Installation Guide

Sun™ ONE Calendar Server

Version 5.1.1

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About This Guide

This guide describes how to install the Sun™ Open Network Environment (Sun™ ONE) Calendar Server (formerly iPlanet™ Calendar Server) and its accompanying software components. Topics in this chapter include:

- Who Should Read This Guide
- What You Need to Know
- How This Guide is Organized
- Document Conventions Used in This Guide
- Where to Find Related Information
- Where to Find This Guide Online

For the most recent information about known problems with this release, see the Sun ONE Calendar Server Release Notes at:

`http://docs.sun.com/db/prod/s1calsrv`

Who Should Read This Guide

This guide is intended for administrators and support specialists who are responsible for installing and deploying Calendar Server.

What You Need to Know

Before you install Calendar Server, you should be familiar with these concepts:

- Basic administrative procedures of your operating system (Solaris™ Operating Environment, other UNIX® system, or Windows NT system)
- Lightweight Directory Access Protocol (LDAP), if you plan to use an LDAP directory server to store user information

How This Guide is Organized

Table 1 Organization of the Sun ONE Calendar Server Installation Guide

Chapter or Appendix	Description
About This Guide (this chapter)	Describes the audience, requirements, organization, document conventions, and related information.
Chapter 1, “Preparing for Installation”	Describes how to prepare to install the Calendar Server.
Chapter 2, “Installing Calendar Server on UNIX Systems”	Describes how to install Calendar Server on UNIX systems.
Chapter 3, “Installing Calendar Server on Windows NT Systems”	Describes how to install Calendar Server on Windows NT systems.
Chapter 4, “Migrating Calendar Server Data”	Describes the Calendar Server migration utilities.
Glossary	Describes Calendar Server terms.
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Document Conventions Used in This Guide

This guide uses conventions for the Solaris operating environment. If you are installing the Calendar Server on another UNIX operating system or a Windows NT system, use the file path equivalents for your operating system whenever Solaris file paths are shown.

Monospaced Font

The `Monospaced Font` typeface is used for any text that appears on the computer screen or text that you should type. It is also used for file names, distinguished names, functions, and examples.

Italicized Font

The *Italicized Font* typeface represents text that you enter using information that is unique to your installation. It is used for server directory paths and names. For example, in this guide you will see directory path references in the form:

server-root`/cal/bin`

In these references, *server-root* represents the directory location in which you installed the server. For example:

- The default installation on Solaris systems uses the path: `/opt/SUNWics5/` as the *server-root* for the software files. Therefore, if you choose the default installation directory, *server-root*`/cal` represents:

  `/opt/SUNWics5/cal`

- On UNIX systems other than Solaris systems, the default installation location is: `/opt/iPlanet/CalendarServer5/`, in which case *server-root*`/cal` represents:

  `/opt/iPlanet/CalendarServer5/cal`

- On Windows NT systems, the default installation location is: `c:\Program Files\iPlanet\CalendarServer5\`, in which case *server-root*`/cal` represents:

  `c:\Program Files\iPlanet\CalendarServer5\cal`

Square Brackets [ ]

Square (or straight) brackets [ ] enclose optional parameters. For example, the `-q` and `-m` options are optional in the following form of the syntax for the`ics2migrate` migration utility:

```
ics2migrate [-q] [-m ldap]
```

Vertical Bar (|)

A vertical bar (|) separates alternatives in a horizontal list. For example, the `-s`, `-f`, and `-l` options have alternatives you can specify:

```
ics2migrate [-q] [-m db] [-s def|none] [-f def|none]
  [-l min|max] source target
```

Command-Line Prompts

Command line prompts (% for a C-Shell or $ for a Korn or Bourne shell) are not specified in the examples. Depending on the operating system you are using, you will see a variety of different command line prompts. However, you should enter the command as it appears in this document unless specifically noted otherwise.

Where to Find Related Information

Calendar Server includes documentation for administrators, developers, and end users. In addition to this guide, the following Calendar Server documents are available in PDF and HTML formats on the documentation Web site:

- New Features for Calendar Express 5.1.1
- *Sun ONE Calendar Server Release Notes*
- *Sun ONE Calendar Server Administrator's Guide*
- *Sun ONE Calendar Server Programmer's Manual*
- *Sun ONE Messaging and Collaboration Schema Reference*
- *Sun ONE Messaging and Collaboration Event Notification Service Manual*

To view these documents, see:

`http://docs.sun.com/db/prod/s1calsrv`

For end users, online help is available from Calendar Express.

Where to Find This Guide Online

This guide is available online in PDF and HTML formats at:

`http://docs.sun.com/db/prod/s1calsrv`

Chapter 1

Preparing for Installation

This chapter contains the following sections to help you prepare for installation of Sun™ ONE Calendar Server:

- Installation Overview
- System Requirements
- Installation Privileges
- Gathering Your Installation Information
- Using an LDAP Directory Server
- Important Considerations

If you have Calendar Server version 2.x on your system, you can install version 5.1.1, which can then co-exist on the same system. You can also migrate the 2.x calendar data and user information to version 5.1.1. For more information, see Chapter 4, “Migrating Calendar Server Data.”

If you have already installed Calendar Server 5.x on your system, you can either upgrade to 5.1.1, or you can remove it and then reinstall the 5.1.1 version.

If you are perform an upgrade, the installation program removes any out-of-date localized resources. For example, suppose you have Calendar Server 5.1 installed on a Solaris system with English, German, Spanish, French, and Japanese localized resources. If you upgrade using an installation archive named `ics-5_1_1-export-en-de-es-fr_sparc-sun-solaris2_6_tar.gz`, the installation program installs new localized resources for English, German, Spanish, and French, but removes the out-of-date Japanese localized resources.

For the most recent information about known problems with this release, see the Calendar Server Release Notes at:

`http://docs.sun.com/db/prod/s1calsrv`

Installation Overview

There are three basic steps involved in installing the Calendar Server:

1. Gathering Your Installation Information.
2. Using an LDAP Directory Server.
3. Installing the Calendar Server. See Installing Calendar Server on UNIX Systems or Installing Calendar Server on Windows NT Systems.

Considerations for UNIX systems are:

- The installation program uses an X-Windows graphical user interface. It is recommended that you install the Calendar Server using a local terminal window.
- If you cannot use X-Windows remotely or if your machine does not have X-Windows installed, you must use the command line installation. The command line installation follows the same process as the graphical installation. The only difference between the graphical and command line interfaces is in how you invoke the installation setup script.
- If you must run the installation program from a remote terminal, be sure to set your DISPLAY environment variable properly on the remote machine and be sure to allow X-Windows connections from the machine to appear on your terminal (for example, using the utility `xhost +`).

System Requirements

Before you install the Calendar Server, you must ensure you have met the minimum hardware and operating system requirements. For the latest information on the supported platforms and software and hardware requirements, see the Calendar Server Release Notes at:

`http://docs.sun.com/db/prod/s1calsrv`

Installation Privileges

To install, reinstall, or upgrade the Calendar Server, you must have superuser privileges. On Solaris or other UNIX systems, you must login as (or become) root (user ID = 0). On Windows NT systems, you must login as an administrator who has full administration privileges for the system.

Gathering Your Installation Information

Before beginning the installation process, it is helpful to gather the installation and configuration information you will need. The information will differ according to the type of installation you select.

The two installation types are:

Typical Installation. This is the simplest type of installation. Most options are automatically configured with default values, but some require that you choose and enter the value you wish to use. This type of installation is recommended for most administrators or for any installation that does not require a custom configuration. For checklist information on completing this type of installation, see Typical Installation Checklist.

Custom Installation. This is a more complex installation than the typical installation. You must choose and enter all configuration values. This type of installation is recommended for advanced administrators only. For checklist information on completing this type of installation, see the Custom Installation Checklist.

Typical Installation Checklist

You need the following information to complete the installation procedure for a Typical Installation.

Component Selection

Choose one or more of the following components (default is all):

- Calendar Server
- Calendar Server API (CSAPI)

Installation Directory

Determine the name and path of the directory in which you want the server to be installed. For example, `/opt`. If the installation is for a large deployment, ensure that it is installed on a machine with a storage device large enough to handle the load, such as a high capacity hard drive with adequate free space or a Redundant Array of Inexpensive Disks (RAID).

Service Ports

The service port is the TCP port number that you want the Calendar Server to use to provide web (HTTP) access to users (default is 80). It is highly recommended that you choose the Web port number suggested by the installation program because 80 is the default port number used by all Web browsers. If you specify a port number other than 80, calendar users will need to explicitly include this port number in the URL they enter to access their calendars on this Calendar Server. If port 80 is already in use, it is recommended that you free port 80 on the other service before you install the Calendar Server.

Remote administration is planned for a future release. In the current release, the installation program does not allow you to specify an administration (admin) port, and by default, the admin port is disabled (`service.admin.port.enable = "no"`).

Calendar Server User and Group Account (UNIX systems only)

These accounts are the UNIX user and group identity under which the Calendar Server will run. It is recommended to use the defaults `icsuser` and `icsgroup`. These accounts will be created automatically by the installation program if they do not already exist.

Calendar Server Administrator (Windows NT systems only)

This is the identity that the Calendar Server will run as on Windows NT systems. The installation program assumes that this identity is the user (and password) that is currently logged in to the system during installation, and it cannot be changed while you are running the installation program.

This user must have full administrator rights to this system.

NOTE The password for the administrator cannot be blank.

Therefore, before you start the installation program, log in as the user that you want the Calendar Server to run as and ensure that this user has full administrator rights to the system where you are installing the Calendar Server.

Calendar Server Administrator

The Calendar Server Administrator is the user account that can manage the Calendar Server. For example, this user account can run the Calendar Server administration utilities to perform actions such as starting and stopping the Calendar Server or listing all logged-in users.

To login to and manage the Calendar Server, the Calendar Server Administrator user account must exist in your user authentication directory server. If your user preferences are stored in another directory server, this user account must also exist in that directory server. If the Calendar Server Administrator user account does not exist in the directory server during installation, you must add it after installation, or the account will not be able to login to the Calendar Server.

The Calendar Server Administrator user ID is stored in the `ics.conf` file in the `service.admin.calmaster.userid` parameter. The default is `calmaster`.

Customizable Files

If you are upgrading or reinstalling the Calendar Server, the installation program overwrites the existing Calendar Server files, including any files you have customized. You can choose, however, to have the installation program save all Calendar Server configuration and customizable files with these extensions:

```
.xsl .xml .conf .gif .htm
```

The installation program saves the Calendar Server files with these extensions, even if you have not customized them. The installation program also generates a report that indicates which files have changed. After the installation has finished, you can use this report to merge your customizations from the saved files into the newly installed Calendar Server files.

To save your customizable files, you must specify a directory in the Save Calendar Server Customizable Files window. You can click Browse and select an existing directory, or you can enter a directory name and have the installation program create the directory for you.

In the Calendar Server 5.1.1 release, the visible text strings in the XSL files have been converted to variables for localization purposes and are in the respective i18n.xsl file for each language. The XSL files are installed in the following directories:

server-root`/cal/bin/data/`*language*`/source`

where *language* identifies the specific language code.

You can localize the i18n.xsl file as required at your site. The i18n.xsl file contains the text strings referenced in non-localized XSL files as well as the text strings used in date_format.xsl (which is localized). You need to localize date_format.xsl only for languages whose format or layout differs from English.

Email and Email Alarms Address

Identify the following:

- Calendar Server Administrator email address. This address uses the syntax: `userid@hostname.domainname`. For example, `calmaster@sesta.com`.
- SMTP server host name. This is the fully qualified host name of the SMTP server that the Calendar Server will use to send email messages. For example:

  `calhome.sesta.com`

  where `calhome` is the machine's host name and `sesta.com` is the DNS domain name on which the SMTP server is running.

Calendar Database Directory

Specify the directory to place the Calendar Server database.

- On Solaris, the default is:

  `/var/opt/SUNWics5/csdb`

- On UNIX systems other than Solaris, the default is:

  `/var/opt/iPlanet/CalendarServer5/csdb`

- On Windows NT systems, the default is:

  `c:\Program Files\iPlanet\CalendarServer5\var\csdb`

  Note that on Windows NT systems, this directory must be located on an NTFS formatted drive and not on a FAT file system.

LDAP Server Information

Identify the following LDAP server information for user authentication and preferences:

- Host: The host name of the machine where the LDAP server is installed. The default is the host name of the machine on which you are running the installation program.
- Port: The service port for the LDAP server. The default is 389.
- Base DN: The Base DN (distinguished name) is the entry in your LDAP directory used as the starting point from which searches will occur. For example, if you specify a base DN of `ou=people, o=sesta.com`, all LDAP search operations executed by the Calendar Server will examine only the `ou=people` subtree in the `o=sesta.com` directory tree.
- Administrator Bind DN: The DN of the account that has privileges to manage the attributes of any calendar user in the LDAP directory that stores user preferences. The default is:

  ```
  uid=admin,ou=Administrators,ou=TopologyManagement,o=NetscapeRoot
  ```

  The default bind DN will work with any 4.x version of Netscape Directory Server or the 5.1 version of iPlanet Directory Server. You can verify that this DN exists by using the directory server `ldapsearch` utility. For example:

  ```
  ./ldapsearch -b o=NetscapeRoot uid=admin
  ```

- Administrator Password: The password for the user account of the Administrator Bind DN described above.
- Directory Manager (also known as “Unrestricted User”) of the directory server that stores user and group information. This is the username and password of the person who can make changes in the directory server schema. This user has overall administrator privileges on the directory server and all servers that make use of the directory server, such as the Administration Server, and has full administration access to all entries in the directory server.

  The Directory Manager's distinguished name (DN) was supplied when the directory server was installed. The default DN is `cn=Directory Manager`. This information is needed because the Calendar Server requires specific updates to the LDAP schema.

Custom Installation Checklist

In addition to the information in the Typical Checklist, you will need the following information to complete the Custom Installation procedure:

System Resources

Select the desired values for the following system resource allocations to run the Calendar Server:

- Maximum sessions (default is 5000)
- Maximum threads (default is 1000)
- Number of server processes (default is 1)

Using an LDAP Directory Server

Sun ONE Calendar Server stores and manages calendars, calendar properties, access control information, events, todos (tasks), and alarms. To manage storage for user information, however, the Calendar Server requires a directory service to perform operations such as user authentication and the storage and retrieval of user preferences.

The default Calendar Server installation supports users defined and maintained in the following LDAP directory servers:

- iPlanet Directory Server 5.1
- Netscape Directory Server 4.12 and 4.16

If your users are already stored in an LDAP directory, the simplest solution for deploying the Calendar Server is to upgrade your directory server to iPlanet Directory Server 5.1 or Netscape Directory Server 4.12 or 4.16. The Calendar Server installation program will then try to automatically update your directory server schema for Calendar Server 5.1.1.

For information about installing and configuring iPlanet Directory Server or Netscape Directory Server, see:

`http://docs.sun.com/db/prod/s1dirsrv`

If you are using another directory server, or if the installation program cannot update your directory server, you must modify your schema manually to allow your users to access the Calendar Server.

Updating the LDAP Server Schema Manually

- iPlanet Directory Server 5.1
- Netscape Directory Server 4.12 and 4.16

iPlanet Directory Server 5.1

For iPlanet Directory Server 5.1, the LDAP schema extensions used by the Calendar Server are defined in the following files:

```
60iplanet-calendar.ldif
um50-common-schema.conf
ns-wcal-schema.conf
```

The Calendar Server installation program installs these files in the *server-root*`/cal/bin/config` directory.

To update iPlanet Directory Server 5.1 manually:

1. Install Calendar Server 5.1.1.
2. Stop the Calendar Server if it is running.
3. Stop the Directory Server 5.1 if it is running.
4. Copy the `60iplanet-calendar.ldif`, `um50-common-schema.conf`, and `ns-wcal-schema.conf` files to the following directory on the server where your directory server is running:

   server-root`/slapd-`*hostname*`/config/schema`

   where *hostname* is the name of the server.
5. Restart the Directory Server. If you receive OID errors, see Resolving Conflicting OIDs in the LDAP Schema Directory.
6. Restart the Calendar Server.

Netscape Directory Server 4.12 and 4.16

For Netscape Directory Server 4.12 and 4.16, the LDAP schema extensions used by the Calendar Server are defined in the following files:

- `um50-common-schema.conf` defines the LDAP attributes and object classes shared by Sun ONE products.
- `ics50-schema.conf` defines the LDAP attributes and object classes used by the Calendar Server.

The Calendar Server installation program installs these files in the *server-root*/cal/bin/config directory.

To update Netscape Directory Server 4.12 or 4.16 manually:

1. Install Calendar Server 5.1.1.
2. Copy the LDAP schema files (um50-common-schema.conf and ics50-schema.conf) from *server-root*/cal/bin/config to the following directory on the server where your directory server is running:

   server-root/slapd-*hostname*/config

   where *hostname* is the name of the server.

   For example, on Solaris and other UNIX systems:

   /usr/Netscape/Server4/slapd-sesta/config
3. Stop the Calendar Server if it is running.
4. Stop the Directory Server if it is running.
5. Edit the ns-schema.conf file (in the same directory in which you copied the um50-common-schema.conf and ics50-schema.conf files. At end of the file, if they are not already present, add the following lines to include these files.

   On Solaris and other UNIX systems:

```
include
/netscape/server4/slapd-hostname/config/um50-common-schema.conf
include /netscape/server4/slapd-hostname/config/ics50-schema.conf
```

   On Windows NT systems:

```
include
"C:\Netscape\Server4\slapd-hostname\config\um50-common-schema.conf"
include "C:\Netscape\Server4\slapd-hostname\config\ics50-schema.conf"
```

   where *hostname* is the name of the server where the directory server is running.

NOTE Be sure to add the lines in the order shown above so that um50-common-schema.conf is included before ics50-schema.conf.

6. Restart the Netscape Directory Server. If you receive OID errors, see Resolving Conflicting OIDs in the LDAP Schema Directory.

7. Restart the Calendar Server.

Resolving Conflicting OIDs in the LDAP Schema Directory

If your LDAP schema directory contains conflicting OIDs, the Directory Server does not know which OID to use and returns an error message. For example, the following message indicates a conflicting OID for the icsCalendarUser object class for iPlanet Directory Server 5.1:

```
[24/Jul/2002:23:45:28 -0700] dse - The entry cn=schema in file
/export/iplanet/servers/slapd-ical/config/schema/99user.ldif is
invalid, error code 20 (Type or value exists) - object class
icscalendaruser: The name does not match the OID. Another object
class is already using the name or OID.

[24/Jul/2002:23:45:28 -0700] dse - Please edit the file to correct
the reported problems and then restart the server.
```

This problem can occur when you install Calendar Server 5.1.1 and you also had an older Calendar Server release that dynamically updated your LDAP server schema `99user.ldif` file.

To resolve the conflicting OIDs, you must edit the `99user.ldif` file and remove the older OIDs. For Calendar Server 5.1.1, the following table shows the specific OIDs that might cause problems.

Table 1-1 Calendar Server OIDs in the LDAP Schema Directory

Object Class	Old OID	New OID
icsCalendarUser	2.16.840.1.113730.3.2.141	1.3.6.1.4.1.42.2.27.9.2.2
icsCalendarResource	2.16.840.1.113730.3.2.143	1.3.6.1.4.1.42.2.27.9.2.3
icsCalendarDomain	2.16.840.1.113730.3.2.144	1.3.6.1.4.1.42.2.27.9.2.4

After you edit the `99user.ldif` file, restart the Directory Server.

Important Considerations

Note the following considerations before installing Sun ONE Calendar Server 5.1.1:

- On UNIX systems, the installation program uses the command `/usr/bin/`*domainname* to identify the associated DNS domain name of your system. To verify that this setting is correct, type at the command prompt:

  `domainname`

  The above command should return the DNS domain name of your system correctly. If this is not the case, set the domain name by typing:

  `domainname` *your-system-domain-name*

  If the installation program cannot determine the DNS domain name as described above, it will attempt to read this value in the `etc\resolv.conf` file, if available.

- On some UNIX systems, the value returned by `hostname` could not be used in the IP addresses associated with that system. For example, the machine name is `x.example.com`, but TCP/IP applications must use `y.example.com` to connect to it. This is probably a badly configured machine.

  If you install Calendar Server on such a machine, entries in the `ics.conf` file might have incorrect values. Ideally, the machine should be reconfigured. If you cannot change the configuration of the machine, you will have to edit the `ics.conf` file explicitly using a text editor to correct the host name values.

  Additionally, there are several properties with property names containing the strings "`host`" and "`hostname`" that have null values. A null value causes the server to use the value returned by `gethostname(3C)`. You will have to manually add the host name recognized by the TCP/IP subsystem as a value for these properties.

Chapter 2

Installing Calendar Server on UNIX Systems

This chapter describes the steps to follow to install Sun™ ONE Calendar Server on a UNIX platform. You can run the setup program by either:

- Using the Graphical Interface Installation on UNIX Systems
- Using the Command-Line Installation on UNIX Systems

Using the Graphical Interface Installation on UNIX Systems

The following steps describe how to use the graphical user interface installation program to install Calendar Server.

1. Login as `root`. You must have superuser privileges (that is, be logged in as `root`) to run the installation program. If you are not able to login as root, you must set the access permissions on the system to full administration rights for the currently logged in user (for example, type: `xhost +`) to be able to run the installation program graphical interface.
2. Create a directory (such as `/tmp/ics5`) on the machine that will host the Calendar Server and download (or copy) the Calendar Server archive file to that directory. Make sure that the directory you use has adequate disk space to store the extracted files.

3. Change to the directory where you copied the archive file and, to extract the contents, type:

   `gunzip -c archive.tar.gz | /usr/bin/tar xvf -`

   where *archive* identifies the name of the platform archive file you downloaded or copied.

   Note: You must use `/usr/bin/tar`. This program should be the tar utility that is distributed with your operating system and not a third party tar utility, such as gnu.

   If you plan to install or upgrade a localized version of Calendar Server 5.1.1, you must ensure you have the correct installation archive file. This file identifies localization versions by including the language codes in the filename: en–English (always included), fr–French, de–German, es–Spanish, ja–Japanese, zh–Simplified Chinese, and zhtw–Traditional Chinese.

4. In the installation directory in which you untarred the Calendar Server archive file, type: `./setup`

5. The installation program displays a Welcome Message. Click Next to continue.

6. Read the license agreement and click Yes (Accept License) to accept it and continue. (If you click No, the installation program ends without installing the Calendar Server.)

7. On most systems, the installation program will automatically detect the host name and DNS domain name of the system on which you are installing the server and you can proceed to the next step.

   If the installation program cannot detect the host name or DNS domain name, it will display the “Unable to make network connection” screen. Please be sure that the host name and DNS domain name specified are correct, then click Next to continue the installation. The installation program will then try to establish a network connection using these values.

   Note: The Host Name or Domain Name fields will be blank if the installation program is unable to detect these values. In this case, you must enter a valid host name or DNS domain name, or both.

   If a network connection cannot be made using the new values, you will be asked again to supply a valid host name and DNS domain name. At this point you can:

- Click Accept if you want to continue with the installation anyway using these values. If you accept these values, you will not be able to run the server until you supply a valid host name and DNS domain name. In this case, you can edit the `ics.conf` file after you complete the installation and supply a valid host name and DNS domain name. The `ics.conf` file is located in the *server-root*`/cal/bin/config` directory (for example, `/opt/SUNWics5/cal/bin/config`).
- Click Choose New to enter another host name or DNS domain name, or both.

8. Select the type of installation you wish to use: Typical or Custom. The same software is installed with each type of installation. The only difference between the types of installation is the number of choices you have to make during the installation process. Typical Installation is recommended for most users. Custom Installation requires you to specify all available configuration options and is recommended only for advanced users or for installations that require customized configuration options not provided in the Typical Installation. When you have finished making your selections, click Next to continue.

   Note: If you choose Typical Installation, the installation program will skip some of the following questions because they are configured for you. Questions that apply only to a Custom Installation are indicated as such in this guide and you can proceed to the next step.

9. Select the software components that you want to install (default is all):
   - Calendar Server Product - the software used to run the server.
   - Calendar Server API (CSAPI) - an application programming interface that enables third-party application developers to add functionality to the Calendar Server or change how the server performs certain operations.

   When you have finished making your selections, click Next to continue.

10. This step applies only if you have a previous version of Calendar Server installed on this system. The installation program will automatically detect an existing Calendar Server 5.x installation and will display a window that lets you choose to either:
    - upgrade
    - remove and reinstall the selected components

    Upgrade: To upgrade your installation of the Calendar Server, leave the box next to Remove and Reinstall Existing Components unchecked (this is the default) and click Next.

The installation program then displays a window reminding you to back up your existing database and configuration information before you continue. Click Continue if you are sure you want to proceed. (Otherwise, click Cancel to return to the previous window.) If you click Continue, the installation program will stop all Calendar Server services running on this system. (If the installation program is unable to verify that all Calendar Server services on this system are stopped, a warning message displays and you should use your operating system administration tools to ensure that all Calendar Server services on this systems are stopped before you proceed with the upgrade.)

Next, the installation program displays the Ready to Install window. To complete the installation, click Install Now. The installation program will then upgrade all installed components and will preserve all existing database and configuration information, such as users' calendar data.

After the upgrade finishes successfully, the installation process is now complete and a summary window displays. Click Details if you want to review summary information about the installation. When you are finished, click Dismiss to close the Summary information window, then click Exit to end the installation program.

If you choose an upgrade, the installation program displays the Save Calendar Server Customizable Files window, which is described in Step 22.

If you are performing an upgrade, the installation program also removes any out-of-date localized resources.

Remove and reinstall: To remove and then reinstall Calendar Server 5.1, click the box next to Remove and Reinstall Existing Components, then click Next. This action tells the installation program to completely remove the existing installation of the Calendar Server and reinstall it from scratch.

If you choose to remove and reinstall the Calendar Server, a window displays asking you to confirm that you want to continue. Click Continue (remove/reinstall) if you are sure you want to proceed. (Otherwise, click Cancel to return to the previous window.) If you click Continue (remove/reinstall), the installation program will stop all Calendar Server services running on this system. (If the installation program is unable to verify that all Calendar Server services on this system are stopped, a warning message displays and you should use your operating system administration tools to ensure that all Calendar Server services on this systems are stopped before you proceed.)

It is highly recommended that you backup any existing database information before you remove and reinstall the Calendar Server. Once the actual installation process is started, it cannot be undone. (See Step 22 for information about saving your Calendar Server customizable files.)

11. If the installation program detects that Calendar Server 2.x is installed on this system, a window displays stating that version 5.1 will be installed and the two versions will co-exist on this system. For a description of migrating data from version 2.x, see Chapter 4, "Migrating Calendar Server Data."

Click Next to continue with the installation.

12. Specify the directory where you want to install the Calendar Server software. The default is `/opt`.

If you want to select another directory, type it in or click Browse, then select a directory and click OK. When you have made your selection, click Next to continue.

If the directory you selected does not exist, a message box displays and you can either:

- Click Create Directory to create the directory and install the Calendar Server in the specified directory and continue the installation.
- Click Choose New to return to the Select Install Directory window where you can select another installation directory.

13. Specify the Web Port number that you want the Calendar Server to listen on. (Default is 80.) The Web Port number is used by the Calendar Server to provide Web (HTTP) access to users. It is highly recommended that you choose the default Web port number suggested by the installation program because it is the default port number used by all Web browsers. If you specify a Web port other than 80, calendar users will need to explicitly include this port number in the URL they enter to access their calendars on this Calendar Server.

When you have finished making your selection, click Next to continue.

The installation program will warn you if the port number you selected is already being used by another service on this system. If this is acceptable at this point, click Accept. Otherwise, click Choose New and enter another Web port number.

Note: If port 80 is already in use, you can click Accept to specify that the Calendar Server listens on port 80 and then free port 80 on the other service. In this case, it is highly recommended that you free port 80 on the other service before you continue with the installation.

In the current release, the installation program does not allow you to specify an admin port, and by default, the admin port is disabled.

14. Enter the UNIX user and group identity that the Calendar Server will run as. It is recommended that you use the default accounts `icsuser` and `icsgroup`. These accounts will be created automatically by the installation program if they do not already exist.

    Note: Do not specify `root` for either the user or the group account.

    When you have finished making your selections, click Next to continue.

15. Supply the following email and email alarm information:

    Calendar Administrator email address. Enter the full email address (user ID and DNS domain name) of the person to whom you want the Calendar Server to send messages in case of server problems. For example:

    `calmaster@sesta.com`

    SMTP Server Host Name. Enter the host name of the machine running the SMTP server that the Calendar Server is to use to send messages.

    Enable email alarms. By default, email alarms for the Calendar Server are enabled. If you do not want the Calendar Server to send email alarms, uncheck this checkbox.

    When you have finished making your selections, click Next to continue.

    Note: If the Calendar Server cannot connect to the SMTP server you entered, a message box will display stating that the Calendar Server will not run if an SMTP server is not available. If this is acceptable at this point, click Accept. Otherwise, click Choose New and enter the host name of another SMTP server.

16. Specify the directory in which to store the Calendar Server database files. The default is:

    `/var/opt/SUNWics5/csdb`

    If you want to select another directory, type it in or click Browse to select a directory and click OK.

    When you have finished making your selections, click Next to continue.

    Note: If the directory you selected does not exist, a message box displays and you can either:

    - Click Create Directory to install the Calendar Server database files in the specified directory and continue the installation.

- Click Choose New to return to the Select Install Directory window where you can select another directory.

17. Specify the directory in which to store the Calendar Server temporary files (Custom installation only). The default is:

    `/var/opt/SUNWics5/tmp`

    If you want to select another directory, type it in or click Browse to select a directory and click OK.

    When you have finished making your selections, click Next to continue.

    Note: If the directory you selected does not exist, a message box displays and you can either:

    - Click Create Directory to install the Calendar Server temporary files in the specified directory and continue the installation.
    - Click Choose New to return to the Select Install Directory window where you can select another directory.

18. Enter the following LDAP server information for user authentication (this step applies only if you chose Custom Installation — if you chose Typical Installation, proceed to the next step.)

    - **Host**. Host name of the machine on which the LDAP Server is running.
    - **Port**. Port number that the LDAP server listens to. The default is 389.
    - **Base DN**. Base DN (distinguished name) is the entry in your LDAP directory used as the starting point from which searches will occur. For example, if you specify a base DN of `ou=people, o=sesta.com`, LDAP search operations executed by the Calendar Server will examine only the `ou=people` subtree in the `o=sesta.com` directory tree.
    - **Administrator Bind DN**. The DN of the account that will be used to bind to the LDAP directory to search for a calendar user's DN during authentication. The default is to bind anonymously.

      Note: If your directory server does not allow anonymous bind authentication or does not allow anonymous search, you must enter a valid DN that has these access rights.
    - **Administrator Password**. The password for the user account of the Administrator Bind DN described above. No password is required for the default user `anonymous`.

    When you have finished making your selections, click Next to continue.

Note: If the installation program cannot verify the LDAP credentials you specified, a message box displays and you can either:

- Click Accept to install the Calendar Server anyway if this is acceptable at this point.
- Click Choose New to return to the LDAP user authentication window where you can enter different directory server information.

19. Enter the following LDAP server information (in a Typical Installation these settings apply to where user authentication information and user preferences are stored; in a Custom Installation these settings apply only to where user preferences are stored):

    - **Host.** Host name of the machine on which the LDAP Server is running.
    - **Port.** Port number that the LDAP server listens to. The default is 389.
    - **Base DN**. Base DN (distinguished name) is the entry in your LDAP directory used as the starting point from which searches will occur. For example, if you specify a base DN of `ou=people, o=sesta.com`, the LDAP search operations executed by the Calendar Server will examine only the `ou=people` subtree in the `o=sesta.com` directory tree. The installation program does not attempt to verify your entry.
    - **Administrator Bind DN**. The DN of the account that has privileges to manage the attributes of any calendar user in the LDAP directory that stores user preferences. The installation program does not attempt to verify your entry. The default is:

```
uid=admin,ou=Administrators,ou=TopologyManagement,o=NetscapeRoot
```

      The default bind DN will work with any 4.x version of Netscape Directory Server or the 5.1 version of iPlanet Directory Server. You can verify that this DN exists by using the directory server `ldapsearch` utility. For example:

```
./ldapsearch -b o=NetscapeRoot uid=admin
```

    - **Administrator Password.** The password for the user account of the Administrator Bind DN described above. The installation program does not attempt to verify your entry.

    When you have finished making your selections, click Next to continue.

Note: If the installation program cannot bind to the LDAP server specified or if it cannot find the LDAP schema for the Calendar Server, a message box will display stating that the Calendar Server will not run if an LDAP server is not available. If this is acceptable at this point, click Accept. Otherwise, click Choose New and re-enter the LDAP configuration parameters.

20. Calendar Server 5.1 requires specific schema updates if you are using an LDAP directory server to store user and group information. If you are using iPlanet Directory Server 5.1 or Netscape Directory Server 4.12 or 4.16, you can choose to have the installation program automatically update the LDAP schema.

To automatically update the LDAP schema, supply the user ID and password of the Directory Manager (this is the user with the rights to update the schema also known as "Unrestricted User"). This is the username and associated password that can make changes in the directory server schema. The default DN is `cn=Directory Manager`. The installation program will then attempt to automatically update the LDAP schema of the directory server you specify.

Choose Next to continue and the installation program asks you to confirm that you want to update the LDAP schema. Click Continue if you want to update the LDAP schema at this time. Otherwise click Cancel to return to the previous window.

The installation program will warn you if it cannot update the LDAP schema automatically because it:

- did not detect iPlanet Directory Server 5.1 or Netscape Directory Server 4.12 or 4.16.
- detected an earlier version of the Calendar Server 5.1 schema extensions on the specified directory server. In this case, you can manually remove the `um50-common-schema.conf` and `ics50-schema.conf` files on your directory server (located in the *server-root*`/slapd-`*hostname*`/config` directory) and run the installation program again.

You can also choose to update the LDAP schema manually. For more information, see "Updating the LDAP Server Schema Manually," on page 21.

If you do not specify a Directory Manager and password and you click Next, the installation program warns that Calendar Server will not run properly if you do not update the LDAP schema. If this is acceptable at this point, click Accept. Otherwise, click Choose New to re-enter the requested information.

21. Specify the Calendar Server Administrator. This is the user account that has privileges to use the Calendar Server administration utilities: `csstop` to stop the server, `cstats` to display server statistics, and `cstool` to list all logged-in users. The default is `calmaster`.

    To log into and manage the Calendar Server, the user ID you specify must be a valid user that exists in your directory server. For example, if you accept the default `calmaster`, then the user `calmaster` must exist in the directory directory that is accessed for user authentication. If you are using one directory server for user authentication and another directory server to store user preferences, the user you specify here must exist in both of these directory servers.

    If the Calendar Server Administrator user account does not exist in the directory server during installation, it must be added after installation.

    When you have finished making your selections, click Next to continue.

    Note: If the installation program cannot verify that the user you specified is a valid user, a message box displays and you can either:

    - Click Accept to install Calendar Server anyway if this is acceptable at this point.
    - Click Choose New to return Calendar Server Administration window where you can enter a different user.

22. If you are upgrading or reinstalling the Calendar Server, the installation program displays the Save Calendar Server Customizable Files window. During installation, your existing Calendar Server files, including any files you have customized, are overwritten. To save your existing customizable files, accept the following default option:

    - Save customizable files in the following directory:

      Click Browse and select an existing directory, or enter a directory name and have the installation program create the directory for you. It is recommended that you specify the full path name of your directory.

    - If you do not want to save your existing customizable files, check Do not save customizable files. The installation program overwrites the existing Calendar Server files, including any files you have customized.

    The installation program saves each customizable file and appends the `.save.yyyymondd-hhmmss` extension, indicating the timestamp of the save.

During the save operation, the installation program generates the following reports in the specified save location:

- `savedfiles.report` lists the files that were saved.
- `savedfiles.report.complete` lists the files that were saved and indicates whether they are different (DIFFER) or identical (IDENTICAL) to the newly installed files. The installation program generates this report only if the upgrade or reinstall completes successfully.
- `savedfiles.report.errors` lists any errors that occurred during the file comparison and information specifying how the files are different.

Click Next to continue the installation.

23. Select the desired values for the following system resource allocations to run the Calendar Server (Custom Installation only):

Maximum sessions (default is 5000)

Maximum threads (default is 1000)

Number of server processes (default is the number of CPUs on the machine on which you are installing the Calendar Server)

24. Select the options for automatically starting the Calendar Server. You can choose to start the server after successful installation and at system startup. If you do not wish to start the server after the installation or at system startup, uncheck the applicable box or boxes. When you have finished making your selections, click Next to continue.

25. The installation program verifies if there is adequate disk space and then displays the Ready to Install window. To complete the installation, click Install Now.

26. When the installation process completes, a summary window displays. Click Details if you want to review summary information about the installation. When you are finished, click Dismiss to close the Summary information window, and then click Exit to end the installation program.

Using the Command-Line Installation on UNIX Systems

The Calendar Server provides you the option of running the installation script without using the graphical interface. To run the command line installation program, use the following steps:

1. Login as `root` or type `su` to become `root`. You must have superuser privileges (that is, be logged in as `root`) to run the installation program.
2. Create a directory (such as `/tmp/ics5`) on the machine that will host the Calendar Server and download (or copy) the Calendar Server archive file to that directory. Make sure that the download directory has adequate disk space to store the extracted files.
3. Change to the directory in which you placed the archive file and to extract the contents, type:

   ```
   gunzip -c archive.tar.gz | /usr/bin/tar xvf -
   ```

   where *archive* identifies the name of the platform archive file you downloaded or copied.

NOTE You must use `/usr/bin/tar`. This program should be the `tar` utility that is distributed with your operating system and not a third party `tar` utility such as `gnu`.

4. In the installation directory in which you untarred the Calendar Server archive file, type: `./setup -nodisplay`

The installation program will run in the current window and ask the same configuration questions as described above in steps 5-24 in Using the Graphical Interface Installation on UNIX Systems.

Uninstalling the Calendar Server on UNIX Systems

To uninstall Sun ONE Calendar Server on UNIX systems, use the following steps:

1. Change to the installation *server-root*/`cal` directory (for example, `/opt/SUNWics5/cal`).
2. At the command line, type: `./uninst`

   If you want to run the uninstall program as a command-line script, type: `./uninst -nodisplay`.
3. The program displays instructions about how to disable client access control. Press Enter to continue.
4. The uninstall window appears (graphical interface only). Click Next to continue.
5. Choose either a Full or a Partial uninstall. The Full uninstall removes both the the Calendar Server and the Calendar Server API. The Partial uninstall lets you choose to uninstall either or both of these components.
6. Click Uninstall Now (or press Enter if you are using the command line interface) to proceed with the uninstallation.

Installing Calendar Server on Windows NT Systems

This chapter describes the steps to follow to install Sun™ ONE Calendar Server on Windows NT systems. You can run the setup program by either:

- Using the Graphical Interface Installation on Windows NT Systems
- Using the Command-Line Installation on Windows NT Systems

Using the Graphical Interface Installation on Windows NT Systems

The following steps describe how to use the graphical user interface installation program to install the Calendar Server.

1. Login as an administrator. You must have superuser privileges (that is, be logged in with full administration rights to the system) to run the installation program.
2. Create a directory (such as `c:\temp\ics5`) on the machine that will host the the Calendar Server and download or copy the self-extracting archive file (such as `ics-5_1_1-export-en-de-es-fr_x86-windows-nt4_0.exe`) to that directory. Ensure that the download directory has adequate disk space to store the extracted files.

   Note: If the archive file is compressed (such as in zip format), you will first need to uncompress it.

If you plan to install or upgrade a localized version of Calendar Server 5.1.1, you must ensure you have the correct installation archive file. This file identifies localization versions by including the following language codes in the filename: en–English (always included), fr–French, de–German, es–Spanish, ja–Japanese, zh–Simplified Chinese, and zhtw–Traditional Chinese.

3. In the directory where you placed the archive file, double-click the self-extracting Calendar Server archive file.
4. A message box displays and asks if you want to install the Calendar Server. Click Yes to continue.
5. The installation program performs the self-extraction process and then displays a Welcome Message. Click Next to continue.
6. The license agreement displays. Read the license agreement and click Yes (Accept License) to accept it and continue. (If you click No, the installation program will end without installing the Calendar Server.)
7. On most systems, the installation program will automatically detect the host name and domain name of the system on which you are installing the server and you can skip this step.

   If the installation program cannot detect the host name or domain name, it will display the "Unable to make network connection" screen. If this occurs, please be sure that the host name and domain name specified are correct, then click Next to continue the installation. The installation program will then try to establish a network connection using these values.

   Note: If the Host Name or Domain Name field is blank, it is because the installation program was unable to detect its value. In this case, you must enter a valid host name or domain name, or both.

   If a network connection cannot be made using the new values, you will be asked again to supply a valid host name and domain name. At this point you can:

   - Click Accept if you want to continue with the installation anyway using these values. If you accept these values, you will not be able to run the server until you supply a valid host name and domain name. In this case, you can edit the `ics.conf` file after you complete the installation and supply a valid host name and domain name. The `ics.conf` file is located in the *`server-root`*`\cal\bin\config` directory (for example, c:`\Program Files\iPlanet\CalendarServer5\cal\bin\config`).
   - Click Choose New to enter another host name or domain name, or both.

8. Select the type of installation you wish to use: Typical or Custom. The same software is installed with each type of installation. The only difference between the types of installation is the number of choices you have to make during the installation process. Typical Installation is recommended for most users. Custom Installation requires you to specify all available configuration options and is recommended only for advanced users or for installations that require customized configuration options not provided in the Typical Installation. When you have finished making your selection, click Next to continue.

   Note: If you choose Typical Installation, the installation program will skip some of the following questions because they are configured for you. Questions that apply only to a Custom Installation are indicated as such in this document and you can proceed to the next step.

9. Select the software components that you want to install (default is all):

   - Calendar Server - the software used to run the server.
   - Calendar Server API (CSAPI) - an application programming interface that enables third-party application developers to add functionality to the Calendar Server or change how the server performs certain operations.

   When you have finished making your selections, click Next to continue.

10. This step applies only if you have a previous version of the Calendar Server installed on this system. The installation program will automatically detects an existing version installation and will display a window that lets you choose to either:

    - upgrade
    - remove and reinstall the selected components.

    Upgrade: To upgrade your installation of the Calendar Server, leave the box next to Remove and Reinstall Existing Components unchecked (this is the default) and click Next.

    The installation program then displays a window reminding you to back up your existing database and configuration information before you continue. (See Step 22 for information about saving your Calendar Server customizable files.)

Click Continue if you are sure you want to proceed. (Otherwise, click Cancel to return to the previous window.) If you click Continue, the installation program will stop all Calendar Server services running on this system. (If the installation program is unable to verify that all Calendar Server services on this system are stopped, a warning message displays and you should use your operating system administration tools to ensure that all Calendar Server services on this systems are stopped before you proceed with the upgrade.)

Next, the installation program displays the Ready to Install window. To complete the installation, click Install Now. The installation program will then upgrade all installed components and will preserve all existing database and configuration information, such as users' calendar data.

After the upgrade finishes successfully, the installation process is now complete and a summary window displays. Click Details if you want to review summary information about the installation. When you are finished, click Dismiss to close the Summary information window, and then click Exit to end the installation program.

If you choose an upgrade, the installation program displays the Save Calendar Server Customizable Files window, which is described in Step 22.

If you are performing an upgrade, the installation program also removes any out-of-date localized resources.

Remove and reinstall: To remove and then reinstall the Calendar Server 5.1, click the box next to Remove and Reinstall Existing Components, then click Next. This action tells the installation program to completely remove the existing installation of Calendar Server and reinstall it from scratch.

If you choose to remove and reinstall the Calendar Server, a window displays asking you to confirm that you want to continue. Click Continue (remove/reinstall) if you are sure you want to proceed. (Otherwise, click Cancel to return to the previous window.) If you click Continue (remove/reinstall), the installation program will stop all Calendar Server services running on this system. (If the installation program is unable to verify that all Calendar Server services on this system are stopped, a warning message displays and you should use your operating system administration tools to ensure that all Calendar Server services on this systems are stopped before you proceed.)

It is highly recommended that you backup any existing database information before you remove and reinstall the Calendar Server. Once the actual installation process is started, it cannot be undone. (See Step 22 for information about saving your Calendar Server customizable files.)

11. If the installation program detects that the Calendar Server version 2.x is installed on this system, a window displays stating that version 5.1 will be installed and the two versions will co-exist on this system. For more details on how to migrate data from version 2.x, see Chapter 4, “Migrating Calendar Server Data.”

    Click Next to continue with the installation.

12. Specify the directory where you want to install the Calendar Server software. The default is `c:\Program Files\iPlanet`

    If you want to select another directory, type it in or click Browse to select one and click OK.

    When you have finished making your selection, click Next to continue.

    If the directory you selected does not exist, a message box displays and you can either:

    - Click Create Directory to install the Calendar Server in the specified directory and continue the installation.
    - Click Choose New to return to the Select Install Directory window where you can select another installation directory.

13. Specify the Web Port number that you want the Calendar Server to listen on. (Default is 80.) The Web Port number is used by the Calendar Server to provide Web (HTTP) access to users. It is highly recommended that you choose the default Web port number suggested by the installation program because it is the default port number used by all Web browsers. If you specify a Web port other than 80, calendar users will need to explicitly include this port number in the URL they enter to access their calendars on this Calendar Server.

    When you have finished making your selection, click Next to continue.

    The installation program will warn you if the port number you selected is already being used by another service on this system. If this is acceptable at this point, click Accept. Otherwise, click Choose New and enter another Web port number.

    Note: If port 80 is already in use, you can click Accept to specify that the Calendar Server listens on port 80 and then free port 80 on the other service. In this case, it is highly recommended that you free port 80 on the other service before you continue with the installation.

    In the current release, the installation program does not allow you to specify an admin port, and by default, the admin port is disabled.

14. Enter and confirm the password of the user that the Calendar Server will run as. The installation program assumes this identity is the user and password that is currently logged in to the system, and it cannot be changed while you run the installation program. This user must have full administrator rights to this system.

NOTE The password for the administrator cannot be blank.

When you have finished making your selections, click Next to continue.

Note: The installation program will warn you if it cannot verify that this identity has the account privileges required to manage the Calendar Server services on this system. If this is acceptable at this point, click Accept. Otherwise, click Choose New and supply another password.

15. Supply the following email and email alarm information:

Calendar Administrator email address. Enter the full email address (userID and domain name) of the person to whom you want the Calendar Server to send messages in case of server problems. For example: `calmaster@sesta.com`

SMTP Server Host Name. Enter the host name of the machine running the SMTP server that the Calendar Server is to use to send messages.

Enable email alarms. By default, email alarms for the Calendar Server are enabled. If you do not want the Calendar Server to send email alarms, uncheck this checkbox.

When you have finished making your selections, click Next to continue.

Note: If the installation program cannot connect to the SMTP server you entered, a message box will display stating that the Calendar Server will not run successfully if an SMTP server is not available. If this is acceptable at this point, click Accept. Otherwise, click Choose New and enter the host name of another SMTP server.

16. Specify the directory in which to store the Calendar Server database. The default is:

```
c:\Program Files\iPlanet\CalendarServer5\var\csdb
```

If you want to select another directory, type it in or click Browse to select a directory, then click OK.

When you have made your selection, click Next to continue.

If the directory you selected does not exist, a message box displays and you can either:

- Click Create Directory to install the Calendar Server database files in the specified directory and continue the installation.
- Click Choose New to return to the Select Install Directory window where you can select another directory.

Note: The installation program displays a warning message if you selected a directory located on a drive partition that is not formatted as NTFS (NT File System). It is recommended that, for improved performance, you choose an NTFS-formatted drive in which to install the Calendar Server database files.

17. Specify the directory in which to store the Calendar Server temporary files (Custom installation only). The default is:

    `c:\Program Files\iPlanet\CalendarServer5\var\tmp`

    If you want to select another directory, type it in or click Browse to select a directory and click OK.

    When you have finished making your selections, click `Next` to continue.

    If the directory you selected does not exist, a message box displays and you can either:

    - Click Create Directory to install the Calendar Server temporary files in the specified directory and continue the installation.
    - Click Choose New to return to the Select Install Directory window where you can select another directory.

18. Enter the following LDAP server information for user authentication (Custom Installation only — if you chose Typical Installation, proceed to the next step.)

    - **Host.** Host name of the machine on which the LDAP Server is running.
    - **Port.** Port number that the LDAP server listens to. The default is 389.
    - **Base DN**. Base DN (distinguished name) is the entry in your LDAP directory used as the starting point from which searches will occur. For example, if you specify a base DN of `ou=people, o=sesta.com`, LDAP search operations executed by the Calendar Server will examine only the `ou=people` subtree in the `o=sesta.com` directory tree.
    - **Administrator Bind DN**. The DN of the account that will be used to bind to the LDAP directory to search for a calendar user's DN during authentication. The default is to bind anonymously.

Note: If your directory server does not allow anonymous bind authentication or does not allow anonymous search, you must enter a valid DN that has these access rights.

- **Administrator Password.** The password for the user account of the Administrator Bind DN described above. No password is required for the default user `anonymous`.

When you have finished making your selections, click Next to continue.

Note: If the installation program cannot verify the LDAP credentials you specified, a message box displays and you can either:

- Click Accept to install the Calendar Server anyway if this is acceptable at this point.
- Click Choose New to return to the LDAP user authentication window where you can enter different directory server information.

19. Enter the following LDAP server information (in a Typical Installation these settings apply to where user authentication information and user preferences are stored; in a Custom Installation these settings apply only to where user preferences are stored):

    - **Host**. Host name of the machine on which the LDAP Server is running.
    - **Port**. Port number that the LDAP server listens to. The default is 389.
    - **Base DN**. Base DN (distinguished name) is the entry in your LDAP directory used as the starting point from which searches will occur. For example, if you specify a base DN of `ou=people, o=sesta.com`, LDAP search operations executed by the Calendar Server will examine only the `ou=people` subtree in the `o=sesta.com` directory tree. The installation program does not attempt to verify your entry.
    - **Administrator Bind DN**. The DN of the account that has privileges to manage the attributes of any calendar user in the LDAP directory that stores user preferences. The default is:

      ```
      uid=admin,ou=Administrators,ou=TopologyManagement,o=NetscapeRoot
      ```

      The default bind DN will work with any 4.x version of Netscape Directory Server or the 5.1 version of iPlanet Directory Server. You can verify that this DN exists by using the directory server `ldapsearch` utility. For example:

      ```
      ldapsearch -b o=NetscapeRoot uid=admin
      ```

- **Administrator Password**. The password for the user account of the Administrator Bind DN described above.

When you have finished making your selections, click Next to continue.

Note: If the installation program cannot bind to the LDAP server specified or if it cannot find the LDAP schema for the Calendar Server, a message box will display stating that the Calendar Server will not run if an LDAP server is not available. If this is acceptable at this point, click Accept. Otherwise, click Choose New and re-enter the LDAP configuration parameters.

20. Calendar Server 5.1 requires specific schema updates if you are using an LDAP directory server to store user and group information. If you are using iPlanet Directory Server 5.1 or Netscape Directory Server 4.12 or 4.16, you can choose to have the installation program automatically update the LDAP schema.

To automatically update the LDAP schema, supply the user ID and password of the Directory Manager (this is the user with the rights to update the schema also known as "Unrestricted User"). This is the username and associated password that can make changes in the directory server schema. The default DN is `cn=Directory Manager`. The installation program will then attempt to automatically update the LDAP schema of the directory server you specify.

Choose Next to continue and the installation program asks you to confirm that you want to update the LDAP schema. Click Continue if you want to update the LDAP schema at this time. Otherwise click Cancel to return to the previous window.

The installation program will warn you if it cannot update the LDAP schema automatically because it:

- did not detect iPlanet Directory Server 5.1 or Netscape Directory Server 4.12 or 4.16.
- detected an earlier version of the Calendar Server 5.1 schema extensions on the specified directory server. In this case, you can manually remove the `um50-common-schema.conf` and `ics50-schema.conf` files on your directory server (located in the *server-root*`\slapd-`*hostname*`\config` directory) and run the installation program again.

You can also update the LDAP schema manually. For more information, see "Updating the LDAP Server Schema Manually," on page 21.

If you do not specify a Directory Manager and password and you click Next, the installation program warns the Calendar Server 5.1 will not run properly if you do not update the LDAP schema. If this is acceptable at this point, click Accept. Otherwise, click Choose New to re-enter the requested information.

21. Specify the Calendar Server Administrator. This is the user account that has privileges to use the Calendar Server administration utilities: `csstop` to stop the server, `cstats` to display server statistics, and `cstool` to list all logged-in users. The default is `calmaster`.

    To log into and manage the Calendar Server, the user ID you specify must be a valid user that exists in your directory server. For example, if you accept the default `calmaster`, the user `calmaster` must exist in the directory that is accessed for user authentication. If you are using one directory server for user authentication and another directory server to store user preferences, the user you specify here must exist in both of these directory servers.

    If the Calendar Server Administrator user account does not exist in the directory server during installation, it must be added after installation.

    When you have finished making your selection, click Next to continue.

    Note: If the installation program cannot verify that the user you specified is a valid user, a message box displays and you can either:

    - Click Accept to install the Calendar Server anyway if this is acceptable at this point.
    - Click Choose New to return Calendar Server Administration window where you can enter different user.

22. If you are upgrading or reinstalling the Calendar Server, the installation program displays the Save Calendar Server Customizable Files window. During installation, your existing Calendar Server files, including any files you have customized, are overwritten. To save your existing customizable files, accept the following default option:

    - Save customizable files in the following directory:

      Click Browse and select an existing directory, or enter a directory name and have the installation program create the directory for you. It is recommended that you specify the full path name of your directory.
    - If you do not want to save your existing customizable files, check Do not save customizable files. The installation program overwrites the existing Calendar Server files, including any files you have customized.

    The installation program saves each customizable file and appends the `.save.yyyymondd-hhmmss` extension, indicating the timestamp of the save.

During the save operation, the installation program generates the following reports in the specified save location:

- `savedfiles.report` lists the files that were saved.
- `savedfiles.report.complete` lists the files that were saved and indicates whether they are different (DIFFER) or identical (IDENTICAL) to the newly installed files. The installation program generates this report only if the upgrade or reinstall completes successfully.
- `savedfiles.report.errors` lists any errors that occurred during the file comparison and information specifying how the files are different.

Click Next to continue the installation.

23. Select the desired values for the following system resource allocations to run the Calendar Server (Custom Installation only):
    - Maximum sessions (default is 5000)
    - Maximum threads (default is 250)
    - Number of server processes (default is the number of CPUs on the machine on which you are installing the Calendar Server)
24. Select the options for automatically starting the Calendar Server. You can choose to start the server after successful installation and automatically at system startup. If you do not wish to start the server after the installation or at system startup, uncheck the applicable box or boxes. When you have finished making your selections, click Next to continue.

    Note: On HP-UX systems, these automatic startup options are not valid, and you must start the Calendar Server manually.
25. The installation program verifies if there is adequate disk space and then displays the Ready to Install window. To complete the installation, click Install Now.
26. When the installation process completes, a summary window displays. Click Details if you want to review summary information about the installation. When you are finished, click Dismiss to close the Summary information window, and then click Exit to end the installation program.

Using the Command-Line Installation on Windows NT Systems

The Calendar Server provides you the option of running the installation script without using the graphical interface. To run the command line installation program, use the following steps:

1. Login as Administrator. You must have superuser privileges (that is, be logged in with full administration rights to the system) to run the installation program.
2. Create a directory (such as `c:\temp\ics5`) on the machine that will host the the Calendar Server and download (or copy) the Calendar Server archive file to that directory. Make sure that the download directory has adequate disk space to store the extracted files.
3. Open a command prompt and change to the directory in which you placed the the Calendar Server archive file. For example:

   ```
   cd \temp\ics5
   ```

4. Type the name of the Calendar Server archive file followed by the argument `-nodisplay`. For example:

   ```
   ics5.1-export-en.x86-windows-nt4.0 -nodisplay
   ```

5. After the installation program extracts the compressed installation files, read the instructions and then press Enter to continue.

The installation program then asks the same configuration questions as described above in Using the Graphical Interface Installation on Windows NT Systems.

Uninstalling the Calendar Server on Windows NT Systems

To uninstall Sun ONE Calendar Server, use the following steps:

1. From the Start menu, choose Settings and then Control Panel.
2. Choose Add Remove Programs.
3. From the list of products, select Sun ONE Calendar Server 5.1 and click Change/Remove.
4. Click Yes if you want to uninstall the product at this time.
5. Choose either a Full or a Partial uninstall. The Full uninstall removes both components (Calendar Server and Calendar Server API). The Partial uninstall lets you choose to uninstall either or both of these components.
6. Click Uninstall Now to proceed with the uninstallation.

Chapter 4

Migrating Calendar Server Data

This chapter describes the following Sun™ ONE Calendar Server 5.1.1 migration utilities:

- ics2migrate Migration Utility – Migrates data from Calendar Server 2.x.
- ncs4migrate Migration Utility – Migrates data from Netscape Calendar Server 4.x.
- csmig Migration Utility – Migrates a calendar database to support the LDAP Calendar Lookup Database (CLD) plug-in.

ics2migrate Migration Utility

The `ics2migrate` migration utility can migrate both Calendar Server 2.x calendar data and LDAP user preferences to Calendar Server 5.1.1.

This section describes:

- Migration Requirements
- What Gets Migrated?
- Migration Process
  1. Prepare to Migrate
  2. Migrate the Data
  3. Check the Migration Results
- Migration Examples

The migration from Calendar Server 2.x to 5.x is a one-way migration. You can migrate data from version 2.x to 5.1, but you cannot migrate version 5.x data to 2.x.

Migration Requirements

Calendar Server 2.x to 5.x migration requires the following hardware and software:

- The source machine has the Calendar Server 2.x data that you plan to migrate.
- The target machine is where the migrated data will be created. This machine must have Calendar Server 5.0 patch 4 (or later) installed.

  `ics2migrate.exe`. is located in the *server-root*`\cal\bin` directory.

The source machine and destination machine can be different servers or the same server. The following platforms are supported:

- Solaris 2.6 (5.6) Operating Environment (or newer)
- Windows NT 4.0 with Service Pack 6a

What Gets Migrated?

The following table lists the Calendar Server 2.x data and describes how `ics2migrate` migrates the data to Calendar Server 5.x.

Table 4-1 Migration of Calendar Server 2.x Data

Calendar Server 2.x Data	Migration Results for Calendar Server 5.x
Calendar Properties (`calprops`)	Updates the Calendar Server `calprops` database.
Events	Updates the Calendar Server `events` database.
Todos	Updates the Calendar Server `todos` database
Alarms	Updates the `alarms` database while writing events and todos.

The following table lists the Calendar Server 2.x LDAP attributes and describes how `ics2migrate` migrates the attributes to Calendar Server 5.x.

Table 4-2 Migration of LDAP Attributes

Calendar Server 2.x LDAP Attribute	Calendar Server 5.x LDAP Attribute
`nswcalUser *`	`icsCalendarUser *`
`nswcalCalID`	`icsCalendar`
`nswcalExtendedUserPrefs`	`icsExtendedUserPrefs`

Table 4-2 Migration of LDAP Attributes *(Continued)*

Calendar Server 2.x LDAP Attribute	Calendar Server 5.x LDAP Attribute
ceCalList **	icsSubscribed
ceAgendaList **	icsSet
ceDefaultAgenda **	icsDefaultSet
ceDefaultTZID **	icsTimeZone
ceFirstDayWeek **	icsFirstDay

* Objectclass

** Originally part of nswcalExtendedUserPrefs

Migration Process

CAUTION Before you migrate, backup both your Calendar Server 2.x and 5.x calendar databases.

Prepare to Migrate

Follow these steps to prepare to migrate your data:

1. On the target machine where Calendar Server is installed, log in as a user who has administration rights to the system:
   - On Solaris machines, log in as (or become) root, or as the user and group under which the Calendar Server is running that was specified during installation (such as icsuser and icsgroup).
   - On Windows NT machines, log in as an administrator with full administrator privileges.
2. Locate the Calendar Server 2.x caldb.conf file. The default directory for this file depends on your platform:
   - Solaris machines: /var/opt/SUNWicsrv/csdb
   - Windows NT machines: *server-root*\var\csdb
3. Change the first line in the caldb.conf file as follows:

   Old value: caldb.version "1.0.0 [BerkeleyDB]"

   New value: caldb.version= "1.0.0 [BerkeleyDB]"

4. To ensure data integrity, stop all services for both Calendar Server 2.x and 5.x. For more information, see the respective *Sun ONE Calendar Server Administrator's Guide* on the documentation web site.

Migrate the Data

Follow these steps to migrate your data:

1. Change to the *server-root*`\cal\bin` directory where `ics2migrate.exe` is located.
2. Run `ics2migrate` using the following syntax:

To migrate both the Calendar Server 2.x database and LDAP user preferences

```
ics2migrate [-q] [-s def|none] [-f def|none] [-l min|max] source
target
```

To migrate only the Calendar Server 2.x database

```
ics2migrate [-q] [-m db] [-s def|none] [-f def|none] [-l min|max]
source target
```

To migrate only the LDAP user preferences

```
ics2migrate [-q] [-m ldap]
```

NOTE To display the syntax, type `ics2migrate` without any options.

Table 4-3 lists the `ics2migrate` options with a description of each option.

Table 4-3 ics2migrate Options

ics2migrate Option	Description
`[-q]`	Run in quiet mode. If the migration is successful, `ics2migrate` does not display information on the console. If the migration fails, `ics2migrate` displays only errors. The default is verbose mode.
`[-m db|ldap]`	`db` – Migrate only the calendar database. `ldap` – Migrate only the LDAP user preferences. The default is to migrate both the calendar database and LDAP user preferences.
`[-s def|none]`	`def` – Grant scheduling access to only a user's default calendar. `none` – Deny scheduling access to all users' calendars. The default is to grant scheduling access to all calendars.
`[-f def|none]`	`def` – Grant free/busy access to only a user's default calendar. `none` – Deny free/busy access to all users' calendars. The default is to grant free/busy access to all calendars.
`[-l min|max]`	`min` – Log the minimum data migration statistics: calendar ID, primary owner, and number of events and todos for each calendar. `max` – Log the maximum data migration statistics: minimal statistics plus the number of attendees and alarms for each event and todo. `ics2migrate` logs statistics to `ics2migrate.log` in the *server-root*`\cal\bin` directory. By default, `ics2migrate` displays migration statistics on the console and does not generate a log file.
`source`	Directory where the Calendar Server 2.x database files are located. `source` is required for database migration if the `-m db` option is specified, or if the `-m` option is omitted.
`target`	Directory where the Calendar Server 5.1 database files are located. `target` is required for database migration if the `-m db` option is specified, or if the `-m` option is omitted.

Check the Migration Results

After you have finished the migration, check the results:

- Check the `ics2migrate.log` file in the *server-root*`\cal\bin` directory for the following messages (depending on your migration choices):

  ```
  Database migration successfully completed
  LDAP user preference migration successfully completed
  ```

- If you suspect a possible database corruption, run the `csdb` utility `check` command.

  The `check` command scans a calendar database for corruption. If the `check` command finds an inconsistency that cannot be resolved, it reports the situation in its output. If necessary, you can then run the `csdb` utility `rebuild` command to rebuild the calendar database (`caldb`).

  For documentation about the `csdb` utility `check` and `rebuild` commands, see the *Sun ONE Calendar Server Administration Guide* on the documentation web site.

Migration Examples

Migrate Both Calendar Database and LDAP User Information

Migrate both the LDAP user information and the Calendar Server 2.x database. The Calendar Server 2.x database is stored in the `/var/opt/SUNWicsrv/2x_db` directory and the 5.1 database is in the `/var/opt/SUNWics5/50_db` directory.

Grant scheduling and free / busy access to all calendars and log minimal migration statistics in a log file named `ics2migrate.log` in the *server-root*`\cal\bin` directory.

```
ics2migrate /var/opt/SUNWicsrv/2x_db /var/opt/SUNWics5/50_db -l min
```

Migrate in Quiet Mode

Perform the same migration as the previous example, except operate in quiet mode. `ics2migrate` does not display migration statistics on the console or generate a log file.

```
ics2migrate -q /var/opt/SUNWicsrv/2x_db /var/opt/SUNWics5/50_db
```

Migrate Only the Calendar Database

Migrate only the 2.x calendar database stored in the `2x_db` directory (relative to the current directory) and create a 5.1 database in the `/var/opt/SUNWics5/50_db` directory.

```
ics2migrate -m db 2x_db /var/opt/SUNWics5/50_db
```

Migrate Only LDAP User Information

Migrate only the Calendar Server 2.x LDAP user information to version 5.1 format.

```
ics2migrate -m ldap
```

Migrate Both Calendar Database and LDAP User Information

Migrate both LDAP and calendar database information in the specified directories. Grant scheduling access only to each user's default calendar, deny free/busy access to all calendars on the server, and do not generate statistical information to a log file.

```
ics2migrate -s def -f none 2x_db 50_db
```

ncs4migrate Migration Utility

This section describes how to migrate Netscape Calendar Server 4.x calendar data to Sun ONE Calendar Server using the `ncs4migrate` migration utility.

Netscape Calendar Server 4.x calendars are also known as CS&T calendars for the developer Corporate Software & Technologies Int. Inc.

If you need a copy of the `ncs4migrate` utility, contact your Sun technical support representative or account manager. When you get `ncs4migrate` copy it to your *server-root*`\cal\bin` directory.

This section includes the following information:

- Migration Requirements
- What Gets Migrated?
- Migration Steps

  1. Backup the Calendar Server 5.0 Database

  2. Prepare to Migrate

  3. Migrate the Data

     Migrating Data From Multiple Nodes

     Checking the Migration Log File

  4. Check the Migrated Data

Migration Requirements

The migration requires the following hardware and software:

- Source machine — This machine (or machines) has the Netscape Calendar Server 4.0 (or later) data that you plan to migrate.
- Target machine — This machine has the Calendar Server 5.0 database that you plan to migrate to. It should be running Calendar Server 5.0 Patch 4 (or newer).

The source machine and target machine can be different servers or the same server. The following platforms are supported:

- Solaris 2.6 (5.6) or later Operating Environment
- Windows NT 4.0 with Service Pack 6a

What Gets Migrated?

The following table shows how `ncs4migrate` migrates Netscape Calendar Server data to Calendar Server 5.0.

Table 4 Migration of Netscape Calendar Server 4.0 Data

Netscape Calendar Server 4.0 Data Item	Calendar Server 5.0 Migration Results
Meetings, events, and notes of resources and users	Migrated as events.
Tasks	Migrated as todos (tasks).

Access (security) rights	Ignored during migration. Designates and Designate Rights are not migrated.
	
	For user's calendars and resource calendars, `ncs4migrate` uses the access control strings in the `ics.conf` file as follows:
	
	For user's calendars, `ncs4migrate` uses `calstore.calendar.default.acl` and sets the privacy settings in the Calendar Server 5.0 calendar as:
	
	• Calendar owner: Availability, Schedule, Read, Delete, and Modify
	
	• All other users: Availability and Schedule
	
	For resource calendars, `ncs4migrate` uses `resource.default.acl` and sets the privacy settings in the Calendar Server 5.0 calendar as:
	
	• Resource owner: Availability, Schedule, Read, Delete, and Modify
	
	• All other users: Availability, Schedule, and Read
	
	For a description of privacy settings and how to change them, see the Calendar Express online Help.
	
	Note Before you migrate, check the strings in the `ics.conf` file to make sure they are correct as follows:
	
	The correct string for `calstore.calendar.default.acl` is:
	
	`@@o^a^r^g;@@o^c^wdeic^g;@^a^sf^g;@^c^^g`
	
	The correct string for `resource.default.acl` is:
	
	`@@o^a^r^g;@@o^c^wdeic^g;@^a^rsf^g;@^c^^g`

File attachments	Ignored during migration; warning is generated in log file.
Groups	Not migrated.

Migration Steps

Backup the Calendar Server 5.0 Database

Before you migrate, it is recommended that you perform these steps to ensure the integrity of your calendar database:

1. Backup your calendar database using the `csbackup` utility (or another backup utility).

   For information about `csbackup`, see the *Sun ONE Calendar Server Administrator's Guide*.

2. Run the `csdb` utility `check` command on your calendar database to check for any database corruption. If the `check` command detects any corruption, run the `csdb` utility `rebuild` command to rebuild the database.

   For documentation about the `csdb` and `csbackup` utilities, see the *Sun ONE Calendar Server Administrator's Guide*.

Prepare to Migrate

Before you run the `ncs4migrate` utility, perform these steps on the target machine:

1. Log in as (or become) `root` or a user who has administrator rights to the system.
2. Change to the *server-root*`\cal\bin` directory.
3. Create a text file named `ncs4dirpaths.dat` and specify the fully qualified directory path to the Netscape Calendar Server 4.0 database. For example:

   `/apps/ncs/calendar/unison/db/nodes/N0/perm`

   To locate the directory that contains the Netscape Calendar Server 4.0 database, search for the `unison.dbd` file.

   If necessary, fulfill any requirements to allow `ncs4migrate` to access the node and read the directory where the Netscape Calendar Server 4.0 database is located.

NOTE Do not use variables such as `$CAL_HOME` in the pathname. Variables are not be resolved during migration.

For information about creating an `ncs4dirpaths.dat` file for data on multiple nodes, see Migrating Data From Multiple Nodes.

4. If you plan to migrate selected users, create a user filter file named `ncs4userfilter.dat` in the *server-root*`\cal\bin` directory. `ncs4userfilter.dat` is a text file that specifies the users you want to migrate. Each line identifies a user in either of the following formats:

   - `node-number:user id` in Netscape Calendar Server calendar system (`nscalxitemid` attribute)
   - user's `UID` attribute

   For example, several entries in a `ncs4userfilter.dat` file might be:

   ```
   caluser1
   caluser2
   10000:00256
   10000:00257
   ```

   You can use both formats in the same `ncs4userfilter.dat` file.

5. Make sure that the LDAP server is running.
6. To prevent updates to the calendar database during the migration, stop the Calendar Server. The Netscape Calendar Server, however, can be either running or stopped.

You are now ready to migrate the Netscape Calendar Server 4.0 data.

Migrate the Data

On the target machine, perform these steps:

1. While logged in as `root` or a user who has administrator rights to the system, change to the *server-root*`\cal\bin` directory (if necessary).
2. Type `ncs4migrate` on the command line.

The `ncs4migrate` utility then displays its welcome menu with the options shown in Table 5.

Note: Although `ncs4migrate` displays the (E)xport and (I)mport options, these options are not supported and should not be used.

Table 5 ncs4migrate Utility Options

ncs4migrate Option	Description
(E)xport	Export Netscape Calendar Server 4.0 calendar database to intermediate files.
(I)mport	Import the data from intermediate files into the calendar database.
(S)kip	Skip intermediate files. Just migrate one record at a time from Netscape Calendar Server 4.0 to Calendar Server 5.0.
(L)ogging = ON | OFF	Set Logging. Logging filename is `ncs4migrate_`*`yyyymmdd-hhmmss`*`.log`. Default is ON.
(V)erbose = ON | OFF	Set Verbose log. Default is OFF.
	To save disk space, we recommend leaving as OFF.
(D)ebug = ON | OFF	Set Debug log. Default is OFF.
(Q)uiet = ON | OFF	Set for screen output. Default is OFF.
(T)erminate = TRUE | FALSE	Terminate if a user in the Netscape Calendar Server 4.0 database is not in LDAP. Default is FALSE.
(O)nly = TRUE | FALSE	Migrate only users in the user filter file `ncs4userfilter.dat`. Default is FALSE.
	If O and M are TRUE, `ncs4migrate` migrates any event that has any participant in the filter file as either an owner or attendee. All attendees will have the event migrated to their calendars.
(M)igrate = TRUE | FALSE	Migrate users in the user filter file. Default is FALSE.
(B)ypass = TRUE | FALSE	Bypass migration for users in the user filter file. Default is FALSE.
(A)ny = TRUE | FALSE	Any combination of Netscape Calendar Server security access levels produces a grant in Calendar Server. Default is TRUE. FALSE means all 3 access levels need to be present; see (H)elp.
(U)ser	Display user filter file `ncs4userfilter.dat`. Use O option to turn filtering ON | OFF. Default is OFF.
(P)ath	Path file for Netscape Calendar Server 4.0 databases. Filename is `ncs4dirpaths.dat`.
(H)elp	Display Help screen
(E)xit	Exit the program.

3. From the `ncs4migrate` menu, specify the S option to migrate all users. Or, if you are migrating specific users in a user filter file (`ncs4userfilter.dat`), specify the O option.
4. Monitor the migration log file to check the migration status. See Checking the Migration Log File for more information.
5. After the migration is finished, check the migrated calendar database as described in Check the Migrated Data.

Migrating Data From Multiple Nodes

To migrate Netscape Calendar Server 4.0 data from multiple nodes, perform these steps on the target machine:

1. While logged in as `root` or a user who has administrator rights to the system, copy the Netscape Calendar Server 4.0 database directory from each node to the machine where you plan to run `ncs4migrate`. (Each Netscape Calendar Server 4.0 directory should contain a `unison.dbd` file.)

   You can also migrate the Netscape Calendar Server 4.0 data directly from each node; however, you must first fulfill any requirements to allow `ncs4migrate` to access the Netscape Calendar Server 4.0 data on the other nodes.
2. Change to the *server-root*`\cal\bin` directory.
3. In the `ncs4dirpaths.dat` file, specify a directory pathname for data from all nodes. For example, the following `ncs4dirpaths.dat` file incudes directory paths for three nodes:

   ```
   /apps/ncs/calendar/unison/db/nodes/N0/perm
   /apps/ncs/calendar/unison/db/nodes/N1/perm
   /apps/ncs/calendar/unison/db/nodes/N2/perm
   ```
4. To run the migration utility, type `ncs4migrate` on the command line.
5. From the `ncs4migrate` menu, specify the S option to migrate all users. Or, if you are migrating specific users in a user filter file (`ncs4userfilter.dat`), specify the O option.
6. Monitor the migration log file to check the migration status. See Checking the Migration Log File for more information.
7. After the migration is finished, check the migrated calendar database, as described in Check the Migrated Data.

Checking the Migration Log File

The `ncs4migrate` utility generates a log file with the following name in the *server-root*`\cal\bin` directory:

`ncs4migrate_`*`yyyymmdd-hhmmss`*`.log`

where *`yyyymmdd-hhmmss`* is a timestamp that indicates when the migration started.

If the `ncs4migrate` utility is taking a long time to run, check that the log file is increasing in size as an indication that the utility is still running.

NOTE To prevent the log file from becoming too large, consider omitting the `ncs4migrate` verbose (V) option.

Check the Migrated Data

After the migration is finished, perform these steps on the target machine:

1. Run the `csdb` utility `check` command to scan the calendar database to determine if any corruption has occurred. If the `check` command detects any corruption, run the `csdb` utility `rebuild` command to rebuild the database.

   For documentation about the `csdb` utility `check` and `rebuild` commands, see the *Sun ONE Calendar Server Administration Guide* on the documentation web site.

2. If necessary, restart the Calendar Server.

   Users can access the migrated calendar database using Calendar Express.

csmig Migration Utility

The `csmig` utility migrates a calendar database that was created before the Calendar Server 5.1.1 release to a destination target database that supports the LDAP Calendar Lookup Database (CLD) plug-in. Calendars in the migrated database are then accessible using this plug-in. (New Calendar Server 5.1.1 deployments do not require this migration.)

The LDAP CLD plug-in provides horizontal scalability of the calendar database by allowing calendars to be distributed over a number of back-end servers. For information about the LDAP CLD plug-in, see the *Sun ONE Calendar Server Administrator's Guide.*

This document describes these topics:

- csmig Functions
- csmig Requirements
- csmig Syntax
- csmig Migration Steps
- csmig Tips and Troubleshooting

csmig Functions

The `csmig` migration utility performs these functions:

- `csmig` migrates both user and resource calendars in the current calendar database (*.db files) specified by the `caldb.berkeleydb.homedir.path` parameter. In the new destination target database, `csmig` updates entries required by the LDAP CLD plug-in in the calendar properties (calprops), events, todos (tasks), and group scheduling engine (gse) database files.

  `csmig` writes only to the destination target database; it does does not write to your existing calendar database.

- `csmig` updates LDAP attributes for all relevant LDAP entries, including `icsSubscribed`, `icsCalendar`, `icsCalendarOwned`, `icsFreeBusy`, `icsSet`, and `uid` (for resource calendars) . `csmig` creates the `icsDWPHost` attribute for each calendar in the LDAP directory server database. `icsDWPHost` specifies the host name of the back-end server where a calendar resides.

- `csmig` assigns an owner to each calendar in the calendar database and maps each calendar ID (`calid`) to an owner, if needed. All default `calids` are kept as is, and no changes are made. Other calendars are mapped as follows:
  - User calendars that don't have valid owners will be owned by the user passed to `csmig` by the `-c` option. For example, if `jsmith` doesn't have an owner, it will be converted to `orphan:jsmith`, if `orphan` is specified as the `-c` option.
  - Resource calendars that don't have an owner will be owned by the resource user passed to `csmig` by the `-r` option.
  - If a resource calendar has any colons in the name, the colons are converted to underscores.

  For example, a calendar named `football` with owner `bkamdar` will be converted to `bkamdar:football`. A calendar `tchang:soccer` with the owner `bkamdar` will be converted to `bkamdar:tchang_soccer`. (Only one colon should be in the `calid`.) A resource calendar named `auditorium:room1` will be converted to `auditorium_room1`.

csmig Requirements

The requirements for using `csmig` are:

- Your calendar database must not be corrupted. Use the `csdb check` command to check your calendar database, and if necessary, run the `csdb rebuild` command to rebuild the database. For information about these commands, see the Sun ONE *Calendar Server Administrator's Guide.*
- You must have sufficient disk space for the new destination target database and if applicable, your backup database.
- To run `csmig`, you must login as (or become) `root`, or as a user (such as `icsuser`) who has administration rights to the system where Calendar Server is installed.

  You must also have privileges to manage the attributes of calendar users in the LDAP directory server that stores user preferences.
- The Calendar Server must be stopped.

csmig Syntax

The `csmig` utility has the following syntax:

```
csmig [ -t DestinationDB ] [ -b Backend-DWPHost ]
      [ -o OutputFile ]  [ -e ErrorFile ] [ -m MappingFile ]
        -c calendarOwner -r resourceOwner { migrate|dryrun }
```

`-t` *DestinationDB* specifies the destination target database that `csmig` generates. The default is `MigratedDB`.

`-b` *Backend-DWPHost* specifies the name of the DWP back-end host server. This name must match the DWP back-end host server name specified in the `ics.conf` file.

`-o` *OutputFile* specifies an output file that captures the `csmig` output to the screen as well as any errors that occur. The default is `MigrateOut`.

`-e` *ErrorFile* is the file where `csmig` writes any errors or database entries that cannot be resolved. If database entries cannot be resolved, they are not written to the destination database. The default is `MigrateError`.

`-m` *MappingFile* specifies a mapping file for updating entries the LDAP schema. The mapping file provides a list of recommended modifications to the LDAP schema but does not perform the actual modifications to the schema.

`-c` *calendarOwner* specifies the owner for user calendars that don't have owners.

`-r` *resourceOwner* specifies the owner for resource calendars that don't have owners.

csmig Migration Steps

After you have installed Calendar Server 5.1.1 on all of the servers in your configuration, you must run `csmig` to migrate your existing Calendar Server and LDAP data to the new Calendar Server 5.1.1 and LDAP data, which is required for the LDAP CLD plug-in to work properly. Here are the recommended steps to migrate calendar data using `csmig`:

1. Configure Your LDAP Directory Server–Adding indexes can greatly improve the performance of your migration and calendar searches on LDAP data.
2. Perform a Test Dry Run–A dry run reports what csmig would do during a migration, but it does not migrate any actual data. After the dry run, you can correct any errors and determine a plan to handle any unresolved calendars.
3. Migrate Your Production Data–During a production run, `csmig` migrates the calendar database (.db files) and LDAP data (user and group preferences data), `icsSubscribed`, `icsCalendar`, `icsCalendarOwned`, `icsFreeBusy`, `icsSet`, and `uid` (for resource calendars). After the migration, all calendar resources will have an LDAP entry created.

Configure Your LDAP Directory Server

To improve performance, consider adding the following two new indexes to the `slapd.ldbm.conf` file:

- `index icscalendar pres,eq,sub`–Used by the migration process for searching the `icsCalendar` attribute.
- `index icscalendarowned pres,eq,sub`–Not required for the migration process but is used to perform a calendar search on LDAP data (for a subscribe operation) when the LDAP CLD plug-in is enabled.

For information about creating indexes in the `slapd.ldbm.conf` file, refer to your directory server documentation.

Perform a Test Dry Run

A test dry run performed on a staging server reports what would be migrated, but it does not perform the actual migration of your production database. A dry run allows you to determine a plan for migrating your production database. For example, you can decide how you want to handle “orphan” calendars, which are calendars that don’t have an owner.

To perform a test dry run using `csmig`, follow these steps:

1. Log in as (or become) `root` or as a user (such as `icsuser`) who has administration rights to the system where Calendar Server is installed.
2. Install Calendar Server 5.1.1 (if necessary) on the staging server.
3. Copy a snapshot of your calendar database to the staging server.
4. Install an LDAP server to mimic the production LDAP environment. Install a snapshot of the LDAP database on this server with the new indexes in the `slapd.ldbm.conf` file.
5. Change to the *server-root*`/cal/bin/` directory.
6. Consider creating a catchall `calid` for user calendars that don't have an owner. For example, on Solaris systems, the following command creates a user with the `calid` of `orphan`:

   ```
   ./csuser -g orphan -s adminuser -y password -l en -c orphan create orphan
   ```

7. Stop the Calendar Server using the `stop-cal` command (if necessary).
8. Run the `csdb check` command to check your database for corruption. If corruption is indicated, run `csdb rebuild` to rebuild the database.
9. Run `csmig` with the `dryrun` option. For example, on a Solaris system, enter:

   ```
   ./csmig -b sesta.com -o csmig.out -e csmig.errors -m csmig.map
   -c orphan -r calmaster dryrun
   ```

   This command assigns user calendars without an owner to `orphan` and resource calendars without an owner to `calmaster`.
10. Check the output, mapping, and error files. Resolve any LDAP issues or errors that you find. Determine how you will handle any unresolved calendars before the actual migration. Several options are:
    - Delete any unneeded calendars before you migrate.
    - Assign owners to any unresolved calendars.
    - Allow `csmig` to assign owners to the calendars during migration using the `-c` and `-r` options.

11. It is highly recommended that you migrate your calendar database on your staging server before you migrate your actual production calendar database. This steps allows you to see exactly how your data will be migrated and to correct any problems before you migrate your production database.

    For example, on a Solaris system, the following command migrates the calendar database to the `/var/opt/SUNWics5/testcsdb/` directory:

    ```
    ./csmig -t /var/opt/SUNWics5/testcsdb/ -b sesta.com -o csmig.out
    -e csmig.errors -m csmig.map -c orphan -r calmaster migrate
    ```

12. After the test migration is finished, copy the migrated database to the `/csdb` directory specified by the `caldb.berkeleydb.homedir.path` parameter. Or, edit this parameter to point to the new location of the migrated database. Then perform these checks:

    - Run `csdb check` on the new calendar database. The number events and todos in the migrated database should match the pre-migration totals.
    - Search for `icsCalendarOwned` entries and make sure that the entries match the pre-migration number of calendars.
    - Login to Calendar Express and verify some of the calendars in the migrated database.

If the test migration is successful, you are ready to migrate your production database.

Migrate Your Production Data

To migrate your production database using `csmig`, follow these steps:

1. Log in as (or become) `root` or as a user (such as `icsuser`) who has administration rights to the system where Calendar Server is installed.
2. Change to the *server-root*`/cal/bin/` directory.
3. Stop the Calendar Server using the `stop-cal` command (if necessary).
4. Backup the following data:
    - Calendar database (`.db` files).
    - LDAP data: `slapd` database directory and LDAP database.
    - `ics.conf` file. This step is not actually required, but it can be useful if you need to revert to your original configuration.

5. Run `csmig` with the `migrate` option. For example, on a Solaris system, the following command migrates the calendar database to the `/var/opt/SUNWics5/newcsdb/` directory:

   ```
   ./csmig -t /var/opt/SUNWics5/newcsdb/ -b sesta.com -o csmig.out
   -e csmig.errors -m csmig.log -c orphan -r calmaster migrate
   ```

6. Check for any unresolved calendars in the error file and resolve them according to your plan from Step 10 under Perform a Test Dry Run.

7. Copy the new migrated database to the `/csdb` directory specified by the `caldb.berkeleydb.homedir.path` parameter. Or, edit this parameter to point to the new location of the migrated database.

8. Run the `csdb check` command to check your migrated database. If any corruption is indicated, run `csdb rebuild` to rebuild the database.

9. Enable the LDAP CLD plug-in by making any necessary changes to the following configuration parameters in the `ics.conf` file:

   - `service.dwp.enable = "yes"`
   - `service.dwp.port = "9779"`
   - `csapi.plugin.calendarlookup = "y"`
   - `csapi.plugin.calendarlookup.name = "*"`
   - `caldb.cld.type = "directory"`
   - `caldb.dwp.server.default = "`*default-server-name*`"`
   - `caldb.dwp.server.`*server-hostname*`.ip = "`*server-hostname*`"` (for each back-end server including the local server)
   - `caldb.cld.cache.enable = "yes"` (if you want to use the CLD cache option)
   - `caldb.cld.cache.homedir.path` specifies the location of the CLD cache directory. The default is *server-root*`/var/csdb/cld_cache`.

     Check that this directory is correct, or if you want a different location for the CLD cache, modify this parameter.

   For information about setting configuration parameters for the LDAP CLD plug-in, see the *Sun ONE Calendar Server Administrator's Guide*.

10. Restart the Calendar Server using the `start-cal` command.

11. Log in to the Calendar Server and verify that your configuration is working by checking several of the migrated calendars. To disable alarms while you are making your checks, set each of the following parameters in the `ics.conf` file to “no”:

- `caldb.serveralarms = "no"`
- `caldb.serveralarms.dispatch = "no"`
- `service.ens.enable = "no"`
- `service.notify.enable = "no"`
- `ine.cancellation.enable  = "no"`
- `ine.invitation.enable = "no"`
- `service.admin.alarm = "no"`

csmig Tips and Troubleshooting

The section describes the following tips and trouble shooting solutions:

- The csmig dry run calendar owner is not the owner I want for a calendar
- The LDAP calendar search doesn’t work correctly
- The csmig dry run indicates duplicate calendar names
- How do I assign orphan calendars to different owners?
- How do I move calendar users to another back-end server?

The csmig dry run calendar owner is not the owner I want for a calendar

For example, a calendar named `tchang:myCalendar` has the owner as `jsmith` in the calendar database, and the `csmig` dry run shows the mapping as `jsmith:tchang_myCalendar`. I would like to keep this calendar name as `tchang:myCalendar` and assign the owner as `tchang`.

Solution

Before the migration, use the `cscal` utility to change the owner of the calendar `tchang:myCalendar` to `tchang`. Once this is done, the migration will map this calendar to `tchang:myCalendar` and add `icsCalendarowned` to tchang’s LDAP entry.

The LDAP calendar search doesn't work correctly

After migration, the LDAP calendar search is enabled, but the calendar search dialog does not return any results or returns only partial results.

Solution

Enabling the LDAP calendar search allows Calendar Server to search `(&(objectclass=icscalendaruser)(icscalendarowned=*substr*))`.

Manually run two different searches on the LDAP data with the following filters and compare the output:

- ldapsearch with filter `(&(objectclass=icscalendaruser)(icscalendarowned=*substr*))`
- ldapsearch with filter `(icscalendarowned=*substr*)`

Since the server uses the filter that includes `icsCalendaruser` objectclass, the LDAP server might have been deployed with the schema check disabled, and some calendar entries may have been provisioned without the `icsCalendaruser` objectclass.

The csmig dry run indicates duplicate calendar names

The `csmig` dry run mapping file and output file indicate that there is a duplicate calendar name. For example, in the original database, `jsmith` owns the following calendars:

- `basketball` with 5 events
- `jsmith:basketball` with 10 events

The dry run indicates that during a migration, the two calendars will be merged, and the resulting calendar will be

- `jsmith:basketball` with owner `jsmith` and 15 total events

The output file will include the following warning message:

```
Error modifying calendar properties, error=2
```

Solution

If you don't want the two calendars to be merged, change the owner of `basketball` to a user other than `jsmith` before the migration. This will preserve the data integrity of the two separate calendars.

How do I assign orphan calendars to different owners?

By default `csmig` assigns all orphan calendars to a single owner, but I would like to assign different owners for some orphan calendars.

Solution

`csmig` doesn't accept the mapping file in the command line. However, you can assign owners to the orphan calendars in the original database before the migration. Check the dry run mapping file for all orphan calendars. Then use the `cscal` utility to assign owners to the orphan calendars before the migration. Run csmig in `dryrun` mode again to verify the new owners.

How do I move calendar users to another back-end server?

How do I move users from one back-end server to another?

Solution

To move a calendar user, you export each of the user's calendars on the original server and then import the calendars on the second server. After the calendars are moved, you can delete the calendars on the original server. For detailed steps about moving users, see the *Sun ONE Calendar Server Administrator's Guide*.

Glossary

access control entry (ACE) A string that provides access control for calendars, calendar properties, and calendar components such as events and todos (tasks). An example of an ACE is`jsmith^c^wd^g`.

access control list (ACL) A set of access control entry (ACE) strings that collectively provide access control for calendars, calendar properties, and calendar components such as events and todos (tasks). An example of an ACL with three ACEs, with each ACE separated by a semi-colon is `@@o^a^r^g;@@o^c^wdeic^g;@^a^sf^g`.

alarm event An event generated and sent by the Calendar Server Event Notification Service (ENS). When an alarm event occurs, a message reminder is sent to specific recipients.

authentication The verification of a user ordinarily done using a user ID and a corresponding password. Knowledge of the password is assumed to guarantee that the user is authentic. The Calendar Server requires a directory service such as an LDAP server for user authentication.

base DN The distinguished name (DN) that identifies the starting point of a search in an LDAP directory. Also known as a search base. For example, `ou=people,o=sesta.com`.

Berkeley DB A transactional database intended for high-concurrency read-write workloads and for applications that require transactions and recoverability. The Calendar Server uses the Berkeley DB from Sleepycat Software Inc. for storing calendar data.

Calendar Express A Web-based calendar client program that provides access to the Calendar Server for end users.

calendar group A collection of several calendars that can help a user manage more than one calendar.

calendar ID (`calid`) A unique identifier associated with a calendar in the Calendar Server database. The format for a calendar ID is `userid[:calendar]` where `userid` is the user ID and `calendar` is the calendar name.

Calendar Lookup Database (CLD) A plug-in that determines the physical location of a calendar when the calendar database is distributed over two or more back-end servers. Calendar Server provides the LDAP CLD plug-in and the algorithmic CLD plug-in.

Calendar Server Application Programming Interface (CSAPI) A programmatic interface that provides the capability to modify or enhance the feature set of the Calendar Server. CSAPI modules are plug-ins that are loaded from the `cal/bin/plugins` directory when the Calendar Server is started.

Calendar Access Protocol (CAP) A standard Internet protocol for calendaring based on requirements identified by the Internet Engineering Task Force (IETF).

common name (cn) An attribute that identifies the person or object defined by the entry in an LDAP directory.

component state A set of attributes that describe a calendar event such as a meeting. In WCAP, the `compstate` parameter allows fetch commands to return events by component state. For example, `compstate` might be REPLY-DECLINED (attendee has declined a meeting) or REQUEST_NEEDS-ACTION (attendee has not taken action on a meeting yet).

Calendar User Agent (CUA) An application that a calendar client uses to access the Calendar Server.

default calendar The calendar a user first sees after logging into Calendar Express. Usually, the calendar ID of a default calendar is the same as the user's user ID. For example, `wchang@sesta.com` would have a default calendar named `wchang`.

directory service A centralized repository of directory information for use by other servers. The Calendar Server requires that a calendar user be stored in a directory server such as an LDAP server. The Calendar Server then uses the directory server for user authentication and for the storage and retrieval of user preferences. See also LDAP (Lightweight Directory Access Protocol).

distinguished name (DN) A string representation that uniquely identifies a user, system, or organization. A DN identifies an entry in an LDAP directory from which searches will occur. Also known as a search base. For example, `ou=people,o=sesta.com`.

Database Wire Protocol (DWP) A Calendar Server proprietary protocol that allows multiple servers to be linked together within the same Calendar Server system to form a distributed calendar store. The Calendar Servers uses DWP to retrieve remote data stored in the calendar database.

event A entry with an associated date and time in a calendar. For example, an event might be a new meeting or appointment on a calendar.

Event Notification Service (ENS) A generic service that accepts reports of server-level events that can be categorized and then notifies other servers that have registered interest in certain categories of events.

Extensible Markup Language (XML) A flexible programming language developed by the World Wide Web Consortium (W3C) to create common information formats and share both the format and the data on the Web, intranets, and elsewhere. XML is extensible because, unlike HTML, the markup symbols are unlimited and self-defining. The Calendar Server uses XML and XSL to generate the Calendar Express user interface.

Extensible Style Language (XSL) A language used to create style sheets for XML. XSL describes how data sent over the Web using the XML is to be presented to the user. The Calendar Server uses XSL and XML to generate the Calendar Express user interface.

Group ID (GID) On UNIX systems, the group for Calendar Server files such as counters and logs. The GID is stored in the `ics.conf` file in the `local.servergid` parameter.

GMT (Greenwich Mean Time) The mean solar time of the meridian of Greenwich, England, and the time standard against which all other time zones in the world are referred. GMT is not affected by Daylight Savings Time or Summer Time.

Group Scheduling Engine (GSE) The Calendar Server process that handles group scheduling. The GSE enables a user to schedule events with other calendar users on the same server or on a different server. The other user can then modify, cancel, or reply to the event.

High Availability (HA) A configuration that enables two Solaris servers to run a single instance of Calendar Server 5.1 that remains continuously available after any single point of failure in hardware (disk, server, or network) or software has occurred in either of the servers.

horizontal scalability The Calendar Server's capability to run on a single server or as a group of processes that are spread across multiple server with a wide variety of possible configuration options.

Hypertext Transfer Protocol (HTTP) A standard protocol that allows the transfer of hypertext documents over the Web. The Calendar Server uses HTTP as its primary transport.

instance A Calendar Server configuration of one or more server processes. Multiple Calendar Server instances can be configured per server.

ISO 8601 An ISO (International Organization for Standardization) standard that specifies the numeric representation of date and time. The Calendar Server uses ISO 8601 standard notations to represent date, time, and duration strings.

LDAP (Lightweight Directory Access Protocol) A directory service protocol defined by the Internet Engineering Task Force (IETF) used for the storage, retrieval, and distribution of information, including user profiles, distribution lists, and configuration data.

LDAP server A software server that maintains an LDAP directory and services queries to the directory. The Calendar Server uses the iPlanet Directory Server or Netscape Directory Server, which are implementations of an LDAP server.

notification A message describing an event occurrence. An example of a notification in Calendar Server is a reminder for an upcoming meeting.

notification service A service that receives subscriptions and notifications from other servers and then relays notifications to specific subscribers. The Calendar Server `csnotifyd` service sends notifications of events and todos (tasks) using the Event Notification Service (ENS) as the broker for the events.

permissions The settings that control the access to a calendar. For example, in Calendar Express, permissions include Availability, Invite, Read, Delete, and Modify. Calendar Server administrators set permissions as access control entry (ACE) strings using command-line utilities. See also access control entry (ACE) and access control list (ACL).

plug-in An accessory program that can be loaded and then used as part of the overall system. For example, the Calendar Server can use a plug-in to access a non-LDAP directory service.

resource calendar A calendar associated with a resource such as a meeting room or equipment such as a notebook computer or overhead projector.

service A component of an overall system. The Calendar Server has the following services: Administration Service (csadmind). HTTP Service (cshttpd), Notification Service (csnotifyd), Event Notification Service (enpd), and Distributed Database Service (csdwpd).

server root A directory location relative to other files on a server. For example, the default Calendar Server installation on Solaris systems uses the path `/opt/SUNWics5/` as the server root.

SHTML (Server-side Include Hypertext Markup Language) An HTML file that includes embedded server-side includes (SSIs).

Single Sign-on (SSO) A authentication mechanism that enables a user to log in once and then access multiple applications. These applications form a circle of trust that use each other's cookies as verification of authority so that the user does not have to login to each application separately.

task In Calendar Express on the client side, a component of a calendar that specifies something to be done. On the server side, a task is also called a todo.

time zone A geographical region that uses the same time. There are 25 hourly time zones from -12 through +12 (GMT is 0). Each time zone is measured relative to GMT. Most time zones have localized designations in three-letter abbreviations. The Calendar Server also identifies time zones using a time zone ID (TZID) such as America/Los_Angeles or Asia/Calcutta.

todo On the server side, a a component of a calendar that specifies something to be done. In Calendar Express on the client side, a todo is called a task.

user ID (UID) A unique string identifying a user to a system. The Calendar Server identifies each user by a user ID.

Universal Principle Name (UPN) The value for a logged-in user that includes the login name combined with the domain to which the user belongs. For example, user `bill` in domain `sesta.com` has the UPN `bill@sesta.com`.

WCAP (Web Calendar Access Protocol) A high-level, command-based protocol used by clients to communicate with the Calendar Server.

Zulu time A military designation for GMT and UTC (Coordinated Universal Time).

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