# Sun™ Messaging Connectivity Services cc:Mail Channel Guide

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# Preface

This guide describes how to fine-tune your configuration, in order to maintain, monitor, troubleshoot, and seamlessly integrate your Microsoft Mail connectivity services and personal computers (PCs). You should have already installed the mail server software and loaded the users and distribution lists from your existing email system, as applicable, using the *Sun Internet Mail Server 3.5 Advanced Installation Guide.*

The *Sun Internet Mail Server 3.5 Administrator's Guide* and the *Sun Internet Mail Server 3.5 Reference Manual* provide information for the commands and configuration files implemented for the SIMS 3.5 mail server.

# Who Should Use This Book

This book is intended for the following two audiences:

- Highly technical, experienced Solaris™ system administrators who manage a network comprised of Sun Workstations™, PCs, Macintoshes, or IBM mainframes that share resources. This system administrator has previous experience planning, installing, configuring, maintaining, and troubleshooting an enterprise email system. In addition, this system administrator should be familiar with configuring mail channels on PCs and PC mail gateways.

- Moderately technical system administrators with some Solaris experience who manage a network comprised of Sun workstations, PCs, and Macintoshes that share resources. This system administrator does not have previous experience planning, installing, configuring, maintaining, and troubleshooting an email system.

# Before You Read This Book

Before reading and performing the tasks described in this book, you should have installed the mail server software and loaded the users and distribution lists from your existing email system, if applicable, per information provided in the *Sun Internet Mail Server 3.5 Advanced Installation Guide*. You have probably used the *Sun Internet Mail Server 3.5 Administrator's Guide* to set up your system and should be familiar with the SIMS 3.5 Graphical User Interface (GUI) described in that book.

Many concepts, such as using the SIMS 3.5 product, configuring it, and tracking log queues are described in detail in the *Sun Internet Mail Server 3.5 Reference Manual.*

# How This Book Is Organized

**Chapter 1, "Sun Messaging Connectivity Services Overview"** provides relevant conceptual information about the SIMS 3.5 gateway interface components and features. This information will help you understand how SIMS and your email system work together to seamlessly manage one or more email systems on a variety of PCs.

**Chapter 2, "Installing Sun Messaging Connectivity Services Client Software"** provides information about installing the client software for Microsoft Mail.

**Chapter 3, "Managing Channels"** provides information about how channels are created and configured to perform the message format conversions and coordinate the flow of messages between the router (*server*) and each channel's respective email system (*client*).

**Chapter 4, "Monitoring Channels"** describes how you can monitor email messages and message queues.

# Related Information

The *Sun Messaging Connectivity Services* is a companion document to the following manuals in the SIMS documentation set:

- *Sun Internet Mail Server 3.5 Advanced Installation Guide* - Describes the planning and installation procedures for the Sun Internet Mail Server (SIMS) 3.5 software on Solaris SPARC and Intel-based x86 systems. In particular, it describes the installation of the software using the Graphical User Interface (GUI).

- *Sun Internet Mail Server 3.5 Administrator's Guide* - Describes how to fine-tune the default configuration, maintain, monitor, and troubleshoot your mail server using the Administration Console, a GUI.

- *Sun Internet Mail Server 3.5 Reference Manual* - Provides detailed information on command line options, administrator-editable configuration files, system architecture, supported standards, and location of software files.

- *Reference manual pages* (*man pages*) - Describe command-line utilities and detailed information about the arguments and attributes relevant to each command.

For additional up-to-date product information, refer to the SIMS 3.5 web site. The URL is `http://www.sun.com/sims`. At this location, you can find information related to the following:

- Press releases and data sheets about Sun Internet Mail products
- Technical white papers
- Product documentation
- Product demos
- Product Frequently Asked Questions (FAQs) for installation and usage
- Links to other sites with IMAP4 clients
- Links to third party client software

# Topics Not Covered

*Sun Messaging Connectivity Services* does not cover the following topics:

- Solaris administration topics

# What Typographic Changes Mean

The following table describes the typographic changes used in this book.

**TABLE P-1**   Typographic Conventions

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

# Shell Prompts in Command Examples

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

**TABLE P-2**   Shell Prompts

| Shell | Prompt |
|---|---|
| C shell prompt | `machine_name%` |
| C shell superuser prompt | `machine_name#` |
| Bourne shell and Korn shell prompt | `$` |
| Bourne shell and Korn shell superuser prompt | `#` |

# Graphical User Interface Conventions

This section describes terminology and other conventions used when discussing the Administration Console, a graphical user interface.

## Terminology

The following table defines terms used in procedures associated with the Graphical User Interface (GUI) of the Administration Console.

**TABLE P-3**  Graphical User Interface Terminology

| Term | Explanation | Example |
|------|-------------|---------|
| Check box | A yes/no or on/off control. A square box that appears highlighted and pushed in when on or pushed out when off. Usually, all check boxes in a group can be selected. | To enable the logging of each message, click the check box. |
| Radio button | A yes/no or on/off control. A diamond or circle that appears highlighted and pushed in when on or pushed out when off. Usually, only one radio button in a group can be selected. | You can enable the channel to ignore nonstandard encoding headers by clicking the appropriate radio button. |
| Click | Press and release a mouse button without moving the pointer. | Click the radio button. |
| Double-click | Click a mouse button twice quickly without moving the pointer. | Double-click the SMTP channel name from the list of channels to bring up the SMTP property book. |

# Sun Messaging Connectivity Services Overview

Sun Messaging Connectivity Services provides batch-mode connectivity to the Lotus cc:Mail proprietary messaging system.

Sun Messaging Connectivity Services connects the Sun Internet Mail Server to proprietary mail systems and supports integration of users from those systems to native internet.

## Overview of Sun Messaging Connectivity Services Architecture

Sun Messaging Connectivity Services is composed of a backend server and messaging frontend systems that talk to the proprietary mail clients.

The Administration Console contains components to help you configure the server and monitor your client and server linked by *channels*. Channels perform the message format conversions and coordinate the flow of messages between the SIMS server and cc:Mail client. Each channel converts the inbound message to the canonical format, then sends the message to the router.

The router reads the canonical address to determine the destination and passes the message to the channel associated with the recipient's local mail network. The outbound message is then converted to the outbound channel's message format and passed to the outbound channel's transport for delivery into the client mail agents.

# Channels

A channel is an interface with another Sun Internet Mail Server (SIMS) 3.5 component, another mail system, or mail user agent. The actual hardware connection or software transport or both may vary widely from one channel to the next.

Each channel consists of up to two channel programs and an outgoing message queue for storing messages that are destined to be sent to one or more of the interfaces associated with the channel. Channel programs perform two functions:

- They transmit messages to other interfaces, deleting them from their queue after they are sent.
- They accept messages from other interfaces, placing them or *enqueueing* them into channel queues. Note that while a channel program only removes messages from its own queue, it can enqueue messages in any queue, including its own.

A channel program that initiates a message transfer to another interface on its own is called a *master program*. A program that accepts transfers initiated by another interface is called a *slave program*. A channel can be served by a master program or a slave program.

# Transports

Transports are background programs that transfer messages between networks. Some channels have a client component that interfaces between the server and the local computing environment. Others, such as SMTP/MIME, act as full peer message transfer agents (MTAs). Each transport program supports multiple channels.

## SPX Transport

This type of transport provides an Ethernet-based method for transferring messages with a PC-based SPX client program. This type of transport communicates directly with the cc:Mail client for message transfer.

## File Sharing Transport

This type of transport moves messages between the UNIX operating system and the PC running a client through a shared file system available to both platforms. When a channel is configured to use filesharing transport, you must specify the shared directory to use for the file exchange.

# Directory Synchronization

There are two types of directories that participate in the directory synchronization process - a central directory and several secondary directories.

## Central Directory

The central directory is a fully LDAP-compliant directory that stores and maintains a wide range of user and system information, including component configurations, message routing data, and end-user records. The central directory also organizes and facilitates access to information needed to convert and route messages. It provides users inside and outside the organization the ability to locate people and access a variety of information about them.

## Secondary Directory

The secondary directories are separate directories maintained by each mail system, which the central directory must coordinate and communicate with to provide transparent connectivity among mail systems. The information stored in the secondary directories must be synchronized with other directories so information is consistent across all directories.

Within SMCS, every user data change is owned and administered through secondary directories and propagated to the Central directory.

# Installing Sun Messaging Connectivity Services Client Software

This chapter provides instructions for installing the SMCS cc:Mail client as needed, discusses the basic setup to enable directory synchronization, and provides instructions for configuring LAN clients for directory synchronization. Since not all channels require client software, this chapter may not apply to you. If you are installing the cc:Mail SMCS component, you must also install the appropriate client software. A windows-based setup is used to install the cc:Mail client. The SMCS client is a 16 bit DOS application.

**Note –** To prepare for installation, it is recommended that you complete the *PC Client Install Worksheet*, included as Appendix A.

## LAN Client System Requirements

Each client must be configured to match settings of its corresponding SMCS channel on the server. These channels use a client program running on a PC to transfer messages between a post office and SMCS. This software can be installed on any PC with access to post offices on the network.

Before installing PC client software, please make sure:

You installed the corresponding mail programs for all of the clients you intend to install.

- Make sure the system is running DOS and Windows or Windows NT
- You need to install cc:Mail Router 5.1 and above

- If you plan to use the SPX Transport, you need to note the SPX address of the SIMS host. Refer to the the Sun Internet Mail Server 3.5 Installation Guide for this information.

# Running LAN Clients

For SMCS to exchange mail with cc:Mail via SPX, the proper application must be running. Client applications may be started manually, or via a batch file.

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**Note –** For more information on using PC client applications, see the "Managing Channels" chapter of the Administrator's Guide.

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# Installing LAN-Based Clients

LAN-based clients are installed and configured using the PC setup application. This application is distributed on CD ROM. The self extracting file `solstice.exe` is the SMCS front end installation file for cc:Mail channels. It contains the SMCS client `setup.exe` program. This file needs to be executed on a PC. The location of this file on the CD is:

`/products/sims/win16/solstice.exe`

The CD has a Windows 95/NT readable partition which will allow you to copy this file into a DOS/Windows based system.

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**Note –** The Windows-based `setup.exe` application is used to install the cc:Mail client. `Setup.exe` appears in the Program Manager window.

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After client setup is complete, the setup application is installed in a Windows program group so that you can revise your PC clients setup as needed.

To install the client setup program, do the following:

1. **Double click on the** `setup.exe` **icon in the Windows Program Manager group. You will see the welcome message shown below (see** FIGURE 2-1**).**
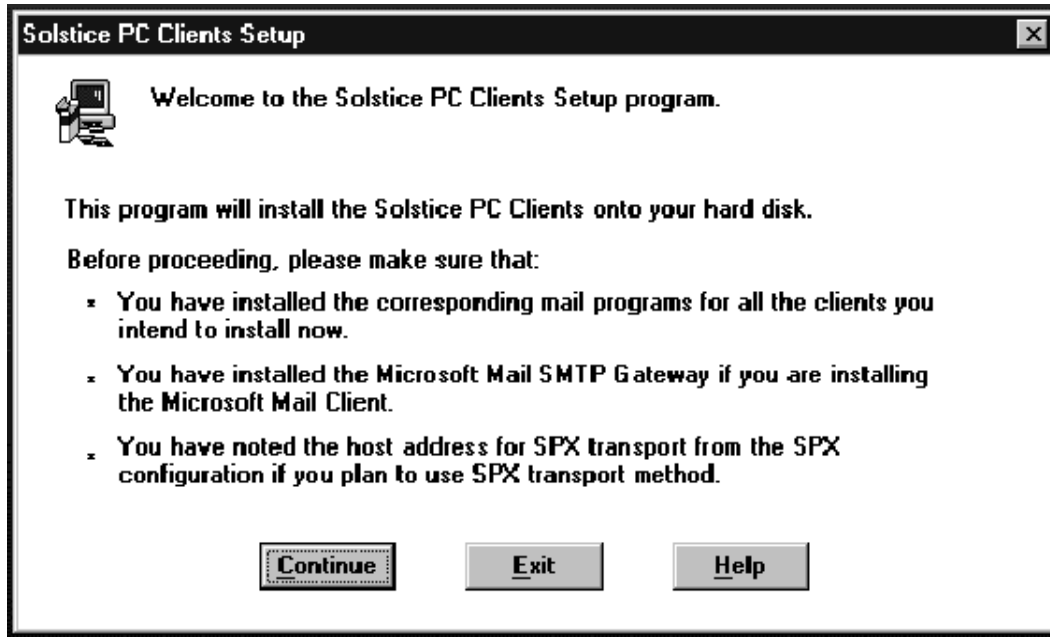


**FIGURE 2-1**    PC Clients Setup Welcome Message Screen

## 2. Choose Continue.

Indicate that you want to install the cc:Mail channel (see FIGURE 2-2).
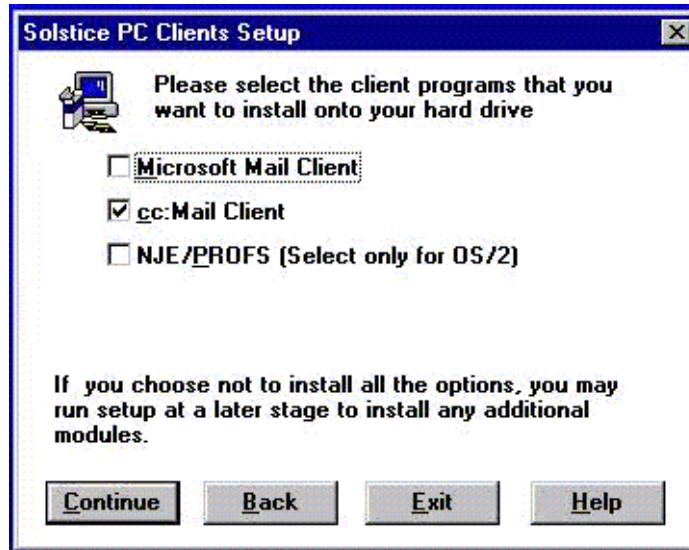


**FIGURE 2-2**   PC Clients Setup Checkbox Screen

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**Note –** You can install both Microsoft Mail and cc:Mail on the same PC.

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## 3. Indicate the installation directory (see FIGURE 2-3):
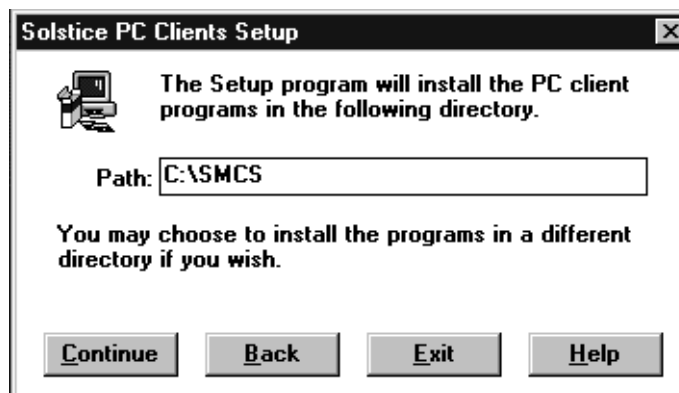


**FIGURE 2-3**   Installation Directory Screen

## Starting Lan-Based Clients Automatically

You can create an icon to add to the Startup menu so that SMCS will automatically start when you reboot your Microsoft Windows 95 or NT system. To do so, perform the following steps:

1. **Create an icon for the executable from the Program Manager window.**

2. **Add the icon to the Startup window.**

   SMCS will automatically start on reboot.

# Configuring the cc:Mail Client

1. **From Windows, start the Clients Config application by double-clicking on the set-up icon in the Solstice PC Clients program group.**

2. **Select the cc:Mail Channel.**

   If you are configuring more than one type of LAN channel, the program configures each channel in sequence.

**3. Enter general mail parameters in the cc:Mail tab.**

A description of each parameter is provided (see FIGURE 2-4).

**Program Directory:** The name of the PC directory containing the cc:Mail Import and Export programs, IMPORT.EXE and EXPORT.EXE. For example, T:\CCADMIN. The cc:Mail client does not allow filenames and directory names longer than eight characters. There is no default value for this parameter.

**Data Directory:** The name of the PC directory containing the cc:Mail postoffice (the MLANDATA file, or ccpombox for versions 5.x and 6.x. For example, T:\CCDATA. There is no default value for this parameter.

**Postoffice:** The name of the local cc:Mail post office residing in the cc:Mail data directory. There is no default value for this parameter.

**Password:** The password for the cc:Mail post office listed above. Do not confuse this with the password for the Administrator's mailbox. SMCS must know this password in order to use the cc:Mail Import and Export programs. There is no default value for this parameter.

**Gateway Postoffice:** The name of the remote cc:Mail gateway post office (specified on the server using the Administration Console) used to send messages to SMCS. There is no default value for this parameter. This parameter must match in the server and client configurations.

If you are the system administrator, you will have to create a cc:Mail 'P' entry (a temporary repository/postoffice) for use by SMCS.

**Gateway Postoffice Password:** The password for the cc:Mail post office listed above. Do not confuse this with the password for the Administrator's mailbox. SMCS must know this password in order to use the cc:Mail Import and Export programs. There is no default value for this parameter.

4. **Select the Global tab and enter cc:Mail global parameters (see** FIGURE 2-5**).**
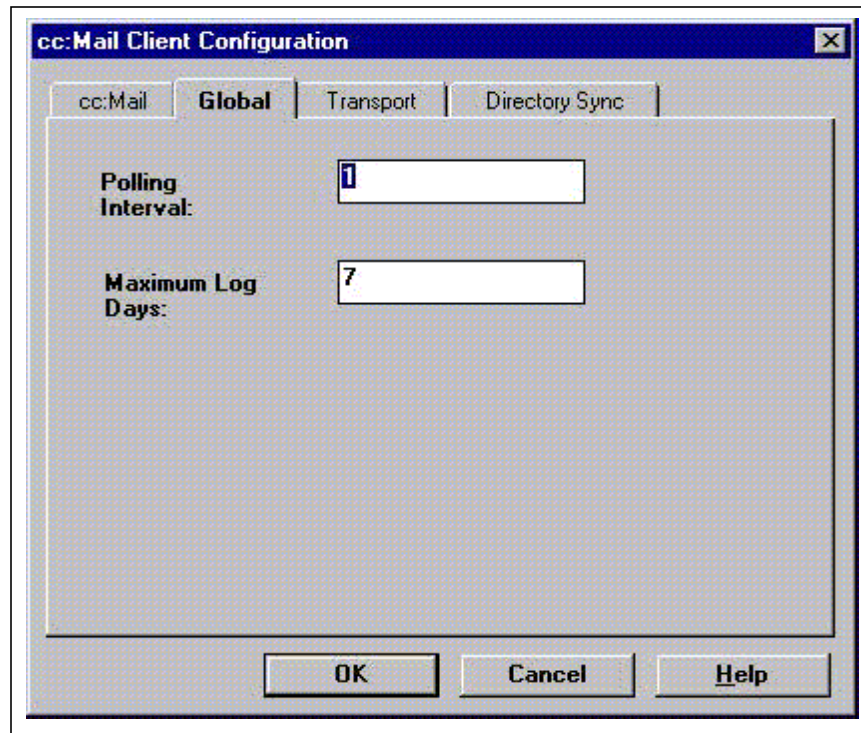


**FIGURE 2-5**    cc:Mail Global Parameters Screen

**Polling Interval:** An interval value in minutes for exchanging messages with SMCS. The recommended value is 1 minute.

**Maximum Log Days:** Enter the maximum number of days to maintain logs for this client.

**5. Select the Transport tab and enter cc:Mail transport parameters (see** FIGURE 2-6**).**
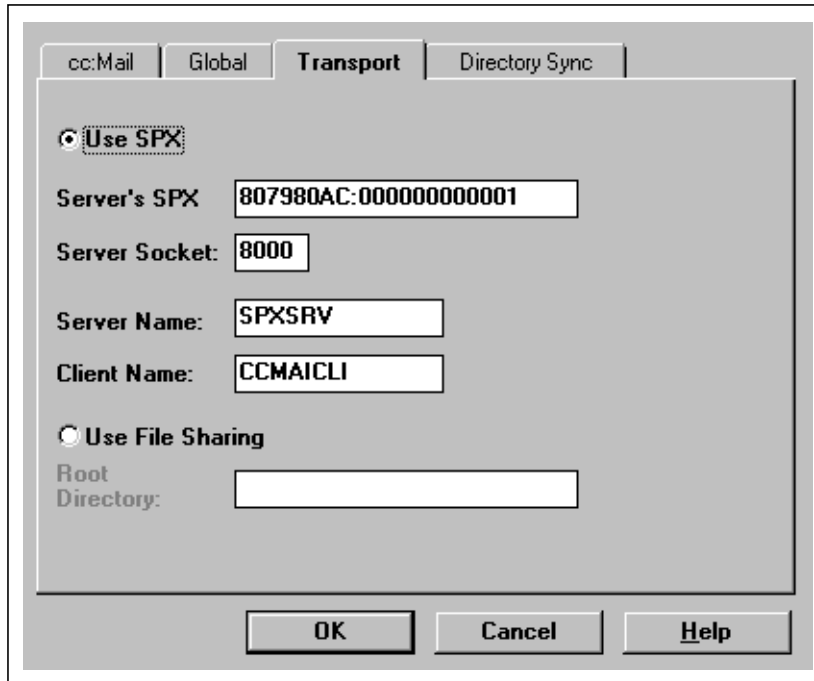


**FIGURE 2-6**    cc:Mail Tranport Parameters Screen

If you are using the SPX Transport, click on Use SPX, and enter the following parameters:

■ **SPX Address:** The address of the SPX server for the SMCS server. If you have installed SolarNet Postoffice and want to figure out the server machine's SPX address, use the `/opt/SUNWefps/sbin/ipxstat -i` command. If TotalNet Advanced Server is installed, use `/opt/totalnet/sbin/tnistat -i`. For example, on a machine called `tin`, the results of the command can be as follows:

```
Name          Address                 Ipkts    Ierr Opkts  Oerr
i_00000001    807980ac:000000000001   4833650  2478 4788939 0
```

The Address field contains the SPX address, `807980ac:000000000001`. Specify this address either in hexadecimal or in decimal format.

■ **Server Socket:** The port number used for SPX by the Server. The default value is 8000, which is appropriate for most SPX transport configurations. (*What does this map to on the server end?*)

- **Server Name:** The SPX name of the Server. This parameter can contain from 1 to 8 alphanumeric characters, and must match the *Server name* specified using the Administration Console in the cc:Mail channel's Transport tab (under SPX). The default value is SPXSRV.

- **Client Name:** The Client name of the PC. This parameter can contain from 1 to 8 alphanumeric characters, and must match the *Client name* specified using the Administration Console in the cc:Mail channel's Transport tab (under SPX). The default value is CCMAICLI.

If you are using file sharing, click on Use File Sharing, and enter the following parameter:

- **Root Directory:** The shared server directory used to exchange mail files.

6. **Select the Directory Sync Tab and enter cc:Mail parameters.**

   Provide information on the following directory sync parameters (see FIGURE 2-7):
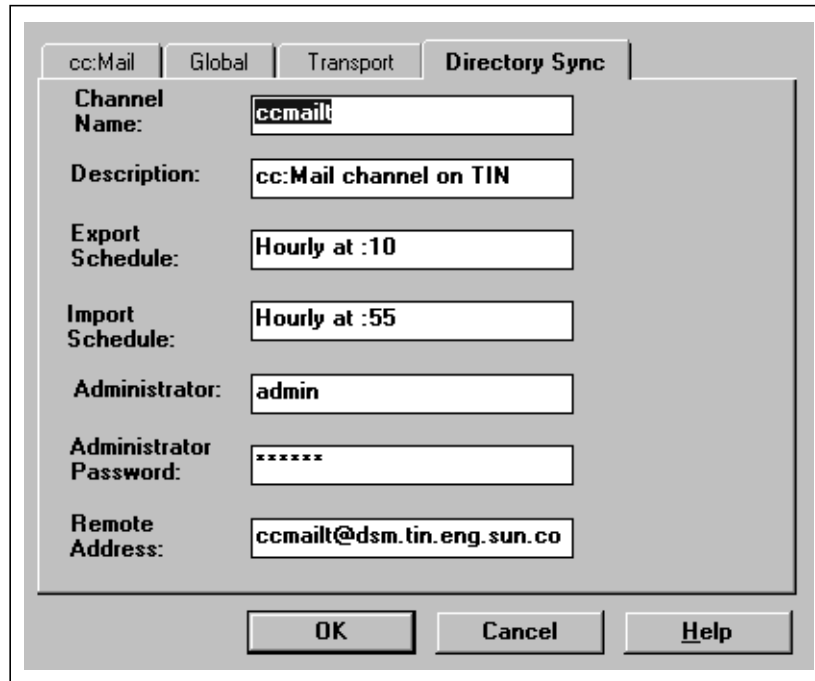


**FIGURE 2-7**    cc:Mail Directory Sync Parameters Screen

- **Channel Name:** SMCS's channel name for this channel. It should match the name used by the Administration Console for this cc:Mail channel that you created.

- **Description:** A free-form text description of the channel being configured.

- **Export Schedule:** The time interval between cc:Mail export operations. The default is one export per day (1d). Time intervals must be set in 5 minute increments. Keep in mind these files might be large, so schedule intervals accordingly. Days are based on standard 3-letter abbreviations. Hours are based on a 24-hour clock.

  Other formats include:

  Monthly on [*days*] at [*hh:mm*]

  Weekly on [*days*] at [*hh:mm*]

  Daily at [*hh:mm*]

  Hourly at [*:mm*]

  For example, to establish an export schedule of one export per hour, indicate the following: `Hourly at :00`.

- **Import Schedule:** The time interval waited before checking for a cc:Mail update to import. Time intervals must be set in 5 minute increments. At each interval time, SMCS looks for an update, and if it finds one, it begins the import operation. The default is one import per day (1d).

  Other formats include:

  Monthly on [days] at [*hh:mm*]

  Weekly on [days] at [*hh:mm*]

  Daily at [*hh:mm*]

  Hourly at [*:mm*]

  For example, to establish an import schedule of one import per day 30 minutes after midnight, indicate the following: `Daily at 00:30`.

- **Administrator:** The address of the cc:Mail users to receive status messages and error reports. The format is a valid cc:Mail address, such as `admin`. For sending status reports to more than one mailbox, separate addresses with spaces and the word `AND`, for example, `admin and robert smith`. The default value for this parameter is `admin`.

---

**Note –** This is the SMCS admin only and not the post office admin. We recommend a user name without a space. For example, `SMCSAdmin`.

---

- **Remote Address:** The mail address of the user who is to receive update messages. The format is a valid cc:Mail address. There is no default value. The remote address is created by adding the host and gateway post office addresses specified using the following syntax:

```
[channelname]@dsm.[host] AT [gateway post office]
```

For example, this can be:

```
ccmailt@dsm.tin.eng.alpha.com at internet
```

**Note –** `dsm` is the Directory Service Manager that is running on your server machine.

7. **Click on OK to save changes and exit cc:Mail setup.**

If more than one channel was selected, Setup displays configuration tabs for the next channel client to be configured.

8. **Run the client program to verify that the channel connection worked as planned.**

To do so, follow these steps:

a. **Change directories (**`cd`**) where you have installed the software:**

```
cd c:\SMCS
```

b. **Change directories (**`cd`**) to the cc:mail directory:**

```
cd c:\SMCS\ccmail
```

**Note –** If you installed cc:Mail and Microsoft Mail at the same time, make different directories for each one. If you put one in the same directory as the last one that was installed, the original configuration file will be overwritten with the latest one.

**c. At the prompt, run the client:**

```
>ccclient
```

You will see an error message, `No route to host`, if you have specified an inaccurate address.

**d. Change any information in the configuration that is inaccurate.**

9. Double-click on the Client Configuration icon. This will display your old configuration parameters that you can modify. After modifying your old responses, click on `ok` to register your new input.

## Applications

The following cc:Mail directory synch scheduler application automates directory imports

and exports at selected time intervals:

```
dassist.exe
```

The following is the directory sync schedule utility used for cc:Mail.

```
sched.exe
```

# Managing Channels

This section describes how to add and delete channels, and how to configure the channels and the central directory.

To access channel properties, click on the IMTA icon on the Admin Console home page (see FIGURE 3-1).



**FIGURE 3-1**  IMTA icon

Channels can be added, deleted, and configured using the IMTA Property Book selections (see FIGURE 3-2).
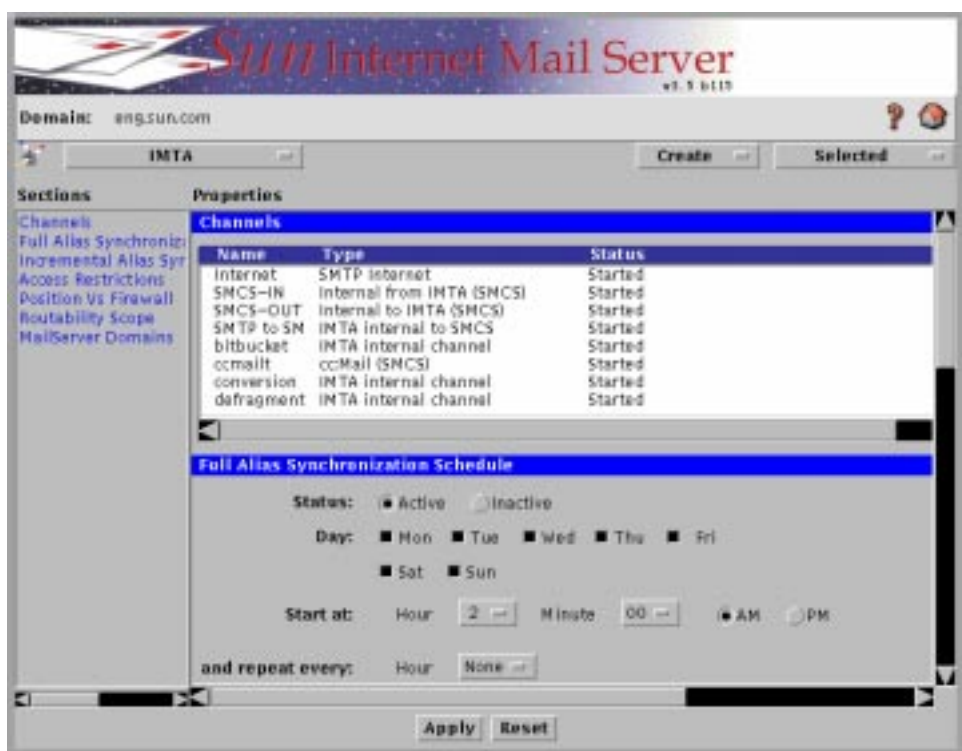


**FIGURE 3-2**   The IMTA Property Book Screen

For help at any time, click on the question mark above the Properties list, and then click the item you for which you want additional information.

To return to the Admin Console home page at any time, click on the "Home" icon located next to the question mark.

# Creating Channels

# ▼ Creating a Channel

**1. From the IMTA Property Book screen, select the Create drop-down menu and drag the cursor down to select Channel. The Create Channel window appears (see** FIGURE 3-3**).**
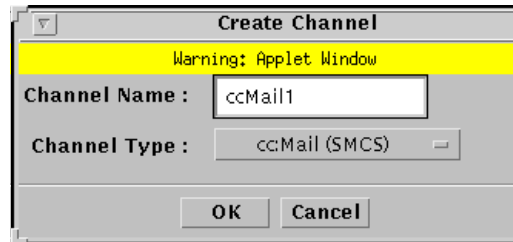


**FIGURE 3-3**   Create Channel Window

**2. Place the cursor in the Channel Name field and type an appropriate channel name.**

Channel names are *not* case-sensitive. As a result, you cannot use two channel names such as `CCMAIL` and `CcMail`. However, names such as `CcMail1` and `CCMAIL2`can be used simultaneously.

---

**Note –** Do not use reserved characters or spaces in the channel name. For example, do not use names such as `ccmail*`,`!ccmail`, or `"ccmail channel"`.

---

**3. Pull down the Channel Type cascading menu. Several channel types may be available. Drag the cursor to highlight the type of channel you want to create (in this case, cc:Mail) and release the mouse button. Click OK.**

**Note –** If you attempt to create a channel without first giving it a name, an error message will appear.

The General Setting property window appears within the SMCS Channel Property window (see FIGURE 3-4).



**FIGURE 3-4**    General Settings Properties Window

The windows are divided into left and right side columns. Clicking on the item in the left column moves you directly to the right hand column where that subject is displayed. You can also use the vertical scrollbar to move to the section you want to define.

# Configuring a Channel

Once you have created a channel, you will configure it so that your mail transactions occur smoothly between your server and client. If the configuration input doesn't match between the two, the connection will fail and no mail transaction can take place. Refer to Appendix A for a worksheet and information on the specific parameters that you need to configure.

When configuring channels, you need to observe the following parameters:

- Character set options must be set correctly in all channels or errors in character mappings result.

- For each mail system, the gateway postoffice used to create the first channel will be used in all subsequent channels of the same type. It *cannot* be changed without deleting all channels of the same type. For example, the gateway postoffice name you use to create your first cc:Mail channel must be used for all subsequent cc:Mail channels.

If you are unsure about a particular option, leave the default values in the text field.

# General Settings

General settings for each channel are included in the Properties column of the IMTA Channel Property window. The General Settings include the following:

## Restart automatically

This checkbox automatically starts the channel on SMCS startup. If you do not select this option, you must manually start the channel from the Administration Console.

## Retain processed messages

This checkbox controls the handling of processed queue messages. Messages are normally deleted from queues after they are delivered. Checking this parameter keeps a copy of each message in the queue even though it has been delivered. Retained messages have a status of DEL, and can be purged through Automated Nightly Maintenance.

## Lookup addresses in the directory

This checkbox controls whether addresses in messages processed by this channel are looked up in the directory. Without directory lookups, all messages passing through this channel must contain a fully-qualified addresses in order to be delivered.

## Poll interval (in minutes)

This is the interval in minutes between mail checks. When the channel finishes processing mail, it sleeps for the Poll Interval before checking again for incoming mail. A sleeping channel wakes when either the Poll Interval expires, or a message is placed in the channel's queue by the router.

## Alias user name format

This field controls the format of the e-mail alias automatically generated when a new user is added to the directory. As shown in TABLE 3-1, the rule is formed using strings (taken literally) and variables which represent name attributes stored in the directory. Alias Username Format is a write-once field.

**TABLE 3-1**    Alias Username Format

| Variable | $g | $i | $s | $q |
|---|---|---|---|---|
| Attribute | Given Name | Initials | Surname | Generation Qualifier |

**Note –** Write-once means that you can't change the field without deleting the channel and recreating it.

The default rule for cc:Mail is `$g $i $s $q`, and a name like `Stephen E. Bates III` would have an alias of `stephen e bates iii`.

When creating rules, the following guidelines apply:

1. Each variable can appear only once in the rule.

2. Integers may be used to limit the size of a particular attribute, for example, `$7s` means seven characters or fewer of the surname attribute.

**Note –** This parameter may only be set when the channel is created.

3. A + symbol in front of an integer means that if other size-restricted attributes are empty, the size of this attribute can grow by the size limit of the empty attribute. This allows the total size of the alias to be controlled. For example, `$+7s,$5g` means "up to seven characters of the surname, followed by a comma and up to five characters of the given name"; however if the given name is blank, the surname can be up to 12 characters.

4. Other characters can be included.

## Header style

Controls the placement of headers within a message; whether at the top, bottom, both, or neither. Required headers are those the channel requires in order to properly process the message. All other headers are considered optional. The cc:Mail default header style is All at Top, None at Bottom.

### Default character set

Specifies the character set to be assigned to text bodyparts that does not contain character set information. For each channel, this should be set to match the character set used by the mail system supported by the channel. The Default Character Set is assigned to all inbound text bodyparts from the mail system.

### Gateway postoffice

Indicate the name of the cc:Mailgateway posftoffice used by SMCS. The gateway postoffice used to create the first channel will be used in all subsequent channels of the same type. It *cannot* be changed without deleting all channels of the same type. For example, the gateway postoffice name you use to create your first cc:Mailchannel must be used for all subsequent cc:Mailchannels.

## ▼ Configuring General Settings

1. **Check the Restart automatically box if you want the channel to start from the SMCS startup.**

2. **Check the Retained processed messages box if you want to keep a copy of each message in the queue after delivery.**

3. **Check the Lookup addresses in the directory box if you want the addresses from messages processed by this channel to be looked up in the directory.**

4. **Choose the poll interval, entering your value in minutes**.

5. **Enter the desired Alias user name format in the text box, using a space between each variable.**

6. **Choose the header style. To view different values click on the box right next to the Header Style label. The cc:Mail default style is** `All at Top, None at Bottom`.

7. **Choose the default character set value. To view the available character sets, click on the box next to the Default character set label.**

8. **Select the Gateway postoffice name used by SMCS. This parameter must match the Gateway Postoffice on the client side. Check with the cc:Mail system administrator to find out the name of the post office.**

   If you are the system administrator, you will have to create a cc:Mail 'P' entry (a temporary repository/postoffice) for use by SMCS.

9. **If you are using the Transport default and not configuring dirsync, you can click OK at this point. If you want to change any settings, click Cancel and select the settings that you want.**

# Transport Settings

The cc:Mail channel can be configured using either Sequenced Packet Exchange (SPX) or file sharing transport. Which transport option you choose depends on your existing setup and your preference. The transport settings are contained in the Properties column of the IMTA Property Book (see FIGURE 3-5).
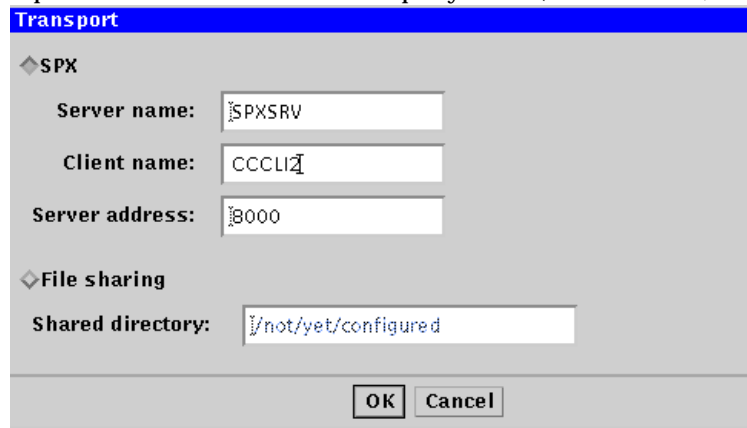


**FIGURE 3-5**    cc:Mail Transport Settings Properties Window

## SPX Transport

This type of transport provides an Ethernet-based method for transferring messages with a PC-based SPX client program. This type of transport communicates directly with the cc:Mail client for message transfer. You must specify the following parameters:

- **Server Name**: The name of the SPX server for this channel.
- **Client Name**: The SPX name of the PC.
- **Server Address**: The hexadecimal socket number used by the SPX service.

## File sharing Transport

This type of transport moves messages between the UNIX operating system and the PC running a client through a shared file system available to both platforms. When a channel is configured to use file sharing transport, you must specify the shared directory to use for the file exchange.

This directory must be accessible for read and write by the cc:Mail client PC using file sharing.

> **Note –** The cc:Mail client returns a nondelivery report for all recipients, even valid ones, if there are one or more bad recipients. If you receive a nondelivery report when sending mail from an SMTP/MIME user to a cc:Mail user, the nondelivery reason for the good recipients is "unknown," and a diagnostic code is *not* indicated.

Subdirectories are created as needed beneath this shared directory by the SIMS administrator. The cc:Mail channel uses two directories beneath the selected directory, `/in` and `/out`, to exchange messages with the cc:Mail client.

## Permissions

The Admin Console will create directories and set permissions correctly so you do not have to manually set them.

File sharing requires that both the channel and the PC client have read, write, and delete privileges in the shared directories. The channel is owned by `root`, but executes as `inetmail`.

In UNIX system terms these privileges are equivalent to a permissions set of `660`, where the `user ID` that owns the file (either the channel or the PC client) has `read`, `write`, and `execute` privileges for the file, and the `inetmail` group (either the channel, the PC client, or the channel or site administrator) has `read`, `write`, and `execute` privileges on the file. These permissions limit file access to *only* the channel, the PC client, and the site and channel administrators, preserving the security of the messages in transit.

## ▼ Configuring the Transport for SPX

The SPX Transport program listens for connections from a PC client program; connections are always established by a "call" from the PC client. The client establishes an active connection to the SPX Transport program. The programs then exchange any queued messages and attachments, deleting the local copies after successful delivery to the corresponding directories on the other system. When all messages are transferred, the client program drops the SPX connection.

1. **Type the server name in the Server name text box. This parameter can contain from one to eight alphanumeric characters, and must match the SPX server name provided on the PC side of the link.**

   The default value for this parameter is `SPXSRV`. Any or all channels can use the same server name, so *you should not need to change this parameter.*

2. **Type the client name in the Client name text box.This parameter can contain from one to eight alphanumeric characters, and must match the client name on the PC side of the link.**

   The default value for this parameter is `CCMAICLI`. This name must be unique within your configuration, so choose another name (such as `CCMAICL2`) if you have more than one cc:Mail channel.

3. **Type the server address in the Server address text box.**

   The default SPX socket number is `8000`; valid ranges are `0001-0BB8` and `8000-FFFF`. In almost all circumstances, the default will suffice. In rare cases, other software on the Ethernet may be using SPX socket 8000, in which case you should choose another value. If you change the server address from the default, you must *also* specify the new socket number using the `SERVERSOCKETADDRESS` parameter in the client configuration.

   If Sun's NWServ is installed, `opt/SUNWefps/sbin/ipxstat-i` will show the address for SunNet PC. If TotalNet Advanced Server is installed, `/opt/totalbin/bin/tnistat -i` will show you the address.

▼ Configuring the Transport for File Sharing

Enter the name of the directory to be used for the file exchange between the server and the PC client. The cc:Mail client allows one to eight characters for filenames and directory names.

---

# Directory Synchronization

Directory synchronization (dirsync) is the process by which directories that operate independently of each other are updated so the information within them is consistent. Dirsync ensures that when a change is made in one directory, corresponding directories are updated as well.

Refer to the *Sun Internet Mail Administrator's Guide* for additional information on dirsync.

# Dirsync Scheduling

Directory synchronization occurs in cycles. As a result, changes that occur in one secondary directory (SD) between cycles are not reflected immediately in other SDs until the next cycle is complete. The time between synchronization cycles is scheduled by adding and deleting schedule entries. The directory synchronization is done in three phases:

- Client export
- Server update
- Client import

## Client Export

During this phase, changes are issued to each secondary directory to reflect revisions that have occurred elsewhere. Unauthorized changes are undone. It is recommended that the Client Export phase occurs one half hour before the Server Update.

## Server Update

Updates from each of the secondary directories are filtered and mapped into the format of the central directory. The update should be scheduled one half-hour after the client export phase.

## Client Import

During this phase, changes that have occurred since the last synchronization cycle are resolved by comparing each secondary directory to its state at the end of the previous synchronization cycle. Client import phases for different e-mail systems should be scheduled one half hour after the Server Update phase.

# Dirsync Settings

The Dirsync window is located at the bottom of the IMTA Property Book (see FIGURE 3-6).
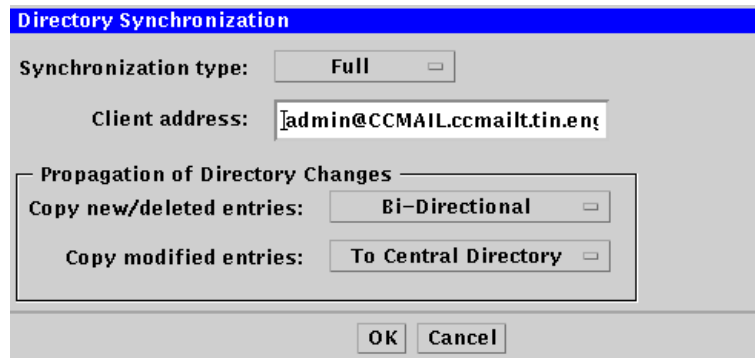
**FIGURE 3-6**  SMCS Directory Synchronization Properties Window

The Directory Synchronization window includes the following fields:

## Synchronization type

The channel can perform the following types of directory synchronization:

- **Full:** The channel synchronizes all local and foreign entries. This option should be used the first time a channel is synchronized. Thereafter, full synchronization should be used once per week for configurations.

- **Full-Foreign:** The channel synchronizes all foreign entries only. Full-foreign synchronization should be used once per week for configurations.

- **Incremental:** The channel receives only additions, deletions, and changes to local and foreign entries. Incremental synchronization should be scheduled daily.

- **None:** The channel does not participate in directory synchronization.

## Client address

This is the email address of the dirsync client. This address corresponds to the account that is sending updates to the Central Directory. For each channel that is participating in dirsync, you will have to refer to the client setup to get the information required. This address will be of the form:

*cc:Mailadmin@postoffice.channelname.machinename.domain*

where the local host name is fully qualified. The postoffice in the address is the local postoffice, and not the gateway postoffice.

> **Note –** If you don't know what the correct address should be, run an `export` on your client and watch the logs on the server. The server logs who it got a message from and who it expected the message from. Change your configuration so that the client address matches the actual sender. If the SMCS administrator's name in cc:Mail has a space, use "" to enclose the name. For example, `"\"SMCS Admin\" @postoffice.channelname.localhostname"`.

## Copy new/deleted entries

When the directories are synchronized, both parameters specify how the propagation of new or deleted entries flow to and from the directory. To select an option, click on the box next to propagation label. Retain the default values if you are unsure.

- **To Central Directory (CD):** This enables you to copy any new or deleted directory information from the channel directories (also known as the subordinate or slave directories) to the central directory.
- **From Central Directory:** This enables you to copy any new or deleted directory information from the central directory to the channel directories (also known as the subordinate or slave directories).
- **Bi-directional:** Changes made to either the central or the channel directories are propagated to and from both directories.

## Copy Modified entries

When the directories are synchronized, this parameter specifies how the propagation of modified entries flow to and from the directory. To select an option, click on the box next to propagation label. Retain the default values if you are unsure.

- **To Central Directory (CD):** This enables you to copy any modified directory information from the channel directories (also known as the subordinate or slave directories) to the central directory (also known as the LDAP directory).
- **From Central Directory:** This enables you to copy any modified directory information from the central directory (also known as the LDAP directory) to the channel directories (also known as the subordinate or slave directories).

# Dirsync Server Scheduler

The LDAP server schedule is set in the following screen (see FIGURE 3-7).
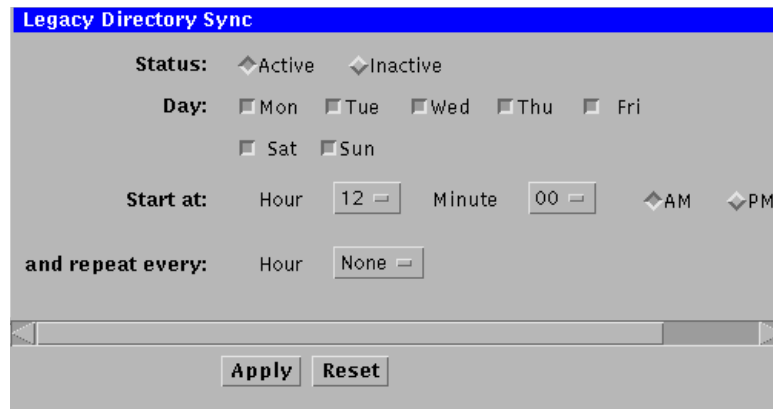
**FIGURE 3-7**    LDAP Server Directory Synchronization Schedule

1. **Click on the SUN Directory Services icon in the Admin Console home page.**

2. **Select SMCS Directory Sync.**

3. **To set the schedule, click on the Active box.**

4. **Set the day or days that you want to update the directory.**

5. **Set the time for the update, including whether you want it to occur in the AM or PM.**

6. **If you want to repeat the update, choose how often to repeat it.**

7. **Click the Apply button.**

# Deleting a Channel

When you delete a channel, all user entries for that channel are deleted in the central directory. Adding a channel with the same name does not undelete the entries. For `dirsync` channels. when you delete a channel and then add that channel name back, the next `dirsync` cycle deletes all user entries from the synchronized directory.

---

**Note –** To prevent deleting all user entries when deleting a `dirsync` channel, set the synchronized directory as the owner of the user objects. When you delete a channel, you need to delete the LAN subdirectories as well

---

To delete a channel:

1. **Select the channel you want to delete from the IMTA Property Book page.**

2. **Choose the Selected drop-down menu and choose Delete.**

# Managing PC Clients

For Internet Message Transfer Agent (IMTA) to exchange mail with cc:Mail via SPX, the proper application must be running. Client applications can be started manually or via a batch file. Some client applications might be run continuously, using a batch file. The following cc:Mail client application exchanges messages between email systems and cc:Mail:

```
ccclient.exe
```

**Note –** To run on a DOS machine, use `cclient -1`.

# Monitoring Channels

Channels are monitored via the Administration Console and its IMTA Property Book window (see FIGURE 4-1).
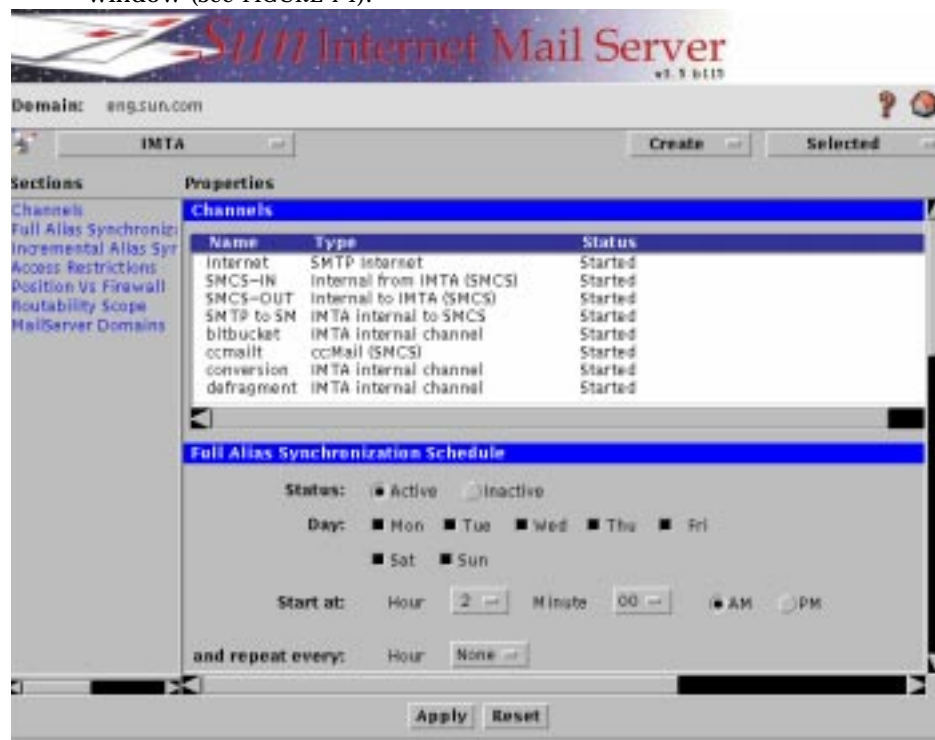


**FIGURE 4-1**    The IMTA Property Book Window

# Channel Status

The Channels window provides the current status of the channel (see FIGURE 4-2).



**General Settings**

Status
Channel server: not running
Configuration: complete
Gateway client: starting up
Transport server: not running
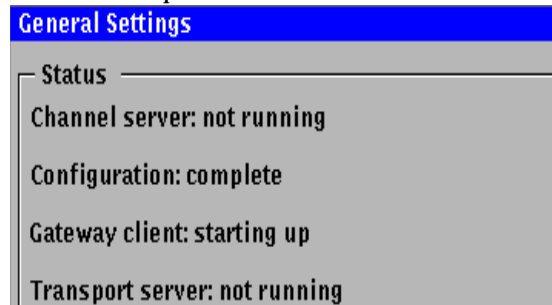
**FIGURE 4-2**  Channel Status Window

Possible states include:

- **Started** - The channel is started.
- **Stopped** - The "Stop" button has been pushed, but the channel is still completing work. Once processing is complete, the channel stops.

# Channel Controls

The IMTA Channel Properties channel distribution window provides a pull-down menu to change the state of the channel:

- **Start Channel**:  Starts the channel, so that it can begin processing messages. This option is not available if the channel has not been configured properly or if the channel is already running.
- **Restart Channel**:  Starts the channel, so that it can begin processing messages. This option is not available if the channel has not been configured properly or if the channel is already running.
- **Stop Channel**:  Stops the channel. This option is not available unless the channel is running. When a stop is requested, the channel finishes working on the current message before stopping.
- **Delete Channel**:  Delete the channel.

- **Monitor Queue**: The utility by which the queue can be monitored (see FIGURE 4-3).
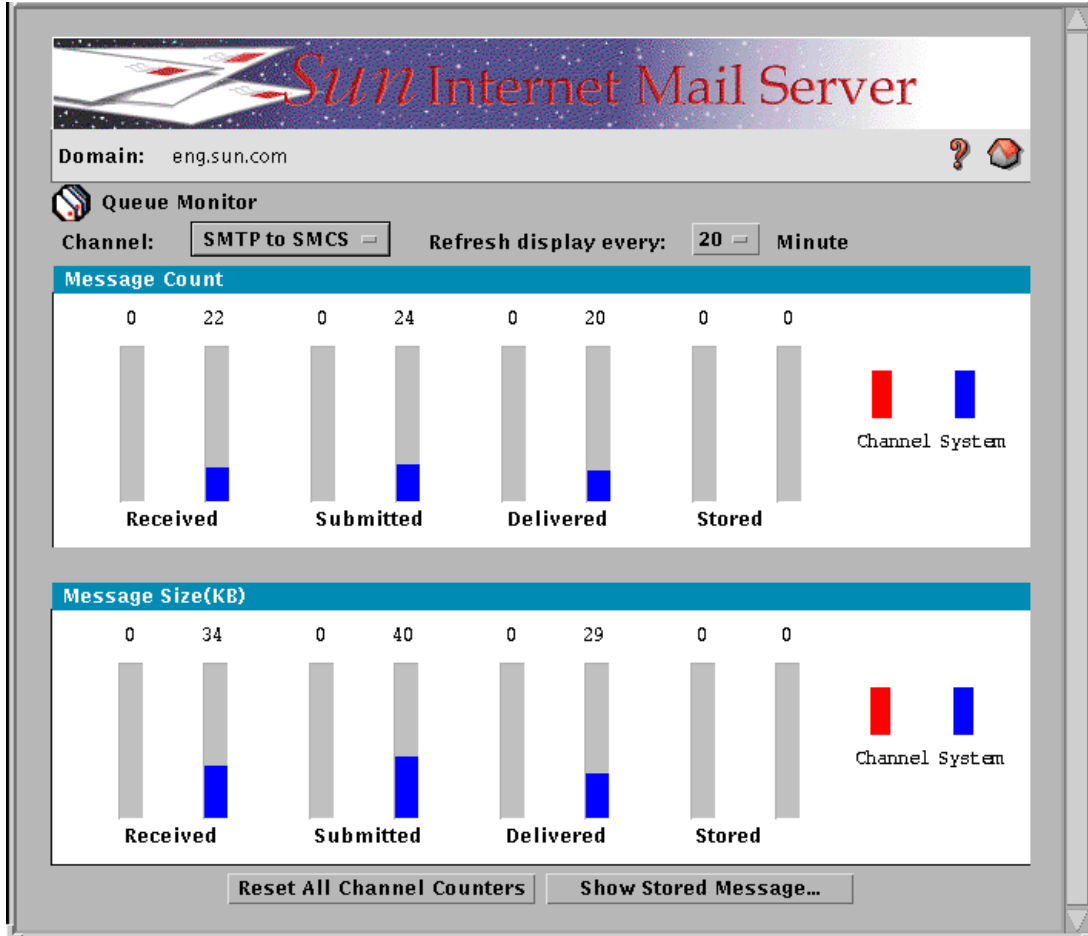


**FIGURE 4-3**    Queue Monitor

# Displaying Channel Log Files

Channel logging events can be useful for network traffic analysis and problem troubleshooting.  Each *event* represents the receipt or processing of a message.

## ▼ Displaying Channel Log Files in Syslog

Logging is performed through the syslog facility. Syslog must be enabled on the system running SIMS to view these logs. You can view the following events in the syslog file:

- **Info** - Normal authentication, including Login, Logout, and broken connection.
- **Notify** - Identifies repeated Login failures and mailbox access errors.
- **Err** - Shows fatal system error, including out of memory, unexpected signal, etc.
- **Alert** - Shows fatal disk error, including possible mailbox corruption. This will not happen with routine filesystem full errors, which are recoverable.

## ▼ Displaying Channel Log Files in the Log Manager

1. **From the Admin Console home page, choose the Log Manager in the left-hand column. The Log Manager window appears (see** FIGURE 4-4**).**
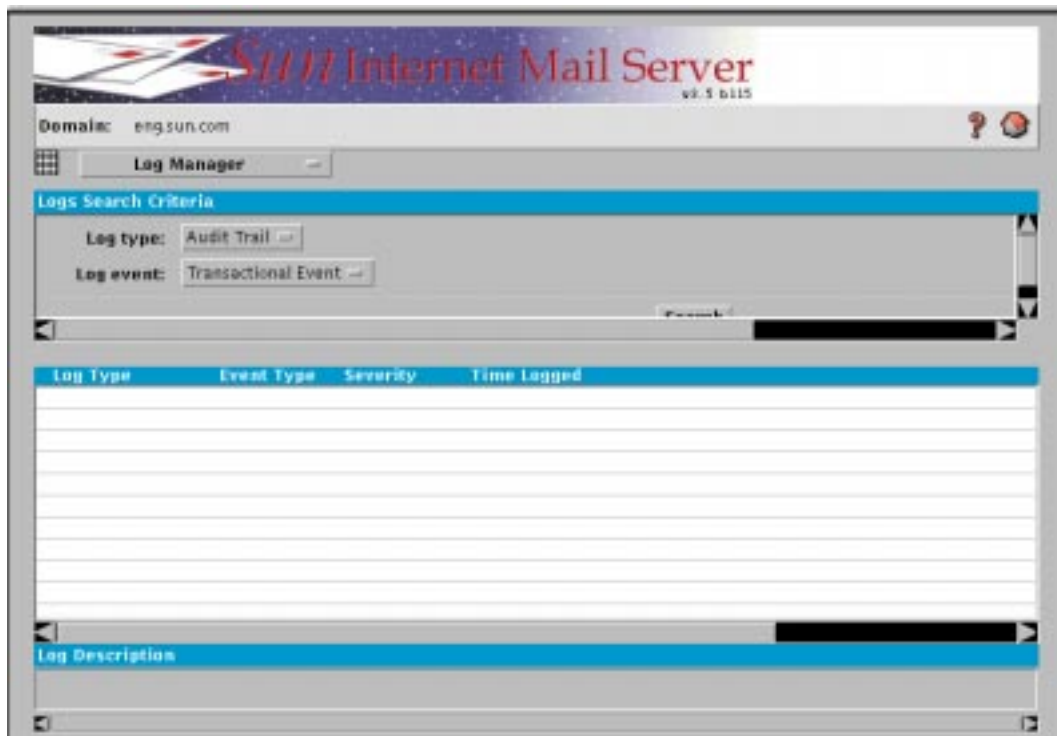


**FIGURE 4-4**   Log Manager

**2.** **Click on a log type in the scrollable list. A log description will appear in the status bar for that log type.**

# Channel Configuration Reference

This appendix provides reference information on configuring your cc:Mail channel on the server and client end. It helps ensure that the parameters are configured correctly on the server and the client to permit email transactions:

- Install SIMS using the `setup` or `setup-tty` installation program. For details, refer to the *Sun Internet Mail Server (SIMS) 3.5 Installation Guide*.

- Check the box provided for installing SMCS during installation.

- Start the Administration Console on the mail server.

- In order to create an SMCS channel, click on the IMTA icon seen on the main Administration Console screen.

- For detailed information on each channel, refer to other relevant chapters in this manual (the *Sun Messaging Connectivity Services cc:Mail Channel Configuration Guide)*.

- The entries marked in **BOLD** in the tables are important, and it is essential to make sure that these entries match both on the client as well as the server side.

- Pay particular attention to the entries marked with an asterisk. The asterisk indicates that the information you need to provide for these entries must be derived.

---

**Note –** If you are not sure what the value should be, you can retain the default values, if a default is provided.

---

# cc:Mail Configuration

To configure a cc:Mail channel successfully the following parameters need to be addressed. TABLE A-1 lists the fields that need to match on the server and the client side. If your input does not match, the connection between the client and the server will fail.

**TABLE A-1**    cc:Mail Required Matching Entries on the Server and the Client

| Server-Side Entries | Client-Side Entries |
| --- | --- |
| Channel Name | Channel Name |
| Gateway Postoffice | Gateway Postoffice |
| Server Name | Server Name |
| Client Name | Client Name |
| Server Address | Server Socket |
| Shared Directory | Root Directory |

TABLE A-2 and TABLE A-2 list the significance of the server and client parameters, their possible values, and examples. Parameters that need to match on both the server and client end are shown in boldface type. They provide a worksheet to enable you to compile configuration information prior to beginning your installation session.

To use this worksheet, copy it, and fill in the last column with configuration information specific to your site. When all pages are complete, use the information to configure each screen as presented by the Administration Console or the Client installation software.

## cc:Mail Server-Side Parameters

Following is a listing of the server-side parameters. Complete this worksheet before you begin the installation of the cc:Mail server.

**TABLE A-2**    cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| **Channel Name** | The Channel Name is the name of your cc:Mail channel and should match the value on client side. | ccmailt | Refer to the channel name parameter listed in TABLE A-2. Fill in the same information in this parameter. <br><br> _____ |
| Restart Automatically | If selected, it starts the channel on SMCS startup. If you do not select this option, you must manually start the channel from the Administration Console. | ✓ | Indicate your setting in the provided checkbox: ❏ |
| Retain Processed Messages | Messages are normally deleted from queues after they are handled. Checking this parameter keeps a copy of each message in the queue even after the message has been delivered. Since processed messages are preserved, you can troubleshoot any problems at a later time. | ✓ | Indicate your setting in the provided checkbox: ❏ |
| Lookup Addresses in Directory | If this parameter is checked, the addresses in messages processed by this channel will be looked up in the directory. Without the directory lookup facility all the messages must contain fully qualified SMCS addresses in order to be delivered. | ✓ | Indicate your setting in the provided checkbox: ❏ |

**TABLE A-2**    cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| Poll Interval (in minutes) | This indicates how often you want the cc:Mail client to check for messages. Enter your value in minutes. | `1` | Choose your poll interval from the pull down menu. |
| Alias User Name Format | This controls the format of the user name alias automatically generated when a new user is added to the directory. The rule is formed using strings and variables which represent name attributes stored in the directory.<br>`$g`    Given Name<br>`$i`    Initials<br>`$s`    Surname<br>`$q`    Generation Qualifier | `$g $i $s $q` | Fill in your response in the provided text field.<br><br>_____ |
| Header Style | The header styles control the placement of headers within a message; whether at the top or at the bottom. To view different values click on the box right next to the Header Styles label. The default style is `All at Top, None at Bottom`. | `All at Top, None at Bottom.` | Choose the header style from the pull down menu. |
| Default Character Set | Default character set specifies the character set to be assigned to text body parts that do not contain character set information. | `IBM-437` | Choose the default character set from the pull down menu. |

**TABLE A-2** cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| **Gateway Postoffice** | Indicate the name of the cc:Mail gateway node used by SMCS. You must add this post office directory entry manually to SMCS, not the name of the actual cc:Mail Post Office (where user mail boxes reside). This parameter must match the *Gateway Node* on the client side. Check with the cc:Mail system administrator to find out the name of the post office. | SMCS | Refer to the gateway postoffice parameter listed in TABLE A-2. Fill in the same information in this parameter.<br><br>————————— |
| **Server Name** | Indicate the name of SPX server for this channel. This parameter must match the *Server Name* provided on the PC (client) side of the link. | SPXSRV (this is the default value for this parameter) | Fill in your response in the provided text field.<br><br>—————————<br><br>Retain the default value if you are unsure.<br><br>Copy this information in the server name parameter listed in the client configuration table, TABLE A-2. |
| **Client Name** | Indicate the SPX name of the PC. This can be from 1-8 alphanumeric characters and must match the *Client Name* on PC side of the link. If you have more than one MS-Mail channel, choose a unique name for each channel. | CCMAICLI (this is the default value for this parameter) | Refer to the client name parameter listed in TABLE A-2. Fill in the same name in this parameter.<br><br>—————————<br><br>Retain the default value if you are unsure. |

**TABLE A-2**    cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| **Server Address** | Indicate the hexadecimal socket number used by the SPX server. The default SPX socket number is 8000. Valid ranges are 0001-0BB8 and 8000-FFFF. If you change the default value, you must also specify the new *Server Socket* on the client side. | `8000` | Fill in your response in the provided text field.<br><br>_____<br><br>Retain the default value if you are unsure.<br><br>Copy this information in the server socket parameter listed in the client configuration table, TABLE A-2. |
| **Shared Directory** | Fill out this information if you have selected the Fileshare transport and not SPX. This field specifies the name of the directory to use for file sharing. This directory must be accessible for read and write by the cc:Mail client PC using File Sharing. This should match the *Root Directory* on the client side. | `/share/ccmail` | Fill in your response in the provided text field.<br><br>_____<br><br>Copy this information in the root directory parameter listed in the client configuration table, TABLE A-2. |

**TABLE A-2**    cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| Directory Synchronization | In order to select a type of directory synchronization click on the button next to the label that says *Directory synchronization* on the channel configuration page. You have four choices when it comes to directory synchronization:<br><br>■ None—This indicates that you do not want this channel to participate in any directory synchronization processes.<br><br>■ Full—The very first time you create and configure a channel, choose this option to participate in a thorough, complete directory synchronization process. Since this entails a comprehensive synchronization procedure, it is time consuming.<br><br>■ Full Foreign—This option helps resynchronize channels apart from the current channel. For instance, though your MS-Mail channel may already be synchronized, your cc:Mail, NJE/PROFS, or ldap channels may not be. By choosing this option, the directory information for the other channels will also be synchronized. | Full | Indicate your directory synchronization choice from the pull down menu. |

**TABLE A-2**    cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| | ■ Incremental—After your channel participates in a full directory synchronization process, to register any subsequent directory changes, choose this option. It helps incorporate your directory changes and resynchronize the directory information. | | |
| Client Address* | Enter the client address. This will be of the form: *cc:Mailadmin@postoffice.ch annelname.localhostname* | `admin@ccmail.ccmailt. tin.eng.alpha.com` | Fill in your response in the provided text field.<br>—————————— |

**TABLE A-2**    cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| Copy New/Deleted Entries | When the directories are synchronized, both parameters specify how the propagation of new or deleted entries flow to and from the directory. To select an option, click on the box next to propagation label. Retain the default values if you are unsure.<br><br>■ To Central Directory (CD): This enables you to copy any new or deleted directory information from the channel directories (also known as the subordinate or slave directories) to the central directory (also known as the LDAP directory).<br><br>■ From Central Directory: This enables you to copy any new or deleted directory information from the central directory (also known as the LDAP directory) to the channel directories (also known as the subordinate or slave directories).<br><br>■ Bi-directional: Changes made to either the central or the channel directories are propagated to and from both directories. | `Bi-directional` | Choose to propagate new/deleted entries in directory from the pull down menu. |

**TABLE A-2** cc:Mail Server Parameters and Worksheet

| Server-Side Parameters | Description | Example | Your Parameters |
|---|---|---|---|
| Copy Modified Entries | When the directories are synchronized, this parameter specifies how the propagation of modified entries flow to and from the directory. To select an option, click on the box next to propagation label. Retain the default values if you are unsure.<br><br>■ To Central Directory (CD): This enables you to copy any modified directory information from the channel directories (also known as the subordinate or slave directories) to the central directory (also known as the LDAP directory).<br><br>■ From Central Directory: This enables you to copy any modified directory information from the central directory (also known as the LDAP directory) to the channel directories (also known as the subordinate or slave directories). | `To Central Directory` | Choose to propagate modified entries in directory from the pull down menu. |

# cc:Mail Client-Side Parameters

Following is a listing of the client-side parameters. Complete this worksheet before you begin the installation of the cc:Mail client.

**TABLE A-3**    cc:Mail Client Configuration Parameters and Worksheet

| Client-Side Parameters | Description | Example | Your Client-Side Parameters |
|---|---|---|---|
| Program Directory | This is the directory where cc:Mail client is installed, and where the import and the export files are located. | `T:\CCADMIN` | Fill in your response in the provided text field. _____ |
| Data Directory | This indicates the location where the cc:Mail gateway postoffice data files reside. | `T:\CCMAIL` | Fill in your response in the provided text field. _____ |
| Post Office*[1] | Enter the name cc:Mail postoffice where the user mail boxes reside. | `ccmail` | Fill in your response in the provided text field. _____ |
| Password* | Enter the password for the postoffice. | `*******` | Fill in your response in the provided text field. _____ |
| **Gateway Postoffice**[2] | Enter the gateway post office name you created for SMCS. This is the 'P' entry in cc:Mail (a temporary repository/ postoffice) to hold messages for SMCS. | `SMCS` | Fill in your response in the provided text field. _____ Copy this information to the gateway postoffice parameter listed in the server configuration table, TABLE A-2. |
| Gateway Post Office Password | Enter the password for the gateway post office. | `*******` | Fill in your response in the provided text field. _____ |
| Polling Interval | This indicates how often you want the cc:Mail client to check for messages. Enter your value in minutes. | `1` | Fill in your response in the provided text field. _____ |

**TABLE A-3**    cc:Mail Client Configuration Parameters and Worksheet

| Client-Side Parameters | Description | Example | Your Client-Side Parameters |
|---|---|---|---|
| Maximum Log days | The number of days for which you want the log files to be maintained. | 7 | Fill in your response in the provided text field. _____ |
| Server's SPX* | Fill out the information in this field if you have selected the SPX transport. The server's SPX will be of the format *xxxxxxxx:yyyyyyyyyyyy,* where *xxxxxxxx* is the hostid or the network number of the server, where as *yyyyyyyyyyyy* is usually a mask set to 000000000001 (eleven zeros and a one). To find out this address, you can go to the `/opt/SUNWefps/sbin` directory on your server and execute the `ipxstat -i` command. This will give you the required address. | 807980AC:0000000000 01 | Fill in your response in the provided text field. _____ |
| **Server Socket** | Fill out the information in this field if you have selected the SPX transport. The Server socket address is usually set to **8000** by default. This should match the *Server Address* on the server side. | 8000 | Copy this information from the server address parameter listed in the server configuration table, TABLE A-2. _____ Retain the default value if you are unsure. |
| **Server Name** | Fill out the information in this field if you have selected the SPX transport, that is the name of the cc: Mail SPX server. If you change the default name, make sure that you change the corresponding *Server Name* on the server side. | SPXSRV (this is the default value for this parameter) | Copy this information from the server name parameter listed in the server configuration table, TABLE A-2. _____ Retain the default value if you are unsure. |

**TABLE A-3**   cc:Mail Client Configuration Parameters and Worksheet

| Client-Side Parameters | Description | Example | Your Client-Side Parameters |
|---|---|---|---|
| **Client Name** | Fill out the information in this field if you have selected the SPX transport. The client name should be the SPX name of the PC. | `CCMAICLI` (this is the default value for this parameter | Fill in your response in the provided text field.<br><br>_____<br><br>Retain the default values if you are unsure.<br><br>Copy this information to the client name parameter listed in the server configuration table, TABLE A-2. |
| **Root Directory** | Fill out the information in this field if you have selected the Fileshare transport and not the SPX transport. The root directory is the DOS path of the shared directory. This should match the *Shared Directory* on the server side. | `N:\ccmail` | Copy this information from the shared directory parameter information listed in the server configuration table, TABLE A-2.<br><br>_____ |
| **Channel Name**\* | This is the name of your cc:Mail channel. It should match the *Channel Name* on the server side. | `ccmailt` | Fill in your response in the provided text field.<br><br>_____<br><br>Copy this information to the channel name parameter listed in the server configuration table, TABLE A-2. |
| Description | This indicates a brief description of the channel. | `cc:Mail channel on TIN` | Fill in your response in the provided text field.<br><br>_____ |

**TABLE A-3**   cc:Mail Client Configuration Parameters and Worksheet

| Client-Side Parameters | Description | Example | Your Client-Side Parameters |
|---|---|---|---|
| Export Schedule* | Indicate the time interval between cc:Mail export operations. Exporting entails propagating user directory information changes to the central directory.<br><br>■ Formats include:<br>■ Monthly on [*days*] at [*hh:mm*]<br>■ Weekly on [days] at [*hh:mm*]<br>■ Daily at [*hh:mm*]<br>■ Hourly at [*:mm*] | `Hourly at :10` | Fill in your response in the provided text field.<br>_____ |
| Import Schedule* | This is similar to the export schedule, but the schedule is for cc:Mail import operations. Importing entails propagating user directory information changes from the central directory. | `Hourly at :55` | Fill in your response in the provided text field.<br>_____ |
| Administrator* | This should be the name of a cc:Mail administrative user on the cc:Mail Gateway postoffice. | `admin` | Fill in your response in the provided text field.<br>_____ |
| Administrator Password | Administrative user's password. This should be the password for the administrative user. | `*******` | Fill in your response in the provided text field.<br>_____ |
| Remote Address* | This is the address for the channel at the postoffice on the server side. Use the following syntax:<br>*channelname*`@dsm.`*host.do mainname at <gateway po>* | For example,<br>`ccmailt@dsm.tin.eng`<br>`.alpha.com at SMCS` | Fill in your response in the provided text field.<br>_____ |

1. Parameters marked with an asterisk (*) require information that needs to be derived before entering them in the space provided.

2. Parameters shown in **Bold** font need to match on the server and the client end. To ensure that you are comparing the correct entries on the server and the client end, refer to TABLE A-1 on page 66.

# Troubleshooting

This section discusses some of the possible errors that you may encounter while installing or using SMCS on either the server or client side. TABLE B-1 and TABLE B-2 list the errors and possible solutions for the server and client.

# SMCS Server- Side Troubleshooting

Following is a listing of possible server errors and their resolutions.

TABLE B-1    Sun Messaging Connectivity Services Server Admin Errors

| User Errors | Resolution |
| --- | --- |
| The user could not be authenticated with SMCS | User or password is incorrect |
| SMCS has not yet been initialized | /opt/SUNWmail/sbin/smcs initialize |
| The directory is not configured properly to work with SMCS | SMCS initial directory items missing |
| The directory server does not appear to be running | /etc/initd/slapd start |
| There are not enough available licenses for the channel | restricted number of channels |
| There are no licenses for the channel | /var/opt/SUNWmail/gtw/lic/license.dat |
| A method invocation error occurred | Some java component is missing |
| Could not read or write the PMDF configuration file | /etc/opt/SUNWmail/imta/imta.cnf |

**TABLE B-1**    Sun Messaging Connectivity Services Server Admin Errors

| User Errors | Resolution |
|---|---|
| The SMCS shell process encountered an error starting up | can not run /opt/SUNWmail/sbin/smcs |
| The SMCS shell process was interrupted | /opt/SUNWmail/sbin/smcs was killed |
| The SMCS shell process encounterd an error | problem with /opt/SUNWmail/sbin/smcs |
| The SMCS internal router channel is not configured | Dir problem/Previous setup had failed |
| The SMCS internal router channel server is <channel_name> | Dir problem/Previous setup had failed |
| The <channel_name> channel server is {1} | running normally<br>starting up<br>stopped due to an error<br>stopping<br>not responding<br>not running<br>invalid for unknown reasons |
| The <channel_name> channel shared directory {1} | does not exist<br>has insufficient permissions |
| The <channel_name> channel transport server is {1} | running normally<br>starting up<br>stopped due to an error<br>stopping<br>not responding<br>not running<br>invalid for unknown reasons |
| The <channel_name> channel lan gateway client is {1} | running normally<br>starting up<br>stopped due to an error<br>stopping<br>not responding<br>not running<br>invalid for unknown reasons |
| The <channel_name> channel NJE transport server is {1} | running normally<br>starting up<br>stopped due to an error<br>stopping<br>not responding<br>not running<br>invalid for unknown reasons |

**TABLE B-1**    Sun Messaging Connectivity Services Server Admin Errors

| User Errors | Resolution |
|---|---|
| The <channel_name> channel is not configured | Directory problem/Previous config failed |
| The <channel_name> channel has not been started | The <channel_name> channel NJE transport has not been started |
| The SMCS administraive logging mechanism failed | Login to MMAD failed as admin |

Following is a listing of possible server errors and their resolutions.

# cc:Mail Client Troubleshooting

**TABLE B-2**    Sun Messaging Connectivity Services cc:Mail Client Errors

| User Errors | Resolution |
|---|---|
| Error spawning EXPORT.EXE config | Invalid program directory in config |
| You are asked to enter: Post office direct | Invalid data directory in config |
| You are asked to enter: Post office or user name: | Invalid post office name in config. This could be in dirsync or client run |
| connect failed: Connection timed out | Invalid SPX address<br>server is not running<br>server socket or server name doe not match what is on the server |
| fopen(P:\CCMAIL\OUT\heartb.eat): No such file or directory | Path to file share is incorrect<br>Access rights are incorrect |
| bad parameter: exportschedule = "Hourly at 30" | Invalid export schedule time |
| bad parameter: importschedule = "Hourly at 30" | Invalid import schedule time |
| Import/Export error 5: Post office path is not correct | Invalid remote address in dirsync config |

# Maps and Filters

Maps and Filters are two common closely related concepts in directory synchronization, though they may be known by different names in different products. Maps are configurable rules that determine how one or more attributes of one directory are combined to produce an attribute in another directory. Maps are needed for two primary reasons:

- Semantics vary: For example, one e-mail directory might include a JOB DESCRIPTION field that contains the same contents held in the TITLE and BUSINESS CATEGORY fields of another directory.

- Formats vary: For example, one e-mail directory might allow a description field to contain 500 characters while another directory might limit the same field to 250 characters.

Filters are configurable rules that determine which objects are to be propagated, based on the values of certain attributes. Filters are needed to block propagation of objects which are not relevant to, or not authorized in, other directories. For example, e-mail system administrators typically have two e-mail accounts: a personal e-mail account, used to interact with other users; and an administrator's account used to maintain other accounts on the e-mail system. In most instances it is not necessary, or desirable, to propagate the latter e-mail address to other directories. To avoid this, you can filter it.

Like maps, filters are typically defined separately for each direction. The scalability constraints of many simple e-mail system directories may preclude the blanket propagation of all enterprise users to each of the outlying secondary directories, so in order to limit the size, only objects meeting certain criteria might be propagated. In the other direction, user objects which are only of local interest would likely be filtered out.

# Creating Maps and Filters

In most cases, you are not required to write new maps or filters. Rather, you need to modify the settings used in existing filters. To adjust or create maps and filters, you need to use software-specific grammar. These grammar variables are described in xx. Examples are provided for each variable..

**TABLE C-1**    Map and Filter Variables

| Variable | Description |
| --- | --- |
| variable | Variables are of the format "${Variable Name}", although the curly brackets may be omitted if the variable is only one word. Upon the initial processing of a record for import, the variables set are those specific to the channel performing the directory sync. The list of channel variables are found in /etc/opt/SUNWMail/gtw/cfg/ <channel.attval. |
| | X.500 variable names are "friendly" names defined by the browser configuration. |
| | Temporary variables may be used without declaration and may be read or assigned as needed. These temporary variables will not be in the final output of the record. Variables used for output are those in the canonical list of X.500 attributes (for import, SD-CD) and those in the canonical list of per-channel attributes (for export, SD<-CD). |
| | *Example 1 (cc:Mail)*<br>------------------<br>$Name<br>$Addr<br>$Cmts<br>$Locn |
| | *Example 2 (some X.500)*<br>----------------------<br># These variable names come from the browser config, so as<br># the browser configuration file changes so do these variable names<br><br>$Surname<br>${Given Name}<br>$Title |
| match line | A match line is always part of a match construct. The match line is composed of a right-hand side and a left-hand side. All variables and expressions on the left-hand side are interpolated into a text string. This string is then matched against the right-hand side. |

**TABLE C-1**    Map and Filter Variables

| Variable | Description |
| --- | --- |
| match line (cont) | Each match line is processed using the following rule:<br>EXPAND TO THE LEFT, MATCH INTO THE RIGHT<br><br>*Example 1*<br>---------<br># This match line will always work<br># Constants will always match themselves<br>1 : 1<br><br>*Example 2*<br>---------<br># This match line will never work<br># Constants are not equal to different constants<br>2 : 1<br><br>*Example 3*<br>---------<br># This match will always work as will<br>1 : $temp<br><br>*Example 4*<br>---------<br># This match is typical of what you will see<br>$Name : $Surnam, ${Given Name} |
| match# | The "match" is the main construct used in the mapping file. The first line consists of the word "match", optionally followed by the word "any". There are then one or more match lines, then an optional "assign", "reject", or "foreign" construct.  The "match" construct is terminated with a line that contains the word "endmatch".<br><br>• When this construct is processed for a record, each of the match lines are attempted in sequence.<br>• If ALL of the match lines succeed, then the "assign", "reject", or "foreign" action occurs.<br>• A successful "match" will also have the side effect that all the right hand side variables will be assigned values.<br>• If the first line of the "match" is "match any", then the first successful match is used. The rest of the match lines for the "match any" construct will be skipped. This is also a successful "match" and the "assign", "reject", or "foreign" action occur normally. |

**TABLE C-1**    Map and Filter Variables

| Variable | Description |
|---|---|
| match# (cont) | MATCH<br>$Name : $Surname, ${Given Name}<br>ENDMATCH<br><br># If $Name is "Smith, Bob" the above "match" will map<br># "Smith" to $Surname and "Bob" to ${Given Name}<br><br>**Example 2**<br>---------<br># This example shows how to assign defaults for your environment<br># Say you want all employees to have the same zip code<br><br>MATCH<br>1:1<br># 1 ALWAYS matches 1<br>ASSIGN<br>${ZIP Code} = 55555<br>ENDMATCH<br><br>**Example 3**<br>---------<br># This example shows how you could use a "match any" construct to<br>#X.500 attributes<br><br>MATCH ANY<br>$Name : $Surname, ${Given Name}<br>$Name : ${Given Name} $Surname<br>$Name : $Surname<br>ENDMATCH<br><br># If $Name=Smith,Bob, then the first match line will succeed and we<br>#assign "Smith" to $Surname and "Bob" to ${Given Name} If<br>$Name=Bob Smith, then the second match line will succeed and we<br>#assign "Smith" to $Surname and "Bob" to ${Given Name}<br>#If $Name=Smith, then the third match line will succeed and we<br>#assign "Smith" to $Surname, but ${Given Name} is still unbound |
| assign | The "assign" construct is used within a "match" to make simple variable assignments after a match is successful. Analogous to the match rule of a match line, the assign rule is EXPAND THE RIGHT, ASSIGN TO THE LEFT. |

**TABLE C-1**   Map and Filter Variables

| Variable | Description |
| --- | --- |
| assign (cont) | This means:<br>text on the right-hand side of the "=" is interpolated, and then assigned to the variable on the left-hand side.<br>Assignments do not use regular expressions and the left-hand side may only contain one variable.<br>There may be multiple lines in an assign statement.<br><br>*Example 1*<br>---------<br># Match a constant to itself to set a default value for<br># a variable<br>MATCH<br>1:1<br>ASSIGN<br>$Surname:Unknown<br>ENDMATCH<br><br>*Example 2*<br>---------<br># Use temporary variables to parse the cc:Mail $Cmts<br># variable and then assign the temporary variables to an<br># X.500 attribute<br><br>MATCH<br>$Cmts:$a-$b-$c,$Title<br>ASSIGN<br>$homePhone = $a-$b-$c<br>ENDMATCH<br><br># This match succeeds if $Cmts=608-238-4454,President<br># Now "President" is assigned to $Title and $a = "608"<br># $b ="238" $c = "4454" the ASSIGN explicitly assigns<br># "608-238-4454" to ${Home Phone} |
| reject | The "reject" rule is used within a "match" as a means of filtering content. If the match succeeds, the record is ignored.<br><br>*Example 1:*<br>----------<br># Filter out all "ADMIN" users, so these entries are not<br># added to the central directory |

**TABLE C-1**   Map and Filter Variables

| Variable | Description |
|---|---|
| rejext (cont) | MATCH<br>$Name:admin.*<br>REJECT<br>ENDMATCH<br><br>*Example 2:*<br>----------<br># Filter out any users like "ROOT" or "POSTMASTER"<br><br>MATCH ANY<br>$Surname : Root.*<br>$Surname : Postmaster.*<br>REJECT<br>ENDMATCH |
| foreign | The "foreign" construct is used to remove foreign entries. When foreign entries are being stored this construct saves the matched record as a foreign entry. Most foreign entries have very specific rules to match them according to the channel that is performing directory sync.<br><br>*Example 1 (cc:Mail)*<br>-------------------<br>MATCH<br>$Addr:GATEWAYPO.*<br>FOREIGN<br>ENDMATCH<br><br>*Example 2 (MSMail)*<br>------------------<br>MATCH<br>$MSAddress:SMTP.*<br>FOREIGN<br>ENDMATCH<br><br>*Example 3 (PROFS)*<br>-----------------<br>MATCH<br>$NODE:GATEWAY<br>FOREIGN<br>ENDMATCH |

# Functions

Use functions in the interpolated sections of a "match" or "assign" to modify a variable. You may not nest functions (but you can certainly use a temporary variable to get the same effect), and there is no way to define a new function.

Descriptions for each function are provided in TABLE C-2.

**TABLE C-2**    Function Descriptions

| Function | Synopsis | Description |
|---|---|---|
| field | &field(*<variable*, *<field*, *<delimiter*) | Return field number <field delimited by <delimiter from <variable<br>*Arguments:*<br>*<variable* is a bound variable name<br>*<field* field number to extract from *<variable*, fields are indexed starting at 1 (one)<br>*<delimiter* string to use as delimiter to split *<variable*<br><br>*Example:*<br>If $Addr=CCPOST field2 field3 &field($Addr, 1, " ") this returns "CCPOST" |
| subsrt | &substr(*<variable*, *<offset*, *<length*) | Extract a string of <length> from <variable> starting from the |
| offset | &offset(*<variable*, *<length*) | <offset> position in <variable><br><br>*Arguments*<br><variable> is a bound name<br><offset> Starting position for substring. The first character of a string is offset 0 (zero). If the offset is a negative number, this will begin substr in the back of the string. - l is the last character.<br><br><length> Length of string to be returned,<br><br>*Returns:*<br>String equal to or less than *<length*<br><br>*Example:*<br>if $Surname=Anderson $substr($Surname, 0, 6) this will return "Anders" |

**TABLE C-2** Function Descriptions

| Function | Synopsis | Description |
| --- | --- | --- |
| length | &length(<*variable*) | Return the number of characters in a string.<br><br>*Arguments:*<br><*variable* - is a bound variable name<br><br>*Returns:* Number of characters in a string assigned to <*variable*<br><br>*Example:* if $Cmts="hello"<br>&length($Cmts)<br>this returns 5 |
| expand | &expand(<*variable*) | Expand contents of <*variable* if any parts match the set of predefined values found in the directory sync configuration.<br><br>*Arguments:* <*variable* is a bound variable name<br><br>*Returns:* Expanded string<br><br>*Example:*<br>if $Title = V.P. Eng.<br>&expand($Title)<br>This returns "Vice-President Engineering"<br><br>*Configuration:*<br>The expand function maps the abbreviation that users have configured through the modification to /etc/opt/ SUNWMail/gtw/cfg/ <channel.attrname. |

**TABLE C-2**    Function Descriptions

| Function | Synopsis | Description |
|---|---|---|
| abbrev | &abbrev(<*variable*>) | Abbreviate contents of <variable> if any parts match the set of predefined values found in the directory sync configuration.<br><br>*Arguments*: <variable> is a bound name<br><br>*Returns*: abbreviated string<br><br>*Example:* If $Title = Vice-President Engineering &abbrev($Title) This returns "V.P. Eng."<br><br>*Configuration:*<br>The abbrev function maps the abbreviation that users have configured through the  the modification to /etc/opt/ SUNWMail/gtw/cfg/ <channel.attrval. |

# Expressions

Expressions are simple comparisons that may be performed within a match to check for a valid string. They are set off by use of square brackets. The following things may be used in an expression: variables, functions, string and numeric constants, string relational operators (eq, ne, lt, gt, le, ge), numeric relational operators (==, !=, <, ,<=, =), the string concatenation operator (.), the unary negation operator (-), the logical operators (not, and, or), and the ascii-to-character and character-to-ascii converter functions (ord, chr).

Example:

match

$a $b $c $d $e: ${Hope this is long enough}

[&length($Hope this is long enough} < 123]

assign

${Real variable} = ${Hope this is long enough}

endmatch

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