Chapter 37
Distributing Directory Changes to SRC Components on a Solaris Platform

This chapter describes how to configure the directory eventing system (DES) on a Solaris platform using the SRC configuration applications that run only on Solaris platforms.

You can also use the CLI that runs on Solaris platforms and the C-series Controller to configure the directory eventing. See *Chapter 30, Configuring Local Properties with the SRC CLI*.

Topics in this chapter include:

Configuring JNDI Properties for the Directory Eventing System

DES is a Java Naming and Directory Interface (JNDI)–compliant service and accepts standard JNDI properties. For more information about JNDI, see http://java.sun.com/products/jndi/.

To configure JNDI properties for the directory eventing system:

- Use standard DES properties in the format:

    < connectionPrefix > . < standardJNDISuffix >

    Where the variable < connectionPrefix > is a property prefix that depends on the SRC component and the directory to which it connects, and the variable < standardJNDISuffix > is a standard JNDI property.

For example, the property net.juniper.smgt.des.retry_interval is a standard JNDI property that specifies how often the DES for the NIC agent polls the directory.

Variables to Customize JNDI Properties for an SRC Component

If you do not specify values for the standard DES properties, DES accepts the default values. The following list shows the <standardJNDISuffix> variables for the most common standard JNDI properties that you may want to customize for an SRC component.

.java.naming.provider.url

- URL of the primary directory.
- Value—URL in the format ldap:// <host>:389
    - <host>—IP address or name of directory host
- Example—ldap://127.0.0.1:389/

.java.naming.security.principal

- Distinguished name (DN) of the directory entry that defines the username with which the SRC component accesses the directory.
- Value—<DN>
- Example—*cn = nic, ou = Components, o = Operators,* <base>

.java.naming.security.credentials

- Password with which the SRC component accesses the directory.
- Value—<password>
- Guidelines—The password can be encoded in base64 and not visible in plain text. To use an encoded value, use the format {BASE64} <encoded-value>.
- Example—admin

.java.naming.security.protocol

- Security protocol (SSL) for the connection.
- Value—ssl

.java.naming.factory.initial

- Name of the Java factory class from which the SRC software creates the LDAP initial context.
- Value—Path to Java factory
- Example—*net.juniper.smgt.lib.des.DESInitialContextFactory*

Extending the Directory Eventing System for SRC Components

The SRC software defines a number of DES properties that extend the standard set.

- To extend the directory eventing system for SRC components, use the following format for the DES properties:

    <connectionPrefix> .des. <propertySuffix>

Where the variable <connectionPrefix> is a property prefix that depends on the SRC component and the directory to which it connects. The variable <propertySuffix> depends on the DES property.

For example, the property net.juniper.smgt.des.enable_eventing is a property that specifies whether the DES for the NIC agent polls the directory periodically.

Variables to Configure DES Properties for SRC Components

The following list describes the <propertySuffix> variables for the DES properties that you can configure for SRC components.

enable_eventing

- Specifies whether the SRC component polls the directory for changes.
- Value
  - True—SRC component polls the directory for changes.
  - False—SRC component does not poll the directory for changes.

pollinginterval

- Time interval at which the SRC component polls the directory.
- Value—Number of seconds in the range 15–2147483647

event_baseDN

- DN of an entry superior to the data associated with this SRC component in the directory.
- Value—*o* = <DN>, <base>
  - <DN>—DN of superior entry
- Guidelines—If you are storing non-SRC data in the directory, and that data changes frequently whereas the SRC data does not, you may need to adjust the default value to improve performance. For optimal performance, set the value to the DN of an entry superior to both the SRC data and the changing non-SRC data.
- Default—*o* = *umc*, <base>

delegate_factory_initial

- Value used by an SRC internal process.
- Value—SRC software sets the value automatically

⚠ **CAUTION:** Do not change this value unless instructed to do so by Juniper Networks.

connection_pool_size

- Number of directory connections that DES uses.
- Value—1

⚠️ **CAUTION:** Do not change this value unless instructed to do so by Juniper Networks.

dispatcher_pool_size

- Number of events that the SRC component can receive from the directory simultaneously.
- Value—Integer in the range 1–2147483647

⚠️ **CAUTION:** Some SRC components require a specific value for this property. See the documentation for the component to determine whether you can change this value.

connection_manager_id

- DES connection manager within the JNDI framework.
- Value—Text string
- Example—DIRAGENT_POOL_VR

fake_delete

- Specifies how DES tracks objects deleted from the directory.
- Value—SRC software sets the value automatically

⚠️ **CAUTION:** Do not change this value unless instructed to do so by Juniper Networks.

show_fake_delete

- Specifies whether you can view the objects deleted from the directory.
- Value
  - True—Deleted objects are visible.
  - False—Deleted objects are not visible.
- Default—False

⚠️ **CAUTION:** Do not change this value unless instructed to do so by Juniper Networks.

share_connection

- Specifies whether other SRC components running in the same process as this SRC component share a connection to the directory with this SRC component.

- Value—

    - True—SRC components share the connection.

    - False—SRC components do not share the connection.

⚠ **CAUTION:** Do not change this value unless instructed to do so by Juniper Networks.

backup_provider

- List of redundant directories.

- Value—List of URLs separated by semicolons; URLs have the format ldap:// <host>:389

    - <host>—IP address or name of the directory host

- Example—ldap://127.0.0.1:389/; ldap://127.0.0.2:389/

enable_sysman

- Specifies whether the SRC SNMP agent exports MIBs for this directory connection.

- Value

    - True—SNMP agent exports MIBs.

    - False—SNMP agent does not export MIBs.

connect.timeout

- Maximum time that DES waits for the directory to respond.

- Value—Number of seconds in the range 1–2147483647

retry_interval

- Time interval at which DES attempts to connect to the directory.

- Value—Number of seconds in the range 10–2147483647

connectcheck_interval

- Time interval at which DES verifies its connection to the directory.

- Value—Number of seconds in the range 15–2147483647

signatureDN

- DN of the directory entry that specifies the usedDirectory attribute. The usedDirectory attribute identifies the type of directory, such as DirX, to which the SRC software is connected. For information about this attribute, see the LDAP schema files in the SRC software distribution in the directory *SDK/doc/ldap* or on the Juniper Networks Web site at

    http://www.juniper.net/techpubs/software/management/sdx

    For information about setting this property, see *Identifying the Type of Directory* on page 317.

    If the value of signatureDN is not the DN of a directory entry or is the DN of an entry that does not have a usedDirectory attribute, the SRC software logs an error and proceeds as it would for directory types other than DirX. If the value of the usedDirectory attribute does not correspond to a type of directory that the SRC software supports, the SRC software logs an error and proceeds as it would for directory types other than DirX.

- Value— < DN >

- Default—GlobalUserDatabase.server.signatureDN = *o = umc*

- Example—GlobalUserDatabase.server.signatureDN = *o = SDX, o = Juniper, o = Applications*

Example

```
java.naming.security.principal =  cn=nic,ou=Components,o=Operators,<base>
java.naming.security.credentials =  {BASE64}bmlj
java.naming.provider.url = ldap://127.0.0.1:389/
java.naming.factory.initial=net.juniper.smgt.lib.des.DESInitialContextFactory
net.juniper.smgt.des.enable_eventing = true
net.juniper.smgt.des.delegate_factory_initial = com.sun.jndi.ldap.LdapCtxFactory
net.juniper.smgt.des.connection_pool_size = 1
net.juniper.smgt.des.connection_manager_id = DIRAGENT_POOL_VR
net.juniper.smgt.des.dispatcher_pool_size = 1
net.juniper.smgt.des.fake_delete = true
net.juniper.smgt.des.show_fake_delete = false
net.juniper.smgt.des.directory_init_delta = 2592000
net.juniper.smgt.des.polling_interval = 30
net.juniper.smgt.des.share_connection=true
net.juniper.smgt.des.event_baseDN = <base>
net.juniper.smgt.des.enable_sysman = false
net.juniper.smgt.des.connect.timeout = 10
net.juniper.smgt.des.retry_interval = 30
net.juniper.smgt.des.connectioncheck_interval = 60
net.juniper.smgt.des.signatureDN = o=umc
```

Identifying the Type of Directory

The SRC software includes a DES property called signatureDN that identifies the DN of the entry that specifies the LDAP schema attribute usedDirectory. This attribute identifies the type of directory, such as DirX, to which the SRC software connects. For information about this attribute, see the LDAP schema files in the SRC software distribution in the directory *SDK/doc/ldap* or on the Juniper Networks Web site at

http://www.juniper.net/techpubs/software/management/sdx

Identifying the type of directory allows the SRC software to accommodate the different ways that different directories process DES queries, and enables more efficient retrieval of information. In particular, this feature offers benefits for the following tasks:

■ Checking whether an object in the directory has not been deleted

■ Finding new entries in the directory

If you load the LDAP schema from the SRC software distribution, the SRC software automatically sets the usedDirectory attribute for the type of directory to which it connects. If you use this LDAP schema as the structure for your directory, you can use the default value ($o = umc$) for the signatureDN property, and you do not need to configure the type of directory.

However, if you use a customized LDAP schema rather than the provided LDAP schema, use the following procedure to allow the SRC software to determine the type of directory:

1. Choose the entry that specifies the usedDirectory attribute.

2. Specify a value for the usedDirectory attribute.

3. In the property file of the SRC component that connects to this directory, set the signatureDN property to the DN of the entry with the usedDirectory attribute for the signatureDN property.

    For example, use SDX Admin to configure DES properties for the SAE.

4. Repeat Steps 1 to 3 for each DES connection.

Enabling Blacklisting for an Unresponsive Directory

For information about how the SRC software can manage connections to an unresponsive directory, see *Chapter 29, Distributing Directory Changes to SRC Components*.

To enable DES to prevent connection to a directory that repeatedly fails to respond:

■ Configure the enable_blacklist property.

Blacklist Property

You can enable the following property to blacklist a directory.

enable_blacklist

■ Specifies whether DES prevents connection to a directory if the directory fails to respond during 10 polls.

■ Value

   ■ True—DES prevents connection to the directory.

   ■ False—DES does not prevent connection to the directory.

■ Default—False

Reestablishing a Connection to a Directory

If DES prevents connection to a directory, do the following to reestablish the connection to the directory.

1. Fix the problem with the directory.

2. Restart the SRC component that communicates with this directory.