menu Item	Description
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	To list the status of received calls.
Refresh Directory	To query the directory server for an immediate update of the directory listings.
Call Information	To view audio/video bandwidth usage in the current call.

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

Tools Menu

TABLE 2-3 Tools Menu Descriptions

Menu Item	Description
Video	To select video windows to be displayed.
Configuration Wizard	To start the Configuration Widard program.
Share Application	To share your applications with others on the call. A submenu lists the shareable applications you have running on your desktop.
Share	To select an application window on your desktop for sharing. (Same as clicking the Share button.)
Unshare	To unshare the application. (Same as clicking the Unshare button.)
Collaborate	To shift a shared application from view-only to collaborate. When you collaborate an application, you enable others to take control of the application. (Same as clicking the Collaborate button.)
Send File	To select a file to send to everyone in the conference. (Same as clicking the Send button.)
Cancel All Sends	To cancel sending of files.
Cancel All Receives	To cancel receipt of files.
Shared Desktop Viewer	To show an overview of all user desktops and the location of shared applications.

TABLE 2-3 Tools Menu Descriptions *(Continued)*

Menu Item	Description
Whiteboard	To start the whiteboard graphical application. The whiteboard automatically starts on other user systems in the conference. (Same as clicking the Whiteboard button.)
Chat	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	To copy and paste clipboard data between systems.

Options Menu

TABLE 2-4 Options Menu Descriptions

Menu Item	Description
Call Settings	To configure SunForum options for handling calls.
Tool Settings	To configure general SunForum options.
Audio/Video Settings	To configure Audio/Video conference attributes.
Audio/Video Device Settings	To configure the Audio input and output devices and Video input device, including the Sun 1394 Camera.

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

To log in 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.

This section contains the following topics:

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

▼ 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 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.**

▼ To Log In to a Directory Server

1. **To view the directory listing, choose Call ➤ Log On To Directory Server.**
2. **Enter the name of the directory server you want to log in to and click OK.**

   When SunForum has successfully logged in to the directory server, the server is automatically queried for other users also logged in to that directory.

To log out from a directory server: choose Call ➤ Log Off From Directory Server.

Note – You may configure an LDAP server as a SunForum directory server. To do this, refer to the SunForum 3.1 Help for these system administrator procedures.

▼ To Refresh the Directory List

- **Choose View ➤ Refresh Directory.**

  This option can be selected only when the directory list is displayed.

▼ To Automatically Log in to a Directory Server at Startup

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

   The next time you start SunForum, it will log in 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 in to the directory server."**

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

   If you are currently logged in 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 on a Directory Server Using Their Email Address

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

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

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

Using the SunForum Software

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 Unshare Applications
- To Collaborate Applications
- To Transfer Files
- To Chat
- To Transfer Data Using the Shared Clipboard

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.**

   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.

To Make a Call

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 the SunForum software, 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. 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 controlling users move 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.

▼ To Unshare Applications

1. **Choose Tools ➤ Unshare, or double-click Unshare, to stop sharing the application.**

2. **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, that person 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.

- **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 the 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 Options ➤ Tools Settings.

▼ 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 a 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 the SunForum Audio and Video

The H.323 audio and video communications protocol is the standard for audio/video conferencing. SunForum conforms to the H.323 standard.

This section contains the following topics:

- Types of Audio/Video Conferences
- Configuring Audio and Video Capabilities
- To Set Audio/Video Options
- To Set Audio/Video Device Options
- Controlling Audio Within the Conference
- Controlling Your Video Image Over a Conference
- Controlling Video Image Within a Multipoint Conference
- Controlling Video Within a Point-To-Point Conference

Types of Audio/Video Conferences

Conferencing products may provide one of three different levels of audio/video support.

- *Multipoint* - You can see and hear many people in the call at the same time. Each person's video image appears in a separate window, and the audio information from each person is mixed together so that you hear a single audio channel including everyone's voice.
- *Point-to-point* - You can see and hear one other person in the call at a time, and can switch from one to another.
- *No audio/video* - You cannot see or hear other people in the conference. Users of conferencing products that do not support audio/video often set up a telephone-based conference call in parallel with the SunForum conference.

SunForum provides multipoint support, but can also operate in point-to-point mode or without audio/video to support conferences with other products:

- If everyone in the conference is using a product that supports multipoint audio/video, you can use either multipoint or point-to-point. (You may prefer to use point-to-point if people are familiar with products that operate only in this mode.)

- If some people are using a product that supports only point-to-point audio/video, you should use point-to-point. SunForum can be configured to force a conference to use point-to-point thus insuring that the products that only support point-to-point can establish audio/video links.
- Anyone who is using a product that does not support audio/video can still participate in the conference, but will not be able to see or hear other people. You can still use audio/video to communicate with anyone in the conference who has support for it.

When you start a call to another person, SunForum initially creates a point-to-point link for audio/video support regardless of the capabilities of the other product. Should a third person join the conference, their capabilities will determine if the conference becomes a multipoint conference or remains a point-to-point conference. Once a conference has become a multipoint conference, products that do not support multipoint will not be able to establish an audio/video link in the conference.

If you want to start a conference explicitly in point-to-point mode, you can specify this in the Audio/Video Settings dialog box. See To Set Audio/Video Device Options for more information.

In the current call window, the audio/video icons indicate an audio/video link to a participant in the conference.

FIGURE 2-3 Conference Manager Audio and Video Icons

Configuring Audio and Video Capabilities

▼ To Set Audio/Video Options

- **Choose Options ➤ Audio/Video Settings.**

  Or, choose View ➤ Audio/Video Settings in your video display window or the video display windows of others if you are in a conference.

TABLE 2-5 Audio and Video Options

Menu Item	Description
Use point-to-point Audio/Video connections	This option allows you to only use point-to-point connections for your audio/video conferences. This guarantees that users who only support point-to-point will be able to utilize Audio and Video as part of the conference.
Send image size	Specify the size of your video image as it appears to other people. This also determines the size of the My Video window on your screen. The range of window sizes that you can use depends on the capabilities of the conferencing products being used by other people. If you are already in a conference, one or more of these options may be grayed if other people are using conferencing products that cannot support them. You may find that the window size changes when you start a call, or when another person joins or leaves the conference. This is because another person may not be able to use the size that you originally selected; SunForum cooperates with the other conferencing products to select the best compromise between the requirements of everyone currently in the conference.
Default video magnification	This option specifies the default magnification (100% - 400%) used to display video on your system.
I prefer to receive...	This option allows you to tune the picture quality of the video images of other people as they appear on your screen. - Move the slider towards Faster Video to view the video with more updates per second. This gives a smoother display, but reduces the resolution of the image. - Move the slider towards Better Quality to view the video with higher resolution. This gives a better-quality video image, but may mean that the video appears less smooth.
Connection speed	Select the option that best describes the network over which you are using SunForum 3.1.
Echo suppression	If selected, SunForum 3.1 disables your microphone when it is playing back audio.
Auto Gain Control	If selected, SunForum 3.1 will automatically adjust the sensitivity of your microphone based on the input level.

▼ To Set Audio/Video Device Options

- **Choose Options ➤ Audio/Video Device Settings.**

TABLE 2-6 Audio and Video Device Options

Menu Item	Description
Audio Device	Allows you to choose the audio device to use for conferencing and the attributes associated with that device. First you select the audio device you want to use from the menu and then you push the "Settings" button to configure the device specific attributes. Each device is a unique attribute that can be configured.
Video Device	Allows you to choose the video device to use for conferencing and the attributes associated with that device. One choice is "None" for systems without video capture capabilities or for those who are capable but choose to disable it. First you select the video device you want to use from the menu and then you push the "Settings" button to configure the device specific attributes. Each device is a unique attribute that can be configured.

Using the Sun 1394 Camera Snap Feature

You can snap a video image directly from the camera with the Sun 1394 Camera. This allows you to capture an image at any location within a 3.0 meter range (1394 cable length) away from your workstation. This feature is activated through SunForum (see "Capturing and Copying Video Images" on page 29).

Controlling Audio Within the Conference

You can adjust your own audio and adjust the audio you receive from the conference participants.

To Adjust Your Audio Over a Conference

The checkbox to the left of the Conference Manager Microphone icon indicates whether your audio is being played to other people in the call.

- To start or stop playing your audio to other people in the call, click on the checkbox to the left of the icon.

- To control the output level of your audio, move the slider to the right to make your audio louder, or to the left to make it quieter. This is important in a multipoint conference, where this slider determines the volume of your audio relative to other people's audio.
- If you are using point-to-point audio/video, only the person that you are currently switched to will be able to hear you. To switch to a different person in the call, see Controlling Video Within a Point-To-Point Conference.

To Adjust Conference Audio on Your Computer

The checkbox to the left of the Speaker icon indicates whether other participant's audio is being played on your computer.

- To start or stop listening to other people in the call, click on the checkbox to the left of the icon.
- To control the volume, move the slider to the right to increase the volume, or to the left to decrease it.
- If you are using point-to-point audio/video, you will hear only the person that you are currently switched to. To switch to a different person in the call, see Controlling Video Within a Point-To-Point Conference.

Controlling Your Video Image Over a Conference

Before starting a call using video, you can check the video image of yourself that will appear on other participant's screens (for example to make sure that the camera on your system is aligned correctly). The video image appears on your screen in a window with the title My Video. You can show or hide the My Video window at any time.

▼ To Control Your Video Image Before a Conference

- **Choose Tools ➤ Video ➤ Display My Video.**

  You can also hide the window by closing it. Prior to entering a call you will see the message `Not Sending` beneath the My Video window.

Note – SunForum 3.1 software enables you to zoom your video display window.

To Control Your Video Image During a Conference

Once in a call, a button is displayed in addition to the status message at the bottom of the My Video window. The status message reflects the current state of video transmission. The button is used to change that state as follows:

- If the video status is “Sending”, the Pause button is shown. Click on this button to pause the video display. When you pause the display, a “freeze frame” image appears in the window and the status message becomes “Paused.”
- If video status is “Paused”, the Play button is shown. Click on this button to activate the video display. When you activate the display, video transmission is restarted and the status message becomes “Sending”.

Instead of the Pause/Play buttons in the window, you can use the Pause or Play option that appears in the View menu of this window. These options only appear when in a call.

You can control whether your video image is automatically sent to other people as soon as you start a call; see To Set Audio/Video Device Options for more information.

Controlling Video Image Within a Multipoint Conference

If you are using multipoint audio/video, a video image of each person in the call is displayed automatically when he or she starts sending video.

- Each participant’s image is displayed in a separate window, with the participant’s name as the window title. As other people join or leave the call, new windows appear or existing windows disappear.
- You can choose which of these windows are displayed on your screen.

▼ To Control Video Image Within a Multipoint Conference

- **Choose Tools ➤ Video ➤ Display Others.**

  Click on an entry for the window you want to display or hide. Alternatively, you can hide a displayed window by closing the window using the system menu.

  At the bottom of each of these windows, a button indicates whether the video is being displayed, as follows:

  - If the video status is “Receiving”, the Pause button is shown. Click on this button to pause the video display. When you pause the display, a “freeze frame” image appears in the window and the status message becomes “Paused”.

- If video status is “Paused”, the Play button is shown. Click on this button to activate the video display. When you activate the display, video transmission is restarted and the status message becomes “Receiving”.

You can control whether you automatically display video images of other people as soon as they start sending video; see To Set Audio/Video Options for more information. If you do not display these images, the window for a remote user on your screen remains blank until you use the Play button to start the video display.

Instead of the Pause/Play buttons in the window, you can use the Pause or Play option that appears in the View menu of this window.

Note – The window size used for other people’s video is determined by the sender’s conferencing product.

Controlling Video Within a Point-To-Point Conference

In point-to-point audio/video, you can see and hear only one other person in the conference at a time. You can switch between different people in the conference; if you switch to a different person, the person you were previously seeing and hearing remains in the conference but is not switched to anyone.

Note – The switch attempt will fail if you try to switch to a person who is already switched to someone else.

▼ To Switch to Another Person

- **Choose from the Tools ➤ Switch Audio and Video.**

This displays a list of people that you can switch to, including the person you are currently switched to (with a selection marker next to that person’s name). The list does not include people who do not have audio/video support.

- To switch to a different person, click on that person’s name in the list.
- To “switch out” so that you remain in the conference but are no longer switched to anyone, click on the name of the person you are currently switched to (the name with the selection marker next to it).

The Switch Audio and Video menu item only appears if you are in a conference with more than one audio/video capable person and are using point-to-point connections.

Displaying Remote Video in a Point-To-Point Conference

If you are using point-to-point audio/video, the Remote Video window displays a video image of the person you are currently switched to (if any).

- To switch to a different person in the call, see Controlling Video Within a Point-To-Point Conference.
- You can choose whether to display this window on your screen by displaying Remote Video.

▼ To Display Remote Video

- **Choose Tools ➤ Video ➤ Display Others' Video.**

  This displays or stops displaying the window. Alternatively, you can close the window by clicking on the Close button for the window.

Using the 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 certain collaboration software running on PCs.

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 Capture (Snap) Video 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 Options ➤ Tool Settings.**
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 T.126 mode whiteboard.

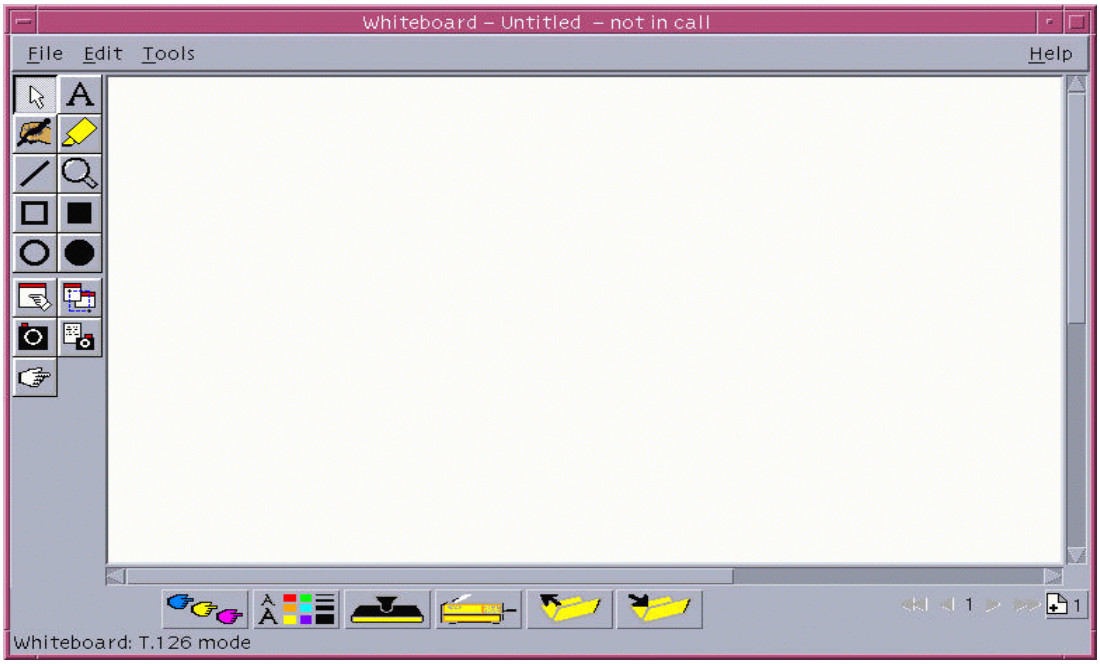

FIGURE 2-4 SunForum 3.1 Whiteboard

Whiteboard Menus

TABLE 2-7 Whiteboard Menu Bar Descriptions

Menu	Description
File	For file handling functions such as New, Open, Save, Import, Export, and Print.
Edit	To edit functions such as copy, paste, clearing, deleting, inserting pages, and so on.
Tools	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.

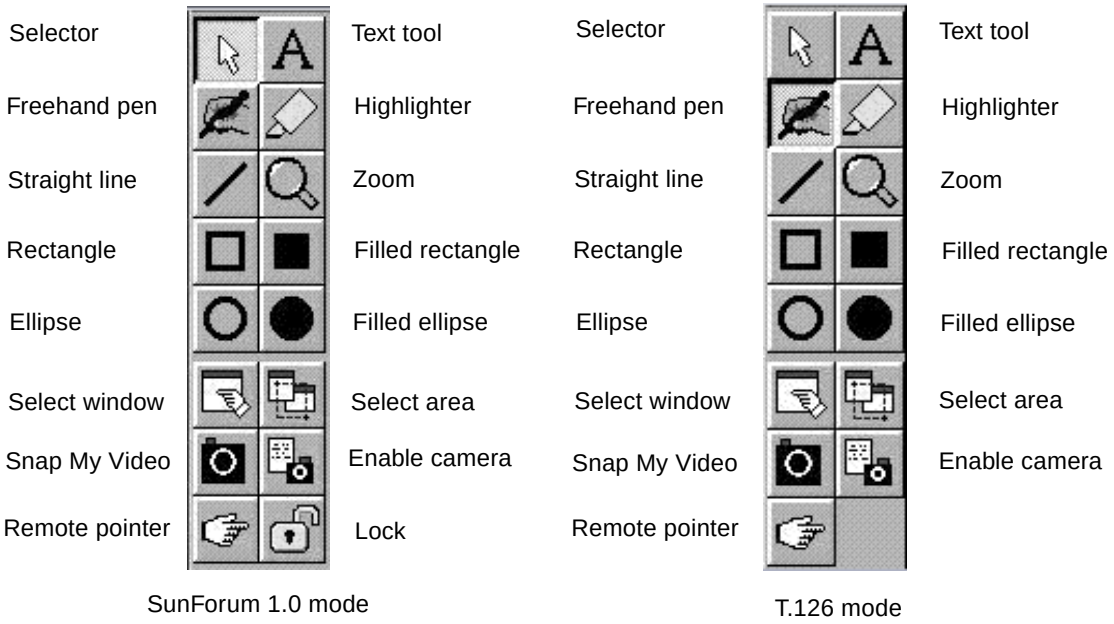

FIGURE 2-5 Whiteboard Tool Panel

▼ 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.**

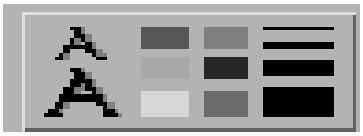

FIGURE 2-6 Whiteboard Options Button

The Whiteboard Options panel is displayed.

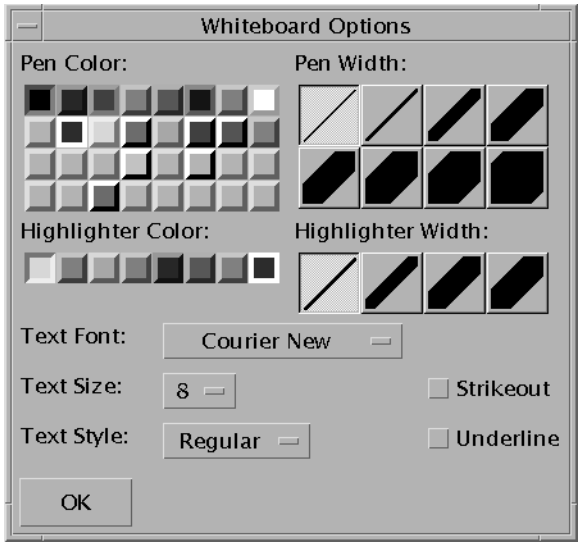

FIGURE 2-7 Whiteboard Options Panel

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.**

Capturing and Copying Video Images

You may snap a camera video image from either the whiteboard tools panel, or from the Sun 1394 Camera snap button, and copy it as an image to the whiteboard.

▼ To Capture an Image from the Whiteboard Tools Panel

1. **Select the camera video image you wish to capture.**
2. **Click the Snap My Video from the Whiteboard tools panel (see** FIGURE 2-5**), or choose Tools ➤ Snap My Video from the Tools menu.**

   The image appears and is copied in the top left corner of the Whiteboard window.

▼ To Capture an Image Using the Sun 1394 Camera

1. **Click the Enable Camera button on the whiteboard tools panel (see** FIGURE 2-5**).**

   This enables the Sun 1394 Camera snap button so that each time you press the camera snap button, the image is captured on the Whiteboard.

2. **Focus on the image to be captured and press the Sun 1394 Camera snap button.**

   If you do not use the camera snap button for a period of 60 seconds, then the snap button becomes disabled again.

Note – If you want to disable the snap button on the camera before the timeout period expires, simply press the Escape key.

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.

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/system-config` 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. The SunForum software 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.**

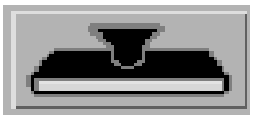

FIGURE 2-8 Rubber Stamps Button

The Whiteboard Stamps window is displayed.

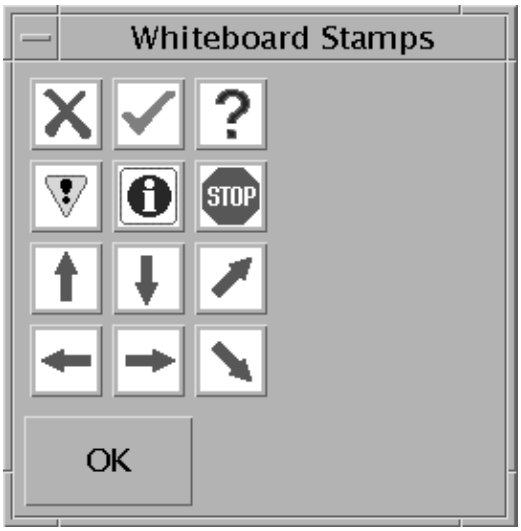

FIGURE 2-9 Whiteboard Stamps Window

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.

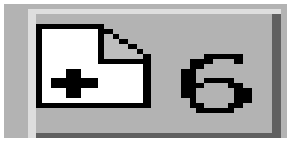

FIGURE 2-10 New Page Button

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.

1. **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.

2. **Click the lock button a second time to release the lock.**

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).**

▼ To Print the Whiteboard Contents

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

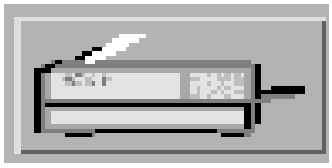

FIGURE 2-11 Print Button

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. The SunForum software allows you to also specify a networked printer name.

CHAPTER 3

Technical Information

This chapter contains the following topics:

- "SunForum Architecture" on page 37
- "T.120 Topology" on page 38
- "T.126 Whiteboard" on page 39
- "Using the SunForum Software Through a Network Security Mechanism" on page 40
- "Installing and Using TrueType Fonts With SunForum Software" on page 41
- "Calling Into a Multipoint Conferencing Unit" on page 41
- "Password-Protected Conferences" on page 41
- "Solving Color Problems" on page 42
- "SunForum Software Support" on page 42

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 software users can use a mix of standardized and nonstandardized 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

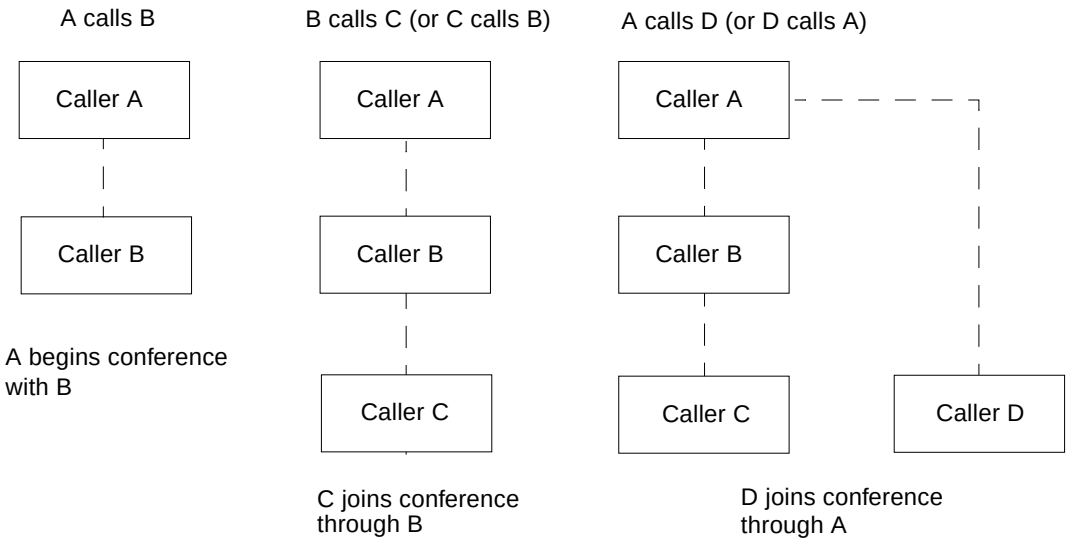

FIGURE 3-1 T.120 Conference Hierarchy

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 software, 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 software match those supported in DataBeam's Meeting Tools and Polycon's Showstation IP.

Using the SunForum Software 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 software 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 software.

- 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 Software

SunForum software 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 or later operating environment supports TrueType fonts.

With a TrueType font server installed, SunForum software 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 software 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 software 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 software.

When you call into a conference that has been designated as password-protected, SunForum software 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.

Optimizing Video Display

For better performance of video displays, increase the shared memory pool size to at least 16 Mbytes. To do this,

1. **Add the following line to the** `/etc/system` **file:**

```
set shmsys:shminfo_shmmax=16777216
```

2. **Reboot your system.**

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 the SunForum software.

SunForum Software Support

If you have any problems installing or using the SunForum software:

- 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.
- 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)