

Chapter 11

Configuring NIC on a Solaris Platform

This chapter describes how to configure the network information collector (NIC) 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 platform to configure the NIC. See *Chapter 10, Configuring NIC with the SRC CLI*.

Topics in this chapter include:

- Before You Configure NIC Hosts on page 208
- Configuring NIC Hosts to Resolve Requests on page 208
- Configuring Operating Parameters for NIC Hosts on page 209
- Reviewing Basic Configuration for a NIC Host on page 213
- Modifying Basic Configuration for NIC Agents on a NIC Host on page 214
- Starting NIC on a Solaris Platform on page 221
- Stopping a NIC Host on a Solaris Platform on page 221
- Monitoring NIC Hosts on page 222
- Configuring NIC Replication on page 222
- Changing NIC Configurations on page 222

Before You Configure NIC Hosts

When you use NIC in a client/server configuration, you configure the NIC hosts before you configure the NIC proxies.

Before you configure NIC hosts on a Solaris platform:

- Plan your NIC implementation:
 - Choose the NIC configuration scenario to use.
 - Make a list of the agents in the NIC configuration scenario.

For information about NIC configuration scenarios and NIC agents, see *Chapter 9, Locating Subscriber Information with the NIC*.

- Install and configure the main SRC components, such as SAEs and the directory.

See the *SDX Getting Started Guide*.

- Install the sample data.

See *SRC-PE Getting Started Guide, Chapter 29, Defining an Initial Configuration on a Solaris Platform*.

- Install the NIC software (UMCnic package) on each system that is to support a NIC host.



NOTE: A machine can support only one NIC host.

- Understand how to use SDX Configuration Editor to create new configuration files, modify configuration files, and export files to the directory.
- Ensure that the appropriate type of router initialization script is configured for the router or network device.

See *Chapter 9, Locating Subscriber Information with the NIC*.

Configuring NIC Hosts to Resolve Requests

To configure a NIC host:

1. Configure initial operating properties for NIC.
See *Configuring Operating Parameters for NIC Hosts* on page 209.
2. Review the configuration for the instance of the NIC host that you use.

See *Reviewing Basic Configuration for a NIC Host* on page 213.

3. Modify configuration for NIC agents.

See *Modifying Basic Configuration for NIC Agents on a NIC Host* on page 214.

4. Start NIC on the NIC hosts.

See *Starting NIC on a Solaris Platform* on page 221.

5. Configure NIC replication to make NIC highly available.

See *Configuring NIC Replication* on page 222.

6. If you use the OnePopStaticRouteIp configuration scenario, configure NIC to collect interface information for JUNOS routing platforms.

See *Chapter 12, Obtaining Interface Configuration for OnePopStaticRouteIp*.

Configuring Operating Parameters for NIC Hosts

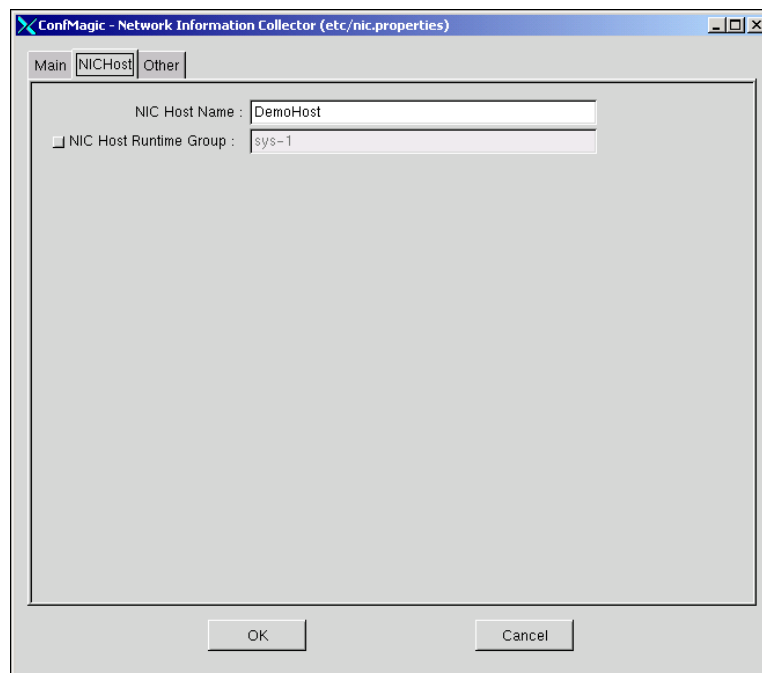
The operating parameters define how the NIC host interacts with other SRC components, such as the directory.

To configure the operating parameters:

1. Log in as root.
2. Start the local configuration tool in the directory where you installed the NIC.

/opt/UMC/nic/etc/config

The Network Information Collector window appears.



3. Configure the fields in each tab of this window. The following sections describe the properties on each tab:
 - Directory Connection Properties for NIC Hosts on page 210
 - NIC Host Properties on page 212
 - Additional Properties for NIC Hosts on page 212
4. Click OK.



NOTE: If you change any of the NIC operating parameters, restart NIC for the changes to take effect.

Directory Connection Properties for NIC Hosts

In the Main tab of the Network Information Collector window of the local configuration tool, you can modify the following fields to configure directory connection properties.

Primary Directory Server

- Location of the directory server in URL string format.
- Value—URL in the format [ldap | ldaps]:// { <host> } : <portNumber>
 - ldap—LDAP connection (not secure)
 - ldaps—Secure LDAP connection
 - <host> —Name or IP address of the host that supports the directory
 - <portNumber> —Number of the TCP/IP port

- Default—`ldap://127.0.0.1:389/`
- Example—`ldaps://192.0.2.10:389/`

Backup Directory Servers

- List of redundant directories.
- Value—List of URLs separated by semicolons.
For format of the URL, see the field Primary Directory Server on page 210.
- Example—`ldaps://192.0.2.10:389/`

Base DN

- Location in the directory in which the SRC data is stored.
- Value—DN
- Example—`o = UMC`

Bind DN

- DN that contains the username that the directory server uses to authenticate the NIC host.
- Value—`< DN > , < base >`
- Example—`cn = nic, ou = Components, o = Operators, < base >`

Bind Password

- Password that the directory server uses to authenticate the NIC host.
- Value—Text string or Base64 string
- Example—`nic`

Static Configuration DN

- DN of the location in which the NIC configuration is stored.
- Value—DN
- Example—`l = OnePop, l = NIC, ou = staticConfiguration, ou = Configuration, o = Management, o = umc`

Dynamic Configuration DN

- DN of the location in which data that the NIC automatically generates is stored.
- Value—DN
- Example—`ou = dynamicConfiguration, ou = Configuration, o = Management, o = umc`

Connect Timeout(s)

- Time that the NIC waits for the directory server to respond when it tries to connect to the directory.
- Value—Number of seconds in the range 1–2147483647
- Example—10

NIC Host Properties

In the NIC Host tab of the Network Information Collector window of the local configuration tool, you can modify the following fields.

NIC Host Name

- Name of the NIC host that you configured.
- Value—Text string
- Guidelines—Use the name DemoHost. The configuration scenarios all use DemoHost as the NIC hostname.
- Default—No value
- Example—DemoHost

NIC Host Runtime Group

- Group to which this NIC host belongs if you configure NIC replication.
- Value—Text string
- Default—No value
- Example—ontarioHosts

Additional Properties for NIC Hosts

In the Other tab of the Network Information Collector window of the local configuration tool, you can modify the following fields.

NIC Host Java

- Path to the JRE.
- Value—Path (absolute or relative) to the directory that contains the JRE
- Example—../jre/bin

JVM Max Heap

- Maximum memory size available to the JRE.
- Value—Capacity in megabytes

- Guidelines—By default, the JRE can allocate 128 MB. Change this value if you have problems because of lack of memory. Set to a value lower than the available physical memory to avoid low performance because of disk swapping.

If you use an SAE plug-in agent, we recommend that you increase the JVM max heap to a value in the range 400–500 MB.

- Default—128 MB

Enable Sysman Clients

- Specifies whether or not there is support for viewing SNMP counters with an SNMP browser.
- Value
 - Yes—Enabled
 - No—Disabled
- Default—No

Sysman IOR

- Folder that contains the IOR file for the NIC. The NIC writes its object references to this folder, and the SNMP agent discovers NIC components by monitoring the NIC IOR file in this folder.
- Value—Path to the folder that contains the IOR
- Guidelines—By default, the NIC IOR file is in the *var* folder, which is relative to the SNMP agent installation folder (*/opt/UMC/agent*). You need to change this property only if you installed the SNMP agent in a folder other than the default folder, or if you previously changed this property and now need it to point to the folder where the IOR file currently resides.
- Default—*/opt/UMC/agent/var*

Reviewing Basic Configuration for a NIC Host

Typically, you can use the configuration for an instance of a NIC host in a configuration scenario. Review the host configuration and change the configuration if needed.

Use the configuration for the NIC host DemoHost. This configuration is intended for use with NIC replication. You can configure one NIC host on a machine.

To use Configuration Editor to review NIC host configuration for a sample scenario:

1. In the NIC folder, open the configuration file whose name matches the scenario you want to modify for your configuration.
2. Click the **Hosts** tab, and review NIC host configurations. No changes should be needed.

After you review the configuration for an instance of a NIC host, modify the NIC agent configuration.

See *Modifying Basic Configuration for NIC Agents on a NIC Host* on page 214.

Modifying Basic Configuration for NIC Agents on a NIC Host

You configure NIC agents for a NIC host by modifying the agent configuration in a configuration scenario provided in the NIC sample data. Typically, you use the configuration for the NIC host DemoHost. This configuration is intended for use with NIC replication.

To use SDX Configuration Editor to configure agents for a NIC host by modifying a sample scenario:

1. Make sure you know which type of agents your configuration scenario uses.

If you do not know which agents the scenario uses, see *Chapter 9, Locating Subscriber Information with the NIC*.

2. Update NIC agent configuration to define properties specific to your environment, such as directory properties. See the following sections:

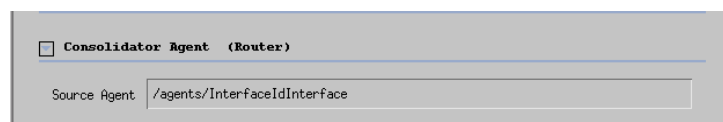
- *Configuring Consolidator Agents* on page 214
- *Configuring Directory Agents* on page 215
- *Configuring SAE Plug-In Agents* on page 217

Configuring Consolidator Agents

Use the basic editing level in SDX Configuration Editor to update the basic configuration for an agent.

To use SDX Configuration Editor to modify the configuration for consolidator agents:

1. In the navigation pane, select a configuration file for NIC.
2. Select the **Agents** tab, and expand the **Consolidator Agent** section.



3. Review the entry in the Source Agent field in the Consolidator Agent section of the Agents pane, and modify it if needed.

See *Consolidator Agent Fields in Basic Editing Level* on page 215.

4. Select **File > Save**.
5. Right-click the configuration file, and select **SDX System Configuration > Export to LDAP directory**.

Consolidator Agent Fields in Basic Editing Level

In SDX Configuration Editor, you can modify the following field in the Consolidator Agent section of the Agents pane in a NIC configuration file.

Source Agent

- Path to the agent for which this consolidator agent publishes data.
- Value—Text string
- Default—No value
- Example—*/agents/InterfaceIdInterface*
- Property name—sourceAgent

Configuring Directory Agents

Use the basic editing level in SDX Configuration Editor to update the basic configuration for an agent.

To use SDX Configuration Editor to modify the configuration for directory agents:

1. In the navigation pane, select a configuration file for NIC.
2. Select the **Agents** tab, and expand the **Directory Client Agent** section.

3. Review the entries in the Directory Agent section of the Agents pane, and modify if needed.

See *Directory Agent Fields in Basic Editing Level* on page 216.

4. Select **File > Save**.
5. Right-click the configuration file, and select **SDX System Configuration > Export to LDAP directory**.

Directory Agent Fields in Basic Editing Level

In SDX Configuration Editor, you can modify the following fields in the Directory Client Agent section of the Agents pane in a NIC configuration file.

Search Base

- DN of the location in the directory from which the agent should read information.
- Value— < DN > , < base >
- Default—No value
- Example—*o = Network, < base >*
- Property name—baseDN

Search Filter

- Directory search filter that the agent should use.
- Value—LDAP search filter
- Guidelines—Optional field.
- Default—No value
- Example—*(objectclass = umcVirtualRouter)*
- Property name—searchFilter

Search Scope

- Location in the directory relative to the base DN from which the NIC agent can retrieve information.
- Value—One of the following options:
 - Object—Entry specified in the Search Base field only
 - Level—Entry specified in the Search Base field and objects that are subordinate by one level
 - Subtree—Subtree of entry specified in the Search Base field
- Guidelines—Optional field.
- Default—Subtree
- Property name—searchScope

Server URL

- Location of the directory in URL string format.
- Value—Location of the directory that stores configuration information in URL string format `ldap:// <host> : <portNumber>`
 - <host> —IP address or name of directory host
 - <portNumber> —Number of TCP/IP port
- Default—No value
- Example—`ldap://127.0.0.1:389/`
- Property name—`java.naming.provider.url`

Backup Servers URL

- List of redundant directories.
- Value—List of URLs separated by semicolons
- Default—No value
- Example—`ldap://127.0.0.1:389/`
- Property name—`net.juniper.smgd.des.backup_provider_urls`

Authentication DN

- DN that contains the username that the directory server uses to authenticate the NIC agent.
- Value—`<DN> , <base>`
- Default—No value
- Example—`cn = nic, ou = Components, o = Operators, <base>`
- Property name—`java.naming.security.principal`

Password

- Password that the directory server uses to authenticate the NIC agent.
- Value—Text string or Base64 string
- Default—No value
- Example—`nic`
- Property name—`java.naming.security.credentials`

Configuring SAE Plug-In Agents

Use the basic editing level in SDX Configuration Editor to update the basic configuration for an agent.

To use SDX Configuration Editor to modify the configuration for SAE plug-in agents:

1. In the navigation pane, select a configuration file for NIC.
2. Select the **Agents** tab, and expand the **SAE Plugin Agent** section.

3. Review the entries in the fields in the SAE Plugin Agent section of the Agents pane, and modify if needed.

See *SAE Plug-In Agent Fields in Basic Editing Level* on page 218.

4. Select **File > Save**.
5. Right-click the configuration file, and select **SDX System Configuration > Export to LDAP directory**.

In addition, configure the SAE for the SAE plug-in agent, see *Configuring the SAE for SAE Plug-In Agents* on page 219.

If you use NIC replication, see *Configuring the SAE to Communicate with SAE Plug-In Agents When You Use NIC Replication* on page 219.

SAE Plug-In Agent Fields in Basic Editing Level

In SDX Configuration Editor, you can modify the following fields in the SAE Plug-In Agent section of the Agents pane in a NIC configuration file.

Event Filter

- LDAP filter that restricts the events that the agent collects.
- Value— < pluginAttribute > = < attributeValue >
 - < pluginAttribute > —Plug-in attribute name
 - < attributeValue > —Value of filter
- Default—No value
- Example—PA_USER_TYPE = INTF
- Property name—eventFilter

Number of Events Sent in a Synchronization Call

- Number of events the SAE sends to the agent at one time during state synchronization.
- Value—Integer in the range 1–2147483647
- Guidelines—This field is used if state synchronization is enabled for the SAE plug-in agent. State synchronization is enabled by default.
- Default—50
- Property name—stateSyncBulkSize

Configuring the SAE for SAE Plug-In Agents

For each SAE plug-in agent in your configuration, you must also configure a corresponding external plug-in for the SAE. Use the following guidelines:

- For the CORBA object reference, use the following construction:

`<host>:<port-number>/NameService#<plugInName>`

- `<host>` —IP address or name of the machine on which you installed the NIC host that supports the agent
- `<port-number>` —Port on which the name server runs
- `<plugInName>` —Name of the agent
- Specify the plug-in attributes that the agent uses. You must specify the attributes `PA_SESSION_ID` and `PA_ROUTER_NAME`, and other attributes that you specified for the agent's network data types and the agent's event filter. Do not, however, specify attributes of type `PAT_OPAQUE`, such as the attribute `PA_DHCP_PACKET`.



NOTE: Do not include attributes that are not needed.

For information about configuring an external plug-in for the SAE, see *SRC-PE Subscribers and Subscriptions Guide, Chapter 9, Configuring Internal, External, and Synchronization Plug-Ins with the SRC CLI*.

Configuring the SAE to Communicate with SAE Plug-In Agents When You Use NIC Replication

You must configure the SAE to communicate with each SAE plug-in agent in each NIC host that you use in the NIC replication.

To use SDX Configuration Editor to configure the SAE to communicate with an SAE plug-in agent in a NIC host:

1. In the navigation pane, select the SAE configuration file for the SAE that communicates with the agent.
2. Select the **Plug-Ins** tab, and expand the **Plug-In Pool** section.
3. Create a new instance of an external plugin, and assign the external plug-in a unique name.

4. Either configure the agent as a global-user tracking plug-in or as a retailer-specific tracking plug-in.

This action specifies which events the SAE sends to the agents.

See *Configuration Fields for SAE Plug-In Agents* on page 220.

5. Repeat Steps 3 to 4 for each SAE plug-in agent in each NIC host that you use in the NIC replication.

For information about these tasks, see *SRC-PE Subscribers and Subscriptions Guide, Chapter 10, Overview of Configuring Plug-Ins for Solaris Platforms*.

Configuration Fields for SAE Plug-In Agents

Use the information in the following field descriptions as guidelines when configuring external plug-ins for SAE plug-in agents. You can configure these fields in SDX Configuration Editor the Plug-Ins tab of an SAE configuration file.

CORBA Object Reference

- CORBA object reference for the plug-in.
- Value—CORBA object reference in the format:
corbaname:: < host > :900/NameService# < agentName > _ < groupName > /sae
Port < plugInName >
 - < host > —IP address or name of the machine on which you installed the NIC host that supports the agent
 - < agentName > —Name of the agent
 - < groupName > —Name of the group to which the NIC host that supports the agent belongs
- Default—No value
- Example—corbaname::192.168.0.100:900/NameService#nicsae_sys-1/saePort
- Property name—Plugin. < pluginName > .objectref
 - < pluginName > —Name of the external plug-in that you created, such as nic1

Attributes

- Plug-in attributes that the agent uses.
- Value—Comma-separated list of plug-in attributes. For a complete list of attributes.

See *SRC-PE Subscribers and Subscriptions Guide, Chapter 11, Configuring Authorization and Accounting Plug-Ins with SDX Configuration Editor*.
- Guidelines—You must specify the attributes PA_SESSION_ID, PA_ROUTER_NAME, and other attributes that you specified for the agent's network data types and the agent's event filter. Do not, however, specify attributes of type PAT_OPAQUE, such as the attribute PA_DHCP_PACKET. Use only the attributes that you need to lessen effect on system performance.
- Default—Comma-separated list of all possible attributes

- Example—PA_SESSION_ID, PA_ROUTER_NAME
- Property name—Plugin. <pluginName> .attr
 - <pluginName> —Name of the external plug-in that you created, such as nic1

Global User Tracking Plug-ins

- Tracks all subscriber sessions. These plug-in instances are called after a subscriber session starts and after a subscriber session ends.
- Value—Comma-separated list of plug-in instances
- Default—fileAcct
- Example—fileAcct, nic1, nic2
- Property name—User.tracking.plugins

Starting NIC on a Solaris Platform

If you run NIC in client/server mode, after you configure operating parameters for a NIC host and modify basic configuration for a NIC host, start the NIC host.

To start a NIC host:

1. On the machine on which the NIC host is installed, log in as `root` or as an authorized nonroot admin user.
2. Start the NIC host from its installation directory.

`/opt/UMC/nic/etc/nichost start`

Stopping a NIC Host on a Solaris Platform

If you run NIC in client/server mode, you can stop the NIC host independently of the NIC proxy.

To stop a NIC host:

1. On the machine on which the NIC host is installed, log in as `root` or as an authorized nonroot admin user.
2. Stop the NIC host from its installation directory.

`/opt/UMC/nic/etc/nichost stop`

Monitoring NIC Hosts

To verify that a NIC host is running:

1. On the machine on which the NIC host is installed, log in as **root** or as an authorized nonroot admin user.
2. Verify the status of the NIC host from its installation directory.

`/opt/UMC/nic/etc/nichost status`

Configuring NIC Replication

You can configure NIC replication for a new NIC configuration and for an established NIC configuration.

To configure NIC replication:

1. Assign NIC hosts to groups:
 - a. Log in as **root** on the machine on which you installed a NIC host.
 - b. Access the operating parameters, and configure the field called NIC Host Runtime group.

See [Configuring Operating Parameters for NIC Hosts](#) on page 209.

- c. If the NIC host was already running, restart it.
 - d. Repeat Steps a to c for each NIC host in the group.
2. Configure the NIC proxy to communicate with groups of NIC hosts.

See [Chapter 13, Configuring Applications to Communicate with an SAE](#).

Changing NIC Configurations

If you change the type of NIC resolution that you use in your network (for example, from the OnePop resolution to the OnePopAllRealms resolution), delete the old data; otherwise the new NIC configuration may not perform resolutions correctly.

To change the type of NIC resolution that you use in your network:

1. Delete the NIC configuration data for the old resolution from the DN *ou = dynamicConfiguration, ou = Configuration, o = Management, o = umc* in the directory.

You can delete the old data with SDX Admin or another LDAP client.

2. Configure the new NIC scenario.