

## Chapter 17

# Monitoring and Troubleshooting NIC with the SRC CLI

This chapter describes how to monitor the network information collector (NIC) with the SRC CLI. Topics include:

- Viewing Statistics About NIC Operations on page 153
- Viewing NIC Resolution Data on page 157
- Troubleshooting NIC Data Resolution on page 160

## Viewing Statistics About NIC Operations

You can view statistics for the NIC process and for various NIC components. Table 22 lists the commands you use to view NIC statistics.

**Table 22: Commands to Display NIC Statistics**

Command	Output Displayed
show nic statistics	All NIC statistics. The output for this command includes the output for the other <code>show nic statistics</code> commands.
show nic statistics agent	NIC statistics for agents.
show nic statistics host	NIC statistics for a NIC host.
show nic statistics process	NIC statistics for the NIC process.
show nic statistics resolver	NIC statistics for resolvers.
show nic statistics slot	All NIC statistics for a specified slot. The output for this command includes the output for the <code>show nic statistics agent</code> , <code>show nic statistics host</code> , <code>show nic statistics process</code> , and <code>show nic statistics resolver</code> commands.

## Viewing Statistics for the NIC Process

To view statistics for the NIC process:

```
user@host> show nic statistics process
Component Statistics
Component Name process
Heap in use      456194 bytes (87%)
Heap limit      524288 bytes
Threads         42
Up time         747848 seconds since Wed Jan 31 19:35:57 EST 2007
```

Table 23 describes the output fields for the `show nic statistics process` command. Output fields are listed in the order in which they appear.

**Table 23: show nic statistics process Output Fields**

Field Name	Field Description
Component name	Name of component—process indicates the NIC process.
Heap in use	Heap size allocated by the Java Virtual Machine. The percentage indicates the percentage of the heap in use. We recommend that if the percent in use is more than 90% additional heap be allocated for the NIC.
Heap limit	Size of Java heap configured for the NIC.
Threads	Number of threads in use.
Up time	Length of time NIC has been running on the system. Includes the date and time at which NIC was last started.

## Viewing Statistics for a NIC Host

To view statistics for a NIC host:

```
user@host> show nic statistics host
Component Statistics
Component Name /hosts
Number of Components Restart 0
Number of No Match Resolutions 0
Number of Resolution Errors 0
Number of Resolutions 0
```

Table 24 describes the output fields for the `show nic statistics host` command. Output fields are listed in the order in which they appear.

**Table 24: `show nic statistics host` Output Fields**

Field Name	Field Description
Component name	Name of component—/hosts indicates NIC host. A specific host has the format /hosts/ <i>hostname</i> .
Number of Components Restart	Number of NIC resolvers and agents that have restarted in the host.
Number of No Match Resolutions	Number of resolution requests that did not return data.
Number of Resolution Errors	Number of errors encountered when processing resolutions requests.
Number of Resolutions	Number of successful data resolutions; for example, the SAE reference for a specified IP address, the login name for a specified IP address, or the SAE reference for a specified login name.

## Viewing Statistics for NIC Resolvers

To interpret the statistics for NIC resolvers, make sure that you have a good understanding of the NIC resolutions process.

See *SRC-PE Network Guide, Chapter 17, NIC Resolution Process*.

To view statistics for NIC resolvers:

```

user@host> show nic statistics resolver
Component Statistics
Component Name      /realms/login/A1
Number of Data Sources  0
Resolver Size       0

Component Statistics
Component Name      /realms/login/B1
Number of Data Sources  1
Resolver Size       0

Component Statistics
Component Name      /realms/login/C1
Number of Data Sources  1
Resolver Size       2140

Component Statistics
Component Name      /realms/login/D1
Number of Data Sources  2
Resolver Size       0

```

Table 25 describes the output fields for the `show nic statistics resolver` command. Output fields are listed in the order in which they appear.

**Table 25: show nic statistics resolver Output Fields**

Field Name	Field Description
Component name	Name of a resolver. Resolver names have the format <i>/realms/real-name/resolver name</i> .
Number of Data Sources	The number of sources from which the resolver obtains data. A data source can be an agent or another resolver.
Resolver Size	The number of keys (or number of mappings) required to perform this resolution.

## Viewing Statistics for NIC Agents

To interpret the statistics for NIC agents, make sure that you have a good understanding of the NIC agents.

See *SRC-PE Network Guide, Chapter 9, Locating Subscriber Information with the NIC*.

To view statistics for NIC agents:

```

user@host> show nic statistics agent
Component Statistics
Component Name      /agents/LoginNameVr
Agent Type          Passive
Connection to Data Source Up
Data Size           262141

Component Statistics
Component Name      /agents/VrSaeId
Agent Type          Active
Connection to Data Source Up
Data Size           2212

Component Statistics
Component Name      /agents/IpLoginName
Agent Type          Passive
Connection to Data Source Up
Data Size           262141

Component Statistics
Component Name      /agents/Pool
Agent Type          Active
Connection to Data Source Up
Data Size           3

```

Table 26 describes the output fields for the `show nic statistics agent` command. Output fields are listed in the order in which they appear.

**Table 26: show nic statistics agent Output Fields**

Field Name	Field Description
Component name	Name of an agent. Agent names have the format <code>/agents/agent-name</code> .
Agent Type	Type of agent—active or passive. Active agents publish data whether or not a resolver requests the data. Passive agents provide information only when a resolver requests it.
Connection to Data Source	Whether or not the agent has a connection to its data source; for example, a directory agent to the directory, or an SAE plug-in agent to the CORBA naming server.
Data Size	Number of key to value mappings for the agent.

## Viewing NIC Resolution Data

You can view the data that NIC uses during a resolution. You can view all resolution data, or data for a specified NIC component. Table 27 lists the commands you use to view NIC resolution information.

**Table 27: Commands to Display NIC Data**

Command	Output Displayed
<code>show nic data</code>	All NIC data. The output for this command includes the output for the other <code>show nic data</code> commands.
<code>show nic data maximum-results</code>	All or a specified quantity of NIC resolution data.
<code>show nic data agent</code>	NIC resolution data for a specified agent.
<code>show nic data resolver</code>	NIC resolution data for a specified resolver.
<code>show nic data slot</code>	All NIC data for a specified slot. The output for this command includes the output for the <code>show nic data agent</code> and <code>show nic data resolver</code> commands.

## Viewing Data for NIC Resolvers

To interpret the data for resolvers, make sure that you have a good understanding of the NIC resolution process.

See *SRC-PE Network Guide, Chapter 17, NIC Resolution Process*.

To view all NIC resolver data:

```

user@host> show nic data resolver
Component name
/realms/login/C1
Key
Type
Vr
String
default@dw2
Value
Type

```

```

SaeId
String
IOR:
000000000000003549444C3A736D67742E6A756E697065722E6E65742F7361652F5365727...
41637469766174696F6E456E67696E653A312E30000000000000020000000000000780...
0000000C31302E3232372E362E34330022610000000000226761726B6269742E6B616E6C6...
6E70722E6E65742F736165504F412F5341450000000000200000000000008000000004...
000000010000001C000000000001000100000001050100010001010900000001050100010...
0000002C0000000000000001000000010000001C000000000001000100000001050100010...
0000000105010001...
Key
Type
Vr
String
vr1495@marvin
Value
Type
SaeId
String
...

```

Table 28 describes the output fields for the `show nic data resolver` command. Output fields are listed in the order in which they appear.

**Table 28: show nic data resolver Output Fields**

Field Name	Field Description
Component name	Name of a resolver. Resolver names have the format <i>/realms/realm-name/resolver name</i> .
Key	Data type and value of a NIC key. The value is the actual value of the NIC key, not the NIC value to which the key maps.
Value	Data type and value of the NIC value that maps to the associated NIC key.

## Viewing Data for NIC Agents

To interpret the data for agents, make sure that you have a good understanding of the NIC resolution process.

See *SRC-PE Network Guide, Chapter 17, NIC Resolution Process*.

To view all NIC resolver data:

```

user@host> show nic data agent
Component name
/agents/LoginNameVr
Key
Type
Ip
String
192.170.179.0
Value
Type
Vr
String
vorbis-13@prsim
Key
Type

```

```
Ip
  String
192.170.179.3
Value
  Type
Vr
  String
vorbis-13@prsim

...

Key
  Type
Vr
  String
default@sys1
Value
  Type
SaeId
  String
IOR:
000000000000003549444C3A736D67742E6A756E697065722E6E65742F7361652F5365727669
6365
41637469766174696F6E456E67696E653A312E3000000000000002000000000000780001
0200
0000000C31302E3232372E362E34330022610000000000226761726B6269742E6B616E6C6162
2E6A
6E70722E6E65742F736165504F412F5341450000000000200000000000008000000004A41
4300
000000010000001C000000000001000100000001050100010001010900000001050100010000
0001
0000002C0000000000000001000000010000001C000000000001000100000001050100010001
0109
0000000105010001
```

Table 29 describes the output fields for the `show nic data agent` command. Output fields are listed in the order in which they appear.

**Table 29: show nic data agent Output Fields**

Field Name	Field Description
Component name	Name of an agent. Agent names have the format <code>/agents/agent-name</code> .
Key	Data type and value of a NIC key. The value is the actual value of the NIC key, not the NIC value to which the key maps.
Value	Data type and value of the NIC value that maps to the associated NIC key.

## Troubleshooting NIC Data Resolution

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Troubleshooting NIC data resolution is a complex task that requires a good understanding of how NIC operates, how it resolves resolution requests, and how the NIC configuration scenario that you are using performs resolutions. See:

- *SRC-PE Network Guide, Chapter 9, Locating Subscriber Information with the NIC*
- *SRC-PE Network Guide, Chapter 17, NIC Resolution Process*
- *SRC-PE Network Guide, Chapter 19, NIC Configuration Scenarios*

This section presents high-level troubleshooting information. For assistance troubleshooting NIC operation and NIC resolutions, contact the Juniper Technical Support Center.

## Troubleshooting NIC Operation

To troubleshoot NIC operation:

1. Make sure that the heap size configured for NIC is adequate and that the process is up:

```
user@host> show nic statistics process
Component Statistics
Component Name process
Heap in use      456194 bytes (87%)
Heap limit      524288 bytes
Threads         42
Up time         747848 seconds since Wed Jan 31 19:35:57 EST 2007
```

2. Determine whether there are any NIC resolution errors and whether NIC successfully completed any resolution requests:

```
user@host> show nic statistics host
Component Statistics
Component Name           /hosts
Number of Components Restart  0
Number of No Match Resolutions 0
Number of Resolution Errors   0
Number of Resolutions        0
```

3. Test the resolution process by using the `test nic resolve` command.

See *SRC-PE Network Guide, Chapter 10, Configuring NIC with the SRC CLI*.



## Troubleshooting NIC Resolution

If you are unsure whether NIC is resolving resolution requests, you can view data about those requests to see whether NIC is receiving data.

1. Verify that NIC is receiving data by running the **show nic data resolver** command.

See *Viewing Data for NIC Resolvers* on page 157.

For each resolver, which is identified by a component name such as `/realms/login/C1`, the output should show a value, such as `default@sys1` for the key `Vr`, and the NIC value for that key such as the IOR that identifies an SAE.

2. If NIC is not receiving data, determine which agent or agents are not receiving data by running the **show nic data agent** command.

See *Viewing Data for NIC Agents* on page 158.

3. Review your NIC configuration to make sure that NIC is configured correctly by running the **show** command for the NIC configuration scenario. For example:

```
[edit shared nic scenario OnePop]
user@host# show
```

