Chapter 14

Configuring SRC Applications to Communicate with an SAE with the SRC CLI

You can use the CLI to configure SRC applications to communicate with network information collector (NIC) hosts. This chapter describes how to configure a NIC proxy from the SRC CLI on a C-series Controller or on a Solaris platform running the SRC software. Topics include:

- Configuration Statements for NIC Proxies on page 199

- Before You Configure a NIC Proxy on page 200

- Configuring Resolution Information for a NIC Proxy with the SRC CLI on page 201

- Changing the Configuration for the NIC Proxy Cache with the SRC CLI on page 202

- Configuring a NIC Proxy for NIC Replication with the SRC CLI on page 203

- Configuring NIC Test Data with the SRC CLI on page 205

Configuration Statements for NIC Proxies

Use the following configuration statements to configure a NIC proxy for the SAE from the [edit] hierarchy level.

shared sae configuration nic-proxy-configuration *name* {
}

shared sae configuration nic-proxy-configuration *name* resolution {
    resolver-name *resolver-name*;
    key-type *key-type*;
    value-type *value-type*;
    expect-multiple-values;
    constraints *constraints*;
}

```
shared sae configuration nic-proxy-configuration name cache {
    cache-size cache-size;
    cache-cleanup-interval cache-cleanup-interval;
    cache-entry-age cache-entry-age;
}

shared sae configuration nic-proxy-configuration name nic-host-selection {
    groups groups;
    selection-criteria (roundRobin | randomPick | priorityList);
}

shared sae configuration nic-proxy-configuration name nic-host-selection blacklisting {
    try-next-system-on-error;
    number-of-retries-before-blacklisting number-of-retries-before-blacklisting;
    blacklist-retry-interval blacklist-retry-interval;
}
```

To configure a NIC proxy stub for SAE, use the following statements:

```
shared sae configuration nic-proxy-configuration name test-nic-bindings {
    use-test-bindings;
}

shared sae configuration nic-proxy-configuration name test-nic-bindings key-values
name {
    value;
}
```

Before You Configure a NIC Proxy

Before you configure a NIC proxy, you should have a good understanding of:

- NIC resolution

- NIC data types

- How NIC proxies work

See *Chapter 9, Locating Subscriber Information with the NIC*; *Chapter 17, NIC Resolution Process*; and *Chapter 13, Configuring Applications to Communicate with an SAE*.

NOTE: You cannot configure a local NIC host when the NIC is running on a C-series Controller.

Configuring Resolution Information for a NIC Proxy with the SRC CLI

Use the following configuration statements to configure a NIC proxy:

```
shared sae configuration nic-proxy-configuration name {
}
```

```
shared sae configuration nic-proxy-configuration name resolution {
    resolver-name resolver-name;
    key-type key-type;
    value-type value-type;
    expect-multiple-values;
    constraints constraints;
}
```

To configure resolution information for a NIC proxy.

1. From configuration mode, access the configuration statement that specifies the NIC proxy configuration.

   [edit]
   user@host# **edit shared sae configuration nic-proxy-configuration** *name* **resolution**

   For example:

   [edit]
   user@host# **edit shared sae configuration nic-proxy-configuration ip resolution**

2. Specify the NIC resolver that this NIC proxy uses.

   [edit shared sae configuration nic-proxy-configuration ip resolution]
   user@host# **set resolver-name** *resolver-name*

   This resolver must be the same as one that is configured on the NIC host. For example:

   [edit shared sae configuration nic-proxy-configuration ip resolution]
   user@host# **set resolver-name /realms/ip/A1**

3. Specify the NIC data type that the key provides for the NIC resolution.

   [edit shared sae configuration nic-proxy-configuration ip resolution]
   user@host# **set key-type** *key-type*

   For example:

   [edit shared sae configuration nic-proxy-configuration ip resolution]
   user@host# **set key-type ip**

   To qualify data types, enter a qualifier within parentheses after the data type; for example, to specify username as a qualifier for the key LoginName:

   [edit shared sae configuration nic-proxy-configuration ip resolution]
   user@host# **set key-type LoginName** (username)

4. Specify the type of value to be returned in the resolution for the application that uses the NIC proxy.

[edit shared sae configuration nic-proxy-configuration ip resolution]
user@host# **set value-type** *value-type*

For example:

[edit shared sae configuration nic-proxy-configuration ip resolution]
user@host# **set value-type SaeId**

5. (Optional) If the key can have more than one value, specify that the key can have multiple corresponding values.

[edit shared sae configuration nic-proxy-configuration ip resolution]
user@host# **set expect-multiple-values**

6. (Optional. Available at the Advanced editing level.) If the application provides a constraint in the resolution request, specify the data type for the constraint. The constraint represents a condition that must or may be satisfied before the next stage of the resolution process can proceed.

[edit shared sae configuration nic-proxy-configuration ip resolution]
user@host# **set constraints** *constraints*

Changing the Configuration for the NIC Proxy Cache with the SRC CLI

You can modify cache properties for the NIC proxy to optimize the resolution performance for your network configuration and system resources. Typically, you can use the default settings for the cache properties. The configuration statements are available at the Advanced editing level.

Use the following configuration statements to change values for the NIC proxy cache:

shared sae configuration nic-proxy-configuration *name* cache {
    cache-size *cache-size*;
    cache-cleanup-interval *cache-cleanup-interval*;
    cache-entry-age *cache-entry-age*;
}

To configure the cache for a NIC proxy:

1. From configuration mode, access the configuration statement that specifies the NIC proxy configuration. For example:

[edit]
user@host# **edit shared sae configuration nic-proxy-configuration ip cache**

2. Specify the maximum number of keys for which the NIC proxy retains data.

    [edit shared sae configuration nic-proxy-configuration ip cache]
    user@host# **set cache-size** *cache-size*

    If you decrease the cache size or disable the cache while the NIC proxy is
    running, the NIC proxy removes entries in order of descending age until the
    cache size meets the new limit.

3. Specify the time interval at which the NIC proxy removes expired entries from
    its cache.

    [edit shared sae configuration nic-proxy-configuration ip cache]
    user@host# **set cache-cleanup-interval** *cache-cleanup-interval*

4. Specify the how long an entry remains in the cache.

    [edit shared sae configuration nic-proxy-configuration ip cache]
    user@host# **set cache-entry-age** *cache-entry-age*

Configuring a NIC Proxy for NIC Replication with the SRC CLI

Typically, you configure NIC replication to keep the NIC highly available. You
configure NIC host selection to specify the groups of NIC hosts to be contacted to
resolve a request, and to define how the NIC proxy handles NIC hosts that the proxy
is unable to contact. The configuration statements are available at the Advanced
editing level.

Use the following configuration statements to configure NIC host selection for a NIC
proxy:

shared sae configuration nic-proxy-configuration *name* nic-host-selection {
    groups *groups*;
    selection-criteria (roundRobin | randomPick | priorityList);
}

shared sae configuration nic-proxy-configuration *name* nic-host-selection blacklisting {
    try-next-system-on-error;
    number-of-retries-before-blacklisting *number-of-retries-before-blacklisting*;
    blacklist-retry-interval *blacklist-retry-interval*;
}

To configure a NIC proxy to use NIC replication:

1. From configuration mode, access the configuration statement that specifies the
    NIC proxy configuration. For example:

    [edit]
    user@host# **edit shared sae configuration nic-proxy-configuration ip**

2. Specify the list of groups of NIC hosts that the NIC proxy can contact for resolution requests. Use commas to separate the group names.

[edit shared sae configuration nic-proxy-configuration ip nic-host-selection]
user@host# **set groups** *groups*

For example

[edit shared sae configuration nic-proxy-configuration ip nic-host-selection]
user@host# **set groups [group1 group2]**

3. If you configure more than one group, specify the selection criteria that the NIC proxy uses to determine which NIC host to contact.

[edit shared sae configuration nic-proxy-configuration ip nic-host-selection]
user@host# **set selection-criteria** (roundRobin | randomPick | priorityList)

where:

- roundRobin—NIC proxy selects NIC hosts in a fixed, cyclic order. The NIC proxy always selects the next host in the list.

- randomPick—NIC proxy selects NIC hosts randomly from the list.

- priorityList—NIC proxy selects NIC hosts according to their assigned priorities in the list. If the host with the highest priority in the list is not available, the NIC proxy tries the host with the next-highest priority, and so on.

  Priorities are defined by the order in which you specify the groups. You can change the order of NIC hosts in the list by using the **insert** command.

4. Access the configuration statement that specifies the NIC proxy configuration for blacklisting—the process of handling nonresponsive NIC hosts.

[edit shared sae configuration nic-proxy-configuration ip nic-host-selection]
user@host# **edit blacklisting**
[edit shared sae configuration nic-proxy-configuration ip nic-host-selection blacklisting]

5. Specify whether or not the NIC proxy should contact the next specified NIC host if a NIC host is determined to be unavailable.

[edit shared sae configuration nic-proxy-configuration ip nic-host-selection blacklisting]
user@host# **set try-next-system-on-error**

6. (Optional) Change the number of times the NIC proxy tries to communicate with a NIC host before the NIC proxy stops communicating with the NIC host for a period of time. The default is 3.

[edit shared sae configuration nic-proxy-configuration ip nic-host-selection blacklisting]
user@host# **set number-of-retries-before-blacklisting**
number-of-retries-before-blacklisting

7. (Optional) Change the interval at which the NIC proxy attempts to connect to an unavailable NIC host. The default is 15 seconds.

   [edit shared sae configuration nic-proxy-configuration *name* nic-host-selection blacklisting]
   user@host# **set blacklist-retry-interval** *blacklist-retry-interval*

Configuring NIC Test Data with the SRC CLI

To test a resolution without NIC, you can configure a NIC proxy stub to take the place of the NIC. The NIC proxy stub comprises a set of explicit mappings of data keys and values in the NIC proxy configuration. When the SAE (or another SRC component configured to use a NIC proxy stub) passes a specified key to the NIC proxy stub, the NIC proxy stub returns the corresponding value. When you use a NIC proxy stub, no NIC infrastructure is required.

For example, you can specify a subscriber's IP address that is associated with a particular SAE. When the SRC component passes this IP address to the NIC proxy stub, the NIC proxy stub returns the corresponding SAE.

To use the NIC proxy stub for the SAE:

1. In configuration mode, navigate to the NIC proxy configuration and specify the type of key you want to map to a value.

   [edit shared sae configuration nic-proxy-configuration *name*]
   user@host# **set resolution key-type** *key-type*

   For example, to specify the key ip for the ip NIC proxy configuration:

   [edit shared sae configuration nic-proxy-configuration ip]
   user@host# **set resolution key-type ip**

2. Enable a NIC proxy stub for a resolution.

   [edit shared sae configuration nic-proxy-configuration ip]
   user@host# **set test-nic-bindings user-test-bindings**

3. Specify the values of the keys for testing. These statements are available at the Expert CLI editing level.

   [edit shared sae configuration nic-proxy-configuration ip]
   user@host# **set test-nic-bindings key-values** *name value*

   where:

   ■ *name*—Indicates the NIC data value for the proxy.

   ■ *value*—Specifies a value for the NIC data type.

For example, to set up a login name to IP mapping for login name jane@virneo.com to the IP address 192.0.2.30:

[edit shared sae configuration nic-proxy-configuration ip]
user@host# **set test-nic-bindings key-values jane@virneo.com 192.0.2.30**

For example, to set up an IP to SAE ID mapping for IP address 190.0.2.30 to SAE ID identified by the URL for the CORBA IOR corbaloc::10.227.7.145:8801/SAE:

[edit shared sae configuration nic-proxy-configuration ip]
user@host# **set test-nic-bindings key-values 192.0.2.30 corbaloc::10.20.7.145:8801/SAE**

☞ **NOTE:** The SAE writes the value of the CORBA IOR to the *var/run* directory. The IP address in the corbaloc URL can be adjusted to the IP address or DNS name of the SAE.

You can use the key ANY-KEY to match any key for any key type. For example, if you want all IP addresses to resolve to the same SAE:

[edit shared sae configuration nic-proxy-configuration ip]
user@host# **set test-nic-bindings key-values ANY-KEY corbaloc::10.20.7.145:8801/SAE**