



Sun Directory Services 3.1 User's Guide

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Part No: 805-6059
June 1998

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Preface

Sun Directory Services provides two tools for browsing the directory content:

- Deja is a Java™ directory editor that provides a secure and simple way to create, modify, delete, search, and rename directory entries.
- The Web Gateway provides an end-user interface to a Sun Directory Services directory from any web browser. You can use this interface to browse the directory, to search for and read entries, and to modify some directory information.

The *Sun Directory Services 3.1 User's Guide* describes how to use Deja and the Web Gateway. This guide is aimed at directory users who are responsible for maintaining the directory content. It does not describe how to install, configure or administer Sun Directory Services. If you need information about any of these tasks refer to the *Sun Directory Services 3.1 Administration Guide*.

How This Book Is Organized

The *Sun Directory Services 3.1 User's Guide* contains the following chapters:

Chapter 1 briefly introduces Deja and the Web Gateway. It explains the benefits of using each tool.

Chapter 2 describes Deja's standard functionality and explains how it is used to search, edit, create and delete entries.

Chapter 3 describes Deja's functionality for NIS users.

Chapter 4 describes Deja's functionality for RADIUS users.

Chapter 5 describes the Web Gateway and explains how it is used to read and modify directory entries.

Appendix A describes the structure of the `Deja.properties` file, and how to modify `Deja` properties.

Appendix B describes the `dejasync` command line utility and how it is used to synchronize the `Deja.properties` file with the mapping files.

Related Books

The document set for Sun Directory Services also contains:

- *Sun Directory Services 3.1 Administration Guide*

Standards Reference

The Sun Directory Services are based on the following Internet standards and proposed standards:

- *RFC 1777 Lightweight Directory Access Protocol*
- *RFC 1778 The String Representation of Standard Attribute Syntaxes*
- *RFC 2138 Remote Authentication Dial In User Service*
- *RFC 2139 RADIUS Accounting*
- *RFC 1565 Network Services Monitoring MIB*
- *RFC 1567 X.500 Directory Monitoring MIB*
- *RFC 2222 Simple Authentication and Security Layer (SASL)*
- *RFC 2251 Lightweight Directory Access Protocol (v3)*
- *RFC 2252 Lightweight Directory Access Protocol (v3) Attribute Syntax Definitions*
- *RFC 2253 Lightweight Directory Access Protocol (v3) UTF-8 String Representation of Distinguished Names*
- *RFC 2254 The String Representation of LDAP Search Filters*
- *RFC 2255 The LDAP URL Format*
- *RFC 2256 A Summary of the X.500(96) User Schema for Use with LDAPv3*
- *RFC 1274 The COSINE and Internet X.500 Schema*
- *draft-byrne-alias-00.txt*
- *draft-howard-nis-schema-04.txt*
- *draft-ietf-asid-ldapv3-referral-00.txt*

- *draft-ietf-asid-ldapv3-tls-02.txt*
- *draft-ietf-asid-ldapv3-lang-02.txt*
- *draft-ietf-asid-ldapv3-ext-04.txt*
- *draft-ietf-asid-ldif-02.txt*
- *draft-ietf-radius-auth-servmib-01.txt*
- *draft-ietf-radius-acc-servmib-01.txt*
- *draft-ryan-java-00.txt*

The Sun Directory Services support the following OSI standards:

- *ITU-T X.500 1988 Recommendations*
- *ITU-T X.208 Abstract Syntax Notation One (ASN.1)*
- *ITU-T X.209 Basic Encoding rules (BER)*

Ordering Sun Documents

The SunDocsSM program provides more than 250 manuals from Sun Microsystems, Inc. If you live in the United States, Canada, Europe, or Japan, you can purchase documentation sets or individual manuals using this program.

For a list of documents and how to order them, see the catalog section of the SunExpressTM Internet site at <http://www.sun.com.sunexpress>.

Accessing Sun Documentation Online

The `docs.sun.com` web site enables you to access Sun technical documentation online. You can browse the `docs.sun.com` archive or search for a specific book title or subject. The URL is <http://docs.sun.com>.

What Typographic Changes Mean

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

TABLE P-1 Typographic Conventions

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name%</code> You have mail.
AaBbCc123	What you type, contrasted with on-screen computer output	<code>machine_name% su</code> Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new words or terms, or words to be emphasized	Read Chapter 3 in <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be <code>root</code> to do this.

Shell Prompts in Command Examples

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

TABLE P-2 Shell Prompts

Shell	Prompt
C shell prompt	<code>machine_name%</code>
C shell superuser prompt	<code>machine_name#</code>
Bourne shell and Korn shell prompt	<code>\$</code>
Bourne shell and Korn shell superuser prompt	<code>#</code>

Introduction

Sun Directory Services provides two graphical interfaces that are used to view or modify information in the directory:

- **Deja**

Deja is a Java™ directory editor suitable for all day-to-day management of the directory contents. With the tool you can search for and view entries, create and modify entries, delete entries, and copy and paste entries.

- **Web Gateway**

The Web Gateway is designed for quickly viewing the contents of the directory, searching for entries in the directory, and modifying some directory information. Its limited functionality makes it unsuitable for more complicated operations. It should not be used as a substitute for Deja.

Both tools can be connected remotely or locally to a Sun Directory Server. They both provide simple ways to view the contents of the directory.

Deja

Deja provides a comprehensive user interface suitable for maintaining the directory contents. Figure 1–1 shows the Deja Create panel. The tool is split into four areas, the toolbar, the browser window, the function window, and the status bar. The toolbar, browser window, and status bar are optional.

When you click on an icon in the toolbar or select an option from the Directory menu, the appropriate screen is displayed in the function window.

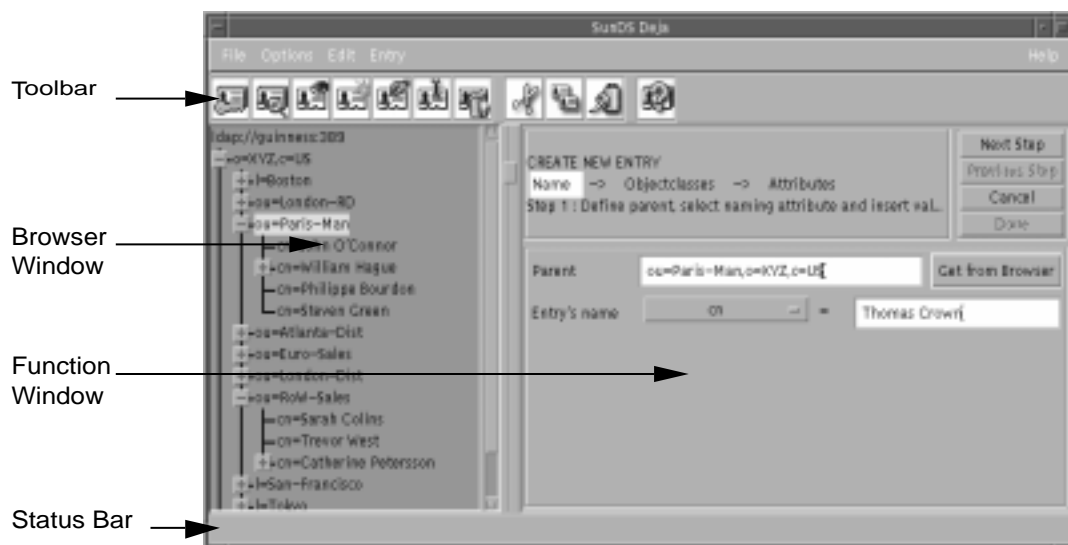


Figure 1-1 Deja Directory Editor

The toolbar uses a number of icons which have specific functions. Refer to Table 1-1 for a description of the icons and their functions.

TABLE 1-1 Deja Toolbar Icons




Icon	Use
 Login	Click this icon to login to the directory server. You must login to modify the contents of the directory.
 Search	Click this icon to search the directory for entries.
 View	Select an entry in the directory browser window and click this icon to view the values of the attributes of an entry.

TABLE 1-1 Deja Toolbar Icons *(continued)*









Icon	Use
 Create	Click this icon to create a new entry in the directory.
 Modify	Select an entry in the directory browser window and click this icon to modify the entry's properties.
 Rename	Select an entry in the directory browser window and click this icon to modify the Relative Distinguished Name of the entry.
 Delete	Select an entry in the directory browser window and click this icon to remove an entry from the directory.
 Cut	Select an entry in the directory browser window and click this icon to cut the entry from the directory, and retain a copy in the clipboard.
 Copy	Select an entry in the directory browser window and click this icon to copy the entry into the clipboard.

TABLE 1-1 Deja Toolbar Icons *(continued)*

Icon	Use
 Paste	After an entry has been cut or copied to the clipboard, select a parent entry in the directory browser window and click this icon to paste the entry as a child of the selected entry.
 Help	Click this icon to display the online help.

Web Gateway

The Web Gateway provides an interface to a Sun Directory Services directory from any web browser. You can view the directory, search for and read entries, and modify some directory information. This is useful for checking information in the directory, but it is a general-purpose tool and should not be used in place of Deja.



Figure 1-2 Web Gateway Directory Specific Entry Page

Figure 1-2 shows the naming contexts defined for the directory, and provides access to the schema.

Starting the Directory Server Daemons

Deja requires the directory services daemon, `dsservd`, to be running on the directory server. In addition, the Web Gateway requires the web gateway daemon, `dswebd`, to be running on the server that holds the directory. Before you start Deja or the Web Gateway, make sure that the appropriate daemons are running. If they are not, start them as described in the following section.

Starting the dsservd and dswebd Daemons

To start the directory server daemon, dsservd, as root type:

```
# /etc/init.d/dsserv start
```

To start the web gateway daemon, dswebd, as root type:

```
# /etc/init.d/dsweb start
```

When you install Sun Directory Services, these commands are added to the system startup file, so that all the server daemons are started automatically when the machine is rebooted.

Deja — Standard Operations

Deja is a Java directory editor that provides a secure and simple way to create, modify, delete, search and rename directory entries.

It runs locally or remotely through a fully Java compatible web browser like HotJava™, or it runs locally as a stand-alone Java application on a machine with a Java Virtual Machine. If it is running locally as an application, it requires JDK 1.1.5 or compatible versions.

If you try to run Deja through a browser that is not fully Java compatible, Deja may not run correctly. Deja has been tested with the following browsers:

- Netscape Navigator™ 4.0.5 running on Windows '95 with AWT 1.1.5. Netscape 4.0.5 does not support Deja's default encryption method — CRAM-MD5. You must set the `STANDARD_SECURITY_AUTHENTICATION` token in the `Deja.properties` file to `simple`. See "General Parameters" on page 62 for information.
- HotJava version 1.0.1 running on Solaris. Before running Deja through HotJava, you must set the `hotjava.default.security` variable to `low` in the `.hotjava/properties` file in your local directory.

Starting Deja

There are four methods for starting Deja:

- Remotely, through the Sun WebServer™, which you can download free of charge from <http://www.sun.com/webserver>
- Remotely, through any other web server
- Locally, without a web server, by opening the `Deja.html` file in a web browser

- Locally, as a Java application, on a machine with a Java Virtual Machine

To connect to the directory server, Deja requires that the `dsservd` daemon is running on the server that holds the directory. If the `dsservd` daemon is not running, Deja will start but is unable to connect. In this case, start `dsservd` as described in “Starting the `dsservd` and `dswebd` Daemons” on page 6. Then connect to the directory server as described in “Reconnecting Deja to the Directory Server” on page 13.

Displaying Deja Remotely Through the Sun WebServer

1. **Set the documentation root for the Sun WebServer to `/opt/SUNWconn/html`.**
Refer to the Sun WebServer documentation for instructions.
2. **Start the Sun WebServer.**
Refer to the Sun WebServer documentation for instructions. The Sun WebServer must be running on the same machine as the `dsservd` daemon.
3. **Open the following URL in a Java compatible web browser:**

```
http://hostname/Deja.html
```

where *hostname* is the hostname of the machine running the Sun Directory Services and the web server.

Deja is displayed.

Displaying Deja Remotely Through Any Web Server

1. **Create a symbolic link from the documentation root directory for your web server to `/opt/SUNWconn/html`:**

```
prompt% cd docroot_dir
prompt% ln -s /opt/SUNWconn/html sds
```

where *docroot_dir* is the documentation root directory for your web server.

The web server must be running on the same machine as the `dsservd` daemon.

2. Open the following URL in a Java compatible web browser:

```
http://hostname/sds/Deja.html
```

where *hostname* is the hostname of the machine running Sun Directory Services and the web server.

Deja is displayed.

Displaying Deja Locally Without any Web Server

1. On the machine running the directory server daemon, `dsservd`, open the following URL in a Java compatible web browser:

```
file:/opt/SUNWconn/html/Deja.html
```

Deja is displayed. It tries to connect to the directory server specified in the `Deja.html` file. If it can't connect, an error message is displayed.

Displaying Deja Locally as a Java Application

1. On the machine running the directory server daemon, `dsservd`, Set the `JAVA_HOME` environment variable to the installation directory of your Java Virtual Machine (JVM).
2. Type:

```
prompt% /opt/SUNWconn/bin/deja [ host_name [port_number]]
```

where:

host_name is the hostname of the directory server. The default is `localhost`.

port_number is the port number of the directory server. The default is 389.

The client machine needs to have a Java Virtual Machine and JDK version 1.1.5 or a compatible version installed.

Logging In

Directory access rights are defined by a set of access control rules on the directory server. You must be the directory administrator to modify the access control rules.

When you login to the directory, your username and password is compared with those stored in the directory. If there is a match, the access rights defined in the access control rules are granted.

You must have write permission before you can modify the directory contents. You can browse the directory content without logging in. Figure 2-1 shows the Login panel.

Note - It may be possible to browse the directory content without logging in. This depends on the access control rules on the directory server.

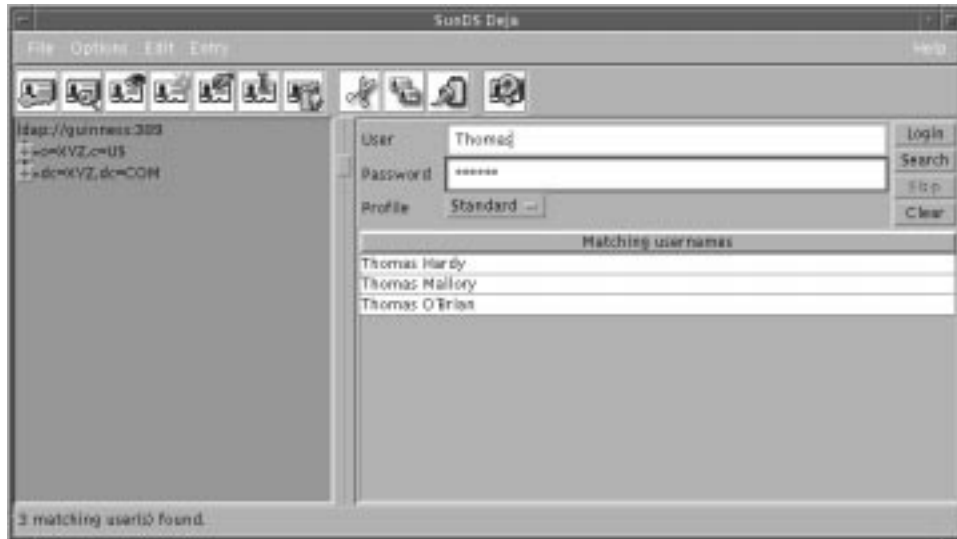


Figure 2-1 Deja Login Panel

1. Click on the Login icon or select Login from the File menu.
2. Type the Distinguished Name (DN) of your entry in the User text field:
 - If you are the directory administrator, type the administrator's name, for example **admin**.
 - If there is an alias defined for you in the `Deja.properties` file on the directory server, type the alias name. See "Adding a Login Alias" on page 65 for information on creating a login alias.
 - If you cannot remember your DN, you can search for it in the directory:
 - a. Type the string that you want to search for in the User text field and click the Search button in the login panel.
The search can include the wildcard character `*`.

- b. Double-click on your name in the Matching Usernames window.**

The DN is transferred to the User text field.

- 3. Type your password in the Password field.**

- 4. Click Login.**

Deja checks to see if the Username you typed corresponds to an alias in the `Deja.properties` file on the directory server. If an alias does not exist, Deja checks to see if the Username you have typed is a valid DN. If it is not, Deja tries to construct a DN from `cn=Username` and the first naming context it finds. If Deja cannot construct a valid DN using any of these methods, it tries to login using the Username you typed.

Your password is compared to the password stored in the directory. If there is no match the login fails.

- 5. Select the desired profile (Standard, NIS or RADIUS) from the Profile option button.**

The default profile is Standard.

General Operations

Display Options

The Options menu is used to hide or show the toolbar, status bar, or directory browser. The default view has all three display elements shown.

- ◆ **Select an option from the Options menu to change its status.**

Deja Properties Panel

The Deja Properties panel displays information about the selected user profile, and the connection to the directory server. To access the Properties panel:

- ◆ **Select Properties from the File menu.**

The Properties panel is displayed, and shows the user properties and connection properties of Deja. See Figure 2-2.

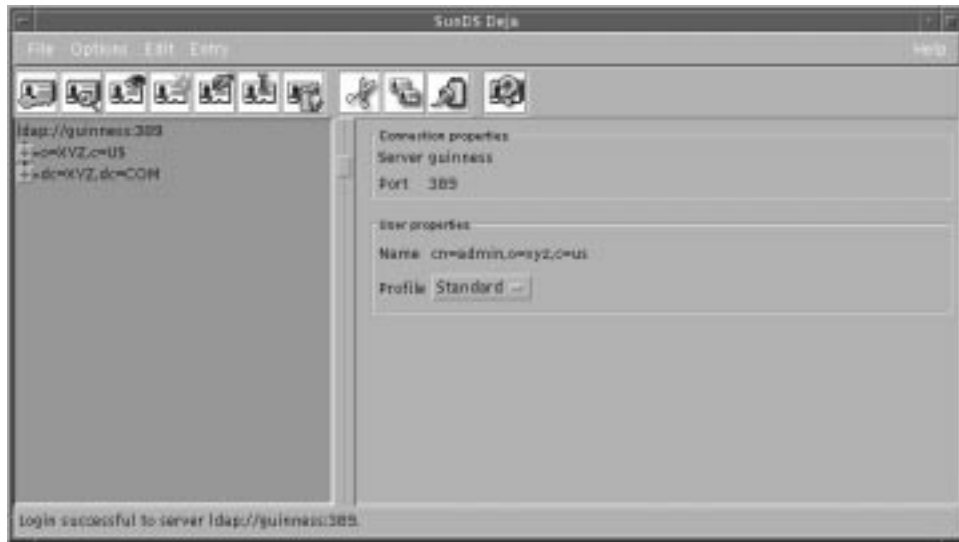


Figure 2-2 Deja Properties Panel

User Properties

Name

If you are not logged into the directory server, Anonymous is displayed. If you have logged in, the login name is displayed.

User Profile

To set the user profile:

- ◆ **Select the profile (Standard, NIS or RADIUS) from the Profile option button in the User Properties window.**

The default profile is Standard.

Connection Properties

Server and Port Number

Deja displays information about its connection to the directory server. The default port number that Deja uses to connect to the directory server is 389. The host name and port number can be specified when Deja is started.

- If Deja is viewed through a browser, the port number that Deja uses to connect to the directory server is specified in the `Deja.html` file on the directory server. If it is viewed as a local applet the hostname of the directory server is also taken from the `Deja.html` file. If it is viewed as a remote applet Deja connects to the remote host. See “Starting Deja” on page 7.
- If Deja is displayed as an application on the directory server, the hostname and port number can be specified on the command line. See “Displaying Deja Locally as a Java Application” on page 9.

To connect to a different directory server, or change the port number, from within Deja see “Connecting to Another Directory Server” on page 14.

Opening and Closing Deja Windows

Opening a New Deja Window

- ◆ **Select New Window from the File menu.**

The new window has its own connection to the directory server.

Closing a Deja Window

- ◆ **Select Close from the File menu to close the window.**

The Deja window is closed.

Closing all Deja Windows

- ◆ **Select Exit from the File menu.**

A confirmation window is displayed. Click Yes to close all Deja windows.

Reconnecting Deja to the Directory Server

If the directory server is disabled for some reason, Deja loses its connection to the directory. Deja does not automatically reconnect to the directory server when it is re-enabled. To reconnect Deja to the directory server:

- ◆ **Select Connect from the File menu.**

Deja is reconnected.

Connecting to Another Directory Server

To connect to a different directory server from within Deja:

1. **Select Connect To... from the File menu.**

The Connect To... dialogue box is displayed. See Figure 2-3.



Figure 2-3 Deja Connect To... Dialogue Box

2. **Type the server name and port number in the Connect To... dialog box.**

Deja tries to connect to the new directory server. If it is unable to connect, an error message is displayed.

Note - If Deja is running as an applet through a browser, the ability to connect to another server depends on the security level set by the browser.

Refreshing the Browser Window

If directory operations are being performed on the same directory server by another user or the administrator, the browser window is not automatically updated. To refresh the browser window:

1. **In the browser window, click on the root entry of the branch you want to refresh.**

You can choose to refresh all of the directory by selecting the directory root entry, or to refresh just a branch by clicking on the root entry of the branch.

2. **Select Refresh Subtree from the File menu.**

All the branches of the directory below the selected entry are collapsed in the browser window. When they are reopened, they are refreshed.

Creating a New Entry

Use Create to add new entries to the directory. Figure 2-4 shows the Deja Create panel. You must have write permission for the parent to which you want to add an entry. See “Logging In” on page 9 for information. To create a root entry for an empty directory, see “Creating a Root Entry” on page 19.

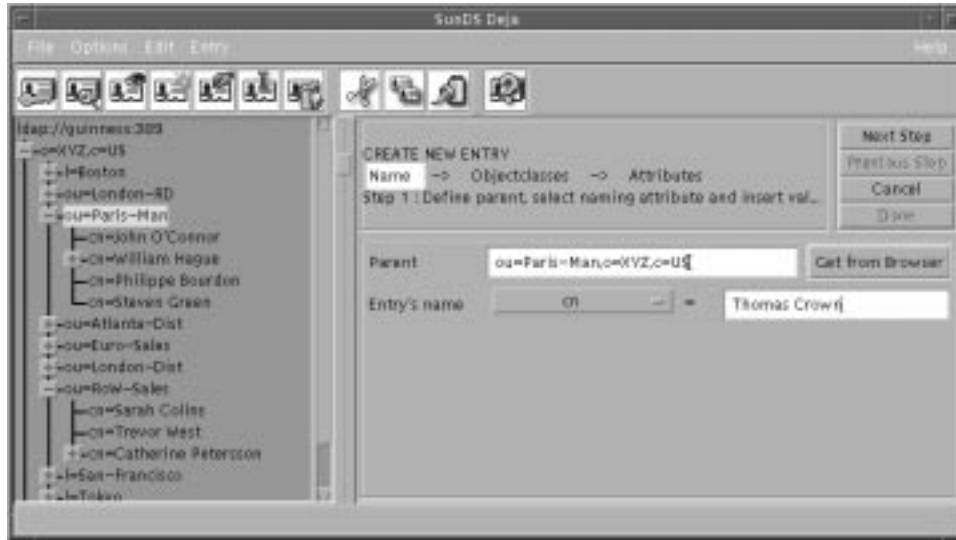


Figure 2-4 Deja Create Panel

1. Click on the Create icon or select Create from the Entry menu.

The Create panel is displayed.

There are three steps to creating a directory entry. You must complete each step before you can progress to the next one.

- Name the entry. See “Naming an Entry” on page 16.
- Select object classes for the new entry. See “Selecting Object Classes” on page 16.
- Add values to the mandatory and optional attributes for each objectclass. See “Selecting Attributes” on page 17.

2. When you have completed the entry, click Done.

Naming an Entry

For example, we will add an entry for the person John Smith, working in an organization called XYZ based in the United States. You must have write permission for the parent to which you want to add an entry. See “Logging In” on page 9 for information.

1. Specify the parent of the entry:

- a. Type the Distinguished Name (DN) of the Entry’s parent in the Parent text field.**

For the example, the DN for the entry’s parent is o=XYZ,c=US.

- b. Alternatively, click once on the parent in the browser window to select it, and click the Get from Browser button.**

The Distinguished Name of the selected entry is imported to the Parent text field.

2. Select the naming attribute from the option button.

Options depend on the directory schema. For the example, the naming attribute is cn, which stands for common name.

3. Type the Relative Distinguished Name (RDN) of the entry in the Entry Name text field.

For the example the RDN is cn=John Smith.

4. When you are satisfied with the entry name and parent, click the Next Step button to select object classes.

The Select Objectclasses panel is displayed. The DN of the new entry is also displayed. For the example the DN is cn=John Smith,o=XYZ,c=US.

Selecting Object Classes

You can define one or more object classes for your entry. When the selected objectclasses list is complete, click the Next Step button to select attributes.

Note - If the selected objectclasses do not contain the previously selected naming attribute, a warning message is displayed. You must either specify a different naming attribute by going back to the first step, or add an appropriate object class to the entry.

Adding an Object Class to the Entry

- ♦ **Double click on the object class from the Available Objectclasses list to add the object class to the entry**
Or, select an object class from the Available Objectclasses list and click on the right arrow button to add the object class to the entry.

For the example John Smith entry, add the person object class to the entry. Click the Next Button to assign attributes to the entry.

Removing an Object Class From the Entry

- ♦ **Double click on the object class in the Selected Objectclasses list to remove the object class from the entry**
Or, select the object class in the Selected Objectclasses list and click on the left arrow button to remove the object class from the entry.

Selecting Attributes

Each object class you have selected has a number of mandatory and optional attributes associated with it. Mandatory attributes are marked with (M), optional attributes with (O). To complete the entry, you *must* provide values for the mandatory attributes. The names of the mandatory attributes are already listed in the entry definition.

Note - Deja produces an error message if you try to add an entry to the directory without naming all the mandatory attributes.

For the example entry, the mandatory attributes are cn and sn (common name and surname). Optional attributes for the person object class can include description, see also, telephone number and userpassword.

Some attributes accept multiple values, others can only have one value. This is defined in the schema by the SINGLE-VALUE keyword. If you try to add more than one value to a single-valued attribute, an error message is displayed.

Assigning a Value to an Attribute

1. **From the Choose Attribute list, or from the entry definition, select the attribute for which you want to add a value.**
For the example, select sn from the Choose Attribute list.
2. **Type the value for the attribute in the text field.**

Type `Smith` in the text field.

3. Click Add to add the value of the attribute to the entry definition.

The value appears in the entry definition next to the attribute.

John Smith's entry is now functionally complete, all of the mandatory attributes have been named. However, we will add a couple of optional attributes to make the entry more useful in the directory; telephone number and userpassword. Add the value 123 456 789 for the telephonenumber attribute, and add a user password for the entry. Note that the value for the userpassword attribute is hidden in the entry definition.

To add an additional value for an attribute, repeat steps 1 to 3.

Finally, to complete the entry we will add a second value for the telephonenumber attribute, John Smith's internal extension number — 789. When you have added the additional value, click on Done to add the entry to the directory. Double click on the entry in the browser to display all of its attributes. See Figure 2-5.



Figure 2-5 Example Entry View Window

When an attribute has more than one value, an arrow is displayed next to the attribute name in the entry definition. Click on the arrow to collapse or expand the attribute definition. See “The View Window” on page 30 for more information.

Deleting a Value From an Attribute

1. Select the value or the attribute name in the entry definition.

2. Click Delete.

- If you delete the only value for an optional attribute, the attribute is removed from the entry definition.

- If you delete the only value for a mandatory attribute, the value is cleared from the entry definition. The attribute stays in the definition.

Modifying an Attribute Value

1. **Select the value of the attribute you want to modify in the entry definition.**

The attribute value appears in the text field.

2. **Modify the value and click Modify.**

The modified value appears in the entry definition.

Cancel

- ♦ **To cancel a create operation at any time, click Cancel.**

The entry definition is cleared from the Create panel.

Creating a Root Entry

When you are connected to the directory server, the topmost entry in the directory browser window is the Directory Specific Entry (DSE). It is displayed as:

```
ldap://hostname:port
```

where *hostname* is the hostname of the directory server, and *port* is the port number that Deja has used to connect to the directory server.

If there is no root entry listed below this when you start Deja, you will see an error message that tells you that the database is empty. Before you can add entries to the directory you must create a root entry for the database.

1. **Login as administrator for the directory.**

See “Logging In” on page 9.

2. **Double click on the Directory Specific Entry in the browser window.**

A view panel is displayed showing the attributes of the DSE. This window lists the naming contexts defined for the directory server. See Figure 2–6.

supportedcontrol	1.2.840.113556.1.4.318
supportedcontrol	2.16.840.1.113730.3.4.2
namingcontexts	c=xyz,c=us
	dc=xyz,dc=con

Figure 2-6 Naming Contexts for the Default Directory Specific Entry

You can create a root entry for each naming context defined for the server. By default there are two naming contexts, o=xyz,c=us and dc=xyz,dc=us. To define new naming contexts, see the *Sun Directory Services 3.1 Administration Guide*.

3. Click on the Create icon or select Create Entry from the Entry menu.

The Create panel is displayed.

4. In the Parent text field, type the Distinguished Name of the naming context for which you want to create a root entry.

For example, to add a root entry for the naming context o=xyz,c=us, type **o=xyz,c=us** in the Parent text field.

5. Click on Next Step.

Now you must select object classes and assign values to attributes using the same procedure as for any new entry. See “Creating a New Entry” on page 15.

Deleting an Entry

The delete panel of Deja is used to delete entries from the directory. Figure 2-7 shows the Deja Delete panel.

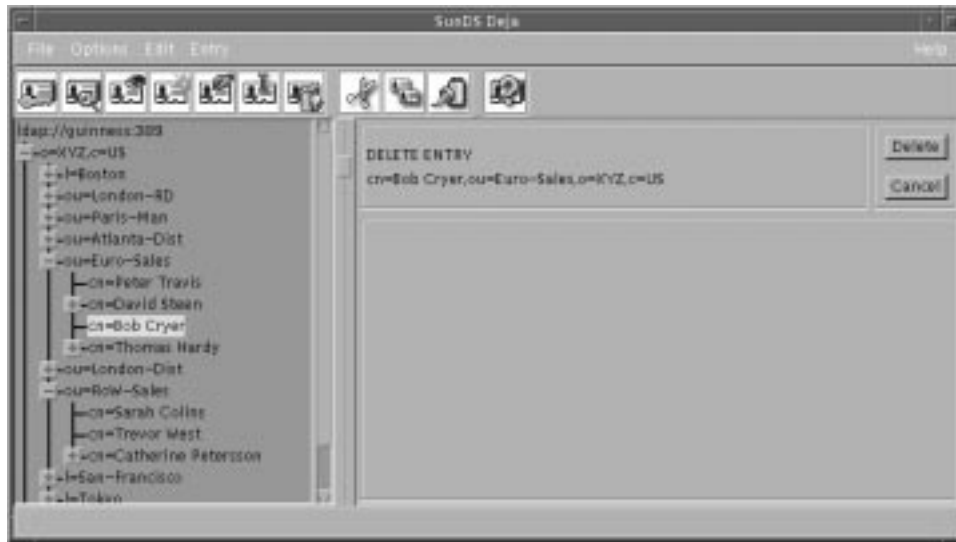


Figure 2-7 Deja Delete Panel

You must have write permission for the entry you want to delete. See “Logging In” on page 9 for information.

1. Select the entry you want to delete in the browser window.

You can only delete leaf entries. You cannot delete a root entry or a parent that still has children.

2. Click on the Delete icon, or select Delete from the Entry menu.

The Delete panel is displayed.

3. Click on Delete to remove the entry from the directory.

Click on Cancel to clear the delete panel.



Caution - There is no undelete function.

Cut, Copy and Paste

Cutting an Entry

Use Cut to remove an entry from the directory and keep a copy of it on the clipboard. The entry can be pasted from the clipboard into the directory in another location.

You must have write permission for the entry you want to cut. See “Logging In” on page 9 for information.

- 1. In the browser, click on the entry you want to cut.**
- 2. Click on the Cut icon, or select Cut from the Edit menu, or press Ctrl-x on the keyboard.**
The entry is cut from the directory to the clipboard.
- 3. You can now paste the entry to a new directory position.**
- 4. If you want to restore the entry to the directory, select Restore from the Edit menu.**

The entry is restored to its original position in the directory if possible. If the parent entry no longer exists, or has been renamed, the paste is not possible and an error message is displayed.

Copying an Entry

Use Copy to copy an existing entry from the directory into the clipboard. The entry can then be pasted from the clipboard into the directory in another location.

- 1. In the browser, click on the entry you want to copy to select it.**
- 2. Click on the Copy icon, or select Copy from the Edit menu, or press Ctrl-c on the keyboard.**
The entry is copied from the directory to the clipboard.
- 3. You can now paste the entry to a new directory position.**

Pasting an Entry

After a Cut or Copy operation, use Paste to paste an entry from the clipboard into the directory. You can paste as a child or as a sibling of the selected entry. You must

have write permission to paste an entry into the directory. See “Logging In” on page 9 for information.

- ◆ **After a cut or a copy operation, click on the Paste icon, or select Paste from the Edit menu, or press Ctrl-v on the keyboard.**

If you selected a new entry before pasting, the pasted entry appears as a child of the selected entry.

If you did not select a new entry before pasting, the pasted entry appears as the last sibling of the selected entry.

If an entry already exists with the same name as the pasted entry, the new entry is pasted with a number appended to its name.

Pasting an Entry to the Create Panel

After a Cut or Copy operation, you can choose to paste an entry directly to the Create panel. This speeds up the process of creating a number of new, but similar entries.

Pasting an entry to the Create panel works in one of two ways:

- The paste action removes information from the Create panel before pasting the entry
- The paste action does not clear data from the Create panel before pasting. This is useful when you want to create an entry that contains the combined characteristics of two or more entries.

The paste method is specified in the `Deja.properties` file on the directory server. By default, Deja does not clear data from the Create panel before pasting. See “Standard Create Parameters” on page 67 for information on changing the default paste method.

1. **After a cut or a copy operation, click on the Create icon, or select Create from the Entry menu.**
2. **Select Paste to Create Panel from the Edit menu.**

If you are in the first section of the Create panel, the entire entry is pasted into the panel, including the name and naming attribute.

If you are in the Select Object Classes section of the Create Panel (you have already named and selected a naming attribute for the entry) only the object classes and attributes are pasted into the Create panel.

If you are in the Attributes section of the Create panel (you have already named and selected a naming attribute for the entry, and have selected object classes for the entry) only the attributes are pasted into the Create panel.

If you have selected a naming attribute and named your entry, and the pasted objectclasses do not contain the selected naming attribute, you get an error message. You must either change the naming attribute by going back to the first step, or select an object class that contains the pasted naming attribute.

- 3. Click Done when the entry is complete to add it to the directory.**

Restoring an Entry

If you accidentally cut an entry from the directory, you can restore it, provided that you have not performed any subsequent cut or copy operations.

- ◆ **Select Restore from the Edit menu.**

The entry on the clipboard is returned to its original location.

Modifying an Entry

Use **Modify** to change attributes and object classes in directory entries. Figure 2-8 shows the Deja Modify panel.

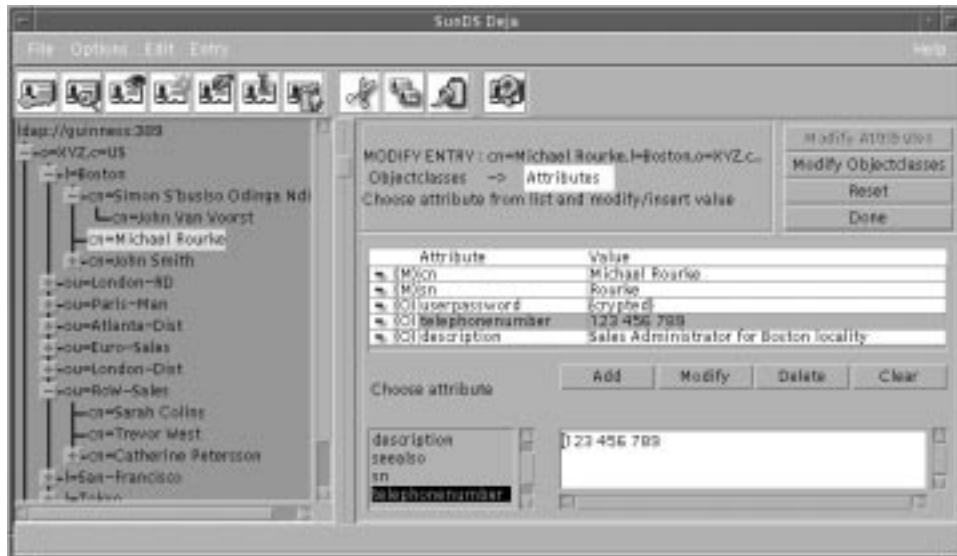


Figure 2-8 Deja Modify Panel

You must have write permission for the entry you want to modify. See “Logging In” on page 9 for information.

1. In the browser, click on the entry you want to modify.
2. Click on the **Modify** icon or select **Modify** from the **Entry** menu.

The Modify Attributes window is displayed. Click on the Modify Objectclasses button to display the Modify Objectclasses window.

You can modify the following characteristics of an entry:

- The values for the mandatory and optional attributes for each object class. See “Selecting Attributes” on page 17.
- The object classes for the entry. See “Selecting Object Classes” on page 16.

If you want to change the name of the entry, use the Rename function. See “Renaming an Entry” on page 25.

3. When you have finished the modifications, click Done.

Renaming an Entry

Use Rename to modify the Relative Distinguished Name (RDN) of an entry. Figure 2-9 shows the Deja Rename panel.

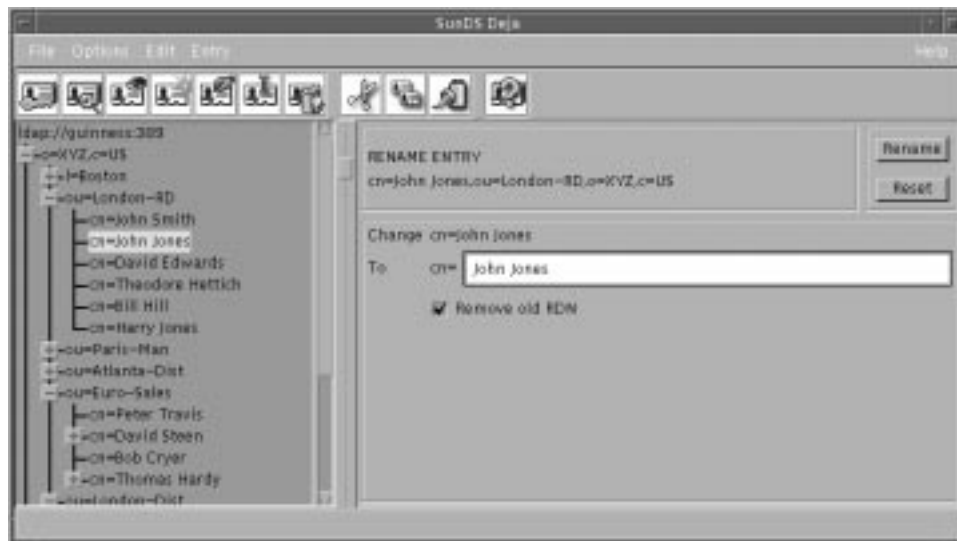


Figure 2-9 Deja Rename Panel

You must have write permission for the entry you want to rename. See “Logging In” on page 9 for information.

1. Select the entry you want to rename in the browser window.

You can only rename leaf entries. You cannot rename parents that still have children, or the root entry.

2. Click on the Rename icon, or select Rename from the Entry menu.

The rename panel appears. The name of the parent and the Relative Distinguished Name (RDN) of the selected entry are displayed.

3. Type the new RDN of the entry in the To text field.

4. If you want the new RDN to replace the old RDN, check the Remove old RDN check box.

By default the new RDN replaces the old RDN. If the Remove old RDN check box is unchecked, the new RDN is added to the entry as an additional value.

5. Click the Rename button.

Searching for an Entry

Use Search when you want to find an entry in the directory. This function provides search facilities based on up to three criteria. Figure 2-10 shows the Deja Search panel. The available search types are defined in the `Deja.properties` file on the directory server. For information on modifying the default searches see “Standard Search Parameters” on page 65. For information on adding a new search see “Adding a New Standard Search” on page 66.

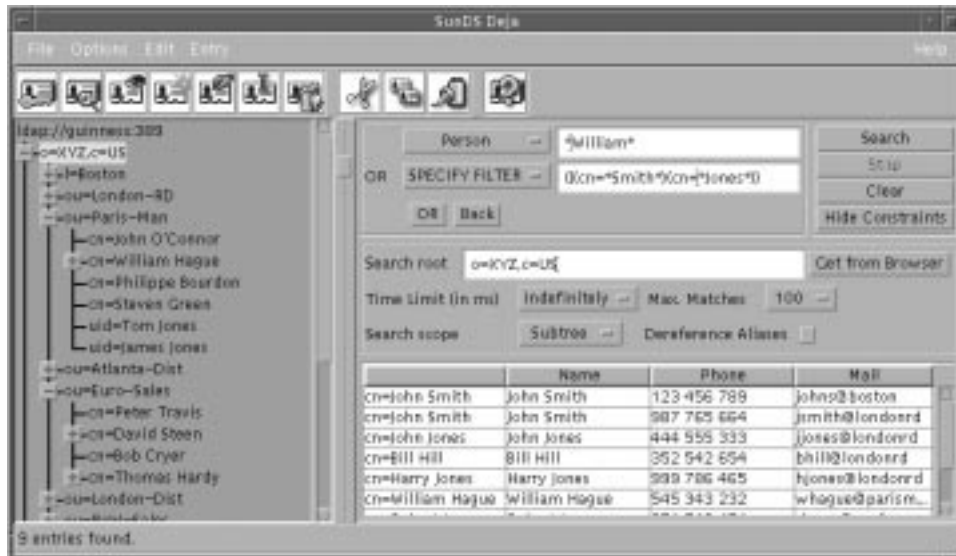


Figure 2-10 Deja Search Panel

1. **Click on the Search icon, or select Search from the Entry menu.**
The Search panel is displayed.
2. **Select the type of entry you want to search for using the Person option button.**
The options in the Person option button are defined in the `Deja.properties` file on the directory server. See “Standard Search Parameters” on page 65 for information on defining standard searches.
Default options are:
 - Person
 - Organization
 - Locality
 - Specify Filter
 See “Search Filters” on page 28.
3. **Type the text string or filter you want to search for in the search text field.**
The search can include the wildcard character `*`.
4. **Click Search to start the search.**
The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.
You can refine your search in two ways:
 - Combine two or more searches. See “Combining Searches” on page 28.

- Constrain the search. See “Using Search Constraints” on page 29.

5. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

6. Click the Clear button to clear the search text field.

Search Filters

Using a search filter is a way of specifying a set of entries, based on the presence of a particular attribute or attribute value. You can combine *and* or *or* logical operators in the same search. Use & for *and* and | for *or*. Table 2–1 gives some examples of filters.

TABLE 2–1 Search Filter Examples

Filter	Definition
<code>l=London</code>	locality is “London”
<code>cn=*Rob*</code>	common name contains “Rob”
<code>(& (cn=Ch*) (cn=*Thomas*))</code>	common name starts with “Ch” and contains “Thomas”
<code>((sn=*bert*) (sn=*bort*))</code>	surname contains “bert” or “bort”
<code>(& (cn=Rob*) ((cn=*Green*) (cn=*Jones*)))</code>	common name starts with “Rob” and contains “Green” or “Jones”

Combining Searches

You can combine your first search string with up to two other text strings using *and* or *or* logical operators. You cannot combine both operators in the same search. For example, you can search for `cn=*Robert*` *and* `l=Boston` *and* `o=xyz`, or you can search for `cn=*Robert*` *or* `l=Boston` *or* `o=xyz`.

1. Select the type of entry you want to search for using the Person option button.

2. Type the text string you want to search for in the search text field.

3. Click on the And or Or buttons to select the logical operator.
4. Select the entry type for the second text string using the Person option button.
5. Type the second text string in the search text field.
6. If you want to add a third search criterion, click the And or Or button.
7. To remove a search criterion, click the Back button.
8. Click the Clear button to clear all the search text fields.

Using Search Constraints

If you do not set all of the search constraints, the default values are used.

1. **Type the Distinguished Name (DN) of the root of the subtree you want to search.**
Or, select the root of the subtree you want to search in the browser window and click Get from Browser.
2. **Select the search time limit (in ms) from the Time Limit option button.**
By default, there is no time limit.
3. **Select the maximum number of search results from the Max. Matches option button.**
The default maximum number of search matches is 100.
4. **Select the scope of the search from the Search Scope option button.**
 - One Level searches the entries on the level immediately below the search root.
 - Subtree searches all entries below the search root.The default scope is subtree.
5. **If you want to dereference aliases as you search, check the Dereference Aliases check box.**
If you choose to dereference aliases as you search, the distinguished name (DN) of an alias entry is translated to the DN of the actual entry. With the dereferencing flag checked, the object referred to by the alias is returned by a search. With the dereferencing flag unchecked, the alias entry is returned by a search.

Search Results List

Search results are displayed in the list below the search criteria.

The RDN, common name, telephone number and email address for each match are displayed.

- ◆ **To view an entry, double-click on the entry's name in the search results list.**
The view entry window is displayed.

Viewing an Entry

Use View to look at the attributes defined for an entry in the directory. Figure 2-11 shows Deja View window. You can only open one View window per entry. To refresh a View window after modifying an entry, View the entry again. The original View window is replaced with a new one.



Figure 2-11 Deja View Window

The View Window

There are three ways to display the View window:

- Double-click on an entry in the browser window
- Select an entry in the browser window and click on the View icon, or select View from the Entry menu
- Click on an entry in the search results list

The view window shows the list of attributes and values associated with the selected entry. Each attribute has an icon by the side of it:



The attribute has one value. It is also used in the Create or Modify panels when a mandatory attribute has no value.



The attribute has more than one value, but only the first is displayed. Click on the arrow to see the other values.



The attribute has more than one value and they are all displayed. Click on the arrow to hide all but the first value.

Closing a View Window

- ♦ **Select Close from the Window menu of the View window, or Double click on the Window menu button.**

The View window closes.

Copying an Entry From a View Window

- ♦ **Select Copy from the Edit menu of the View Window.**

The entry is copied to the clipboard.

Highlighting an Entry From a View Window

- ♦ **Select Highlight from the Edit menu of the View Window.**

The entry is highlighted in Deja's browser window.

Deja — Operations on NIS Entries

This chapter describes the NIS-specific search and create panels. All other Deja functions are described in Chapter 2.

To view the NIS-specific search and create panels you must change the Deja user profile to NIS. See “User Profile” on page 12 for information.

The `Deja.properties` file on the directory server defines the NIS maps available in Deja. For information on adding or modifying NIS maps see “NIS Parameters” on page 68.

Note - The NIS maps are defined in the `nis.mapping` file on the directory server. If the `nis.mapping` file has been changed, the changes should be copied into the `Deja.properties` file using the `dejasync` utility. See Appendix B for information.

Creating a New Entry

Use Create to add new entries to the NIS directory. Figure 3-1 shows the Deja Create panel for NIS users.

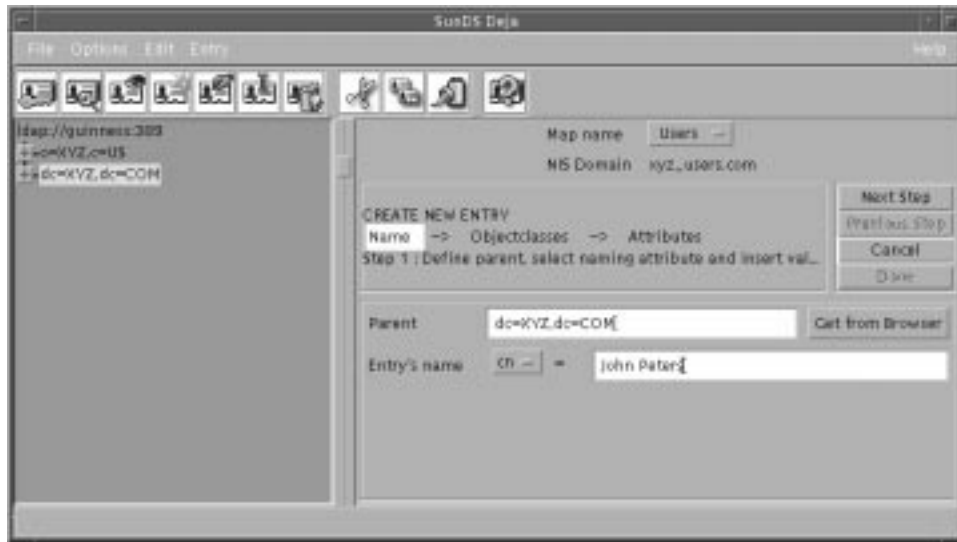


Figure 3-1 Deja Create Panel for NIS Users

1. Click on the Create icon or select Create from the Entry menu.

The Create panel is displayed.

There are three steps to creating a NIS directory entry. You must complete each step before you can progress to the next one. Click on Next Step and Previous Step to navigate between the steps.

- Name the entry. See “Naming an Entry” on page 34.
- Select object classes for the new entry. See “Selecting Object Classes” on page 16.
- Add values to the mandatory and optional attributes for each object class. See “Selecting Attributes” on page 17.

2. When you have completed the entry, click Done.

Naming an Entry

1. Select the name of the map to which the new entry should be added from the Map Name option button.

The default options are Users, Aliases, Hosts and Groups.

Note - To modify the default NIS maps, or create new NIS maps, change the definitions in the `Deja.properties` file on the directory server. See “NIS Parameters” on page 68 for information.

2. **The default parent name is automatically added into the Parent text field. To select another parent name, type the Distinguished Name of the Entry's parent in the Parent text field or click once on the parent in the browser window to select it and click the Get From Browser button next to the Parent text field.**

The Distinguished Name of the selected entry is imported to the Parent text field.

The default parent name depends on the selected map, and is defined in the `Deja.properties` file on the directory server. See “NIS Parameters” on page 68 for information.

3. **Select the naming attribute with the option button.**

The list of naming attributes is defined in the `Deja.properties` file on the directory server. See “NIS Parameters” on page 68 for information.

4. **Type the Relative Distinguished Name of the entry in the Entry Name text field.**

5. **When you are satisfied with the entry name and parent, click the Next Step button to select object classes and attributes.**

See “Selecting Object Classes” on page 16 for information on selecting object classes. The Select Object Classes window is displayed pre-filled with default object classes depending on the selected map. The default object classes are specified in the `Deja.properties` file on the directory server. See “NIS Parameters” on page 68 for information.

See “Selecting Attributes” on page 17 for information on selecting attributes for the entry.

Cancel

- ♦ **To cancel a create operation at any time, click Cancel.**

The entry definition is cleared from the Create panel.

Searching for an Entry

Use Search when you want to find a NIS entry in the directory. By default you can search four NIS maps with this function; users, aliases, hosts and groups. Figure 3-2 shows the Deja Search panel for NIS users.

The `Deja.properties` file on the directory server defines the NIS maps available in Deja. For information on adding or modifying NIS maps see “NIS Parameters” on page 68.

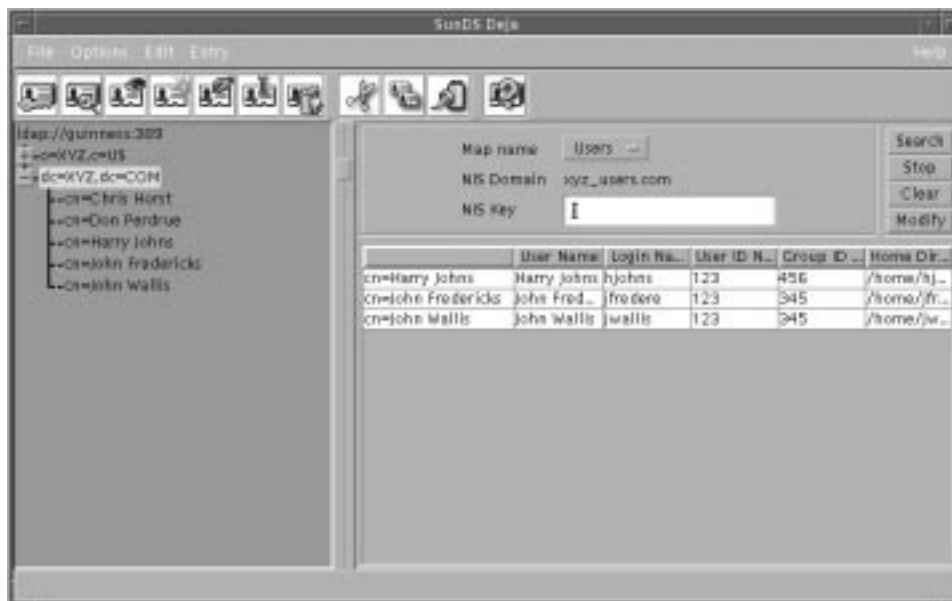


Figure 3-2 Deja Search Panel for NIS Users

Searching for a NIS Entry

1. Click on the Search icon, or select Search from the Entry menu.
The Search panel is displayed.
2. Select the map you want to search from the Map Name option button.
Default options are Users, Aliases, Hosts or Groups.

Note - To modify the default NIS maps, or create new NIS maps, change the definitions in the `Deja.properties` file on the directory server. See “NIS Parameters” on page 68 for information.

3. Type the text string you want to search for in the NIS Key text field.
The search can include the wildcard character `*`.
4. Click Search to start the search.
The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

5. **To stop the search at any time, click the Stop button.**

The search is stopped and no results are returned.

6. **Click the Clear button to clear the search text field.**

Search Results List

Search results are displayed in a list below the search criteria.

The headings of the search results table depend on the map being searched:

MapName	Attributes
users	cn, uid, uidNumber, gidNumber, homeDirectory
aliases	cn, rfc822mailMember
hosts	cn, ipHostNumber, macaddress
groups	cn, gidNumber, memberUid

- ♦ **To view an entry from the search results list, double-click on the entry's name.**

The view entry window is displayed, and the entry is highlighted in the browser window.

Deja — Operations on RADIUS Entries

This chapter describes the RADIUS-specific search, create and modify panels. All other Deja functions are described in Chapter 2.

To view the RADIUS-specific search, create and modify panels you must change the Deja user profile to RADIUS. See “User Profile” on page 12 for information.

The `Deja.properties` file on the directory server defines the RADIUS user profiles available in Deja. For information on adding or modifying RADIUS user profiles see “RADIUS Parameters” on page 72.

Note - The RADIUS profiles are defined in the `radius.mapping` file on the directory server. If the `radius.mapping` file has been changed, the changes should be copied into the `Deja.properties` file using the `dejasync` utility. See Appendix B for information.

Creating a New Entry

Use Create to add new entries to the RADIUS directory. Figure 4-1 shows the Deja Create panel for RADIUS users.

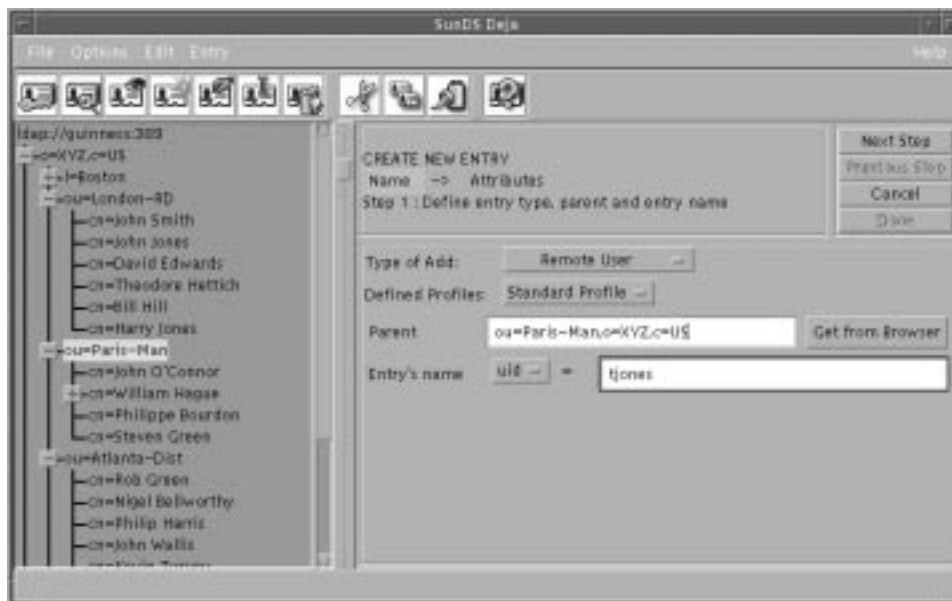


Figure 4-1 Deja Create Panel for RADIUS Users

1. Click on the Create icon or select Create Entry from the Entry menu.

The Create panel is displayed.

There are two steps to creating a RADIUS directory entry. You must complete each step before you can progress to the next one. Click on Next Step and Previous Step to navigate between the steps.

- Name the entry. See “Naming an Entry” on page 40.
- Assign attributes to the entry and name them. See “Selecting Attributes” on page 17.

2. When you have completed the entry, click Done.

Naming an Entry

1. Select the type of entry you want to add (Remote User or Remote Access Server).
2. If you are adding a Remote User, specify the profile of the new entry (Standard, PPP, SLIP, LOGIN).

Note - The list of RADIUS profiles available in Deja is defined in the `deja.properties` file on the directory server. See “RADIUS Profiles” on page 75 for information on defining RADIUS user profiles.

3. Specify the parent of the entry:

By default, the Parent text field holds the distinguished name of an entry specified in the `Deja.properties` file on the directory server. To select another parent entry:

- Type the Distinguished Name of the Entry's parent in the Parent text field
- Alternatively, click once on the parent in the browser window to select it and click the Get From Browser button next to the Parent text field.

The Distinguished Name of the selected entry is imported into the Parent text field.

4. Select the naming attribute for the entry with the option button.

The list of available naming attributes is defined in the `Deja.properties` file on the directory server. See “RADIUS General Parameters” on page 77 for information on defining the list of available naming attributes.

5. Type the value for the naming attribute for the entry in the Entry Name text field.

6. When you are satisfied with the entry name and parent, click the Next Step button to assign values to the attributes.

See “Selecting Attributes” on page 17 for information on selecting attributes for the entry.

Check Data and Reply Data Attributes

The RADIUS add attributes window features four additional buttons:

- *Chk Add* — Select an attribute and type a value for it in the text window. If you click the Chk Add button, the value is added to the entry definition, and the name of the attribute is added to the Radius Check Data optional attribute which matches the `grpCheckInfo` in the `radius.mapping` file.

For example, if you select the User ID attribute from the Choose Attribute list and type the value `charles` in the text window, when you click on Chk Add, the value `charles` is added to the User ID attribute, and `uid` is added to the Radius Check Data attribute.

- *Rpl Add* — Select an attribute and type a value for it in the text window. If you click the Rpl Add button, the value is added to the entry definition, and the name of the attribute is added to the Radius Reply Data optional attribute which matches the `grpReplyInfo` in the `radius.mapping` file.
- *Chk Del* — Select the value of the attribute you want to delete from the entry definition. If you click the Chk Del button, the value is removed from the entry definition, and the name of the attribute is removed from the Radius Check Data optional attribute which matches the `grpCheckInfo` in the `radius.mapping` file.

- *Rpl Del* — Select the value of the attribute you want to delete from the entry definition. If you click the Rpl Del button, the value is removed from the entry definition, and the name of the attribute is removed from the Radius Check Data optional attribute which matches the grpReplyInfo in the `radius.mapping` file.

The `grpCheckInfo` attribute, contains a list of attributes that must be checked by the RADIUS server against the information supplied by the remote user. If the `grpCheckInfo` attribute is not present, or if it does not contain any attributes, then all the attributes in the remote user's entry are checked before access is granted to the user.

The `grpReplyInfo` attribute, contains a list of attributes returned by the RADIUS server with an access-accept or access-reject response. It can contain connection parameters such as a PPP or SLIP profile.

Cancel

- ◆ **To cancel a create operation at any time, click Cancel.**
The entry definition is cleared from the Create panel.

Modifying an Entry

Use Modify to change attributes and object classes in RADIUS directory entries. Figure 4-2 shows the Deja Modify panel for RADIUS users.

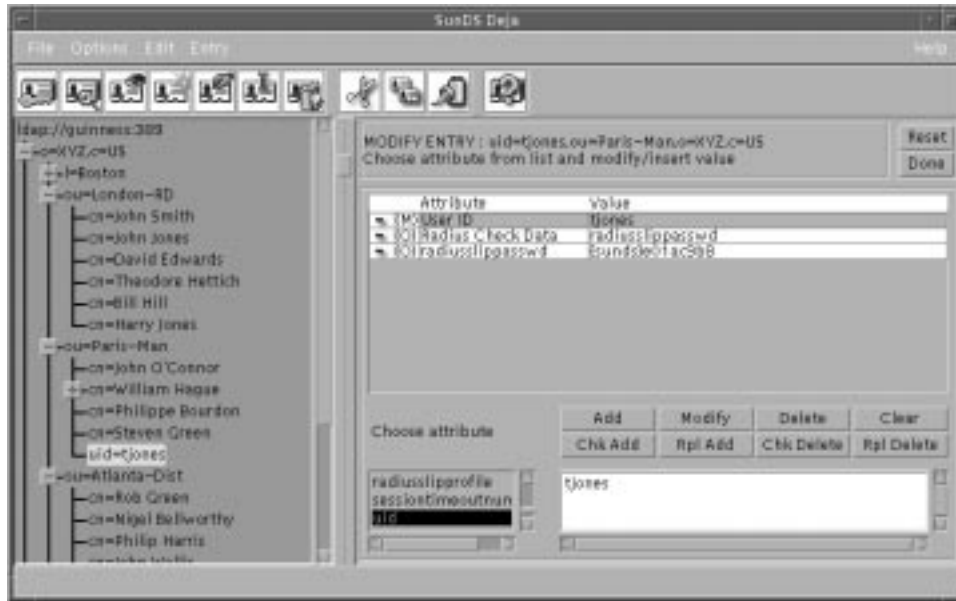


Figure 4-2 Deja Modify Panel for RADIUS Users

You must have write permission for the entry you want to modify. See “Logging In” on page 9 for information.

1. In the browser, click on the entry you want to modify.

2. Click on the Modify icon or select Modify from the Entry menu.

The Modify Attributes window is displayed.

See “Selecting Attributes” on page 17 for information on modifying attributes for the entry.

If you want to change the name of the entry, use the Rename function. See “Renaming an Entry” on page 25.

The RADIUS modify attributes window features four additional buttons: Chk Add, Rpl Add, Chk Del, and Rpl Del. see “Check Data and Reply Data Attributes” on page 41 for details.

3. When you have finished your modifications click Done.

Reset

♦ To cancel a modify operation at any time, click Reset.

The entry definition is cleared from the Modify panel.

Searching for an Entry

Use Search when you want to find a RADIUS entry in the directory. This function provides search facilities for up to three criteria. Figure 4-3 shows the Deja Search panel for RADIUS users.

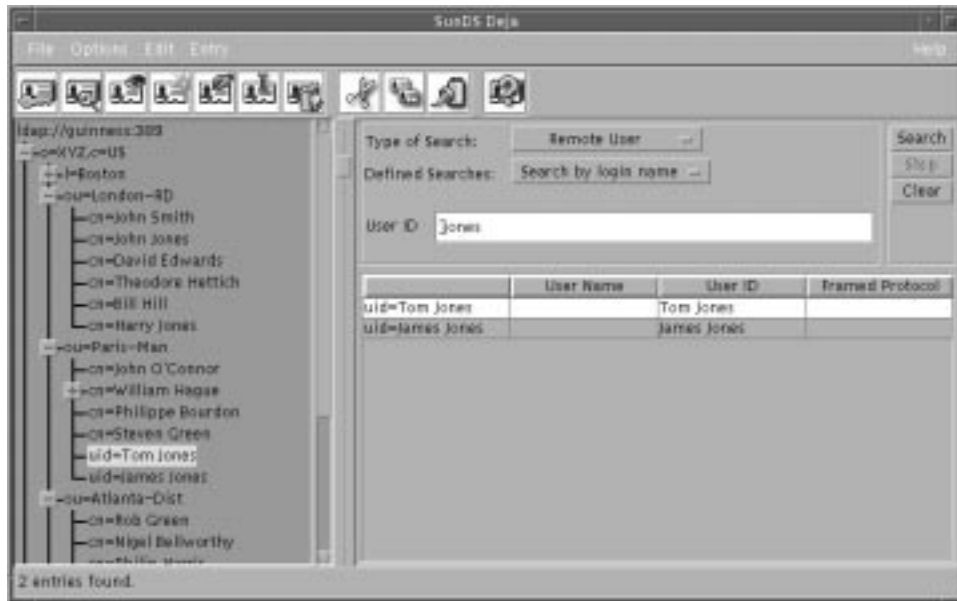


Figure 4-3 Deja Search Panel for RADIUS Users

- ◆ Click on the Search icon, or select Search from the Entry menu.

The Search panel is displayed.

Note - The types of searches available, and the categories of search results are defined in the `Deja.properties` file on the directory server. See “RADIUS Search Panel Definitions” on page 72 for information on defining searches.

The default search types are:

- Remote User search — See “Remote User Searches” on page 45.
- Remote Access Server (RAS) search — See “Remote Access Server Search” on page 49.
- Complex Searches — See “Complex Searches” on page 51.

You can combine Remote User searches with Remote Access Server searches using *and* or *or* operators. You cannot combine both operators in the same search. Up to three search criteria can be defined.

Remote User Searches

There are seven searches pre-defined for remote user entries:

- Search by login name — where Deja searches for entries that have the `remoteuser` objectclass, and whose user id matches the text field. See “Using the Remote User Login Name Search” on page 45.
- Search by user name — where Deja searches for entries that have the `remoteuser` objectclass, and whose user name matches the text field. See “Using the Remote User User Name Search” on page 46.
- List blocked accounts — where Deja searches for entries that have the `remoteuser` object class, and that have one or more failed authorization accesses. See “Using the Remote User Blocked Accounts Search” on page 46.
- List PPP users — where Deja searches for entries that have the `remoteuser` object class, that have a PPP profile, and have a PPP password set. See “Using the Remote User List PPP Users Search” on page 47.
- List SLIP users — where Deja searches for entries that have the `remoteuser` object class, that have a SLIP profile, and have a SLIP password set. See “Using the Remote User List SLIP Users Search” on page 48.
- List LOGIN users — where Deja searches for entries that have the `remoteuser` object class, that have a LOGIN profile, and have a LOGIN password set. See “Using the Remote User List LOGIN Users Search” on page 48.
- Search by name and mail — where Deja searches for entries that have the `remoteuser` object class, and whose name and email address match the text fields. See “Using the Remote User Name and Mail Search” on page 49.

To define a new type of search, see “RADIUS Search Panel Definitions” on page 72.

The default search root for remote user searches is `o=xyz_remote_users,c=us`. This is defined in the `Deja.properties` file on the directory server and cannot be changed from within Deja. See “RADIUS General Parameters” on page 77 for information.

Using the Remote User Login Name Search

1. **Select Remote User from the Type of Search option button.**
2. **Select Search by Login Name from the Defined Searches option button.**
3. **Type the User ID of the entry you want to find in the search text field.**

The search can include the wildcard character *.

4. Click Search to start the search.

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remote user object class searches. See “Complex Searches” on page 51.

5. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

6. Click the Clear button to clear the search text field.

Using the Remote User User Name Search

1. Select Remote User from the Type of Search option button.

2. Select Search by User Name from the Defined Searches option button.

3. Type the user name of the entry you want to find in the search text field.

The search can include the wildcard character *.

4. Click Search to start the search.

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remote user object class searches. See “Complex Searches” on page 51.

5. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

6. Click the Clear button to clear the search text field.

Using the Remote User Blocked Accounts Search

1. Select Remote User from the Type of Search option button.

2. Select List Blocked Accounts from the Defined Searches option button.

There are no user input fields for this search. Deja searches for entries with the following parameters:

```
objectclass = remoteuser  
radiusAuthFailedAccess ≥ RADIUS_MAX_FAIL
```

where RADIUS_MAX_FAIL is defined in the `Deja.properties` file on the directory server. The default value for RADIUS_MAX_FAIL is 4. See “RADIUS General Parameters” on page 77 for information.

3. Click Search to start the search.

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remoteuser object class searches. See “Complex Searches” on page 51.

4. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

Using the Remote User List PPP Users Search

1. Select Remote User from the Type of Search option button.

2. Select List PPP Users from the Defined Searches option button.

There are no user input fields for this search. Deja searches for entries with the following parameters:

```
objectclass = remoteuser  
radiusPppProfile = *  
radiusPppPasswd = *
```

3. Click Search to start the search.

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remoteuser object class searches. See “Complex Searches” on page 51.

4. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

Using the Remote User List SLIP Users Search

1. **Select Remote User from the Type of Search option button.**

2. **Select List SLIP Users from the Defined Searches option button.**

There are no user input fields for this search. Deja searches for entries with the following parameters:

```
objectclass = remoteuser  
radiusSlipProfile = *  
radiusSlipPasswd = *
```

3. **Click Search to start the search.**

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remoteuser object class searches. See “Complex Searches” on page 51.

4. **To stop the search at any time, click the Stop button.**

The search is stopped and no results are returned.

Using the Remote User List LOGIN Users Search

1. **Select Remote User from the Type of Search option button.**

2. **Select List LOGIN Users from the Defined Searches option button.**

There are no user input fields for this search. Deja searches for entries with the following parameters:

```
objectclass = remoteuser  
radiusLoginProfile = *  
radiusLoginPasswd = *
```

3. **Click Search to start the search.**

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remoteuser object class searches. See “Complex Searches” on page 51.

4. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

Using the Remote User Name and Mail Search

1. Select Remote User from the Type of Search option button.

2. Select Search by Name / Mail from the Defined Searches option button.

3. Type the username and email address of the entry you want to find in the search text fields.

The search can include the wildcard character *.

4. Click Search to start the search.

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with RAS object class searches or further remoteuser object class searches. See “Complex Searches” on page 51.

5. To stop the search at any time, click the Stop button.

The search is stopped and no results are returned.

6. Click the Clear button to clear the search text fields.

Remote Access Server Search

There are two searches pre-defined for RAS entries:

- Search by RAS Name — where Deja searches for all entries that have the objectclass RAS, and whose RAS name matches the text field. See “Using the RAS Name Search” on page 50.
- Search by RAS IP Address — where Deja searches for all entries that have the objectclass RAS, and whose RAS network address matches the text field. See “Using the RAS IP Address Search” on page 50.

To define a new type of search, see “RADIUS Search Panel Definitions” on page 72.

The default search root for remote access server searches is `o=xyz_ras,c=us`. This is defined in the `Deja.properties` file on the directory server and cannot be changed from within Deja. See “RADIUS General Parameters” on page 77 for information.

Using the RAS Name Search

1. **Select Remote Access Server from the Type of Search option button.**
2. **Select Search by RAS Name from the Defined Searches option button.**
3. **Type the name you want to find in the search text field.**
The search can include the wildcard character *.

4. **Click Search to start the search.**

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with remote user object class searches or further RAS object class searches. See “Complex Searches” on page 51.

5. **To stop the search at any time, click the Stop button.**
The search is stopped and no results are returned.
6. **Click the Clear button to clear the search text fields.**

Using the RAS IP Address Search

1. **Select Remote Access Server from the Type of Search option button.**
2. **Select Search by RAS IP Address from the Defined Searches option button.**
3. **Type the IP address you want to find in the search text field.**
4. **Click Search to start the search.**

The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.

You can refine your search by combining it with remote user object class searches or further RAS object class searches. See “Complex Searches” on page 51.

5. **To stop the search at any time, click the Stop button.**
The search is stopped and no results are returned.
6. **Click the Clear button to clear the search text fields.**

Complex Searches

You can combine three types of search with the complex searches option:

- Remote User searches
- Remote Access Server searches
- Specify Filter — See “Search Filters” on page 28 for a description of acceptable filters.

Searches can be combined with *and* or *or* operators. You cannot combine both operators in the same search. Up to three search criteria can be defined.

1. **Select Complex Searches from the Type of Search option button.**
2. **Select the first search criterion from the Remote User option button and type the search string or filter definition in the text field.**
3. **Click on the And or Or buttons to select the logical operator.**
4. **Select the second search criterion from the Remote User option button and type the search string or filter definition in the text field.**
5. **If you want to add a third search criterion, click the And or Or button again.**
6. **To remove a search criterion, click the Back button.**
7. **Type the Distinguished Name (DN) of the root of the tree you want to search, or select the root you want to search in the browser window and click Get from Browser.**
8. **Click Search to start the search.**
The search results are displayed in the search results list and the number of entries found is displayed in the status bar. If there are no matches, the search results list is empty and the status bar indicates that no entries were found.
9. **To stop the search at any time, click the Stop button.**
The search is stopped and no results are returned.
10. **Click the Clear button to clear all the search parameters.**

Search Results List

Search results are displayed in a list below the search criteria.

The headings of the search results table depend on the search. The types of searches, and the headings for search results are defined in the `Deja.properties` file on the

directory server. All the headings can be modified except those for complex searches. See “RADIUS Search Panel Definitions” on page 72 for information on defining searches.

The attributes returned for the default searches are:

Search Type	Attributes
remoteuser login name	cn, uid, framedProtocol
remoteuser user name	cn, uid
remoteuser blocked accounts	cn, uid, radiusFailedAccess
remoteuser all PPP users	cn, uid
remoteuser all SLIP users	cn, uid
remoteuser all LOGIN users	cn, uid
remoteuser user name/email address	cn, uid
RAS name	cn, iphostnumber
RAS IP Address	cn, iphostnumber
Complex searches	cn, iphostnumber, uid, radiusFailedAccess

- ◆ **To view an entry from the search results list, double-click on the entry’s name.**
The View window is displayed, and the entry is highlighted in the browser window.

Browsing the Directory Through the Web Gateway

The Web Gateway provides an interface to a Sun Directory Services directory from any web browser. You can view the directory, search for and read entries, and modify some directory information. This is useful for checking information in the directory, but it is a general-purpose tool and should not be used in place of Deja.

The Web Gateway requires that the gateway daemon, `dswebd`, and the directory services daemon, `dsservd`, are running on the server that holds the directory. If they are not, start them as described in “Starting the `dsservd` and `dswebd` Daemons” on page 6.

The Web Gateway is configured by modifying the configuration files on the directory server. See the *Sun Directory Services 3.1 Administration Guide* for information.

Displaying the Web Gateway

From any machine, open the following URL in a web browser:

`http://server:webgwport/`

Where *server* is the name of a directory server running the `dsservd` and `dswebd` daemons and *webgwport* is the port used by `dswebd`. The default port is 1760.

The Root Directory Specific Entry page is displayed. See Figure 5-1.

It shows the root directory specific entry in the data store to which you are connected. If the data store holds several naming contexts, several entries are listed,

sorted by object class. By default there are two naming contexts defined, o=xyz,c=us and dc=xyz,dc=us. Each entry is a hot link to a search facility that enables you to browse the naming context.



Figure 5-1 Web Gateway Root Directory Specific Entry

Browsing the Directory

1. Click a hotlink for a naming context.

Your browser displays a search page, as shown in Figure 5-2.

The search page shows the root entry for the naming context; in Figure 5-2 this entry is o=XYZ, c=US.

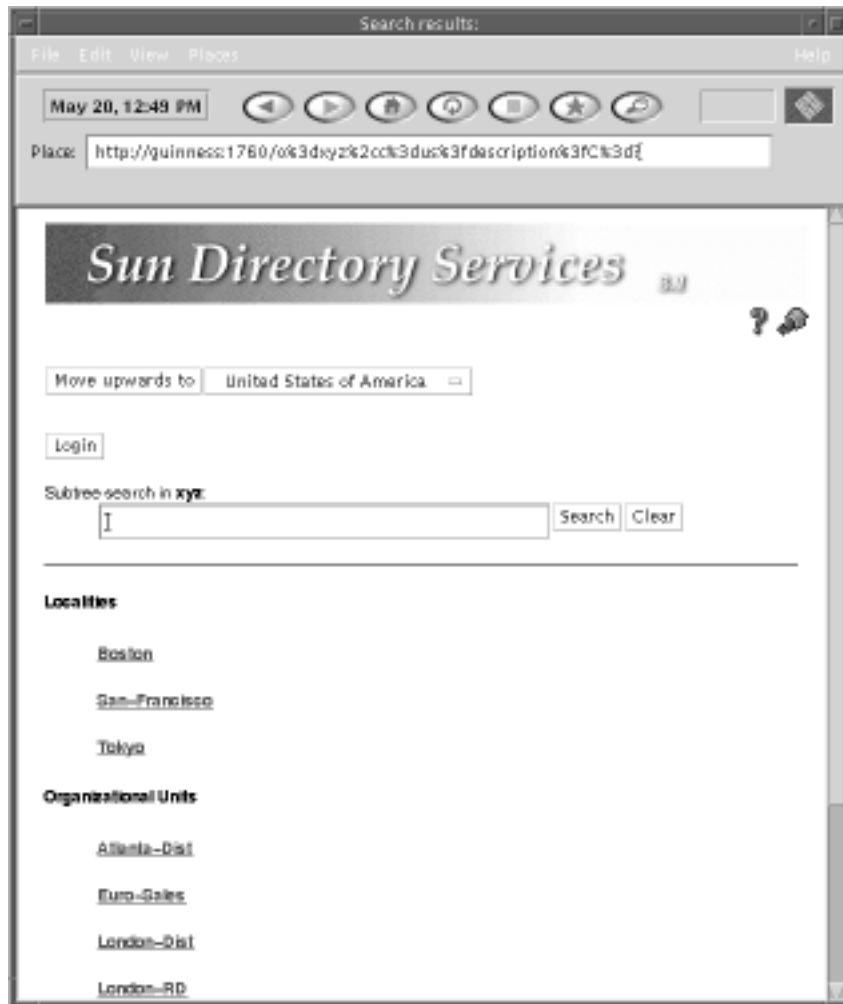


Figure 5-2 Browsing the Directory

2. Specify the top of the subtree you want to browse.

Use the Move upwards control to move up the directory tree hierarchy. At each position, the naming context list shows you the parent naming context and any child naming contexts. Choose the naming context you want to browse. The top entry in that naming context becomes the currently-selected entry.

3. Click on the Browse the Directory button.

The child entries of the currently-selected entry are listed. To see the contents of any entry, click on the link for that entry.

Searching the Directory

1. Specify the top of the subtree you want to browse.

Use the Move upwards control to move up the directory tree hierarchy. At each position, the naming context list shows you the parent naming context and any child naming contexts. Choose the naming context you want to browse. The top entry in that naming context becomes the currently-selected entry.

2. Enter the search string in the Subtree search field and click on the Search button.

The search string can be an attribute value, or a valid LDAP filter. See Table 2-1.

After a short delay, a list of entries that match the search string is displayed, up to the limit configured for the gateway. See the *Sun Directory Services 3.1 Administration Guide* for information. Click on an entry to see the attributes it contains.



Figure 5-3 Search Results Page

By default, a search at the upper levels of the directory tree (root or country level) is a one-level search, that is, only child entries of the currently selected entry is searched and the target of the search is assumed to be a country, organization or locality entry. In the rest of the directory tree, a search is a subtree search and the target is assumed to be a entry relating to a person. This search strategy is configured in the file `dswebfilter.conf`. See the `dswebfilter.conf(4)` manpage for information.

Reading a Directory Entry

For any entry, you have the option of viewing all the attributes and their values. Use the View All Attributes button to show all the attributes and values assigned to the entry.

Some attributes are handled in a special way:

- An attribute's value that is a distinguished name (DN) is a hotlink to the entry identified by the DN.
- An attribute containing an email address is a hotlink to a mailer to send mail to that address.
- An attribute containing an URL is a hotlink to the target of the URL.
- A photograph or other image is either displayed as an inline image or can be downloaded by clicking on a hotlink. The display format depends on your browser.
- Audio data is retrieved by clicking on a hotlink.

Modifying a Directory Entry

To modify an entry you must bind to the directory, supplying your distinguished name and password. Not all attributes can be modified using the Web Gateway. To modify an attribute of an entry:

1. Display the entry that you want to modify.

At the end of the attribute list there is a Modify Attributes button. Depending on the configuration of your Web Gateway, there may also be buttons for modifying specific attributes.

2. Click on the button for modifying the attribute you want to change, or click on the Modify Attributes button.

If you are not logged in, an authentication request window is displayed. See "Authentication" on page 59 for information. Enter your distinguished name and password.

The access controls defined for the entry will determine whether you are permitted to modify any attributes in the entry.

3. Supply a new value for the attribute you want to modify.

4. When you have finished modifying the entry, click the Apply button.

Authentication

Login Button

The Login Button provides a means of logging in for the duration of your connection to the directory. The login button grants the access rights specified in the access control rules on the directory server. Click the Login button to display a login request window. See Figure 5-4.

- ◆ **Type your user name and password and click OK.**

If there are more than one entry in the directory with the attribute uid matching the user name, the login fails.



Figure 5-4 Login Request Window

- ◆ **To logout, click the logout button.**

The access privileges are cleared.

Authentication Request Window

If you are not logged in, and you try to modify the directory contents, you will get an authentication request. This authentication is for the current modify operation only. You will have to authenticate for each subsequent modification. The bind DN is supplied pre-filled.

- ◆ **Type your password and click the Bind to Modify button.**

The password is checked against the password stored in the directory. If the access control rules deny you modification rights to the entry you are modifying, the authentication fails. See Figure 5-5.



Figure 5-5 Authentication Request Page

The `Deja.properties` File

Many of Deja's characteristics can be configured by the directory administrator. The characteristics are defined in the `/opt/SUNWconn/ldap/html/Deja.properties` file on the directory server. You must be authenticated as `superuser` or `root` to modify the `Deja.properties` file. After making changes to the `Deja.properties` file, close Deja and restart it for the changes to take effect.

File Structure

The `Deja.properties` file consists of four sections:

- General Parameters, see “General Parameters” on page 62.
- Standard LDAP parameters, see “Standard LDAP Parameters” on page 64.
- NIS parameters, see “NIS Parameters” on page 68.
- RADIUS parameters, see “RADIUS Parameters” on page 72.

In each section is a list of definitions, each of which is terminated with a carriage return. Separate elements in a definition are separated by commas. Related elements are separated by semi-colons.

For example, the code below defines the default attributes displayed for RADIUS searches. The two attribute definitions are separated by a comma. Each definition consists of an attribute whose value is to be displayed (cn and uid), and a label for the results table header row (`RADIUS_RU_CN_ATTR_LABEL` and `RADIUS_RU_UID_ATTR_LABEL`) separated by a semi-colon. The list is terminated with a carriage return.

```
RADIUS_RU_LIST.default= cn;RADIUS_RU_CN_ATTR_LABEL,  
uid;RADIUS_RU_UID_ATTR_LABEL
```

The character sequence `{0}` is used in the `Deja.properties` file to indicate user input. The character sequence `{0}` is replaced by the text typed by the user. For example, in a search filter, the definition `(cn={0}*)` specifies that the search will result in entries for which `cn` contains the search string typed by the user in the text field.

Labels

Standard Deja labels and identifiers (parameters ending in `_LABEL`, `_IDENTIFIER` or `_CHOICE`) are defined in the localized resource bundle. You cannot change these definitions. You can, however, create your own labels and replace the default ones. For example, if you wanted to replace the Mail label in the Standard Search results table with Email, substitute the word Email for `STANDARD_SEARCH_TABLE_MAIL_LABEL` in the `STANDARD_SEARCH_TABLE_LABELS` definition. The definition now reads:

```
STANDARD_SEARCH_TABLE_LABELS=  
cn; STANDARD_SEARCH_TABLE_NAME_LABEL,  
telephoneNumber; STANDARD_SEARCH_TABLE_PHONE_LABEL,  
mail; Email
```

General Parameters

In this section the following parameters are defined:

`SCHEMA_THREAD_TIME_LIMIT`

Defines a time limit in milliseconds on the time it takes Deja to read the schema. The default value is no time limit.

`REFERRALS_MANAGE_DSA`

With this option set to `true`, entries with the object class `referral` are treated like normal entries. With this option set to `false`, Deja returns a search reference result. The default value is `true`.

BROWSER_ENTRY_LIMIT

Specifies the maximum number of entries that can be displayed in the browser. If a limit has been set, you must refresh some subtrees before opening more. The default value is no limit.

BROWSER_SUBENTRY_LIMIT

Defines the maximum number of immediate children of an entry that can be displayed in the browser. The default value is no limit.

BROWSER_LOAD_SUBNODES_TIME_LIMIT

Specifies the maximum amount of time allowed for Deja to load the children of a node when the node is opened in the browser. This is not the amount of time it then takes to display those children. The default value is 10000 milliseconds.

BROWSER_CHECK_NODE_TIME_LIMIT

This is the maximum time taken for Deja to verify if an entry is a leaf or a node. The default value is 2000 milliseconds.

STANDARD_SECURITY_AUTHENTICATION

Defines the standard authentication mechanism used in the login panel. This can have one of two values: simple or CRAM-MD5. The default value is CRAM-MD5.

CODE EXAMPLE A-1 General Parameters

```
# schema thread time limit in milliseconds (0 = no limit)
SCHEMA_THREAD_TIME_LIMIT=0
#
# manage referrals as entries (true or false)
REFERRALS_MANAGE_DSA=true
#
# max. number of nodes in browser tree (0 = no limit)
BROWSER_ENTRY_LIMIT=0
# max number of subnodes of a node in the browser tree (0 = no limit)
BROWSER_SUBENTRY_LIMIT=0
# time limit to load subnodes (in ms, 0 = no limit)
BROWSER_LOAD_SUBNODES_TIME_LIMIT=10000
# time limit to verify if entry is a leaf or an inner node (in ms, 0 = no limit)
BROWSER_CHECK_NODE_TIME_LIMIT=2000
#
# authentication mechanism
# supported values : CRAM-MD5, simple (cleartext password)
STANDARD_SECURITY_AUTHENTICATION=CRAM-MD5
# STANDARD_SECURITY_AUTHENTICATION=simple
```

Standard LDAP Parameters

In this section of the `Deja.properties` file you can:

- specify which attribute values are hidden in Deja
- specify parameters for the login panel
- define standard searches

Hiding Attributes

`STANDARD_ATTRIBUTES_CRYPTED`

In the view, modify and create windows of Deja, some attribute values are replaced by a localized text string. Specify the attributes you want to be hidden by adding their names to the `STANDARD_ATTRIBUTES_CRYPTED` list. Attribute names are separated by commas. By default the values for `radiusppppasswd`, `radiusloginpasswd`, `chappassword`, `radiusslpasswd`, `userpassword` are hidden.

CODE EXAMPLE A-2 Standard Encrypted Attributes

```
#
# Standard Add/Modify/View
#
STANDARD_ATTRIBUTES_CRYPTED=radiusppppasswd, radiusloginpasswd, chappassword,
radiusslpasswd, userpassword
```

Login Parameters

`STANDARD_LOGIN_SEARCH_FILTER`

The search feature of the login panel operates using the filter defined with this label. By default it is `(|(cn={0}*)(uid={0}*))`. This is defined as either `cn` or `uid` contains the search string typed by the user in the search text field.

`STANDARD_LOGIN_MAX_SEARCH_RESULT`

Specifies the maximum number of search results per naming context returned by a login search. The default value is 55.

`STANDARD_LOGIN_ALIASES`

Defines standard login aliases for Deja. To add an alias, remove the # from the start of the line and see “Adding a Login Alias” on page 65 for information. The syntax is:

```
STANDARD_LOGIN_ALIASES= alias; DN; alias; DN; ...
```

Adding a Login Alias

For example, if the user cn=Robert Travis, ou=sales,o=xyz,c=us wants to login frequently, instead of typing the DN of the user, you can create an alias for him called, for instance, rob. To create the alias:

- ◆ **Remove the # from the start of the line and add the alias name and the DN for the entry to the STANDARD_LOGIN_ALIASES definition:**

```
STANDARD_LOGIN_ALIASES= rob; cn=Robert Travis,ou=sales,o=xyz,c=us
```

When Deja is restarted the alias is available in the Login panel.

CODE EXAMPLE A-3 Login Parameters

```
#
# Standard Login
#
STANDARD_LOGIN_SEARCH_FILTER= (|(cn={0}*)(uid={0}*))
STANDARD_LOGIN_MAX_SEARCH_RESULT= 55
# STANDARD_LOGIN_ALIASES= UserA_alias; userA_dn; UserB_alias; UserB_dn
```

Standard Search Parameters

To add a standard search to Deja, define it in the Standard Search section of the `Deja.properties` file. Each type of search is declared in the `STANDARD_SEARCH_FILTERS` definition. Each search is then defined on a separate line. A search definition consists of the search name (for example, `STANDARD_SEARCH_FILTER_PERSON`), the label that appears in the Search Type option button (for example, `STANDARD_SEARCH_FILTER_PERSON_IDENTIFIER`), and the search definition (for example, `(&(objectclass=person)(cn={0}*))`).

`STANDARD_SEARCH_TABLE_LABELS`

Contains a list of the attributes and header labels for the search results table. By default the cn, telephoneNumber and mail attributes are listed.

```
#
# Standard Search
#
STANDARD_SEARCH_FILTERS= STANDARD_SEARCH_FILTER_PERSON,
STANDARD_SEARCH_FILTER_LOCALITY, STANDARD_SEARCH_FILTER_ORGANIZATION,
STANDARD_SEARCH_FILTER_WILDCARD
STANDARD_SEARCH_FILTER_PERSON= STANDARD_SEARCH_FILTER_PERSON_IDENTIFIER,
(&(objectclass=person)(cn={0}*))
STANDARD_SEARCH_FILTER_LOCALITY= STANDARD_SEARCH_FILTER_LOCALITY_IDENTIFIER,
(l={0}*)
STANDARD_SEARCH_FILTER_ORGANIZATION=
STANDARD_SEARCH_FILTER_ORGANIZATION_IDENTIFIER, (|(o={0}*)(ou={0}*))
STANDARD_SEARCH_FILTER_WILDCARD= STANDARD_SEARCH_FILTER_WILDCARD_IDENTIFIER,
{0}
STANDARD_SEARCH_TABLE_LABELS= cn; STANDARD_SEARCH_TABLE_NAME_LABEL,
telephoneNumber; STANDARD_SEARCH_TABLE_PHONE_LABEL, mail;
STANDARD_SEARCH_TABLE_MAIL_LABEL
```

Adding a New Standard Search

To add a standard search for the uid attribute.

1. Declare the search definition in the STANDARD_SEARCH_FILTERS line:

```
STANDARD_SEARCH_FILTERS= STANDARD_SEARCH_FILTER_PERSON,
STANDARD_SEARCH_FILTER_LOCALITY,
STANDARD_SEARCH_FILTER_ORGANIZATION,
STANDARD_SEARCH_FILTER_WILDCARD, NEW_SEARCH_FILTER_UID
```

The label for the new search is NEW_SEARCH_FILTER_UID.

2. Define the search:

```
NEW_SEARCH_FILTER_UID= User ID, (&(objectclass=*)(uid={0}*))
```

The label to appear in the Search Type option button is User ID, and Deja searches for entries containing the specified value for the attribute uid.

3. Add additional search results table labels:

```
STANDARD_SEARCH_TABLE_LABELS= cn;  
STANDARD_SEARCH_TABLE_NAME_LABEL, telephoneNumber;  
STANDARD_SEARCH_TABLE_PHONE_LABEL, mail;  
STANDARD_SEARCH_TABLE_MAIL_LABEL, uid;User ID
```

User ID is added to the search results table headings.

4. Close Deja and restart it.

You search type is added to the Standard Search panel.

Standard Create Parameters

When you paste an entry to the Create panel (see “Pasting an Entry to the Create Panel” on page 23), the paste works in one of two ways:

- The paste action can remove information from the Create panel before pasting the entry
- The paste action does not clear data from the Create panel before pasting. This is useful when you want to create an entry that contains the characteristics of two or more entries.

STANDARD_CREATE_PASTE_CLEAR_DATA

Specifies the type of paste. `true` indicates that data is cleared from the entry before pasting. By default this is set to `false`.

STANDARD_CREATE_ALTERNATIVE_NAMING_ATTRIBUTES

If the naming attributes cannot be retrieved from the schema for the Standard Create panel, the list of available naming attributes is taken from this definition. By default the naming attributes are `cn`, `o`, `ou`, `l`, `c`, and `dc`.

CODE EXAMPLE A-5 Standard Create Parameters

```
#  
# Standard Create  
#  
STANDARD_CREATE_PASTE_CLEAR_DATA=FALSE  
#STANDARD_CREATE_PASTE_CLEAR_DATA=TRUE  
#  
# Alternate way to specify naming attributes if cannot be retrieved from schema  
STANDARD_CREATE_ALTERNATIVE_NAMING_ATTRIBUTES=cn; o; ou; l; c; dc
```

NIS Parameters

The `NIS_MAPS` definition contains a list of all the NIS maps displayed in Deja. The parameters for each map are specified in a number of definitions. Map definitions can be created by hand, or by using the `dejasync` command line utility. See “Adding a NIS Map to Deja using `dejasync`” on page 69 for information. See also Appendix B, or the `dejasync(1M)` manpage. For each map listed in the `NIS_MAPS` definition in the `Deja.properties` file, `dejasync` gets the `NIS_FILTER`, `NIS_DOMAIN`, `NIS_ROOT`, `NIS_NAMINGATTR` and `NIS_OCLASS` tokens from the `nis.mapping(4)` file, and copies them to the map definition in the `Deja.properties` file. If the tokens already exist in the `Deja.properties` file they are updated by `dejasync`.

`NIS_MAPS`

Specifies the list of maps available in Deja. Each map name is followed by a semicolon and the label that appears in the Map Name option button of the NIS Search, Create or Modify panels. You can create a new map that is not present in the `nis.mapping` file. The syntax is:

`NIS_MAPS= map.name; map_label, map.name; map_label, ...`

`NIS_FILTER.map.name`

Specifies the filter that is used in the NIS Search panel. This definition is automatically generated if you use the `dejasync` utility.

`NIS_DOMAIN.map.name`

Specifies the label that appears in the NIS Create, Modify and Search panels. It shows to which domain the NIS map applies. This definition is automatically generated if you use the `dejasync` utility.

`NIS_NAMINGATTR.map.name`

Specifies the naming attributes that are available in the NIS Create panel. This is a comma delimited list. This definition is automatically generated if you use the `dejasync` utility.

`NIS_ROOT.map.name`

Specifies the DN of the root entry used for NIS searches. It is also the default parent entry displayed in the NIS Create panel. This definition is automatically generated if you use the `dejasync` utility.

`NIS_OCLASS.map.name`

Specifies the default object classes that are added to an entry definition in the NIS Create Panel. This is a comma delimited list. This definition is automatically generated if you use the `dejasync` utility.

`NIS_LIST.map.name`

Contains names of the attributes and header labels for the NIS search results table. The syntax is:

```
NIS_LIST.map.name= attribute;header_label, attribute;header_label, ...
```

`NIS_ADD.map.name`

Specifies labels and syntax for attributes in the NIS Create panel. The syntax is:

```
NIS_ADD.map.name= attribute;label:syntax, attribute;label:syntax, ...
```

Where *syntax* is one of the four basic input types (`int`, `string`, `crypt` and `ipaddr`). If a syntax isn't specified, the default value, `string`, is used. Specifying a syntax is useful to constrain user input:

- `crypt` is a text field where each typed character is replaced with `*`.
- `string` is a text field that accepts any character.
- `int` is a text field that accepts only integer numbers.
- `ipaddr` consists of four `int` fields, in the format `int.int.int.int`.

`NIS_LIST.default`

Contains the names of the attributes listed in NIS search results table if `NIS_LIST` is not defined for a map.

Adding a NIS Map to Deja using `dejasync`

For information about `dejasync`, see Appendix B, or the `dejasync(1M)` manpage. To add a NIS map to Deja from the `nis.mapping` file using `dejasync`:

1. **Login as `root` or become `superuser` on the directory server.**
2. **Add the name of the map, and the label you want to be used in the NIS Maps option button, to the `NIS_MAPS` definition.**

The map must be defined in the `nis.mapping` file. For example to add the `ethers.byname` map to Deja using the label `Ethers`, the `NIS_MAPS` definition will look like this:

```
NIS_MAPS= ethers.byname:Ethers,  
passwd.byname:NIS_MAP_USERS_CHOICE,
```

```
mail.aliases;NIS_MAP_ALIASES_CHOICE,
hosts.byname;NIS_MAP_HOSTS_CHOICE,
group.byname;NIS_MAP_GROUPS_CHOICE
```

3. Run dejasync by typing:

```
prompt# /opt/SUNWconn/ldap/sbin/dejasync -d Deja_properties_directory
-n NIS_mapping_file
```

Where:

Deja_properties_directory specifies the directory containing the `Deja.properties` file. By default this is `/opt/SUNWconn/ldap/html`.

NIS_mapping_file specifies the filename of the NIS mapping file. By default this is `/etc/opt/SUNWconn/ldap/current/mapping/nis.mapping`.

The `dejasync` utility reads the map declarations in `NIS_MAPS`, reads the definitions from the `nis.mapping` file, and updates or adds the corresponding map definitions to the `Deja.properties` file.

For the example, the following map definition is added at the end of the `Deja.properties` file:

```
NIS_OCLASS.ethers.byname= ieee802Device
NIS_FILTER.ethers.byname=
(&(objectClass=ieee802Device)(cn=$NIS_KEY))
NIS_NAMINGATTR.ethers.byname=cn
NIS_ROOT.ethers.byname=dc=xyz,dc=com
NIS_DOMAIN.ethers.byname=xyz.com
```

4. Optionally add NIS_LIST and NIS_ADD definitions for the new map.

Exit from `Deja` and restart it to use the new map.

For the example, the following definitions are added for `NIS_LIST` and `NIS_ADD`:

```
NIS_LIST.ethers.byname=cn;Host Name, macAddress;Ethernet Address,
description;Comments
NIS_ADD.ethers.byname=cn;Host Name, macAddress;Ethernet Address,
description;Comments
```

CODE EXAMPLE A-6 Default NIS Map Definitions

```
#
# list of supported maps
#
NIS_MAPS=passwd.byname;NIS_MAP_USERS_CHOICE,
mail.aliases;NIS_MAP_ALIASES_CHOICE, hosts.byname;NIS_MAP_HOSTS_CHOICE,
group.byname;NIS_MAP_GROUPS_CHOICE
#
# passwd map
#
NIS_FILTER.passwd.byname= (&(objectclass=posixAccount)(uid=$NIS_KEY))
NIS_DOMAIN.passwd.byname= xyz_users.com
NIS_NAMINGATTR.passwd.byname=cn
NIS_ROOT.passwd.byname= dc=xyz_users,dc=com
NIS_OCLASS.passwd.byname= posixaccount, person
NIS_LIST.passwd.byname=cn;NIS_USER_CN_ATTR_LABEL, uid;NIS_UID_ATTR_LABEL,
uidNumber;NIS_UIDNUMBER_ATTR_LABEL, gidNumber;NIS_GIDNUMBER_ATTR_LABEL,
homeDirectory;NIS_HOMEDIRECTORY_ATTR_LABEL
NIS_ADD.passwd.byname=cn;NIS_USER_CN_ATTR_LABEL, sn;NIS_SN_ATTR_LABEL,
uid;NIS_UID_ATTR_LABEL, uidNumber;NIS_UIDNUMBER_ATTR_LABEL;int,
gidNumber;NIS_GIDNUMBER_ATTR_LABEL;int,
homeDirectory;NIS_HOMEDIRECTORY_ATTR_LABEL,
userPassword;NIS_USERPASSWORD_ATTR_LABEL;crypt,
loginShell;NIS_LOGINSHELL_ATTR_LABEL, description;NIS_DESCRIPTION_ATTR_LABEL
#
# alias map
#
NIS_FILTER.mail.aliases= (&(objectclass=nisMailAlias)(cn=$NIS_KEY))
NIS_DOMAIN.mail.aliases= xyz_aliases.com
NIS_NAMINGATTR.mail.aliases=cn
NIS_ROOT.mail.aliases= dc=xyz_aliases,dc=com
NIS_OCLASS.mail.aliases= nismailalias
NIS_LIST.mail.aliases= cn;NIS_ALIAS_CN_ATTR_LABEL,
rfc822mailMember;NIS_RFC822MAILMEMBER_ATTR_LABEL
NIS_ADD.mail.aliases= cn;NIS_ALIAS_CN_ATTR_LABEL,
rfc822mailMember;NIS_RFC822MAILMEMBER_ATTR_LABEL
#
# host map
#
NIS_FILTER.hosts.byname= (&(objectclass=ipHost)(cn=$NIS_KEY))
NIS_DOMAIN.hosts.byname= xyz_hosts.com
NIS_NAMINGATTR.hosts.byname=cn
NIS_ROOT.hosts.byname= dc=xyz_hosts,dc=com
NIS_OCLASS.hosts.byname= ipHost
NIS_LIST.hosts.byname= cn;NIS_HOST_CN_ATTR_LABEL,
```

(continued)

```

ipHostNumber;NIS_IPHOSTNUMBER_ATTR_LABEL, macaddress;NIS_MACADDRESS_ATTR_LABEL
NIS_ADD.hosts.byname=      cn;NIS_HOST_CN_ATTR_LABEL,
ipHostNumber;NIS_IPHOSTNUMBER_ATTR_LABEL;ipaddr,
macaddress;NIS_MACADDRESS_ATTR_LABEL, 1;NIS_L_ATTR_LABEL
#
# group map
#
NIS_FILTER.group.byname= (&(objectclass=posixGroup)(cn=$NIS_KEY))
NIS_DOMAIN.group.byname= xyz_groups.com
NIS_NAMINGATTR.group.byname=cn
NIS_ROOT.group.byname=    dc=xyz_groups,dc=com
NIS_OCLASS.group.byname=  posixGroup
NIS_LIST.group.byname=    cn;NIS_GROUP_CN_ATTR_LABEL,
gidNumber;NIS_GIDNUMBER_ATTR_LABEL, memberUId;NIS_MEMBERUID_ATTR_LABEL
NIS_ADD.group.byname=     cn;NIS_GROUP_CN_ATTR_LABEL,
gidNumber;NIS_GIDNUMBER_ATTR_LABEL;int, memberUId;NIS_MEMBERUID_ATTR_LABEL

NIS_LIST.default=        cn;NIS_CN_ATTR_LABEL

```

RADIUS Parameters

RADIUS Search Panel Definitions

To add a RADIUS search to Deja, define it in the Radius Search Panel section of the `Deja.properties` file. Remote User searches are declared in the `RADIUS_RU_SEARCH` definition, and Remote Access Server searches are defined in the `RADIUS_RAS_SEARCH` definition. Each search is then defined on a separate line. A search definition consists of the search name (for example, `s_user`), the label that appears in the Search Type option button (for example, `RADIUS_RU_SEARCH_USER_LABEL`), and the search definition (for example, `(& (objectclass=remoteuser)(uid={$uid;RADIUS_RU_UID_ATTR_LABEL$}))`).

`RADIUS_COMPLEX_SEARCH_LIST`

Contains a list of the attributes and header labels for the complex search results table. By default the `cn`, `iphostnumber` and `uid` attributes are listed.

Adding a RADIUS Remote Access Server Search

To add a RADIUS Remote Access Server search for the mail attribute.

1. Declare the search definition in the RADIUS_RAS_SEARCH line:

```
RADIUS_RAS_SEARCH=s_name;RADIUS_RAS_SEARCH_NAME_LABEL,  
s_addr;RADIUS_RAS_SEARCH_IPADDR_LABEL, s_mail;Search by Email
```

The name for the new search is `s_mail`, and the label that appears in the Search Type option button is Search by Email.

2. Define the search:

```
RADIUS_RAS_FILTER.s_mail=  
( & (objectclass=nas) (uid={$uid;Email:string$}) )
```

The expression `{ $uid;Email:string$ }` tells Deja that for this search, the user input is a text string (`string`), the label to appear by the text field is Email (`Email`), and that the search text string is a user id (`uid`).

3. Define the headings for the search results table:

```
RADIUS_RAS_LIST.s_mail= cn;RADIUS_RAS_CN_ATTR_LABEL, uid;Email
```

If you do not specify a `RADIUS_RAS_LIST` for the search, the default headings are used (`RADIUS_RAS_LIST.default`).

4. Close Deja and restart it.

Your search type is added to the RADIUS Remote Access Server Search panel.

CODE EXAMPLE A-7 RADIUS Search Definitions

```
#  
# Radius SEARCH PANEL  
#  
# Searches defined for Remote Users  
RADIUS_RU_SEARCH=s_user;RADIUS_RU_SEARCH_USER_LABEL,  
s_name;RADIUS_RU_SEARCH_NAME_LABEL,  
l_bl_acc;RADIUS_RU_LIST_BLOCKED_ACCOUNTS_LABEL ,  
l_ppp;RADIUS_RU_LIST_PPP_USER_LABEL, l_slip;RADIUS_RU_LIST_SLIP_USER_LABEL,  
l_login;RADIUS_RU_LIST_LOGIN_USER_LABEL, s_n_u;RADIUS_RU_SEARCH_NAME_UID_LABEL
```

(continued)

```

# Associated filters pour Remote Users searches
RADIUS_RU_FILTER.s_user= (&
(objectclass=remoteuser)(uid={$uid;RADIUS_RU_UID_ATTR_LABEL$}))
RADIUS_RU_FILTER.s_name= (&
(objectclass=remoteuser)(cn={$cn;RADIUS_RU_CN_ATTR_LABEL$}))
RADIUS_RU_FILTER.l_bl_acc= (&
(objectclass=remoteuser)(radiusAuthFailedAccess>=$RADIUS_MAX_FAIL))
RADIUS_RU_FILTER.l_ppp= (&
(objectclass=remoteuser)(radiusPppProfile=*)(radiusPppPasswd=*))
RADIUS_RU_FILTER.l_slip= (&
(objectclass=remoteuser)(radiusSlipProfile=*)(radiusSlipPasswd=*))
RADIUS_RU_FILTER.l_login= (&
(objectclass=remoteuser)(radiusLoginProfile=*)(radiusLoginPasswd=*))
RADIUS_RU_FILTER.s_n_u= (&
(objectclass=remoteuser)(cn={$cn;RADIUS_RU_CN_ATTR_LABEL$})(uid={$uid;RADIUS_R
U_UID_ATTR_LABEL$}))

# Attributes to be included (listed) in the searches' results
RADIUS_RU_LIST.s_user= cn;RADIUS_RU_CN_ATTR_LABEL,
uid;RADIUS_RU_UID_ATTR_LABEL,
framedProtocol;RADIUS_RU_FRAMEDPROTOCOL_ATTR_LABEL
RADIUS_RU_LIST.l_bl_acc= cn;RADIUS_RU_CN_ATTR_LABEL,
uid;RADIUS_RU_UID_ATTR_LABEL,
radiusAuthFailedAccess;RADIUS_RU_RADIUSAUTHFAILEDACCESS_ATTR_LABEL
RADIUS_RU_LIST.default= cn;RADIUS_RU_CN_ATTR_LABEL,
uid;RADIUS_RU_UID_ATTR_LABEL

# Searches defined for RASes (Remote Access Servers)
RADIUS_RAS_SEARCH=s_name;RADIUS_RAS_SEARCH_NAME_LABEL,
s_addr;RADIUS_RAS_SEARCH_IPADDR_LABEL

# Associated filters pour NAS searches
RADIUS_RAS_FILTER.s_name= (&
(objectclass=NAS)(cn={$cn;RADIUS_RAS_CN_ATTR_LABEL$}))
RADIUS_RAS_FILTER.s_addr= (&
(objectclass=NAS)(iphostnumber={$iphostnumber;RADIUS_RAS_IPHOSTNUMBER_ATTR_LAB
EL;ipaddr$}))

# Attributes to be included (listed) in the searches' results
RADIUS_RAS_LIST.default= cn;RADIUS_RAS_CN_ATTR_LABEL,
iphostnumber;RADIUS_RAS_IPHOSTNUMBER_ATTR_LABEL

# Attributes to be listed in case of a complex search
RADIUS_COMPLEX_SEARCH_LIST=cn;RADIUS_CN_ATTR_LABEL,
iphostnumber;RADIUS_RAS_IPHOSTNUMBER_ATTR_LABEL, uid;RADIUS_RU_UID_ATTR_LABEL

```

RADIUS Create Panel Definitions

You can define alternate names for attributes that are displayed in the Choose Attributes list of the RADIUS Create panel. You can also restrict user input to one of the four basic input types (int, string, crypt and ipaddr). The default *input_type* is string.

RADIUS_RU_ADD_COMMON defines attributes for Remote User Entries that are common to all remote user profiles, and RADIUS_RAS_ADD_COMMON defines attributes for Remote Access Server entries that are common to all remote user profiles. The syntax of an attribute definition is:

```
RADIUS_RAS_ADD_COMMON= attribute_name;label;input_type, ...
```

where:

attribute_name is the name of an attribute

label is the name you want to appear in the Choose Attributes list instead of the attribute name, and

input_type is one of the four basic input types (int, string, crypt and ipaddr). The default *input_type* is string.

CODE EXAMPLE A-8 RADIUS Create Panel Definitions

```
# Radius ADD PANEL

RADIUS_RU_ADD_COMMON= uid;RADIUS_RU_UID_ATTR_LABEL,
grpCheckInfo;RADIUS_RU_GRP_CHECKINFO_ATTR_LABEL,
grpReplyInfo;RADIUS_RU_GRP_REPLYINFO_ATTR_LABEL,
framedIPAddress;RADIUS_RU_FRAMED_IPADDRESS_LABEL;ipaddr,
userPassword;RADIUS_RU_USERPASSWORD_LABEL;crypt
RADIUS_RAS_ADD_COMMON=
iphostNumber;RADIUS_RAS_IPHOSTNUMBER_ATTR_LABEL;ipaddr,
sharedKey;RADIUS_RAS_SHAREDKEY_LABEL;crypt
```

RADIUS Profiles

Three RADIUS Remote User profiles are supplied in the default `Deja.properties` file. There are no Remote Access Server profiles defined in the default `Deja.properties` file. You can add more profiles, or add attributes to the existing profiles, but you should not remove default attributes in the existing profiles.

RADIUS_RU_PROFILE / RADIUS_RAS_PROFILE

Specifies the RADIUS profiles available to Deja. The default profiles are SLIP, PPP and LOGIN. The syntax is:

```
RADIUS_RU_PROFILE= profile_name; label, profile_name; label ...
RADIUS_RAS_PROFILE= profile_name; label, profile_name; label ...
```

Where *profile_name* is the name of the profile, and *label* is the label that appears in the Create or Modify panels.

RADIUS_RU_ADD.profile_name / RADIUS_RAS_ADD.profile_name

Defines the default attributes that are added to the entry automatically. The syntax is:

```
RADIUS_RU_ADD.profile_name= attribute; label; input_type, ...
RADIUS_RAS_ADD.profile_name= attribute; label; input_type, ...
```

Where *attribute* is the attribute you want automatically added to the entry definition, *label* is the name to appear in the entry definition, and *input_type* is one of the four basic input types (int, string, crypt and ipaddr). The default *input_type* is string.

CODE EXAMPLE A-9 RADIUS Profile Definitions

```
# Profiles defined for Remote Users (RU)
RADIUS_RU_PROFILE= ppp_p;RADIUS_RU_PPP_PROFILE_LABEL,
slip_p;RADIUS_RU_SLIP_PROFILE_LABEL, login_p;RADIUS_RU_LOGIN_PROFILE_LABEL

# Mandatory RU profile attributes (you can edit the next line by ADDING
attributes, but
# NEVER erase the attributes that are given by default)
RADIUS_RU_ADD.ppp_p=
radiuspppprofile;RADIUS_RU_RADIUSPPPPROFILE_ATTR_LABEL;int,
radiusPppPasswd;RADIUS_RU_RADIUSPPPPASSWD_ATTR_LABEL;crypt
RADIUS_RU_ADD.slip_p=
radiusSlipprofile;RADIUS_RU_RADIUSSLIPPROFILE_ATTR_LABEL;int,
radiusSlipPasswd;RADIUS_RU_RADIUSSLIPPASSWD_ATTR_LABEL;crypt
RADIUS_RU_ADD.login_p=
radiusLoginprofile;RADIUS_RU_RADIUSLOGINPROFILE_ATTR_LABEL;int,
radiusLoginPasswd;RADIUS_RU_RADIUSLOGINPASSWD_ATTR_LABEL;crypt

# Profiles defined for Remote Access Servers (RAS)
#RADIUS_RAS_PROFILE= no defined profiles

# Mandatory RAS profile attributes
#RADIUS_RAS_ADD.??= no defined profiles
```

(continued)

RADIUS General Parameters

The following general parameters are defined for RADIUS. The `RADIUS_RU_OCLASS`, `RADIUS_RAS_OCLASS`, `RADIUS_RU_ROOT`, `RADIUS_RU_ROOT` and `RADIUS_MAX_FAIL` definitions can be automatically generated from the `radius.mapping(4)` file by the `dejasync` utility. See Appendix B, or the `dejasync(1M)` manpage for information.

`RADIUS_RU_OCLASS`

Specifies the object class associated with the RADIUS Remote User entry type. A single object class is required for each type. This definition is automatically generated if you use the `dejasync` utility. The default object class is `remoteuser`.

`RADIUS_RAS_OCLASS`

Specifies the object class associated with the RADIUS Remote Access Server entry type. A single object class is required for each type. This definition is automatically generated if you use the `dejasync` utility. The default object class is `nas`.

`RADIUS_RU_ROOT`

Specifies the DN of the root entry used for RADIUS Remote User searches. It is also the default parent entry displayed in the RADIUS Create panel. This definition is automatically generated if you use the `dejasync` utility. The default value is `o=xyz_remote_users,c=us`.

`RADIUS_RAS_ROOT`

Specifies the DN of the root entry used for RADIUS Remote Access Server searches. It is also the default parent entry displayed in the RADIUS Create panel. This definition is automatically generated if you use the `dejasync` utility. The default value is `o=xyz_ras,c=us`.

`RADIUS_RU_NAMINGATTR`

Specifies the naming attributes that are available in the RADIUS Create panel for Remote User entries. This is a comma delimited list. The default naming attributes are `cn` and `uid`.

`RADIUS_RAS_NAMINGATTR`

Specifies the naming attributes that are available in the RADIUS Create panel for Remote Access Server entries. This is a comma delimited list. The default naming attribute is cn.

RADIUS_MAX_FAIL

Specifies search limit for the RADIUS Remote User blocked accounts search. The blocked accounts search returns entries that have a value for the attribute radiusAuthFailedAccess greater than or equal to the value of RADIUS_MAX_FAIL. The default value is 4. This definition is automatically generated if you use the dejasync utility.

CODE EXAMPLE A-10 RADIUS General Parameters

```
# Add object classes (a single objectclass is accepted for every type)
RADIUS_RU_OCLASS=      remoteuser
RADIUS_RAS_OCLASS=     nas

# Radius COMMON to ADD and SEARCH Panels
# Root DN: a single RootDN is accepted for every type
RADIUS_RU_ROOT=        o=xyz_remote_users,c=us
RADIUS_RAS_ROOT=       o=xyz_ras,c=us

# Naming attributes: a comma (,) separated list is accepted for every type
RADIUS_RU_NAMINGATTR=  cn, uid
RADIUS_RAS_NAMINGATTR= cn
RADIUS_MAX_FAIL=       4
```

dejasync Command Reference

`dejasync` is a command line utility that synchronises the `Deja.properties` files with the NIS and RADIUS mapping files (`nis.mapping` and `radius.mapping`) on the directory server. Use it when you have made modifications to the mapping files and you want the changes to be carried over into `Deja`.

It creates or updates tokens in the `Deja.properties` file depending on tokens that exist in the `Deja.properties` file.

For information on the `nis.mapping` and `radius.mapping` files, see the relevant manpages; `nis.mapping(4)` and `radius.mapping(4)`.

`dejasync` also backs up the `Deja.properties` file.

You must be logged in as root or superuser to run `dejasync`.

Note - Running `dejasync` implies that you accept all changes that may be made to the `Deja.properties` file.

`nis.mapping` File

`dejasync` gets from the `Deja.properties` file the list of maps managed by `Deja` for NIS. These are lines that start with the `NIS_MAPS` token.

For each map in the `Deja.properties` file, `dejasync` creates a new map definition by copying the following tokens from the `nis.mapping` file into the `Deja.properties` file:

- `NIS_FILTER`
- `NIS_DOMAIN`

- NIS_ROOT
- NIS_NAMINGATTR
- NIS_OCLASS

If these tokens exist in the `Deja.properties` file, `dejasync` updates them. If they do not exist, it creates them.

radius.mapping File

`dejasync` copies the following tokens from the `radius.mapping` file to the `Deja.properties` file:

- RADIUS_RU_OCLASS
- RADIUS_RAS_OCLASS
- RADIUS_RU_ROOT
- RADIUS_RAS_ROOT
- RADIUS_MAX_FAIL

If these tokens exist in the `Deja.properties` file it updates them. If they do not exist it creates them.

Syntax

The command line options for `dejasync` are:

```
/opt/SUNWconn/ldap/sbin/dejasync [-v] [-d Deja_properties_directory]  
[-n NIS_mapping_file] [-r RADIUS_mapping_file]
```

Command Line Options

`-v`

Enables verbose mode.

`-d Deja_properties_directory`

Specifies the directory containing the `Deja.properties` file. By default this is `/opt/SUNWconn/ldap/html`.

-n *NIS_mapping_file*

Specifies the filename of the NIS mapping file. By default this is
/etc/opt/SUNWconn/ldap/current/mapping/nis.mapping.

-r *RADIUS_mapping_file*

Specifies the filename of the RADIUS mapping file. By default this is
/etc/opt/SUNWconn/ldap/current/mapping/radius.mapping.

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