About this Guide

Introduction

The Oracle Communications Session Border Controller HDR Resource Guide provides information about Historical Data Recording (HDR) for S-C Series products. This document includes the following information:

- Description of HDR and how it works
- Enabling/disabling HDR
- Starting, stopping, restarting, purging, and requesting HDR status using the Acme Command Line Interface (ACLI)
- Using a Push Receiver to push the data to a server
- HDR Groups and Group Statistics
- “Show” commands associated with the HDR Groups and Group Statistics

Supported Platforms

Release Release S-CX6.3.0 is supported on the Acme Packet 4500 and Acme Packet 3800 series platforms.

Related Documentation

The following table lists the members that comprise the documentation set for this release:

<table>
<thead>
<tr>
<th>Document Name</th>
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<tr>
<td>Acme Packet 4500 System Hardware Installation Guide</td>
<td>Contains information about the components and installation of the Acme Packet 4500 system.</td>
</tr>
<tr>
<td>Acme Packet 3800 Hardware Installation Guide</td>
<td>Contains information about the components and installation of the Acme Packet 3800 system.</td>
</tr>
<tr>
<td>Release Notes</td>
<td>Contains information about the current documentation set release, including new features and management changes.</td>
</tr>
<tr>
<td>ACLI Configuration Guide</td>
<td>Contains information about the administration and software configuration SBC.</td>
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<tr>
<td>ACLI Reference Guide</td>
<td>Contains explanations of how to use the ACLI, as an alphabetical listings and descriptions of all ACLI commands and configuration parameters.</td>
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<tr>
<td>Maintenance and Troubleshooting Guide</td>
<td>Contains information about SBC logs, performance announcements, system management, inventory management, upgrades, working with configurations, and managing backups and archives.</td>
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Revision History

This section contains a revision history for this document.

<table>
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<tr>
<td>April 30, 2012</td>
<td>Revision 1.00</td>
<td>• Initial Release</td>
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<tr>
<td>July 27, 2012</td>
<td>Revision 1.10</td>
<td>• Corrects the definition of “show sipd sessions” to reflect that the data shown when using this command is the sum of INVITEs and SUBSCRIBEs (and not INVITEs only)</td>
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<tr>
<td>March 6, 2013</td>
<td>Revision 1.11</td>
<td>• Fixed a bug in the “show sipd sessions” graphic.</td>
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<tr>
<td>September 9, 2013</td>
<td>Revision 1.12</td>
<td>• Added outputs of “Local Contacts”, “HNT Entries”, and “Non-HN Entries” in the “” command.</td>
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<td>May 26, 2014</td>
<td>Revision 1.13</td>
<td>• Adds public key configuration procedure.</td>
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<td></td>
<td>• Improves description for Average one way signaling latency and Maximum one way signaling latency objects.</td>
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<td></td>
<td>• Fixes capitalization error presented in the I2C Bus State variable description.</td>
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<td></td>
<td></td>
<td>• Adds caveats on data within CSVs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Added missing Current Deny Entries Allocated data field to system group.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Added missing Total Subscriptions data field to session-realm group.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Added missing Call Rej ects data field to sip-errors group.</td>
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<tr>
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<td></td>
<td>• Corrects data type and range for sip-status’ session rate variable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Corrects data type and range for sip-status’ load rate variable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adds note indicating that transaction timeout statistics are not valid for server operations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adds note indicating that locally throttled statistics are not valid for server operations.</td>
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Introduction
This section provides an overview of Historical Data Recording (HDR) and how it works on the Net-Net C-Series products. It also provides information about enabling and disabling HDR on the Net-Net SD.

What is HDR?
Historical data recording (HDR) refers to a group of management features that allow you to configure the Net-Net SD to collect statistics about system operation and function, and then send those records to designated servers. System statistics, defined in detail below, are saved to a comma-separated value (CSV) file, which are then sent to the designated server(s).

Information types are grouped so that you can refer to a set of statistics by simply invoking their group name (For example, the system statistics are in a group called System; interface statistics are in a group called Interface; etc.). Within each group, there are several metrics available.

The following table describes the type of HDR statistics that the Net-Net SD can collect and forward to a designated server.

<table>
<thead>
<tr>
<th>HDR Statistics</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Group Name</td>
<td>The name of the group that contains the HDR statistics. This name is similar to the current Net-Net SD ACLI parameters. For example, &quot;system&quot;, &quot;interface&quot;, &quot;session-agent&quot;, &quot;session-realm&quot;, etc. The SBC uses the group name when generating the &quot;CSV&quot; file (for example, system.csv, interface.csv, etc.).</td>
</tr>
<tr>
<td>Group Statistics</td>
<td>Various statistical parameters within a group. These statistical parameters appear in the first record of the header in each &quot;CSV&quot; file (for example, in the system.csv file, the header would include the statistic headings of CPU Utilization, Memory Utilization, Health Score, etc.).</td>
</tr>
<tr>
<td>Type</td>
<td>Type of statistical parameter. This document makes use of the following data types:</td>
</tr>
<tr>
<td></td>
<td>- <strong>counter</strong> - A counter is an integer with a minimum possible value of 0 and a maximum value of (2^{32} - 1). A counter is always increasing in value or remaining unchanged. It decreases only in response to reaching its maximum possible value, at which point it’s next value (when the next counted entity or event occurs) will be 0.</td>
</tr>
<tr>
<td></td>
<td>- <strong>gauge</strong> - A gauge is an integer with the same bounds as a counter. However, it does not always have an increasing value. Its value may go up or down.</td>
</tr>
<tr>
<td></td>
<td>- <strong>period</strong> - A period type represents a value determined as the sum of a number of events which occurred during a specified &quot;window of time&quot;, or stated alternatively, &quot;a time period&quot;. There are three windows defined, the &quot;current window&quot;, the &quot;previous window&quot;, and the &quot;sliding window&quot;. For more information about these &quot;windows&quot;, see <a href="#">Windows of Time</a>.</td>
</tr>
<tr>
<td></td>
<td>- <strong>config</strong> - For the config type, the value for this field comes from a configuration record.</td>
</tr>
<tr>
<td></td>
<td>- <strong>timeticks</strong> - For the timeticks type, each tick is 1/100th of a second.</td>
</tr>
<tr>
<td></td>
<td>- <strong>string</strong> - A statistic type pertains to statistics that display as an alphabetic character string.</td>
</tr>
</tbody>
</table>
### Enabling/Disabling HDR

In the system configuration, you can enable HDR by first turning on the system’s collection function, then choosing the records you want to capture, and finally setting up server(s) to which you want records sent.

The main collect configuration (found within the main system configuration) allows you to create global settings that:

- Enable or disable HDR at boot time
- Set the sample rate in seconds, or the time between sample individual collections
- Set the time, in seconds, between individual pushes to designated servers (configured in the push receiver configuration accessed via the collect configuration)
- Set the time you want the collect to start and stop; time is entered in year, month, day, hours, minutes, and seconds

You also configure settings for each group of data you want to collect, and the push receiver (server) to which you want data sent.

For more information about configuring HDR on the Net-Net SD, see Configuring HDR.

### Protocol Use

You can configure HDR to send files using File Transfer Protocol (FTP) or Secure File Transfer Protocol (SFTP) for added security. FTP is the default.

**Note:** Public key authentication is not available when you choose SFTP. Instead, the Net-Net SD uses password authentication. However, for SFTP to work, it is still required that you load the SFTP’s host public key on the Net-Net SD.

### About the CSV File

When HDR is enabled, statistical records are forwarded from the Net-Net SD to push servers that send the data (in standard format) to a receiving server for viewing in a comma-separated value (CSV) file on the server. Before pushing a file, the collector creates the directory by group name for which the statistic belongs (for example, `fan`, `sip-client`, `system`, etc.), if the directory does not exist from a previous push.

The collector can push multiple CSV files per directory. Each file is formatted as `<Unix timestamp>.csv` (for example, `1302041977.csv`). The first record of each file is a header containing the attribute name. For example, in the “System” directory, a file

<table>
<thead>
<tr>
<th>HDR Statistics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer Value (seconds)</td>
<td>For period statistics (statistics that use a period timer), this is the default value, in seconds, of the timer. This value is usually not configurable. However, this value may fall within a range of values if applicable.</td>
</tr>
<tr>
<td>Range</td>
<td>The range of values that a group statistic may use when the SBC collects statistics.</td>
</tr>
</tbody>
</table>

For descriptions of specific HDR Statistics and values, see HDR Groups and Group Statistics.
name of “13020441977.csv” can contain the header names of CPU Utilization, Memory Utilization, Health Score, Redundancy State, etc. The collector appends a Timestamp heading attribute to the beginning of every record as well. You can open the CSV file for viewing with any application that reads a CSV file format. For more information about the CSV file, see HDR Data (39).

Note: The records in a CSV file may display differently, depending on the record data included in the file, and the method used to open the file. For more information about the display of record data in a CSV file, see Appendix A, CSV File Data Formats (171).

Collection Interval and Push

In your HDR configuration, you can set parameters that allow you to:

• Select the groups for record collection
• Set the frequency of record collection
• Set the frequency of off-box record collection

After configuring and enabling HDR, the Net-Net SD forwards group records to push servers that send the data to a receiving server. The number of records in a push equals the push interval divided by the sample interval time multiplied by the number of groups, plus one:

\[
\text{push interval ÷ sample interval time x number of groups +1 header record per group} = \text{number of records in a push}
\]

For example, if you set a push interval time of 60 minutes and a sample interval time of 5 minutes, with 10 groups, the Net-Net SD would send 120 group records plus 10 header records (for a total of 130 records) for each push:

\[
[(60 ÷ 5) \times 10] +10 = 130
\]

You can configure an option parameter (disabled by default) that instructs the Net-Net SD to send a trap when data has been successfully pushed. This trap is defined in the `ap-smgmt.mib`. It contains the name of the node that successfully pushed the HDR file to an HDR server, a unique file name for the HDR file that was pushed, and the IP address of the push receiver (configured in the global collection configuration). For more information about the HDR SNMP traps, see the product-specific Net-Net SD MIB Reference Guide.

Note: After each push, the Net-Net SD clears (deletes) all records. The Net-Net SD also clears files on system reboot, and after three consecutive push failures.
2 Configuring HDR

Introduction
This section provides information and procedures for configuring HDR on the Net-Net C-Series products. It also includes procedures for starting and stopping the collection of data at the Acme Packet Command Line Interface (ACLI).

Configuring HDR via the ACLI
This section provides procedures for configuring HDR. HDR configuration includes:

- setting parameters to govern sample and push intervals, and start/end times for collection
- setting parameters to support HDR across a high availability (HA) node
- setting group parameters to inform the Net-Net Session Border Controller (SBC), which groups of records to collect, when to start and stop collecting, and how often to sample for a specific group.
- setting push receivers that transport the records forwarded by the Net-Net SD

Note: If you modify the HDR configuration parameters using the ACLI, the changed parameters DO NOT take affect until you reboot the SD.

Enabling HDR Collection
You access the parameters that enable and support HDR using the ACLI system-config path.

To enable HDR collection:

1. In Superuser mode, type configure terminal and press <Enter>.
   ACMEPACKET# configure terminal
2. Type system and press <Enter>.
   ACMEPACKET(configure)# system
   ACMEPACKET(system)#
3. Type system-config and press <Enter>.
   ACMEPACKET(system)# system-config
   ACMEPACKET(system-config)#
4. Enter collect and press <Enter>. From here, you can type a question mark (?) to see individual parameters for the configuration.
   ACMEPACKET(system-config)# collect
   ACMEPACKET(collect)#
Setting Global Collection

You access the collection configuration through the ACLI system-configuration menu. Once in the collection configuration, you can establish the global settings for HDR collection.

To set HDR global collection:

1. In Superuser mode, navigate to the “collect” parameter level in the ACLI.
   
   ```
   ACMEPACKET# configure terminal
   ACMEPACKET(configure)# system
   ACMEPACKET(system)# system-config
   ACMEPACKET(system-config)# collect
   ACMEPACKET(collect)#
   ```

2. Set global collection parameters as applicable. Parameters include:
   - **sample-interval**—Enter the time in minutes for how often you want the Net-Net SD to sample data records. The default is 5. The valid range is:
     - Minimum—1
     - Maximum—120
   - **push-interval**—Enter the time in minutes for how often you want the Net-Net SD to send collected records to push receiver(s). The default is 15. The valid range is:
     - Minimum—1
     - Maximum—120
   - **boot-state**—Set this parameter to **enabled** to start group collection, or to **disabled** to prevent the Net-Net SD from collecting HDR statistics. This parameter does not go into effect until the system is rebooted. You can also use the ACLI request collect start command to start collection; using this command, you can start collection for all groups, or for one specified group. The default is **disabled**. Valid values are:
     - enabled | disabled
   - **start-time**—Enter the exact date and time (for your local timezone) when you want the Net-Net SD to start HDR collection. You can enter **now** to set the start-time to the current time, or you can specify a time in the future. If you specify a time, it must be in the format `yyyy-mm-dd-hh:mm:ss`, where: `yyyy` is the year, `mm` is the month, `dd` is the day, `hh` in the hour, `mm` is the minutes, and `ss` is the second (24-hour clock). The default is **now**.
   - **end-time**—Enter the exact date and time (for your local timezone) when you want the Net-Net SD to finish HDR collection. You can enter **never** to set the time to never end, or you can specify an end time in the future. If you specify a time, it must be in the format `yyyy-mm-dd-hh:mm:ss`, where: `yyyy` is the year, `mm` is the month, `dd` is the day, `hh` in the hour, `mm` is the minutes, and `ss` is the second (24-hour clock). The default is **never**.
   - **push-success-trap-state**—Set this parameter to **enabled** if you want the Net-Net SD to send a trap confirming successful data pushes to HDR servers. Default is **disabled**. Valid values are:
     - enabled | disabled
Setting HDR for an HA Node

If you are using the HDR feature on a High Availability (HA) node (or redundant pair of Net-Net SDs), several parameters in the collection configuration must be set for HDR to perform properly.

Acme Packet recommends strongly that you do not change these parameters from their defaults for a normal HA node configuration. Therefore, if you need to change them to support HDR, you should do so with caution.

To set HDR support across an HA node:

1. In Superuser mode, navigate to the "collect" parameter level in the ACLI.

   ```
   ACMEPACKET# configure terminal
   ACMEPACKET(configure)# system
   ACMEPACKET(system)# system-config
   ACMEPACKET(system-config)# collect
   ACMEPACKET(collect)#
   ```

2. Set HDR collection parameters for an HA node as applicable. Parameters include:

   - **red-collect-state**—Set the state of HA support for the collector function. The default is disabled. Valid values are:
     - enabled | disabled

   - **red-max-trans**—Enter the maximum number of HA synchronized transactions to maintain on the active system in the HA node. The default is 1000. The valid range is:
     - Minimum—0
     - Maximum—999999999

   - **red-sync-start-time**—Enter the amount of time, in milliseconds, that the active Net-Net SD checks to confirm that it is still the active system in the HA node. If the active system is still adequately healthy, this timer resets itself. If for any reason the active has become the standby, it starts to checkpoint with the newly active system when this timer expires. The default is 5000. The valid range is:
     - Minimum—0
     - Maximum—999999999

   - **red-sync-comp-time**—Enter amount of time, in milliseconds, that determines how frequently after synchronization the standby Net-Net SD checkpoints with the active Net-Net SD. The first interval occurs after initial synchronizations of the systems; this is the timeout for subsequent synchronization requests. The default is 1000. The valid range is:
     - Minimum—0
     - Maximum—999999999
You can configure the Net-Net SD to collect multiple groups of statistics. Collection group settings are accessible through the collection configuration. For specific group names, group statistics, and values, see HDR Groups and Group Statistics (39).

The “sample-interval”, “start-time”, and “end-time” parameters that you set for multiple collection groups override the same parameters set for global collection.

**Note:** For multiple collection groups, the “sample-interval” value must always be smaller than the global collection parameter value for “push-interval”.

**To set multiple collection groups:**

1. In Superuser mode, navigate to the “collect” parameter level in the ACLI.
   ```bash
   ACMEPACKET# configure terminal
   ACMEPACKET(configure)# system
   ACMEPACKET(system)# system-config
   ACMEPACKET(system-config)# collect
   ACMEPACKET(collect)#
   ``
2. Access the collection group (group-settings) parameters.
   ```bash
   ACMEPACKET(collect)# group-settings
   ACMEPACKET(group-settings)#
   ``
3. Set the group parameters for multiple collection groups as applicable. Parameters include:
   - **group-name**—Enter the group name corresponding to the records that you want to collect; there are 25 possible groups for which the Net-Net SD can collect data. The **system** group name is the default for this parameter. For additional group names, see HDR Groups and Group Statistics (39).
   - **sample-interval**—Enter the time in minutes for how often you want the Net-Net SD to sample data records for the specified group. The default is 5. The valid range is:
     - Minimum—1
     - Maximum—120
   - **boot-state**—Set this parameter to **enabled** to start group collection, or to **disabled** to prevent the Net-Net SD from collecting HDR statistics for this group. This parameter does not go into effect until the system is rebooted. You can also use the ACLI request collect start command to start collection; using this command, you can start collection for all groups, or for one specified group. The default is **disabled**. Valid values are:
     - enabled | disabled
   - **start-time**—Enter the exact date and time (for your local timezone) when you want the Net-Net SD to start collecting records for the specified group. You can enter **now** to set the start-time to the current time, or you can specify a time in the future. If you specify a time, it must be in the format `yyyy-mm-dd-hh:mm:ss`, where: `yyyy` is the year, `mm` is the month, `dd` is the day, `hh` in the hour, `mm` is the minutes, and `ss` is the second (24-hour clock). The default is **now**.
• **end-time**—Enter the exact date and time (for your local timezone) when you want the Net-Net SD to stop collecting records for this group. You can enter `never` to set the time to never end, or you can specify an end time in the future. If you specify a time, it must be in the format `yyyy-mm-dd-hh:mm:ss`, where: `yyyy` is the year, `mm` is the month, `dd` is the day, `hh` in the hour, `mm` is the minutes, and `ss` is the second (24-hour clock). The default is `never`.

---

### Setting Servers as Push Receivers

You can configure multiple push receivers that represent FTP or SFTP destination servers for which the Net-Net SD pushes records. Push receiver settings are accessible through the collection configuration.

If you configure more than one server, the Net-Net SD sends data to all of the servers. If one server fails, the Net-Net SD generates an SNMP trap. The Net-Net SD makes 3 attempts to send data to the failed server. If the server cannot receive the data, the Net-Net SD clears the data for that server. For example, if there are four servers configured, and the Net-Net SD successfully pushes data to three of them, the Net-Net SD generates a trap indicating the fourth server is down and after 3 attempts to send the data, the data is cleared.

**To set servers as push receivers:**

1. In Superuser mode, navigate to the “collect” parameter level in the ACLI.
   ```
   ACMEPACKET# configure terminal
   ACMEPACKET(configure)# system
   ACMEPACKET(system)# system-config
   ACMEPACKET(system-config)# collect
   ACMEPACKET(collect)#
   ```
2. Access the push receiver (`push-receiver`) parameters.
   ```
   ACMEPACKET(collect)# push-receiver
   ACMEPACKET(push-receiver)#
   ```
   • **address**—Enter the IP address of the push receiver (server) to which you want records sent. The default for this parameter is `0.0.0.0`.
   • **username**—Enter the username that the Net-Net SD uses when it tries to send records to this push server using FTP. There is no default for this parameter.
   • **password**—Enter the password (corresponding to the username) that the Net-Net SD uses when it sends records to this push server using FTP. There is no default for this parameter. Enter this password parameter using the following procedure:
      a. Type the parameter name `password`, and then press <Enter>.
         ```
         ACMEPACKET(push-receiver)# password
         ```
      b. Enter the password that the Net-Net SD uses to send records to the push server. The display does not echo the password you enter.
         ```
         Enter password: [enter the password]
         ```
c. Enter the password again to confirm that you entered the password correctly. If the passwords match, the user prompt displays to continue the push server configuration.

   Enter password again: [enter the password again]
   ACMEPACKET(push-receiver)#

If the passwords do not match, an error message displays. Repeat Steps a through c to set the password.

   Error: Password mismatch - aborted.
   ACMEPACKET(push-receiver)#

- **data-store**—Enter the directory on the push receiver where you want collected data placed. There is no default for this parameter.

- **protocol**—Set this parameter to the protocol with which to send HDR collection record files. Default is **FTP**. Valid values are:
  - FTP | SFTP

   **Note:** Public key authentication is not available when you choose SFTP. Instead, the Net-Net SD uses password authentication. However, for SFTP to work, it is still required that you load the SFTP’s host public key on the Net-Net SD.

---

### Creating a Public Key Profile

The Secure Shell (SSH) and related Secure Shell File Transfer (SFTP) protocols provide for the secure transfer of audit files and for the secure transfer of management traffic across the wancom0 interface. When using password or public key authentication with push receiver configurations, use the procedures described below to create your profiles.

Create your profile by configuring:

- SSH Properties
- Import an SSH Host Key
- Create the public key profile

The following two tasks are required for public key authentication mode only.

- Generate an SSH Key Pair
- Copy the Net-Net SD public Key to the SFTP server

After the above, you can use this profile within the context of your FTP push configuration.

---

### SSH Operations

SSH Version 2.0, the only version supported on the Acme Packet Net-Net SBC, is defined by a series of five RFCs.

- RFC 4250, *The Secure Shell (SSH) Protocol Assigned Numbers*
- RFC 4251, *The Secure Shell (SSH) Protocol Architecture*
- RFC 4252, *The Secure Shell (SSH) Authentication Protocol*
- RFC 4253, *The Secure Shell (SSH) Transport Layer Protocol*
- RFC 4254, *The Secure Shell (SSH) Connection Protocol*

RFCs 4252 and 4253 are most relevant to SBC operations.

The transport layer protocol (RFC 4253) provides algorithm negotiation and key exchange. The key exchange includes server authentication and results in a cryptographically secured connection that provides integrity, confidentiality and
optional compression. Forward security is provided through a Diffie-Hellman key agreement. This key agreement results in a shared session key. The rest of the session is encrypted using a symmetric cipher, currently 128-bit AES, Blowfish, 3DES, CAST128, Arfcour, 192-bit AES, or 256-bit AES. The client selects the encryption algorithm to use from those offered by the server. Additionally, session integrity is provided through a cryptographic message authentication code (hmac-md5, hmac-sha1, umac-64 or hmac-ripemd160).

The authentication protocol (RFC 4252) uses this secure connection provided and supported by the transport layer. It provides several mechanisms for user authentication. Two modes are supported by the Net-Net SD: traditional password authentication and public-key authentication.

**ACLI Instructions and Examples**

This section provides ACLI procedures for SFTP push configurations, including SSH property configuration, certificate import, and public key profile configuration on your Net-Net SD.

**Configure SSH Properties**

The single instance `ssh-config` configuration element specifies SSH re-keying thresholds.

1. From admin mode, use the following command path to access the ssh configuration element:
   - `ragnarok# configure terminal > security > admin-security > ssh-config`
   - `ragnarok(ssh-config)#`

   `ssh` configuration element properties are shown below with their default values
   - `rekey-interval` 60
   - `rekey-byte-count` 31

2. `rekey-interval`—specifies the maximum allowed interval, in minutes, between SSH key negotiations
   - Allowable values are integers within the range 60 through 600, with a default of 60 (minutes). Shorter lifetimes provide more secure connections.
   - Works in conjunction with `rekey-byte-count`, which sets a packet-based threshold, to trigger an SSH renegotiation. If either trigger is activated, an SSH renegotiation is begun.
   - Retain the default value, or specify a new value.
   - `ragnarok(ssh-config)# rekey-interval 20`
   - `ragnarok(ssh-config)`

3. `rekey-byte-count`—specifies the maximum allowed send and receive packet count, in powers of 2, between SSH key negotiations
   - Allowable values are integers within the range 20 (1,048,576 packets) through 31 (2,147,483,648 packets), with a default of 31 ($2^{31}$). Smaller packet counts provide more secure connections.
   - Works in conjunction with `rekey-interval`, which sets a time-based threshold, to trigger an SSH renegotiation. If either trigger is activated, an SSH renegotiation is begun.
   - Retain the default value, or specify a new value.
   - `ragnarok(ssh-config)# rekey-packet-count 24`
   - `ragnarok(ssh-config)`
A sample SSH configuration appears below:

```
ragnarok(ssh-config)# rekey-interval 20
ragnarok(ssh-config)# done
ragnarok(ssh-config)# exit
ragnarok(admin-security)#
```

Specifies a key renegotiation every 20 minutes, or at the reception/transmission of 2,147,483,648 packets, whichever comes first.

### Import an SSH host Key

Importing a host key requires access to the SFTP server or servers which receive audit log transfers. Access is generally most easily accomplished with a terminal emulation program such as PuTTY, SecureCRT, or TeraTerm.

1. Use a terminal emulation program to access the SSH file system on a configured SFTP server.
2. Copy the server’s base64 encoded public file making sure in include the Begin and End markers as specified by RFC 4716, *The Secure Shell (SSH) Public Key File Format*.

   For OpenSSH implementations host files are generally found at `/etc/ssh/ssh_host_dsa_key.pub`, or `/etc/ssh/ssh_host_rsa.pub`. Other SSH implementations can differ.

3. From admin mode use the `ssh-pub-key` command to import the host key to the SBC.

   For importing a host key, this command takes the format:

   ```
   ssh-pub-key import known-host <name>
   ```

   where `name` is an alias or handle assigned to the imported host key, generally the server name or a description of the server function.

   ```
ragnarok# ssh-pub-key import known-host fedallah
```

**IMPORTANT:**

Please paste ssh public key in the format defined in rfc4716. Terminate the key with ";" to exit......

4. Paste the public key with the bracketing Begin and End markers at the cursor point.
5. Enter a semi-colon (;) to signal the end of the imported host key.
6. Follow directions to save and activate the configuration.

The entire import sequence is shown below.
```
ragnarok# ssh-pub-key import known-host fedallah
```
**IMPORTANT:**
Please paste ssh public key in the format defined in rfc4716.
Terminate the key with ";" to exit.

```
---- BEGIN SSH2 PUBLIC KEY ----
Comment: "2048-bit RSA, converted from OpenSSH by klee@acme54"
AAAAB3NzaC1yc2EAAAABIwAAAQEA7OBf08j3e7MSMgerjDTg2pPb1rx4n17LQ2qPC7c1LcDGEKSivt5MjcsaV3v6AEN2ppYihoxd2zzismpoo0199k356s/IjGstEzqXMXKXU9mBVqvs7EQo4be0iSs2AP31GujQ5TCXRF1XQX8A4AVhZCu93/yJSNnWq1mhHma2Mm7ZLS
hoR4j/NIpvpsvri0v6Ftz5eIvfgocexFdrjncVvtaMyLbPDDL69exbQzGSS92TnUkpK/yqzlZjG5NFhxw5i+VvdH81Vtdv8505y20p/jiz8u3TA/307tyntBO6beDyIrg64Azc8G7E3Ag/i49LnBTLqf/aw==
---- END SSH2 PUBLIC KEY ----

SSH public key imported successfully....
WARNING: Configuration changed, run "save-config" command to save it and run "activate-config" to activate the changes
ragnarok# save-config
checking configuration
---------------------------------------------------------------------
|                              |                              |
---------------------------------------------------------------------
Save-Config received, processing.
waiting for request to finish
Request to 'SAVE-CONFIG' has Finished,
Save complete
Currently active and saved configurations do not match!
To sync & activate, run 'activate-config' or 'reboot activate'.
ragnarok# activate-config
Activate-Config received, processing.
waiting for request to finish
SD is not QOS-capable
Request to 'ACTIVATE-CONFIG' has Finished,
Activate Complete
ragnarok#
```

It is important to note that it is often difficult to determine whether the server is using RSA or DSA keys for your application. Unless you can definitively determine this, bear in mind that you need to try importing both.

**Create the Public Key Record**

The initial step in generating an SSH key pair is to configure a public key record which will serve as a container for the generated key pair.

1. Navigate to the `public-key` configuration element.
   ```
ragnarok# configure terminal
ragnarok(configure)# security
ragnarok(security)# public-key
ragnarok(public-key)#
```
2. Use the `name` command to provide the object name, and the `show` command to verify object creation.
ragnarok(public-key)# name tashtego
ragnarok(public-key)# show
public-key
    name tashtego
    type rsa
    size 1024
    last-modified-by
    last-modified-date
ragnarok(public-key)#

This command creates a public key record named tashtego.

3. Use the done command to complete object creation.

ragnarok(public-key)# done
public-key
    name tashtego
    type rsa
    size 1024
    last-modified-by admin@console
    last-modified-date 2009-03-06 11:18:00
ragnarok(public-key)#

4. Make a note of the last-modified-date time value.

5. Move back to admin mode, and save and activate the configuration.

ragnarok(public-key)# exit
ragnarok(security)# exit
ragnarok(configure)# exit
ragnarok#
ragnarok# save-config
...
...
...
ragnarok# activate-config
...
...
...
ragnarok#

Generate an SSH key pair

1. Now use the ssh-pub-key generate command, in conjunction with the name of the public key record created in Step 3, to generate an SSH key pair.

For importing an SSH key pair, this command takes the format:

```
ssh-pub-key generate <name>
```

where name is an alias or handle assigned to the generated key pair, generally the client name or a description of the client function.

ragnarok# ssh-pub-key generate tashtego
Please wait...
public-key 'tashtego' (RFC 4716/SECSH format):

```
----- BEGIN SSH2 PUBLIC KEY -----
```
Comment: "1024-bit rsa"
AAAAB3NzaC1yc2EAAAABIAIAIEArZEP1/.../ZC8c.../7mKcImrGAIr7Gmc=
---- END SSH2 PUBLIC KEY ----

SSH public-key pair generated successfully....

WARNING: Configuration changed, run "save-config" command to save it and run "activate-config" to activate the changes

2. Copy the base64-encoded public key. Copy only the actual public key — do not copy the bracketing Begin and End markers nor any comments. Shortly you will paste the public key to one or more SFTP servers.

3. Save and activate the configuration.
   ragnarok# save-config
   ...
   ...
   ...
   ragnarok# activate-config
   ...
   ...
   ...

4. Return to the public-key configuration object, and select the target public key record instance.
   ragnarok# configure terminal
   ragnarok(configure)# security
   ragnarok(security)# public-key
   ragnarok(public-key)# select
   <name>:
   1: acme01
   2: acme02
   3: tashtego

   selection: 3
   ragnarok(public-key)# show
   public-key
   
   name                   tashtego
   type                   rsa
   size                   1024
   last-modified-by       admin@console
   last-modified-date     2009-03-06 11:24:32

   ragnarok(public-key)#

5. Verify that the record has been updated to reflect key generation by examining the value of the last-modified-date field.
### Copy a client public key to an SFTP server.

Copying the client public key to an SFTP server requires server access generally using a terminal emulation program such as PuTTY, SecureCRT, or TeraTerm.

1. Use a terminal emulation program to access the SSH file system on a configured SFTP server.
2. Copy the client key to the SFTP server.

On OpenSSH implementations, public keys are usually stored in the `~/.ssh/authorized_keys` file. Each line this file:

- (1) is empty,
- (2) starts with a pound (#) character (indicating a comment), or
- (3) contains a single public key.

Refer to the sshd man pages for additional information regarding file format.

Use a text editor such as `vi` or `emacs` to open the file and paste the public key to the tail of the `authorized_keys` file.

For SSH implementations other than OpenSSH, consult the system administrator for file structure details.

### View a Public key on the Net-Net SD

You can use the `show security ssh-pub-key` command to display information about SSH keys imported to the SBC with the `ssh-pub-key` command; you cannot display information about keys generated by the `ssh-pub-key` command.

```
ragnarok# show security ssh-pub-key brief
login-name: 
    acme74
finger-print: 
finger-print-raw: 

login-name: 
    fedallah
finger-print: 
finger-print-raw: 
ragnarok#
```

This command displays summary information for all SSH imported keys.

- `login-name` contains the name assigned to the RSA or DSA public key when it was first imported
- `finger-print` contains the output of an MD5 hash computed across the base64-encoded public key
- `finger-print-raw` contains the output of an MD5 hash computed across the binary form of the public key

```
ragnarok# show security ssh-pub-key brief fedallah
login-name: 
    fedallah
finger-print: 
finger-print-raw: 
```

This command displays summary information for a specific SSH public key (in this case \textit{fedallah}).

\begin{verbatim}
ragnarok#
\end{verbatim}

This command displays detailed information for specific SSH public key (in this case \textit{fedallah}, an RSA key).

\begin{verbatim}
ragnarok# show security ssh-pub-key detail fedallah
host-name: fedallah
comment: "2048-bit RSA, converted from OpenSSH by klee@acme54"
pub-key:
AAAAB3NzaC1yc2EAAAABIwAAAQEA7OJf08jje7M3MgerjDTg2zbPbrX4n17LQ3gP
C7c1LcDEtkS1vtS5mJcsav3v6AEN2yZih0x22zismpoo019kkj56s/IjGstEzqX
MKHKU9mBqvrQIEOtQbowEi5zz2AP31GujjTCK2ZRIx0Qx8a4vHZCum93/jfNrs
WQLmhHma2zmnTzl5hO4/1N/1pplusVDpdro1v6Ftz5eiYfocxrDrjncVtsAMLyBpDd
L6e9xeQfQGSSS2TPUKP/yqzL2G5NFhzw5i+FvdHz1vBdVb505y2Qpj/iz1u3TA
/307tynt80b7beDyIr64Azcg87E3AGiH49LNblQf/aw==
modulus: (256)
ECE05F3c3C8C97BB3123207AB8C34E06696CF6E5AdE727D7B2D02603C2E6C9AB70
3184A4A256DE4C849ABF7BFA004376A5866284EC59DD99EC2B26A834D7D9
24279EACFC88C6B2D133A9730A1CA52BF66055AAAFA88104E4A6E8C048B83B3D80
3F7d4652341308A6511755CE431F00E38BC7642BA67F77FE37CD46D964359A11E
66993264F62D284EAF827F365A7EBEB9E6 FA5DE8955E85B73E5E8957E0A1CC6B0
EB8CD715B6C00CC8B0690DD2FA7BD5DE60CC6492F764CBFA3FFCAACCB2761B9
355161C5DC398BE16F747CF5BC176F079D39CB640F88F8B3DEDD303FDC4EEDCA
7B4139BEDB783C88AE0EB803373C1BB137066887E3D2E706D9507FF6B
exponent: (1)
23
ragnarok#
\end{verbatim}

This command displays detailed information for specific SSH public key (in this case \textit{fedallah}, an RSA key).

\begin{verbatim}
host-name
contains the name assigned to the RSA key when it was first imported

finger-print
contains the output of an MD5 hash computed across the base64-encoded RSA public key

finger-print-raw
contains the output of an MD5 hash computed across the binary form of the RSA public key

public-key
contains the base64-encoded RSA key

modulus
contains the hexadecimal modulus (256) of the RSA key
exponent
(also known as public exponent or encryption exponent) contains an integer value that is used during the RSA key generation algorithm. Commonly used values are 17 and 65537. A prime exponent greater than 2 is generally used for more efficient key generation.

```
ragnarok# show security ssh-pub-key detail acme74
host-name: acme74
comment: DSA Public Key
pub-key: AAAAB3NzaC1kc3MAAACBAPY8Z0HY2yFSJA6XYC9HRwNHxaehhnx5wOJ0rzDz0S0Xx
bETW6TohV8dUJ/z+zHo9Fik3yxBzd1aBDmbrb1Q+yP7sxy1ltHnXf1ylFkD1g4T
6JyrdH1y140lmleg9e4NncR1eaoqzPF3UgfZia6BxQTGFQ3jgq3e7YisK/gr+f1VAAA
AFQDbb05cwwHTZDPFx0b2s9rd7NBvqAAA1EANH92+Bb7D4KLY31wrbx7wxdKpg
4gA4pfdtw9vgf30/JRh-dNJB4eo1D+D1x6txwiYGN7PKSSR/FXFNwhXapa0c9U1Jn2
AWQ2dnsk+I/FAAvioUPkmc0zuw0SOeSNaHVTx3wvdVCCGbQ9cet�0KWOOCJ
mB8qadxtRHTuAAAACBAN7CY+Kvk1qHpr2FwdQm/7HK9bb1LAo2KwaoXnadFgeptNBQ
eSGV1o+JsvplHNMB3c9H5n24VYLYtsMu74qXv1yjziVucWkJkJEbb1Jqjqqf0GDTB3
VVmXHLmNanx2643wk4227dlM5y29oue4vXz2PuMcGVP+CDqzCM410wV
```
p: (128) F63C64E1d0B2152240E97602F47470347C5A7A1BF1e70389d28bd9773A12397C
Sb1135BA4e81effF03sD427FCFEC57A3d62928E57986670C6810C785B950F98
A7B4ADC7296D1e75C5D582f823D4613E8962B747608D783A6D5E8378836709
19566A9A193C5D0419F6626BA6D7AC640D7F7809AB67B622B24FE017ED5
q: (20) DBF03E5CBFB01D649D0CF7d7D03DACF5177B341BD
g: (128) 94DF76F816FB0F82B8246D48C3116D76E5C17766C8E8000E297DDB56F6F19F274FD
11DDF680C1E1E3A50FED1DB81EAD5F6063783CA4B947F1573C6C311CF6A9723F
E26F5267085909B249DF8A2FC50008E2A143E499D31CD33B6A12834812361
543B57DD676F55C190C6A5FC7ADCEBB4E2963A870998F3F4A9A7714D11ED5
pub_key: (128) DEC263E28ABF5807A51CC5C1426EC72B6D6B4DDB28A3C3A179DA745818E6D3
4141E4917B5C8F892F6A154C04973D129F6E1562D62DB0CBBB2AE5F8988F3
8959B5C58AE32846F5D63BA9C5D006E50775559B18C9B19C0CFA3758AE3667
B74B339B18DBDA2E7B3BF85F3D8FB8C721E5518F3F0E38A30BCE25A16815
```
ragnarok#
This command displays detailed information for specific SSH public key (in this case acme74, a DSA key).

host name
contains the name assigned to the DSA public key when it was first imported

comment
contains any comments associated with the DSA key
finger-print
contains the output of an MD5 hash computed across the base64-encoded DSA public key

finger-print-raw
contains the output of an MD5 hash computed across the binary form of the DSA public key

public key
contains the base64 encoded DSA key

p
contains the first of two prime numbers used for key generation

q
contains the second of two prime numbers used for key generation

g
contains an integer that together with p and q are the inputs to the DSA key generation algorithm

ragnarok# show security ssh-pub-key detail
...
...
...
  ragnarok#
This command displays detailed information for all SSH imported keys
Starting and Stopping HDR using the ACLI

For ease-of-use, you can start and stop record collection from Acme Packet’s command line interface (ACLI) in Superuser Mode. You can start and stop record collection for the entire HDR process, or you can specify a group name for which you want to start and stop collection.

Starting HDR

To start record collections:

- In Superuser mode, at the root prompt, enter `request collect start all` and press <Enter>. The Net-Net SD starts all record collection.

  `ACMEPACKET# request collect start all`

To start a group-name record collection:

- In Superuser mode, at the root prompt, enter `request collect start <group-name>`, and press <Enter>. The Net-Net SD starts collection for that group name only. In the following example, “voltage” record collection is started.

  `ACMEPACKET# request collect start voltage`

Stopping HDR

To stop all record collections:

- In Superuser mode, at the root prompt, enter `request collect stop all` and press <Enter>. The Net-Net SD stops all record collection.

  `ACMEPACKET# request collect stop all`

To stop a group-name record collection:

- In Superuser mode, at the root prompt, enter `request collect stop <group-name>`, and press <Enter>. The Net-Net SD stops collection for that group name only. In the following example, “voltage” record collection is stopped.

  `ACMEPACKET# request collect stop voltage`

Purging HDR Data using the ACLI

Using the ACLI, you can delete all HDR record collections resident on the Net-Net SD.

To purge all record collections:

- In Superuser mode, at the root prompt, enter `request collect purge` and press <Enter>. The Net-Net SD deletes all record collections.

  `ACMEPACKET# request collect purge`
Restarting HDR using the ACLI

You can restart the collector using the boot configuration.

To restart the collector using the boot configuration:

- In Superuser mode, at the root prompt, enter `request collect restart` and press <Enter>. The Net-Net SD restarts all record collections using the boot configuration.

  ACMEPACKET# request collect restart

Requesting HDR Collection Status

You can display the status of collection groups and push servers on the Net-Net SD, when required, using the ACLI.

To display the status of collection groups and push servers:

- In Superuser mode, at the root prompt, enter `request collect status` and press <Enter>. The Net-Net SD displays the current status of all record collections and push receivers. In the following example, the group, “fan” is disabled at boot time, the start time is immediately when the system comes up, and there is no end time. The Push Receiver configured for this Net-Net SD is 172.30.11.16 and it is currently reachable. The date and time of the next scheduled push is also indicated as well as the interval of time between each push.

  ACMEPACKET# request collect status
  Collector is currently collecting on:
  Group   Boot-State       Start Time       End Time
  fan      disabled         now              never

  Next Push Scheduled for: 2008-01-11-11:12:06
  Subsequent Push Interval: 15 minutes

  Registered push receivers are:
  IP Address   Status
  172.30.11.16 reachable
3 HDR Groups and Group Statistics

Introduction

This section provides information about the Historical Data Recording (HDR) Groups and Group Statistics that make up the HDR records on the Net-Net C-Series products. It also includes information about the source of the HDR data.

HDR Data

HDR data consists of a “Group” with associated “Group Statistics” that apply to each group. HDR data comes from two sources:

- Simple Network Management Protocol (SNMP) Management Information Bases (MIBs) (MIB-Associated Groups and Group Statistics (42))
- Acme Packet’s Command Line Interface (ACLI) (ACLI-Associated Groups and Group Statistics (81))

When you configure HDR on the Net-Net Session Director (SD), the Groups and associated Group Statistics are included in the collection of data. You can configure the Net-Net SD to collect all group statistics or specific group statistics. For information on configuring global collection, see Setting Global Collection (22). For information on specific group collections, see Setting Multiple Collection Groups (24).

When HDR is enabled, the Net-Net SD forwards statistical records to push servers which send the data (in standard format) to a receiving server for viewing in a comma-separated value (CSV) file. Before pushing a file, the collector creates the directory by group name for which the statistic belongs (for example, fan, sip-client, system, etc.), if the directory does not exist from a previous push.

The collector can push multiple CSV files per directory. Each file is formatted as <Unix timestamp>.csv (for example, 1302041977.csv). Within the file, each record also has an associated record timestamp. The filename timestamp is the time that the CSV file was create. The record timestamp is the window of time that the HDR collector used to collect the data. For more information on windows of time, see Windows of Time (40).

The first record of each file is a header containing the attribute name. For example, in the “System” directory, a file name of “13020441977.csv” can contain the header attribute names of CPU Utilization, Memory Utilization, Health Score, Redundancy State, etc. The collector appends a Timestamp heading attribute to the beginning of every record as well.

Note: The records in a CSV file may display differently, depending on the record data included in the file, and the method used to open the file. For more information about the display of record data in a CSV file, see Appendix A, CSV File Data Formats (171).
The following example shows the output from a “System” HDR collection. The output format reflects that the file was opened using the Unix command “cat <timestamp>.csv”.

```
[AcmePacket]$ cd system
[AcmePacket]$ ls -l
-rw-r--r-- 1 moles src 453 Apr 15 05:38 1302041737.csv
-rw-r--r-- 1 moles src 453 Apr 15 05:40 1302041857.csv
-rw-r--r-- 1 moles src 455 Apr 15 05:42 1302041977.csv
```

```
[AcmePacket]$ cat 1302041977.csv
TimeStamp,CPU Utilization,Memory Utilization,Health Score,Redundancy State,Signaling Sessions,Signaling Rate (CPS),CAM Utilization (NAT),Cam Utilization (ARP),I2C Bus State,License Capacity,Current Cached SIP Local Contact Registrations,Current MGCP Public Endpoint Gateway Registrations,Current H323 Number of Registrations,Application Load Rate
1302041977,39,22,50,active,0,0,0,0,online,0,0,0,0,39
```

Windows of Time

Each table in this chapter identifies a data type for a Group Statistic: counter, gauge, config, timeticks, and period. The following illustration shows the “Application Load Rate” Group Statistic table with a data type of “period”.

```
Data Type
```

```
Note: For more information about Group Statistic data types, see What is HDR? (17).
```

A period type represents a value determined as the sum of a number of events which occurred during a specified window of time (or a time period). There are three possible “windows” in which events can occur:

- current window
- previous window
- sliding window
The following paragraphs describe each of these windows.

The **current window** is the window during which events are currently being accumulated. The current window ends D seconds after the start of the current window, where D is the duration of the window. The current window is always of size $D_c < D$. Once the current window becomes of size $D$, it becomes the previous window, and a new current window is started.

The **previous window** is the time period of duration D which ended at the start of the current window.

The **sliding window** marks the period of time for the previous window, D, plus the time passed in the current window. For example: For the "session-agent" and "session-realm" HDR groups, the default timer value is 30 seconds. The "current window" is between 0 and 30 seconds. When the current window reaches 30 seconds it becomes the previous window and a new current window is initialized. The "sliding window" is the sum of the current window and previous window. Therefore the initial sliding window is between 0 and 30 seconds and after that the sliding window is between 30 and 60 seconds.

For the session-agent statistics and the session-realm statistics groups, the default period timer is 30 seconds. In the Net-Net SD configuration, if the sustained-rate-window parameter is not configured, the default window size is 30 seconds. If the sustained-rate-window parameter is configured, the default period is set to the configured value of the sustained-rate-window.
MIB-Associated Groups and Group Statistics

The Groups and Group Statistics in this section are a subset of MIB variables on the Net-Net SD. Each table specifies the MIB that pertains to the Group or Group Statistics. Groups in this section include:

- Group: system (42)
- Group: interface (47)
- Group: session-agent (53)*
- Group: session-realm (61)
- Group: voltage (72)
- Group: fan (74)
- Group: temperature (76)
- Group: space (78)
- Group: network-util (80)

*In addition to being a subset of a MIB variable, the session-agent Group maps to the “show sipd agents” command, the registration-realm Group maps to the “show sipd realms”, and some statistics in the session-realm Group map to the “show sipd realms” command. For more information, see Chapter 4, the section, show sipd agents (152) and show sipd realms (162).

Group: system

<table>
<thead>
<tr>
<th>Description</th>
<th>Group name that consists of general system statistics.</th>
</tr>
</thead>
</table>
| HDR Statistics | • CPU Utilization  
| | • Memory Utilization  
| | • Health Score  
| | • Redundancy State  
| | • Signaling Sessions  
| | • Signaling Rate (CPS)  
| | • CAM Utilization (NAT)  
| | • CAM Utilization (ARP)  
| | • I2C Bus State  
| | • License Capacity  
| | • Current Cached SIP Local Contact Registrations  
| | • Current MGCP Public Endpoint Gateway Registrations  
| | • Current H323 Number of Registrations  
| | • Application Load Rate  
| | • Current Deny Entries |
| SNMP MIB | ap-smgmt.mib  
| | apSysMgmtGeneralObjects  
| | 1.3.6.1.4.1.9148.3.2.1.1 |

Group Statistics

CPU Utilization

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage of total usage of Session Director’s (SD) central processing unit (CPU).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0% to 100%</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1</td>
</tr>
</tbody>
</table>
### Memory Utilization

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage of total memory usage on SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0% to 100%</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.2</td>
</tr>
</tbody>
</table>

### Health Score

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage of system health with a value of 100% being the healthiest.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0% to 100%</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.3</td>
</tr>
</tbody>
</table>

### Redundancy State

<table>
<thead>
<tr>
<th>Description</th>
<th>For Net-Net high availability (HA), specifies whether this Net-Net SD is active or standby. A standalone system has an active state.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>integer</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>active (1) System is in active mode. standby (2) System is in standby mode. unassigned (3) System has not been assigned as “active” or “standby”. recovery (4) System is in recovery mode. outOfService (5) System is currently out of service. Contact your Technical Support representative.</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.4</td>
</tr>
</tbody>
</table>
### Signaling Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of global, concurrent, active sessions in real time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.5</td>
</tr>
</tbody>
</table>

### Signaling Rate (CPS)

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of calls per second (CPS). This is a real-time value which is the sum of SIP H.323 and Media Gateway Control Protocol (MGCP) calls.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.6</td>
</tr>
</tbody>
</table>

### CAM Utilization (NAT)

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage of Content Addressable Memory (CAM) usage for Network Address Translation (NAT).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0% to 100%</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.7</td>
</tr>
</tbody>
</table>

### CAM Utilization (ARP)

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage of Content Addressable Memory (CAM) usage for Address Resolution Protocol (ARP).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0% to 100%</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.8</td>
</tr>
<tr>
<td>HDR GROUPS AND GROUP STATISTICS</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td></td>
</tr>
</tbody>
</table>

### I2C Bus State

**Description**: Current SD state.

**Type**: integer

**Timer Value (seconds)**: N/A

**Range**:
- online (0): SD is online and processing calls.
- becoming offline (1): SD is in the process of going offline.
- offline (2): SD is offline and not processing calls. However, other administrative functions are available.

**SNMP MIB**: 1.3.6.1.4.1.9148.3.2.1.1.9

### License Capacity

**Description**: Percentage of licensed SD sessions currently in progress.

**Type**: gauge

**Timer Value (seconds)**: N/A

**Range**: 0% to 100%

**SNMP MIB**: 1.3.6.1.4.1.9148.3.2.1.1.10

### Current Cached SIP Local Contact Registrations

**Description**: Total number of currently cached registered contacts in the SD.

**Type**: gauge

**Timer Value (seconds)**: N/A

**Range**: 0 to $2^{32} - 1$

**SNMP MIB**: 1.3.6.1.4.1.9148.3.2.1.1.11

### Current MGCP Public Endpoint Gateway Registrations

**Description**: Total number of registered Media Gateway Control Protocol (MGCP) gateway endpoints in the SD.

**Type**: gauge

**Timer Value (seconds)**: N/A

**Range**: 0 to $2^{32} - 1$

**SNMP MIB**: 1.3.6.1.4.1.9148.3.2.1.1.12
## Current H323 Number of Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of H323 registrations in the SD.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.13</td>
</tr>
</tbody>
</table>

## Application Load Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Average Central Processing Unit (CPU) utilization of the Net-Net SD during the current window. The average is computed every 10 seconds unless load-limit is configured in the SipConfig record, in which case it is 5 seconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30 seconds</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.1.16</td>
</tr>
</tbody>
</table>

## Current Deny Entries

<table>
<thead>
<tr>
<th>Description</th>
<th>The total number of endpoints currently denied.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>integer</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>NA</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>.1.3.6.1.4.1.9148.3.2.1.1.26</td>
</tr>
</tbody>
</table>
## Group: interface

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to the physical interface(s) on the SD.</th>
</tr>
</thead>
</table>

### HDR Statistics

- Index
- Description
- Type
- MTU
- Speed
- Physical Address
- Admin Status
- Operational State
- IfLastChange
- InOctets
- InUnicastPackets
- InNon-UnicastPackets
- InDiscards
- OutErrors
- OutOctets
- OutUnicastPackets
- OutNon-UnicastPackets
- OutDiscards
- InErrors

### SNMP MIB

- rfc2863.mib
- ifEntry
- 1.3.6.1.2.1.2.2.1

## Group Statistics

### Index

<table>
<thead>
<tr>
<th>Description</th>
<th>Unique value that identifies the interface.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>config</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### SNMP MIB

- 1.3.6.1.2.1.2.1.1
### Type

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of interface distinguished according to the Physical/Link Protocol(s).</td>
<td>config</td>
<td>N/A</td>
<td>N/A</td>
<td>1.3.6.1.2.2.1.3</td>
</tr>
</tbody>
</table>

### MTU

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Transmission Unit (MTU) - largest datagram size, in octets (eight-bit bytes), that can be sent/received on the interface specified in octets.</td>
<td>config</td>
<td>N/A</td>
<td>N/A</td>
<td>1.3.6.1.2.2.1.4</td>
</tr>
</tbody>
</table>

### Speed

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate of the current bandwidth, in bits per second, on the interface.</td>
<td>config</td>
<td>N/A</td>
<td>N/A</td>
<td>1.3.6.1.2.2.1.5</td>
</tr>
</tbody>
</table>

### Physical Address

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address of the interface at the protocol layer immediately below the network layer in the protocol stack.</td>
<td>config</td>
<td>N/A</td>
<td>N/A</td>
<td>1.3.6.1.2.2.1.6</td>
</tr>
<tr>
<td><strong>Admin Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Current administrative state of the interface.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>config</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.2.1.2.1.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Operational State</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Current operational state of the interface.</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>integer</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>
| **Range** | up(1) Interface is operational and in the UP state.  
down(2) Interface is not operational and in the DOWN state.  
testing(3) Interface is in TESTING state.  
unknown(4) Interface state is UNKNOWN.  
dormant(5) Interface is inactive and in DORMANT state.  
otPresent(6) No interface is present.  
lowerLayerDown(7) Lower layer protocol on the interface is down. |
| **SNMP MIB** | 1.3.6.1.2.1.2.1.8 |

<table>
<thead>
<tr>
<th><strong>IfLastChange</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Specifies the sysUpTime (system up time) value with the time the interface entered its current operational state</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>timeticks</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.2.1.2.1.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>InOctets</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Total number of octets received on the interface.</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.2.1.2.1.10</td>
</tr>
</tbody>
</table>
### InUnicastPackets

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of subnetwork-unicast packets delivered to a higher layer protocol. A unicast packet is a regular IP packet that has a destination IP address.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.11</td>
</tr>
</tbody>
</table>

### InNon-UnicastPackets

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of non-unicast packets (i.e., subnetwork-broadcast or subnetwork-multicast packets) delivered to a higher layer protocol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.12</td>
</tr>
</tbody>
</table>

### InDiscards

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of inbound packets that were discarded even though no errors had been detected. This prevented the packets from being delivered to a higher-layer protocol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.13</td>
</tr>
</tbody>
</table>

### InErrors

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of inbound packets that contained errors, preventing them from being delivered to a higher-layer protocol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.14</td>
</tr>
</tbody>
</table>
### OutOctets

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of octets sent out the interface.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.16</td>
</tr>
</tbody>
</table>

### OutUnicastPackets

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of packets that higher-level protocols requested be transmitted to a subnetwork-unicast address, including packets that were discarded or not sent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.17</td>
</tr>
</tbody>
</table>

### OutNon-UnicastPackets

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of packets that higher-level protocols requested be transmitted to a non-unicast address (i.e., subnetwork-broadcast or subnetwork-multicast addresses), including packets that were discarded or not sent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.18</td>
</tr>
</tbody>
</table>

### OutDiscards

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of outbound packets discarded even though no errors were detected, to prevent the packets from being transmitted.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.2.1.2.2.1.19</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Number of outbound packets that were not transmitted because of errors.</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.2.1.2.1.2.1.2.1.20</td>
</tr>
</tbody>
</table>
### Group: session-agent

**Description**
A signaling endpoint that applies traffic-shaping attributes and information regarding next hops or previous hops.

**HDR Statistics**
- Hostname
- System Type
- Status
- Inbound Active Sessions
- Inbound Session Rate
- Outbound Active Sessions
- Outbound Session Rate
- Inbound Sessions Admitted
- Inbound Sessions Not Admitted
- Inbound Concurrent Sessions High
- Inbound Average Session Rate
- Outbound Sessions Admitted
- Outbound Sessions Not Admitted
- Outbound Concurrent Sessions High
- Outbound Average Sessions Rate
- Max Burst Rate
- Total Seizures
- Total Answered Sessions
- Answer/Seizure Ratio
- Average One-Way Signaling Latency
- Maximum One-Way Signaling Latency

**SNMP MIB**
- **ap-smgmt.mib**
  - apCombinedSessionAgentStatsEntry
  - 1.3.6.1.4.1.9148.3.2.1.2.1.1

### Group Statistics

#### Hostname

**Description**
Hostname of the session agent, in Fully Qualified Domain Name (FQDN) or IP Address format, for which the group statistics are being calculated.

**Type**
config

**Timer Value (seconds)**
N/A

**Range**
N/A

**SNMP MIB**
1.3.6.1.4.1.9148.3.2.1.2.1.2

**ACLI “Show” Command**
show sipd agents

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd agents](152).
### System Type

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of the specified session agent – either SIP or H323.</td>
<td>config</td>
<td>N/A</td>
<td>N/A</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.3</td>
</tr>
</tbody>
</table>

### Status

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current state of the specified session agent.</td>
<td>integer</td>
<td>N/A</td>
<td>disabled, outOfService, standby, inService, constraintsViolation, inServiceTimedOut</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.2</td>
</tr>
</tbody>
</table>

### Inbound Active Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>SNMP MIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of current, active, inbound sessions.</td>
<td>gauge</td>
<td>N/A</td>
<td>0 to (2^{32} - 1)</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.4</td>
</tr>
</tbody>
</table>

ACLI "Show" Command

show sipd agents

ACLI Parameter Mapping

For ACLI parameter mappings, see the table at [show sipd agents](#).
**Inbound Session Rate**

<table>
<thead>
<tr>
<th>Description</th>
<th>Current inbound session rate in calls per second (CPS) during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.5</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd agents</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>

**Outbound Active Sessions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of current, active, outbound sessions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.6</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd agents</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>

**Outbound Session Rate**

<table>
<thead>
<tr>
<th>Description</th>
<th>Current outbound session rate in calls per second (CPS) during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.7</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd agents</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>
### Inbound Sessions Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of inbound sessions admitted during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.8</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd agents</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>

### Inbound Sessions Not Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of inbound sessions rejected because of insufficient bandwidth during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.9</td>
</tr>
</tbody>
</table>

### Inbound Concurrent Sessions High

<table>
<thead>
<tr>
<th>Description</th>
<th>Highest number of concurrent inbound sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.10</td>
</tr>
</tbody>
</table>
## HDR GROUPS AND GROUP STATISTICS

### Inbound Average Session Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Average rate of inbound sessions during the sliding window period in calls per second (CPS).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.11</td>
</tr>
</tbody>
</table>

### Outbound Sessions Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of outbound sessions admitted during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.12</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd agents</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>

### Outbound Sessions Not Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of outbound sessions rejected due to insufficient bandwidth during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.13</td>
</tr>
</tbody>
</table>
### Outbound Concurrent Sessions High

<table>
<thead>
<tr>
<th>Description</th>
<th>Highest number of concurrent outbound sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>$0 \text{ to } 2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.14</td>
</tr>
</tbody>
</table>

### Outbound Average Sessions Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Average rate of outbound sessions during the sliding window period in calls per second (CPS).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>$0 \text{ to } 2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.15</td>
</tr>
</tbody>
</table>

### Max Burst Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Burst rate of traffic (both inbound and outbound) measured during the current window period. The time period is equal to the value of the configuration parameter burst-rate-window in the session constraint or session-agent configuration record. It is equal to 1 if not configured. Its value is the number of active calls plus 1 divided by the time period. This is different from the Max Burst Rate value in the ACLI command “show sipd agent”. In the ACLI it is the high-water mark during the window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>$0 \text{ to } 2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.16</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd agents</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd agents</a> (152).</td>
</tr>
</tbody>
</table>
## Total Seizures

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of seizures during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.1.1.17</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd agents</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>

## Total Answered Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of answered sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.1.1.18</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd agents</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd agents (152).</td>
</tr>
</tbody>
</table>

## Answer/Seizure Ratio

<table>
<thead>
<tr>
<th>Description</th>
<th>Answer-to-seizure ratio expressed as a percentage during the sliding window period. For example, a value of 90 would represent 90% or .90.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
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</tr>
<tr>
<td><strong>Range</strong></td>
<td>0% to 100%</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.1.1.19</td>
</tr>
</tbody>
</table>
## Average One-Way Signaling Latency

<table>
<thead>
<tr>
<th>Description</th>
<th>Average observed one-way signaling latency during the current window period. This is the average amount of time the signaling travels in one direction. Each latency measurement used to calculate this average begins with a request and ends with its first response. Subsequent responses do not affect this measurement. For example, if a 100 Trying arrives as the first response to an INVITE, the system uses that latency for this purpose. Requests that trigger these measurements include every request that receives a response.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.20</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd agents</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd agents (152)</a>.</td>
</tr>
</tbody>
</table>

## Maximum One-Way Signaling Latency

<table>
<thead>
<tr>
<th>Description</th>
<th>Maximum observed one-way signaling latency during the sliding window period. This is the maximum amount of time the signaling travels in one direction. Each latency measurement used to identify this maximum begins with a request and ends with its first response. Subsequent responses do not affect this measurement. For example, if a 100 Trying arrives as the first response to an INVITE, the system uses that latency for this purpose. Requests that trigger these measurements include every request that receives a response.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.1.1.21</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd agents</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd agents (152)</a>.</td>
</tr>
</tbody>
</table>
Group: session-realm

Description: A collection of Web security servers in a single Domain Name System (DNS) that are configured to share sessions.

HDR Statistics:
- Realm Name
- Inbound Active Sessions
- Inbound Session Rate
- Outbound Active Sessions
- Outbound Session Rate
- Inbound Sessions Admitted
- Inbound Sessions Not Admitted
- Inbound Concurrent Sessions High
- Inbound Average Session Rate
- Outbound Sessions Admitted
- Outbound Sessions Not Admitted
- Outbound Concurrent Sessions High
- Outbound Average Sessions Rate
- Max Burst Rate
- Total Seizures
- Total Answered Sessions
- Answer/Seizure Ratio
- Average One-Way Signaling Latency
- Maximum One-Way Signaling Latency
- Average QoS RFactor
- Maximum QoS RFactor
- Current QoS Major Exceeded
- Total QoS Major Exceeded
- Current QoS Critical Exceeded
- Total QoS Critical Exceeded
- Early Sessions
- Successful Sessions
- Active Local Contacts
- Active Subscriptions
- SubscriptionsPerMax
- Subscriptions High
- Total Subscriptions

SNMP MIB: ap-smgmt.mib
apSigRealmStatsEntry
1.3.6.1.4.1.9148.3.2.1.2.4.1

ACL "Show" Command:
show sipd realms

Note: The statistic tables in this section identify the statistics that display in the "show sipd realms" output. Not all statistics are applicable to this show command.

For ACLI parameter mappings, see the table at show sipd realms (162).

Group Statistics

Realm Name

Description: Name of the realm for which the group statistics are being calculated.

Type: config

Timer Value (seconds): N/A
### Inbound Active Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of current, active, inbound sessions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.3</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### Inbound Session Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Current inbound session rate in calls per second (CPS) during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.4</td>
</tr>
</tbody>
</table>

### Outbound Active Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of current, active, outbound sessions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.5</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>
### Outbound Session Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Current outbound session rate in calls per second (CPS) during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.6</td>
</tr>
</tbody>
</table>

### Inbound Sessions Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of inbound sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.7</td>
</tr>
</tbody>
</table>

### Inbound Sessions Not Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of inbound sessions rejected because of insufficient bandwidth during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.8</td>
</tr>
</tbody>
</table>

### Inbound Concurrent Sessions High

<table>
<thead>
<tr>
<th>Description</th>
<th>Highest number of concurrent inbound sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.9</td>
</tr>
</tbody>
</table>
### Inbound Average Session Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Average rate of inbound sessions during the sliding window period in calls per second (CPS).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.10</td>
</tr>
</tbody>
</table>

### Outbound Sessions Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of outbound sessions admitted during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.11</td>
</tr>
</tbody>
</table>

### Outbound Sessions Not Admitted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of outbound sessions rejected due to insufficient bandwidth during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.12</td>
</tr>
</tbody>
</table>

### Outbound Concurrent Sessions High

<table>
<thead>
<tr>
<th>Description</th>
<th>Highest number of concurrent outbound sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.13</td>
</tr>
</tbody>
</table>
## Outbound Average Sessions Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Average rate of outbound sessions during the sliding window period in calls per second (CPS).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.14</td>
</tr>
</tbody>
</table>

## Max Burst Rate

Burst rate of traffic (both inbound and outbound) measured during the current window period. The time period is equal to the value of the configuration parameter burst-rate-window in the session constraint or session-agent configuration record. It is equal to 1 if not configured. Its value is the number of active calls plus 1 divided by the time period. This is different from the Max Burst Rate value in the ACLI command “show sipd agent”. In the ACLI it is the high-water mark during the window period.

<table>
<thead>
<tr>
<th>Description</th>
<th>Burst rate of traffic (both inbound and outbound) measured during the current window period. The time period is equal to the value of the configuration parameter burst-rate-window in the session constraint or session-agent configuration record. It is equal to 1 if not configured. Its value is the number of active calls plus 1 divided by the time period. This is different from the Max Burst Rate value in the ACLI command “show sipd agent”. In the ACLI it is the high-water mark during the window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value</td>
<td>Equal to the burst-rate-window parameter in the Session Agent configuration record. If this value is less than 10, the timer value is set to 10.</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.15</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
</tbody>
</table>

## Total Seizures

Total number of seizures during the sliding window period.

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of seizures during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
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</tr>
<tr>
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<td>30</td>
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<td>Range</td>
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</tr>
<tr>
<td>SNMP MIB</td>
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</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="https://example.com">show sipd realms (162)</a></td>
</tr>
</tbody>
</table>
## Total Answered Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of answered sessions during the sliding window period.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
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</table>

## Answer/Seizure Ratio

<table>
<thead>
<tr>
<th>Description</th>
<th>Answer-to-seizure ratio expressed as a percentage during the sliding window period. For example, a value of 90 would represent 90% or .90.</th>
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</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
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<tr>
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</tr>
<tr>
<td><strong>Range</strong></td>
<td>0% to 100%</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.18</td>
</tr>
</tbody>
</table>

## Average One-Way Signaling Latency

<table>
<thead>
<tr>
<th>Description</th>
<th>Average observed one-way signaling latency during the current window period. This is the average amount of time the signaling travels in one direction.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
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</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.19</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
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<td><strong>ACLI Parameter Mapping</strong></td>
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</tr>
</tbody>
</table>
### Maximum One-Way Signaling Latency

<table>
<thead>
<tr>
<th>Description</th>
<th>Maximum observed one-way signaling latency during the sliding window period. This is the maximum amount of time the signaling travels in one direction.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td><code>1.3.6.1.4.1.9148.3.2.1.2.4.1.20</code></td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td><code>show sipd realms</code></td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>

### Average QoS RFactor

<table>
<thead>
<tr>
<th>Description</th>
<th>Average Quality of Service (QoS) factor observed during the current window period. Quality of service shapes traffic to provide different priority and level of performance to different data flows. R-factors are metrics in VoIP, that use a formula to take into account both user perceptions and the cumulative effect of equipment impairments to arrive at a numeric expression of voice quality. This statistic defines the call or transmission quality expressed as an R factor.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>period</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td><code>1.3.6.1.4.1.9148.3.2.1.2.4.1.24</code></td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td><code>show sipd realms</code></td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>
### Maximum QoS RFactor

<table>
<thead>
<tr>
<th>Description</th>
<th>Maximum Quality of Service (QoS) factor observed during the sliding window period. Quality of service shapes traffic to provide different priority and level of performance to different data flows. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality. This statistic defines the call or transmission quality expressed as an R factor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.25</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>

### Current QoS Major Exceeded

<table>
<thead>
<tr>
<th>Description</th>
<th>Peg counts of the number of times the major Rfactor threshold was exceeded during the sliding window period. The peg count provides counts of calls with different service classes that occur during intervals of frequency which reliability indicate the traffic load. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.26</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>
### Total QoS Major Exceeded

<table>
<thead>
<tr>
<th>Description</th>
<th>Count of the number of times the major Rfactor threshold was exceeded. Provides counts of calls with different service classes that occur during intervals of frequency which reliability indicate the traffic load. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.27</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot;</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>Command</td>
<td></td>
</tr>
<tr>
<td>Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### Current QoS Critical Exceeded

<table>
<thead>
<tr>
<th>Description</th>
<th>Count of the number of times the critical Rfactor threshold was exceeded during the sliding window period. Provides counts of calls with different service classes that occur during intervals of frequency which reliability indicate the traffic load. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>period</td>
</tr>
<tr>
<td>Timer Value</td>
<td>30</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.28</td>
</tr>
</tbody>
</table>

### Total QoS Critical Exceeded

<table>
<thead>
<tr>
<th>Description</th>
<th>Count of the number of times the critical Rfactor threshold was exceeded. Provides counts of calls with different service classes that occur during intervals of frequency which reliability indicate the traffic load. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.29</td>
</tr>
</tbody>
</table>
### Early Sessions

**Description**
Indicates the number of early sessions for each realm. Each time the Net-Net SBC receives an INVITE on the ingress realm or the egress realm sends an INVITE request, a counter increments if the session is established with a 200 OK response. This counter also increments in sessions when there are no 18x responses (Ringing (180), Call is Being Forwarded (181), Queued (182), Session in Progress (183)), but a 200 OK is established. This counter represents the number of sessions that have reached the early dialog state or later.

<table>
<thead>
<tr>
<th>Type</th>
<th>counter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>N/A</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realms</td>
</tr>
</tbody>
</table>

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd realms (162)](#).

### Successful Sessions

**Description**
Indicates the number of successful sessions for each realm. Successful sessions are when the Net-Net SBC receives a successful 200 OK response from an initial INVITE request.

**Note:** This counter is NOT incremented for re-INVITES.

<table>
<thead>
<tr>
<th>Type</th>
<th>counter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>N/A</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realms</td>
</tr>
</tbody>
</table>

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd realms (162)](#).

### Active Local Contacts

**Description**
Current Domain count of active SIP registrations

<table>
<thead>
<tr>
<th>Type</th>
<th>counter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer Value (seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td></td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.31</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realms</td>
</tr>
</tbody>
</table>

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd realms (162)](#).
### Active Subscriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Current domain count of active SIP subscriptions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realm</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### SubscriptionsPerMax

<table>
<thead>
<tr>
<th>Description</th>
<th>Maximum domain count of SIP subscriptions initiated during any 100 second period since the last SBC re-boot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realm</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### Subscriptions High

<table>
<thead>
<tr>
<th>Description</th>
<th>Maximum domain count of active SIP subscriptions since the last SBC re-boot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realm</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### Total Subscriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Count of lifetime total subscriptions for the SD.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.3.6.1.4.1.9148.3.2.1.2.4.1.35</td>
</tr>
</tbody>
</table>
**Group: voltage**

<table>
<thead>
<tr>
<th>Description</th>
<th>Current operating voltages for components in the Net-Net Session Director (SD).</th>
</tr>
</thead>
</table>

**HDR Statistics**
- Type
- Description
- Voltage (millivolts)

**SNMP MIB**
ap-env-monitor.mib
apEnvMonVoltageStatusEntry
1.2.6.1.4.1.9148.3.3.1.2.1.1

---

**Group Statistics**

**Type**

<table>
<thead>
<tr>
<th>Description</th>
<th>Type of power supply currently used on the Net-Net Session Director (SD) hardware.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>string</th>
</tr>
</thead>
</table>

**Timer Value (seconds)**

<table>
<thead>
<tr>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>v2p5</td>
<td>Uses a 2.5V power supply</td>
</tr>
<tr>
<td>v3p3</td>
<td>Uses a 3.3V power supply</td>
</tr>
<tr>
<td>v5</td>
<td>Uses a 5V power supply</td>
</tr>
<tr>
<td>vdd</td>
<td>Uses a positive supply of voltage</td>
</tr>
<tr>
<td>cpu</td>
<td>Uses the computer processing unit (CPU) power supply</td>
</tr>
</tbody>
</table>

**SNMP MIB**

<table>
<thead>
<tr>
<th>N/A</th>
</tr>
</thead>
</table>

---

**Description**

<table>
<thead>
<tr>
<th>Description</th>
<th>Textual description of the voltage currently used on the power supply in the Net-Net Session Director (SD).</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>string</th>
</tr>
</thead>
</table>

**Timer Value (seconds)**

<table>
<thead>
<tr>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5V voltage</td>
<td>2.5V power supply</td>
</tr>
<tr>
<td>3.3V voltage</td>
<td>3.3V power supply</td>
</tr>
<tr>
<td>5V voltage</td>
<td>5V power supply</td>
</tr>
<tr>
<td>VDD voltage</td>
<td>Positive voltage power supply</td>
</tr>
<tr>
<td>CPU voltage</td>
<td>Computer processing unit (CPU) power supply</td>
</tr>
</tbody>
</table>

**SNMP MIB**

<table>
<thead>
<tr>
<th>N/A</th>
</tr>
</thead>
</table>

---
### Voltage (millivolts)

<table>
<thead>
<tr>
<th>Description</th>
<th>Current measurement of voltage, in millivolts (if available).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>1.2.6.1.4.1.9148.3.3.1.2.1.1.4</td>
</tr>
</tbody>
</table>
### Group: fan

<table>
<thead>
<tr>
<th>Description</th>
<th>Environmental fan statistics</th>
</tr>
</thead>
</table>

#### HDR Statistics
- **Location**
- **Description**
- **Speed**

#### SNMP MIB
- `ap-env-monitor.mib`
- `apEnvMonFanStatusEntry`
- `1.3.6.1.4.1.9148.3.3.1.4.1.1`

### Group Statistics

#### Location

<table>
<thead>
<tr>
<th>Description</th>
<th>Physical location of the cooling fan on the circuit board in the Net-Net Session Director (SD).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>string</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>left  Located on the left of the circuit board.  middle  Located in the middle of the circuit board.  right  Located on the right of the circuit board.</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Textual description that specifies the speed of the cooling fan currently installed in the Net-Net Session Director (SD).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>string</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>Fan 1 speed  Slow speed fan  Fan 2 speed  Medium speed fan  Fan 3 speed  Fast speed fan</td>
</tr>
<tr>
<td>SNMP MIB</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Speed

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Current measurement of the fan speed expressed as a percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>gauge</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0% to 100%</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.3.1.4.1.1.4</td>
</tr>
</tbody>
</table>
**Group: temperature**

<table>
<thead>
<tr>
<th>Description</th>
<th>Environmental temperature statistics</th>
</tr>
</thead>
</table>

**HDR Statistics**

- **Type**
- **Description**
- **Temperature (Celsius)**

**SNMP MIB**

- ap-env-monitor.mib
- apEnvMonTemperatureStatusEntry
- 1.3.6.1.4.1.9148.3.3.1.3.1.1

**Group Statistics**

**Type**

<table>
<thead>
<tr>
<th>Description</th>
<th>Indicates the entity being monitored for temperature.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>string</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Range**

- ds 1624s Main: Main board on the Session Director (SD)
- ds 1624s CPU: Central processing unit (CPU)
- ds 1624s Phy0: Physical Interface 0
- ds 1624s Phy1: Physical Interface 1
- NE1775s SDRAM: Synchronous dynamic random access memory (SDRAM)
- NE1775s PMC: Polymer matrix composites (PMC)

**SNMP MIB**

- N/A

**Description**

<table>
<thead>
<tr>
<th>Description</th>
<th>Textual description of the entity being monitored for temperature.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>string</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Range**

- Main board PROM Temperature: Monitoring temperature on the programmable read-only memory (PROM) on the main board.
- Host processor PROM Temperature: Monitoring temperature on the host processor PROM.
- PHY0 PROM Temperature: Monitoring temperature on the Physical Interface 0 PROM.
- PHY1 PROM Temperature: Monitoring temperature on the Physical Interface 1 PROM.
- SDRAM Temperature: Monitoring temperature on the synchronous dynamic random access memory (SDRAM).
- PMC Temperature: Monitoring temperature on the polymer matrix composites (PMC)

**SNMP MIB**

- N/A
<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Current temperature on the main board’s programmable read-only memory (PROM), in Celsius.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>gauge</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>(seconds)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0° to 100°</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.3.1.3.1.1.4</td>
</tr>
</tbody>
</table>
### HDR GROUPS AND GROUP STATISTICS

**Group: space**

<table>
<thead>
<tr>
<th>Description</th>
<th>Statistics that display storage space information on the Net-Net SD</th>
</tr>
</thead>
</table>
| **HDR Statistics** | • Volume Name  
• Space Used  
• Space Available |
| **SNMP MIB** | ap-env-monitor.mib  
apSysStorageSpaceEntry  
1.3.6.1.4.1.9148.3.2.1.1.23.1 |

### Group Statistics

#### Volume Name

<table>
<thead>
<tr>
<th>Description</th>
<th>Name of the volume used for storage space.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>string</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>
| **Range** | hard-disk0 Hard disk volume 0  
hard-disk1 Hard disk volume 1  
hard-disk2 Hard disk volume 2  
hard-disk3 Hard disk volume 4  
/ramdrv Random Access Memory (RAM) drive  
/boot/code Boot code volume  
/boot Boot volume |
| **SNMP MIB** | 1.3.6.1.4.1.9148.3.2.1.1.23.1.2 |

#### Space Used

<table>
<thead>
<tr>
<th>Description</th>
<th>Total space used on the volume in Megabytes (Mb)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>gauge</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Space Available</strong></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Total space available on the volume in Megabytes (Mb)</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>gauge</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>SNMP MIB</strong></td>
<td>1.3.6.1.4.1.9148.3.2.1.1.23.1.4</td>
</tr>
</tbody>
</table>
Group: network-util

| Description | Statistics that display network utilization information |
| HDR Statistics | • Index  
|       | • Rx Utilization  
|       | • Tx Utilization  |
| SNMP MIB | ap-env-monitor.mib  
|       | apSysMgmtPhyUtilTableEntry  
|       | 1.3.6.1.4.1.9148.3.2.1.8.1.1 |

Group Statistics

Index

| Description | An integer that contains the ifIndex of a media port |
| Type | counter |
| Timer Value (seconds) | N/A |
| Range | 0 to $2^{32} - 1$ |
| SNMP MIB | N/A |

Rx Utilization

| Description | Receive (Rx) network utilization of the physical port measured over a one second period |
| Type | gauge |
| Timer Value (seconds) | N/A |
| Range | 0% to 100% |
| SNMP MIB | 1.3.6.1.4.1.9148.3.2.1.8.1.1 |

Tx Utilization

| Description | Transmit (Tx) network utilization of the physical port measured over a one second period |
| Type | gauge |
| Timer Value (seconds) | N/A |
| Range | 0% to 100% |
| SNMP MIB | 1.3.6.1.4.1.9148.3.2.1.8.1.2 |
ACL1-Associated Groups and Group Statistics

The Groups and Group Statistics in this section correspond to the data that displays as output from some of the current ACL1 commands. For example, the output for the “show sipd sessions” command, when run from the ACL1, is shown in the figure below:

Example of “Show” Command Output

For the sip-session group, the HDR Collector stores the same data that would display in the “Lifetime/Total” column if you ran the ACL1 command at the same time the Collector sampled the statistics. In the ACL1 output, the data is grouped by Sessions and Dialogs. When mapped into the HDR data for the sip-session group header, the ACL1 names are further clarified, as shown in the table below:

<table>
<thead>
<tr>
<th>ACL1 Name</th>
<th>Group Header Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sessions</td>
<td>Sessions</td>
</tr>
<tr>
<td>Initial</td>
<td>Sessions Initial</td>
</tr>
<tr>
<td>Early</td>
<td>Sessions Early</td>
</tr>
<tr>
<td>Established</td>
<td>Sessions Established</td>
</tr>
<tr>
<td>Terminated</td>
<td>Sessions Terminated</td>
</tr>
<tr>
<td>Dialogs</td>
<td>Dialogs</td>
</tr>
<tr>
<td>Early</td>
<td>Dialogs Early</td>
</tr>
<tr>
<td>Confirmed</td>
<td>Dialogs Confirmed</td>
</tr>
<tr>
<td>Terminated</td>
<td>Dialogs Terminated</td>
</tr>
</tbody>
</table>
The following is an example of a CSV file containing the HDR statistics for the “sip-session” Group generated by the HDR Collector. The output format reflects that the file was opened using an application compatible with a CSV file.

**Example of a CSV File for the “sip-session” Group**

![Example CSV File](image)

**Note:** The records in a CSV file may display differently, depending on the record data included in the file, and the method used to open the file. For more information about the display of record data in a CSV file, see Appendix A, [CSV File Data Formats](#).

This section provides a description of each Group and Group Statistic associated with the ACLI. Each Group table identifies the ACLI “Show” command for which it is associated, and provides a link to the applicable command in Chapter 4.

Groups in this section include:

- Group: sip-sessions (83)
- Group: sip-acl-oper (87)
- Group: sip-acl-status (90)
- Group: sip-client (92)
- Group: sip-server (96)
- Group: sip-policy (100)
- Group: sip-errors (106)
- Group: sip-status (113)
- Group: sip-invites (121)
- Group: registration-realm (123)
- Group: enum-stats (129)
- Group: mgcp-state (131)
- Group: mgcp-trans (135)
- Group: mgcp-media-events (138)
- Group: mgcp-oper (141)
- Group: mgcp-acl (143)
- Group: h323-stats (145)
Group: **sip-sessions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to the Session Initiation Protocol (SIP) sessions.</th>
</tr>
</thead>
</table>
| Group Statistics | - Sessions  
- Sessions Initial  
- Sessions Early  
- Sessions Established  
- Sessions Terminated  
- Dialogs  
- Dialogs Early  
- Dialogs Confirmed  
- Dialogs Terminated |

<table>
<thead>
<tr>
<th>ACLI &quot;Show&quot; Command</th>
<th>show sipd sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd sessions (151).</td>
</tr>
</tbody>
</table>

### Group Statistics

#### Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions established by INVITE and SUBSCRIBE messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACLI &quot;Show&quot; Command</th>
<th>show sipd sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd sessions (151).</td>
</tr>
</tbody>
</table>

#### Sessions Initial

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions for which an INVITE or SUBSCRIBE is being forwarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACLI &quot;Show&quot; Command</th>
<th>show sipd sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd sessions (151).</td>
</tr>
</tbody>
</table>
### Sessions Early

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions for which the first provisional response (1xx other than 100) is received.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd sessions</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="151">show sipd sessions</a>.</td>
</tr>
</tbody>
</table>

### Sessions Established

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions for which a success (2xx) response is received.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd sessions</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="151">show sipd sessions</a>.</td>
</tr>
</tbody>
</table>

### Sessions Terminated

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions that have ended by receiving or sending a BYE for an “Established” session or forwarding an error response for an “Initial” or “Early” session. The session remains in the terminated state until all the resources for the session are freed up.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd sessions</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="151">show sipd sessions</a>.</td>
</tr>
</tbody>
</table>
### Dialogs

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of end-to-end SIP signaling connections.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd sessions</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd sessions (151).</td>
</tr>
</tbody>
</table>

### Dialogs Early

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of dialogs that were created by a provisional response.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd sessions</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd sessions (151).</td>
</tr>
</tbody>
</table>

### Dialogs Confirmed

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of dialogs that were created by a success response. An “Early” dialog transitions to “Confirmed” when a success response is received.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd sessions</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd sessions (151).</td>
</tr>
</tbody>
</table>
## Dialog Terminated

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of dialogs that were ended by a receiving/sending of a BYE for an “Established” session, or a receiving/sending error response “Early” dialog. The dialog remains in the “Terminated” state until all the resources for the session are freed up.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd sessions</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#151">show sipd sessions</a>.</td>
</tr>
</tbody>
</table>
### Group: sip-acl-oper

**Description**: Consists of statistics pertaining to the Session Initiation Protocol (SIP) access control list (ACL) operations.

**Group Statistics**
- ACL Requests
- Bad Messages
- Promotions
- Demotions
- Demote Trust-Untrust
- Demote Untrust-Deny

**ACLI "Show" Command**: `show sipd acls`

**ACLI Parameter Mapping**: For ACLI parameter mappings, see the table at `show sipd acls (154)`.

### Group Statistics

#### ACL Requests

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>ACLI &quot;Show&quot; Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of ACL requests</td>
<td>counter</td>
<td>N/A</td>
<td>0 to $2^{32} - 1$</td>
<td><code>show sipd acls</code></td>
</tr>
</tbody>
</table>

For ACLI parameter mappings, see the table at `show sipd acls (154)`.

#### Bad Messages

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Timer Value (seconds)</th>
<th>Range</th>
<th>ACLI &quot;Show&quot; Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of bad messages</td>
<td>counter</td>
<td>N/A</td>
<td>0 to $2^{32} - 1$</td>
<td><code>show sipd acls</code></td>
</tr>
</tbody>
</table>

For ACLI parameter mappings, see the table at `show sipd acls (154)`.
### Promotions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entry promotions. These are the ACL entries that have been promoted from untrusted to trusted status.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{22} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="154">show sipd acls</a>.</td>
</tr>
</tbody>
</table>

### Demotions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entry demotions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{22} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="154">show sipd acls</a>.</td>
</tr>
</tbody>
</table>

### Demote Trust-Untrust

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entries demoted from trusted to untrusted.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{22} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="154">show sipd acls</a>.</td>
</tr>
</tbody>
</table>
### Demote Untrust-Deny

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entries demoted from untrusted to deny.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd acls (154).</td>
</tr>
</tbody>
</table>
## Group: **sip-acl-status**

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to the Session Initiation Protocol (SIP) access control list (ACL) state.</th>
</tr>
</thead>
</table>

### Group Statistics

- **Total Entries**
- **Trusted**
- **Blocked**

### ACLI “Show” Command
- show sipd acls

### ACLI Parameter Mapping
- For ACLI parameter mappings, see the table at [show sipd acls (154)](#).

### Total Entries

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entries, both trusted and blocked.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

### ACLI “Show” Command
- show sipd acls

### ACLI Parameter Mapping
- For ACLI parameter mappings, see the table at [show sipd acls (154)](#).

### Trusted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of trusted ACL entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

### ACLI “Show” Command
- show sipd acls

### ACLI Parameter Mapping
- For ACLI parameter mappings, see the table at [show sipd acls (154)](#).
### Blocked

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of blocked ACL entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd acls (154).</td>
</tr>
</tbody>
</table>
Group: **sip-client**

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to the Session Initiation Protocol (SIP) client state.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group Statistics</strong></td>
<td></td>
</tr>
<tr>
<td>• AllStates</td>
<td></td>
</tr>
<tr>
<td>• Initial</td>
<td></td>
</tr>
<tr>
<td>• Trying</td>
<td></td>
</tr>
<tr>
<td>• Calling</td>
<td></td>
</tr>
<tr>
<td>• Proceeding</td>
<td></td>
</tr>
<tr>
<td>• Cancelled</td>
<td></td>
</tr>
<tr>
<td>• EarlyMedia</td>
<td></td>
</tr>
<tr>
<td>• Completed</td>
<td></td>
</tr>
<tr>
<td>• Setmedia</td>
<td></td>
</tr>
<tr>
<td>• Established</td>
<td></td>
</tr>
<tr>
<td>• Terminated</td>
<td></td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd client</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

### Group Statistics

#### AllStates

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Total number of all client session transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd client</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

#### Initial

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Total number of times the “Initial” state was entered due to the receipt of a request.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd client</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>
## Trying

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Trying” state was entered due to the receipt of a request</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong> (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd client</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="https://example.com">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

## Calling

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Calling” state was entered due to the receipt of an INVITE request</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong> (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd client</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="https://example.com">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

## Proceeding

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Proceeding” state was entered due to the receipt of a provisional response while in the “Calling” state</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong> (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<td>For ACLI parameter mappings, see the table at <a href="https://example.com">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>
## Cancelled

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of INVITE transactions that received a CANCEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
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<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

## EarlyMedia

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Proceeding” state was entered due to the receipt of a provisional response that contained a Session Description Protocol (SDP) while in the “Calling” state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

## Completed

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times that the “Completed” state was entered due to the receipt of a status code in the range of 300-699 when either in the “Calling” or “Proceeding” state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>
### Setmedia

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of transactions in which the Net-Net SD was setting up NAT and steering ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show”</td>
<td>show sipd client</td>
</tr>
<tr>
<td>Command</td>
<td></td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

### Established

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the client received a 2xx response to an INVITE, but could not forward it because the NAT and steering port information was missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show”</td>
<td>show sipd client</td>
</tr>
<tr>
<td>Command</td>
<td></td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>

### Terminated

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Terminated” state was entered after a 2xx message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show”</td>
<td>show sipd client</td>
</tr>
<tr>
<td>Command</td>
<td></td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd client (155)</a>.</td>
</tr>
</tbody>
</table>
**Group: sip-server**

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to the Session Initiation Protocol (SIP) server state.</th>
</tr>
</thead>
</table>
| Group Statistics | • AllStates  
• Initial  
• Trying  
• Proceeding  
• Cancelled  
• Established  
• Completed  
• Confirmed  
• Terminated  |

**ACLI “Show” Command**  
show sipd server

**ACLI Parameter Mapping**  
For ACLI parameter mappings, see the table at [show sipd server (156)](#).

### Group Statistics

**AllStates**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of all server session transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**  
show sipd server

**ACLI Parameter Mapping**  
For ACLI parameter mappings, see the table at [show sipd server (156)](#).

### Initial

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Initial” state was entered due to the receipt of a request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**  
show sipd server

**ACLI Parameter Mapping**  
For ACLI parameter mappings, see the table at [show sipd server (156)](#).
## Trying

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Trying” state was entered due to the receipt of a request</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
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</tr>
</tbody>
</table>

## Proceeding

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Proceeding” state was entered due to the receipt of a provisional response while in the “Calling” state</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
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<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd server (156).</td>
</tr>
</tbody>
</table>

## Cancelled

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of INVITE transactions that received a CANCEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
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<td>For ACLI parameter mappings, see the table at show sipd server (156).</td>
</tr>
</tbody>
</table>
### Established

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the server received a 2xx response to an INVITE, but could not forward it because the NAT and steering port information was missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
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<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="156">show sipd server (156)</a>.</td>
</tr>
</tbody>
</table>

### Completed

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times that the “Completed” state was entered due to the receipt of a status code in the range of 300-699 when either in the “Calling” or “Proceeding” state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
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</tr>
</tbody>
</table>

### Confirmed

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times that an ACK was received while the server was in the “Completed” state and then transitioned to “Confirmed” state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
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<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="156">show sipd server (156)</a>.</td>
</tr>
</tbody>
</table>
### Terminated

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of times the “Terminated” state was entered after a 2xx message, or never received an ACK in the “Completed” state, and then transitioned to the “Terminated” state.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<td>For ACLI parameter mappings, see the table at <a href="http://example.com">show sipd server (156)</a>.</td>
</tr>
</tbody>
</table>
Group: **sip-policy**

**Description**: Consists of statistics pertaining to the Session Initiation Protocol (SIP) local policy / routing statistics.

**Group Statistics**
- Local Lookup
- Local Hits
- Local Misses
- Local Drops
- Agent Group Hits
- Agent Group Misses
- No Routes Found
- Missing Dialog
- Inb SA Constraints
- Outb SA Constraints
- Inb REG SA Constraints
- Outb REG SA Constraints
- Requests Challenged
- Challenges Found
- Challenges Not Found
- Challenge Drops

**ACLI "Show" Command**
- `show sipd policy`

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd policy](157).

### Group Statistics

**Local Lookup**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of local policy lookups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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</tr>
</tbody>
</table>

**ACLI "Show" Command**
- `show sipd policy`

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd policy](157).

**Local Hits**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful local policy lookups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
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</tr>
<tr>
<td>Range</td>
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</tr>
</tbody>
</table>

**ACLI "Show" Command**
- `show sipd policy`

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at [show sipd policy](157).
### Local Misses

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of local policy lookup failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
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</tr>
<tr>
<td>ACLI Parameter Mapping</td>
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</tr>
</tbody>
</table>

### Local Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of local policy lookups where the next hop session agent group is H323</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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</tr>
</tbody>
</table>

### Agent Group Hits

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful local policy lookups for session agent groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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<tr>
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<td>For ACLI parameter mappings, see the table at show sipd policy (157).</td>
</tr>
</tbody>
</table>
### Agent Group Misses

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful local policy lookups where no session agent was available for the session agent group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
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<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="157">show sipd policy (157)</a>.</td>
</tr>
</tbody>
</table>

### No Routes Found

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful local policy lookups, but temporarily unable to route (for example, “session agent out of service”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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</tr>
</tbody>
</table>

### Missing Dialog

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of local policy lookups where the dialog was not found for a request addressed to the Net-Net SD with a “To” tag or for a NOTIFY-SUBSCRIBE SIP request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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</tr>
</tbody>
</table>
### Inb SA Constraints

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful local policy lookups where the inbound session agent (SA) exceeded constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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</table>

### Outb SA Constraints

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful local policy lookups where the outbound SA exceeded constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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</tr>
</tbody>
</table>

### Inb REG SA Constraints

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful inbound local policy lookups where the registrar (REG) SA exceeded constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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</tbody>
</table>
### Outb REG SA Constraints

| Description | Total number of successful outbound local policy lookups where the registrar (REG) SA exceeded constraints
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32}$ – 1</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd policy</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="157">show sipd policy (157)</a>.</td>
</tr>
</tbody>
</table>

### Requests Challenged

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of requests that were challenged.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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</tr>
<tr>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="157">show sipd policy (157)</a>.</td>
</tr>
</tbody>
</table>

### Challenges Found

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of challenges found.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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<tr>
<td>ACLI “Show” Command</td>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="157">show sipd policy (157)</a>.</td>
</tr>
</tbody>
</table>
### Challenges Not Found

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of challenges not found.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
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</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd policy</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd policy (157).</td>
</tr>
</tbody>
</table>

### Challenge Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of challenges dropped.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<td>show sipd policy</td>
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<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd policy (157).</td>
</tr>
</tbody>
</table>
## Group: sip-errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to errors that occur in SIP media events.</th>
</tr>
</thead>
</table>
| **Group Statistics** | - SDP Offer Errors  
- SDP Answer Errors  
- Drop Media Errors  
- Transaction Errors  
- Application Errors  
- Media Exp Events  
- Early Media Exp  
- Exp Media Drops  
- Expired Sessions  
- Multiple OK Drops  
- Multiple OK Terms  
- Media Failure Drops  
- Non-ACK 2xx Drops  
- Invalid Requests  
- Invalid Responses  
- Invalid Messages  
- CAC Session Drop  
- CAC BW Drop  
- Call Rejects |

**ACLI “Show” Command**

show sipd errors

**ACLI Parameter Mapping**

For ACLI parameter mappings, see the table at show sipd errors (158).

## Group Statistics

### SDP Offer Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of errors encountered in setting up the media session for a session description in a SIP request or response which is a Session Description Protocol (SDP) Offer in the Offer/Answer model (RFC 3264)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd errors</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd errors (158).</td>
</tr>
</tbody>
</table>
### SDP Answer Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of errors encountered in setting up the media session for a session description in a SIP request or response which is a Session Description Protocol (SDP) Answer in the Offer/Answer model (RFC 3264)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
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<td>show sipd errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="158">show sipd errors</a>.</td>
</tr>
</tbody>
</table>

### Drop Media Errors

| Description | Total number of errors encountered in tearing down the media for a dialog or session that is being terminated due to:  
a) non-successful response to an INVITE transaction, or  
b) a BYE transaction received from one of the participants in a dialog/session, or  
c) a BYE initiated by the Net-Net SD due to a timeout notification from the Middlebox Control Daemon (MBCD). |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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<td>show sipd errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="158">show sipd errors</a>.</td>
</tr>
</tbody>
</table>

### Transaction Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of errors in continuing the processing of the SIP client transaction associated with setting up or tearing down of the media session.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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<td>ACLI Parameter Mapping</td>
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</tr>
</tbody>
</table>
### Application Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of miscellaneous errors in the SIP application that are otherwise uncategorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
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<tr>
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<td>For ACLI parameter mappings, see the table at show sipd errors (158).</td>
</tr>
</tbody>
</table>

### Media Exp Events

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of flow timer expiration notifications received from the Middlebox Control Daemon (MBCD).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd errors (158).</td>
</tr>
</tbody>
</table>

### Early Media Exps

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of flow timer expiration notifications received for media sessions that were not completely set up due to an incomplete or pending INVITE transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
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<tr>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd errors (158).</td>
</tr>
</tbody>
</table>
### Exp Media Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of flow timer expiration notifications from the Middlebox Control Daemon (MBCD) that resulted in the termination of the dialog/session by the SIP application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="158">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>
## Multiple OK Terms

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of dialogs terminated upon reception of a 200 OK response that conflicts with an existing established dialog on the Net-Net SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>

## Media Failure Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of dialogs terminated due to a failure in establishing the media session.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<tr>
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<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>

## Non-ACK 2xx Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions terminated because an ACK was not received for a 2xx response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="#">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>
### Invalid Requests

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of invalid requests (for example, an unsupported header was received).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="158">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>

### Invalid Responses

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of invalid responses (for example, no “Via” header in response)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="158">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>

### Invalid Messages

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of messages dropped due to parse failure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
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<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at <a href="158">show sipd errors (158)</a>.</td>
</tr>
</tbody>
</table>
### CAC Session Drop

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of call admission control (CAC) session setup failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
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</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd errors</td>
</tr>
</tbody>
</table>

For ACLI parameter mappings, see the table at [show sipd errors (158)](#).

### CAC BW Drop

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of call admission control (CAC) session setup failures due to insufficient bandwidth (BW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd errors</td>
</tr>
</tbody>
</table>

For ACLI parameter mappings, see the table at [show sipd errors (158)](#).

### Call Rejects

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of calls rejected during the window.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd errors</td>
</tr>
</tbody>
</table>

For ACLI parameter mappings, see the table at [show sipd errors (180)](#).
**Group: sip-status**

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to Session Initiation Protocol (SIP) transactions.</th>
</tr>
</thead>
</table>

**Group Statistics**
- Sessions
- Subscriptions
- Dialogs
- CallID Maps
- Rejections
- ReINVITEs
- Media Sessions
- Media Pending
- Client Trans
- Server Trans
- Resp Contexts
- Saved Contexts
- Sockets
- Req Drops
- DNS Trans
- DNS Sockets
- DNS Results
- Session Rate
- Load Rate
- Active Subscriptions
- SubscriptionsPerMax
- Subscriptions High

**ACLI "Show" Command**
- show sipd status

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at show sipd status (160).

---

**Group Statistics**

**Sessions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions established by INVITE and SUBSCRIBE messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
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</table>

**ACLI "Show" Command**
- show sipd status

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at show sipd status (160).
### Subscriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of sessions established by SUBSCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
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</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Dialogs

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of end-to-end SIP signaling connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### CallID Maps

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful session header Call ID mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
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<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>
### Rejections

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of rejected INVITEs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>(seconds)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td><strong>ACLI “Show”</strong></td>
<td>show sipd status</td>
</tr>
<tr>
<td><strong>Command</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ACLI Parameter</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### ReINVITEs

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ReINVITEs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>(seconds)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td><strong>ACLI “Show”</strong></td>
<td>show sipd status</td>
</tr>
<tr>
<td><strong>Command</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ACLI Parameter</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Media Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful media sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>(seconds)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td><strong>ACLI “Show”</strong></td>
<td>show sipd status</td>
</tr>
<tr>
<td><strong>Command</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ACLI Parameter</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>
### Media Pending

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of media sessions waiting to be established</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Client Trans

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of client transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Server Trans

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of server transactions that have taken place on the Net-Net SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>
### Resp Contexts

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of response contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Saved Contexts

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of saved contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Sockets

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of SIP sockets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>
### Req Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of dropped requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="160">show sipd status (160)</a>.</td>
</tr>
</tbody>
</table>

### DNS Trans

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of Domain Name System (DNS) transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="160">show sipd status (160)</a>.</td>
</tr>
</tbody>
</table>

### DNS Sockets

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of Domain Name System (DNS) sockets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="160">show sipd status (160)</a>.</td>
</tr>
</tbody>
</table>
### DNS Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of Domain Name System (DNS) results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Session Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>The rate, per second, of SIP invites allowed to or from the Net-Net SD during the sliding window period. The rate is computed every 10 seconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>fixed decimal</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0.0 to 214,748,364.7</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>

### Load Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Average Central Processing Unit (CPU) utilization of the Net-Net SD during the current window. The average is computed every 10 seconds unless the load-limit is configured in the SIPConfig record, in which case it is 5 seconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>gauge</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>30</td>
</tr>
<tr>
<td>Range</td>
<td>0.0% to 100.0%</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd status</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd status (160).</td>
</tr>
</tbody>
</table>
### Active Subscriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Specifies the current global count of active SIP subscriptions.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd realm</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### SubscriptionsPerMax

<table>
<thead>
<tr>
<th>Description</th>
<th>Specifies the maximum global count of SIP subscriptions initiated during any 100 second period since the last SBC re-boot.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd realm</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>

### Subscriptions High

<table>
<thead>
<tr>
<th>Description</th>
<th>Specifies the maximum global count of active SIP subscriptions since the last SBC re-boot.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show sipd realm</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>
## Group: sip-invites

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to Session Initiation Protocol (SIP) INVITEs</th>
</tr>
</thead>
</table>

**Group Statistics**

- INVITE Requests
- Retransmissions
- Response Retrans
- Transaction Timeouts
- Locally Throttled

**ACLI “Show” Command**

show sipd invite

**ACLI Parameter Mapping**

For ACLI parameter mappings, see the table at [show sipd invite (161)](161).

### Group Statistics

#### INVITE Requests

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of INVITE requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**

show sipd invite

**ACLI Parameter Mapping**

For ACLI parameter mappings, see the table at [show sipd invite (161)](161).

#### Retransmissions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of retransmissions of INVITEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**

show sipd invite

**ACLI Parameter Mapping**

For ACLI parameter mappings, see the table at [show sipd invite (161)](161).
## Response Retrans

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of response retransmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd invite</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd invite (161).</td>
</tr>
</tbody>
</table>

## Transaction Timeouts

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of INVITE request transaction timeouts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$ for client. Server values are always “—”; transaction timeout statistics are not valid for server operations.</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd invite</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd invite (161).</td>
</tr>
</tbody>
</table>

## Locally Throttled

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of INVITE requests locally throttled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$ for client. Server values are always “—”; locally throttled statistics are not valid for server operations.</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd invite</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd invite (161).</td>
</tr>
</tbody>
</table>
Group: **registration-realm**

| Description                  | Statistics that display registration information (counters) for the total registrations received, number of successful registrations, and number of unsuccessful registrations for each of the following:  
|                             | • Initial registrations  
|                             | • Refresh registrations  
|                             | • De-Registrations  
| HDR Statistics              | • Realm Name  
|                             | • Total Initial Registrations  
|                             | • Successful Initial Registrations  
|                             | • Unsuccessful Initial Registrations  
|                             | • Total Refresh Registrations  
|                             | • Successful Refresh Registrations  
|                             | • Unsuccessful Refresh Registrations  
|                             | • Total De-Registrations  
|                             | • Successful De-Registrations  
|                             | • Unsuccessful De-Registrations  
| ACLI "Show" Command         | show sipd realms  
| ACLI Parameter Mapping      | For ACLI parameter mappings, see the table at show sipd realms (162).  

---

### Group Statistics

#### Realm Name

<table>
<thead>
<tr>
<th>Description</th>
<th>Name of the realm for which the group statistics are being calculated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>config</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>N/A</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show sipd realms (162).</td>
</tr>
</tbody>
</table>
**Total Initial Registrations**

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of initial registrations. This counter is incremented once for each initial REGISTER message even when the REGISTER is challenged. This counter is based on ingress (received) messages only.</th>
</tr>
</thead>
</table>

**Note:** This counter is not incremented when registrations are challenged by the following response messages:
- 401 (Unauthorized - user authentication required)
- 407 (Proxy authentication required)
- 423 (Interval too brief - expiration time of the resource is too short)

<table>
<thead>
<tr>
<th>Type</th>
<th>counter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**

| ACLI Parameter Mapping | show sipd realms |

**Successful Initial Registrations**

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of successful initial registrations. This counter is incremented once for each successful initial registration with a 200 OK response. This counter is based on ingress (received) messages only.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>counter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**

| ACLI Parameter Mapping | show sipd realms |

For ACLI parameter mappings, see the table at [show sipd realms (162)].
### Unsuccessful Initial Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of unsuccessful initial registrations. This counter is incremented once for each unsuccessful initial registration when the response to the initial REGISTER has a non-success status code. This counter is based on ingress (received) messages only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: This counter is not incremented when registrations are challenged by the following response messages:</td>
<td>• 401 (Unauthorized - user authentication required)</td>
</tr>
<tr>
<td></td>
<td>• 407 (Proxy authentication required)</td>
</tr>
<tr>
<td></td>
<td>• 423 (Interval too brief - expiration time of the resource is too short)</td>
</tr>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>

### Total Refresh Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of registrations that were refreshed. This counter is incremented once for every refresh registration. This counter is based on ingress (received) messages only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>
### Successful Refresh Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of registrations that were successfully refreshed. This counter is incremented once for each successful refresh registration. This counter is based on ingress (received) messages only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
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<td>ACLI “Show” Command</td>
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<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms</a>.</td>
</tr>
</tbody>
</table>

### Unsuccessful Refresh Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of registrations that were unsuccessfully refreshed. This counter is incremented once for each unsuccessful refresh registration. This counter is based on ingress (received) messages only.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show sipd realms</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms</a>.</td>
</tr>
</tbody>
</table>
## Total De-Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of registrations that de-registered. This counter is incremented once for every de-registration. This counter is based on ingress (received) messages only. In the event a de-registration message is received on a realm that is different than that of the initial registration message, the de-registration counter for the ingress realm of that de-registration message is incremented.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td><code>show sipd realms</code></td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>

## Successful De-Registrations

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of registrations that successfully de-registered. This counter is incremented once for each successful de-registration. This counter is based on ingress (received) messages only. In the event a successful de-registration message is received on a realm that is different than that of the initial registration message, the de-registration counter for the ingress realm of that successful de-registration message is incremented.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td><code>show sipd realms</code></td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="162">show sipd realms (162)</a>.</td>
</tr>
</tbody>
</table>
**Unsuccessful De-Registrations**

| Description | Total number of registrations that unsuccessfully de-registered. This counter is incremented once for each unsuccessful de-registration. This counter is based on ingress (received) messages only. In the event an unsuccessful de-registration message is received on a realm that is different than that of the initial registration message, the de-registration counter for the ingress realm of that unsuccessful de-registration message is incremented. |
| Type | counter |
| Timer Value (seconds) | N/A |
| Range | 0 to $2^{32} - 1$ |
| ACLI “Show” Command | show sipd realms |
| ACLI Parameter Mapping | For ACLI parameter mappings, see the table at [show sipd realms (162)](#). |
Group: **enum-stats**

**Description**
Consists of statistics pertaining to the Telephone Number Mapping (ENUM) Agent on the Net-Net SD.

**Group Statistics**
- Enum Agent
- Queries Total
- Successful Total
- Not found Total
- Timeout Total

**ACL “Show” Command**
show enum

**ACL Parameter Mapping**
For ACLI parameter mappings, see the table at [show enum (166)](#).

---

### Enum Agent

**Description**
Name of the ENUM Agent

**Type**
config

**Timer Value (seconds)**
N/A

**Range**
N/A

**ACL “Show” Command**
show enum

**ACL Parameter Mapping**
For ACLI parameter mappings, see the table at [show enum (166)](#).

---

### Queries Total

**Description**
Total number of ENUM queries

**Type**
counter

**Timer Value (seconds)**
N/A

**Range**
0 to \(2^{32} - 1\)

**ACL “Show” Command**
show enum

**ACL Parameter Mapping**
For ACLI parameter mappings, see the table at [show enum (166)](#).
## Successful Total

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of successful ENUM queries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1</td>
</tr>
<tr>
<td><strong>ACLI “Show”</strong></td>
<td>show enum</td>
</tr>
<tr>
<td><strong>Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show enum (166).</td>
</tr>
</tbody>
</table>

## Not found Total

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ENUM queries returning a “not found”</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1</td>
</tr>
<tr>
<td><strong>ACLI “Show”</strong></td>
<td>show enum</td>
</tr>
<tr>
<td><strong>Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show enum (166).</td>
</tr>
</tbody>
</table>

## Timeout Total

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ENUM query timeouts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1</td>
</tr>
<tr>
<td><strong>ACLI “Show”</strong></td>
<td>show enum</td>
</tr>
<tr>
<td><strong>Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show enum (166).</td>
</tr>
</tbody>
</table>
Group: mgcp-state

Description: Consists of statistics pertaining to the Media Gateway Control Protocol (MGCP) state on the Net-Net SD.

Group Statistics:
- MGCP Sessions
- CA Endpoints
- GW Endpoints
- Media Sessions
- Client Trans
- Server Trans
- Pending MBCD
- MGCP ALGs
- Port Maps Available
- Port Maps Allocated

ACLI "Show" Command: show mgcp

ACLI Parameter Mapping: For ACLI parameter mappings, see the table at show mgcp (167).

Group Statistics

MGCP Sessions

Description: Total number of MGCP sessions

Type: counter

Timer Value (seconds): N/A

Range: 0 to $2^{32} - 1$

ACLI "Show" Command: show mgcp

ACLI Parameter Mapping: For ACLI parameter mappings, see the table at show mgcp (167).

CA Endpoints

Description: Total number of call agent (CA) endpoints

Type: counter

Timer Value (seconds): N/A

Range: 0 to $2^{32} - 1$

ACLI "Show" Command: show mgcp

ACLI Parameter Mapping: For ACLI parameter mappings, see the table at show mgcp (167).
### GW Endpoints

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of gateway (GW) endpoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

### Media Sessions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of media sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

### Client Trans

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of client transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>
### Server Trans

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of server transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show mgcp</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

### Pending MBCD

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of pending media requests to the Middlebox Control Daemon (MBCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show mgcp</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

### MGCP ALGs

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of MGCP Application Layer Gateways (ALGs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td><strong>ACLI “Show” Command</strong></td>
<td>show mgcp</td>
</tr>
<tr>
<td><strong>ACLI Parameter Mapping</strong></td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>
### Port Maps Available

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of port maps (i.e., IP ports) available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to 64511</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

### Port Maps Allocated

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of port maps (i.e., IP ports) allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to 64511</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>
### Group: mgcp-trans

**Description**  
Consists of statistics pertaining to the Media Gateway Control Protocol (MGCP) transactions on the Net-Net SD.

**Group Statistics**
- Requests Received
- Responses Sent
- Duplicates Received
- Requests Sent
- Responses Received
- Retransmissions Sent

**ACLI “Show” Command**
show mgcp

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at `show mgcp (167)`.

### Group Statistics

#### Requests Received

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of requests received</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**
show mgcp

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at `show mgcp (167)`.

#### Responses Sent

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of responses sent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>counter</td>
</tr>
<tr>
<td><strong>Timer Value (seconds)</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>$0$ to $2^{32} - 1$</td>
</tr>
</tbody>
</table>

**ACLI “Show” Command**
show mgcp

**ACLI Parameter Mapping**
For ACLI parameter mappings, see the table at `show mgcp (167)`.
## Duplicates Received

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of duplicates received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

## Requests Sent

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of requests sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLl “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

## Responses Received

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of responses received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLl “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>
### Retransmissions Sent

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of retransmissions sent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value</td>
<td>N/A</td>
</tr>
<tr>
<td>(seconds) Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp (167).</td>
</tr>
</tbody>
</table>

(show mgcp (167))
Group: mgcp-media-events

Description  Consists of statistics pertaining to the Media Gateway Control Protocol (MGCP) media event errors on the Net-Net SD.

Group Statistics

- Calling SDP Errors
- SDP Answer Errors
- Drop Media Errors
- Transaction Errors
- Application Errors
- Media Exp Events
- Early Media Exps
- Exp Media Drops

ACLI “Show” Command  show mgcp errors

ACLI Parameter Mapping  For ACLI parameter mappings, see the table at show mgcp errors (168).

Group Statistics

Calling SDP Errors

Description  Total number of errors encountered in setting up the media session for a session description in a Request or Response, which is a Session Description Protocol (SDP) Offer in the Offer/Answer model (RFC 3264)

Type  counter

Timer Value (seconds)  N/A

Range  0 to 2^32 – 1

ACLI “Show” Command  show mgcp errors

ACLI Parameter Mapping  For ACLI parameter mappings, see the table at show mgcp errors (168).

SDP Answer Errors

Description  Total number of errors encountered in setting up the media session for a session description in a Request or Response, which is a Session Description Protocol (SDP) Answer in the Offer/Answer model (RFC 3264)

Type  counter

Timer Value (seconds)  N/A

Range  0 to 2^32 – 1

ACLI “Show” Command  show mgcp errors

ACLI Parameter Mapping  For ACLI parameter mappings, see the table at show mgcp errors (168).
## Drop Media Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number errors encountered in tearing down the media for a session that is being terminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="168">show mgcp errors</a>.</td>
</tr>
</tbody>
</table>

## Transaction Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number errors in continuing the processing of the client transaction associated with setting up or tearing down of the media session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="168">show mgcp errors</a>.</td>
</tr>
</tbody>
</table>

## Application Errors

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of miscellaneous errors that are otherwise uncategorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="168">show mgcp errors</a>.</td>
</tr>
</tbody>
</table>
### Media Exp Events

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of flow timer expiration notifications received from Middlebox Control Daemon (MBCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp errors (168).</td>
</tr>
</tbody>
</table>

### Early Media Exps

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of flow timer expiration notifications received for media sessions that have not been completely set up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp errors (168).</td>
</tr>
</tbody>
</table>

### Exp Media Drops

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of flow timer expiration notifications from the Middlebox Control Daemon (MBCD) that resulted in the termination of the session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp errors</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp errors (168).</td>
</tr>
</tbody>
</table>
Group: mgcp-oper

Description: Consists of statistics pertaining to the Media Gateway Control Protocol (MGCP) operations on the Net-Net SD.

Group Statistics:
- ACL Requests
- Bad Messages
- Promotions
- Demotions

ACLI "Show" Command: show mgcp acls

ACLI Parameter Mapping:
For ACLI parameter mappings, see the table at show mgcp acls (169).

Group Statistics

ACL Requests

Description: Total number of access control list (ACL) requests
Type: counter
Timer Value (seconds): N/A
Range: 0 to $2^{32} - 1$
ACLI "Show" Command: show mgcp acls
ACLI Parameter Mapping:
For ACLI parameter mappings, see the table at show mgcp acls (169).

Bad Messages

Description: Total number of bad messages
Type: counter
Timer Value (seconds): N/A
Range: 0 to $2^{32} - 1$
ACLI "Show" Command: show mgcp acls
ACLI Parameter Mapping:
For ACLI parameter mappings, see the table at show mgcp acls (169).
### Promotions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entry promotions. These are the ACL entries that have been promoted from untrusted to trusted status.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="169">show mgcp acls</a>.</td>
</tr>
</tbody>
</table>

### Demotions

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entry demotions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="169">show mgcp acls</a>.</td>
</tr>
</tbody>
</table>
**Group: mgcp-acl**

<table>
<thead>
<tr>
<th>Description</th>
<th>Consists of statistics pertaining to the Media Gateway Control Protocol (MGCP) access control list (ACL) events on the Net-Net SD.</th>
</tr>
</thead>
</table>
| Group Statistics | • Total Entries  
• Trusted  
• Blocked |
| ACLI “Show” Command | show mgcp acls |
| ACLI Parameter Mapping | For ACLI parameter mappings, see the table at [show mgcp acls (169)](https://example.com) |

**Group Statistics**

### Total Entries

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ACL entries, including both trusted and blocked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="https://example.com">show mgcp acls (169)</a></td>
</tr>
</tbody>
</table>

### Trusted

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of trusted ACL entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show mgcp acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="https://example.com">show mgcp acls (169)</a></td>
</tr>
</tbody>
</table>
### Blocked

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of blocked ACL entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI <em>Show</em> Command</td>
<td>show mgcp acls</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show mgcp acls (169).</td>
</tr>
</tbody>
</table>
Group: h323-stats

Description: Consists of statistics pertaining to H323 events on the Net-Net SD.

Group Statistics:
- Incoming Calls
- Outgoing Calls
- Connected Calls
- Incoming Channels
- Outgoing Channels
- Contexts
- Queued Messages
- TPKT Channels
- UDP Channels

ACLI "Show" Command: show h323

ACLI Parameter Mapping: For ACLI parameter mappings, see the table at show h323 (170).

Group Statistics

Incoming Calls

Description: Total number of incoming H.323 calls

Type: counter

Timer Value (seconds): N/A

Range: 0 to $2^{32} - 1$

ACLI "Show" Command: show h323

ACLI Parameter Mapping: For ACLI parameter mappings, see the table at show h323 (170).

Outgoing Calls

Description: Total number of outgoing H.323 calls

Type: counter

Timer Value (seconds): N/A

Range: 0 to $2^{32} - 1$

ACLI "Show" Command: show h323

ACLI Parameter Mapping: For ACLI parameter mappings, see the table at show h323 (170).
### Connected Calls

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of connected H.323 calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show h323</a>.</td>
</tr>
</tbody>
</table>

### Incoming Channels

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of established incoming calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show h323</a>.</td>
</tr>
</tbody>
</table>

### Outgoing Channels

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of established outgoing calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to (2^{32} - 1)</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at <a href="#">show h323</a>.</td>
</tr>
</tbody>
</table>
## Contexts

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of established H.323 contexts (or call terminations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show h323 (170).</td>
</tr>
</tbody>
</table>

## Queued Messages

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of messages queued</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show h323 (170).</td>
</tr>
</tbody>
</table>

## TPKT Channels

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of ThroughPacket (TPKT) channels open(ed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI “Show” Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show h323 (170).</td>
</tr>
</tbody>
</table>
## UDP Channels

<table>
<thead>
<tr>
<th>Description</th>
<th>Total number of User Datagram Protocol (UDP) channels open(ed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>counter</td>
</tr>
<tr>
<td>Timer Value (seconds)</td>
<td>N/A</td>
</tr>
<tr>
<td>Range</td>
<td>0 to $2^{32} - 1$</td>
</tr>
<tr>
<td>ACLI &quot;Show&quot; Command</td>
<td>show h323</td>
</tr>
<tr>
<td>ACLI Parameter Mapping</td>
<td>For ACLI parameter mappings, see the table at show h323 (170).</td>
</tr>
</tbody>
</table>
4 HDR Show Commands

Introduction

This section provides information about the Net-Net Session Director (SD) “Show” commands you can enter at the root level of the Acme Packet Command Line Interface (ACLI). The parameters in these tables map to the Historical Data Recording (HDR) data used by the HDR Collector when generating comma-separated value (CSV) reports.

For more information about the HDR Collection data, see HDR Groups and Group Statistics (39).

Statistic Counts

For each “Show” command table output, statistical counts are based on the Net-Net SD defining a period as 100 seconds. The recent window represents the previous complete period (period 1 shown below) PLUS the time incurred into the current period (period 2 shown below). Period 1 = 100 seconds and period 2 = 75 seconds. The complete window period = 175 seconds. After period 3 is entered (not pictured below), the Recent window will begin at the 100 second mark.

![Diagram of recent window with period 1 and period 2]

When you execute a show command, a timestamp and period count display.

![Example command output]

- Timestamp
- Period Count
In the period count, the number after the dash, indicates the number of seconds into the recent period. In the above example, the number of seconds into the recent period is 158 seconds. Therefore, the recent window ranges from 100 to 199 seconds.

**Table Column Descriptions**

For each “Show” command table, the columns are defined as follows:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period Active</td>
<td>Represents the current number of active counts</td>
</tr>
<tr>
<td>Period High</td>
<td>Represents the highest number during the recent window</td>
</tr>
<tr>
<td>Period Total</td>
<td>Represents the total accumulated count during the recent window</td>
</tr>
</tbody>
</table>

The Lifetime statistics begin accumulating from the last reboot.

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime Total</td>
<td>Represents the total accumulated count</td>
</tr>
<tr>
<td>Lifetime PerMax</td>
<td>Represents the maximum recorded in one period</td>
</tr>
<tr>
<td>Lifetime High</td>
<td>Represents the highest momentary count</td>
</tr>
</tbody>
</table>
Show Commands Associated with HDR Groups

This section provides ACLI show command output tables and descriptions. These show commands are associated with the HDR Groups described in the section, \textit{ACLI-Associated Groups and Group Statistics} (81).

Show commands in this section include:

- \texttt{show sipd sessions} (151)
- \texttt{show sipd invite} (161)
- \texttt{show sipd agents} (152)*
- \texttt{show enum} (166)
- \texttt{show sipd acls} (154)
- \texttt{show mgcp} (167)
- \texttt{show sipd client} (155)
- \texttt{show mgcp errors} (168)
- \texttt{show sipd server} (156)
- \texttt{show mgcp acls} (169)
- \texttt{show sipd policy} (157)
- \texttt{show h323} (170)
- \texttt{show sipd errors} (158)
- \texttt{show sipd realms} (162)*
- \texttt{show sipd status} (160)

*The “show sipd agents” command is associated with the “session-agent” HDR Group, and the “show sipd realms” command is associated with the “session-realm” HDR Group (in the section \textit{MIB-Associated Groups and Group Statistics} (42)). The “show sipd realm” command is also associated with the “registration-realm” HDR Group in the section, \textit{ACLI-Associated Groups and Group Statistics} (81).

\texttt{show sipd sessions} The “\texttt{show sipd sessions}” command displays information about SIP session transactions on the Net-Net SD. These statistics include session information over Period and Lifetime monitoring spans, as well as information on active sessions. For associated HDR Group and Group Statistics, see \textit{Group: sip-sessions} (83).

\begin{center}
\begin{tabular}{|l|c|c|c|c|c|}
\hline
\textbf{Parameter} & \textbf{Description} \\
\hline
\textbf{Sessions} & Number of sessions established by INVITE and SUBSCRIBE messages \\
\textbf{Initial} & Number of sessions for which an INVITE or SUBSCRIBE is being forwarded. \\
\textbf{Early} & Number of sessions for which the first provisional response (1xx other than 100) is received. \\
\textbf{Established} & Number of sessions for which a success (2xx) response is received. \\
\hline
\end{tabular}
\end{center}
The “show sipd agents” command displays statistics related to defined SIP session agents. SIP session agents can be softswitches, SIP proxies, application servers, SIP gateways, or SIP endpoints.

In addition to functioning as a single logical next hop for a signaling message (for example, where a SIP INVITE is forwarded), session agents can provide information about next or previous hops for packets in a SIP agent, including providing a list of equivalent next hops.

Entering this show command without arguments, list all SIP session agents. By adding the IP address or hostname of a session agent as well as a specified method at the end of the command, you can display statistics for that specific session agent and method. For associated HDR Group and Group Statistics, see Group: session-agent (53).

“Show sipd agents” Command

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminated</td>
<td>Number of sessions for which the session is ended by receiving or sending a BYE for an “Established” session or forwarding an error response for an “Initial” or “Early” session. The session remains in the “Terminated” state until all the resources for the session are freed.</td>
</tr>
<tr>
<td>Dialogs</td>
<td>Number of end-to-end SIP signaling connections.</td>
</tr>
<tr>
<td>Early</td>
<td>Number of dialogs created by a provisional response.</td>
</tr>
<tr>
<td>Confirmed</td>
<td>Number of dialogs created by a success response. An “Early” dialog transitions to “Confirmed” when a success response is received.</td>
</tr>
<tr>
<td>Terminated</td>
<td>Number of dialogs that ended by receiving/sending a BYE for an “Established” session or receiving/sending error response “Early” dialog. The dialog remains in the “Terminated” state until all the resources for the session are freed.</td>
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</tbody>
</table>

### show sipd agents

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“Show sipd agents” Command

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“Show sipd agents” Command

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“Show sipd agents” Command

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“Show sipd agents” Command

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<tr>
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</tr>
</tbody>
</table>
**Parameter** | **Description**
---|---
ConEx | Number of times that signaling & bandwidth constraints for outbound packets were exceeded on the session agent. This helps determine resource availability.
Latency | Average amount of time between the moment the session-agent transmits a SIP packet and the moment it reaches its destination.
Avg | Maximum amount of time between the moment the session-agent transmits a SIP packet and the moment it reaches its destination.
Max | Maximum burst rate for each session agent as total number of session invitations sent to or received from the session agent within the amount of time configured for the burst-rate window.

**“Show sipd agents <IP address or hostname>” Command**

![Syntax](image)

**Parameter** | **Description**
---|---
Inbound Sessions | Number of inbound SIP sessions for this session agent.
Rate Exceeded | Number of times session rate was exceeded for inbound SIP sessions on this session agent.
Num Exceeded | Number of times that signaling & bandwidth constraints for inbound SIP sessions were exceeded on this session agent. This helps determine resource availability.
Burst Rate | Number of times burst rate was exceeded for this session agent on inbound SIP sessions.
Reg Rate Exceeded | Number of times the registration rate was exceeded for this session agent on inbound SIP sessions.
Outbound Sessions | Number of outbound SIP sessions for this session agent.
Rate Exceeded | Number of times session rate was exceeded for outbound SIP sessions.
Num Exceeded | Number of times time constraints were exceeded for outbound SIP sessions.
Burst Rate | Maximum burst rate of traffic (both inbound and outbound).
Reg Rate Exceeded | Number of times the registration rate was exceeded for this session agent on outbound SIP sessions.
show sipd acls

An access control list (ACL) allows/denies specific sources (IP or IP:port) to access the Net-Net SD.

The “show sipd acls” command displays information about SIP ACL activity on the Net-Net SD. These statistics include ACL information over Period and Lifetime monitoring spans, as well as information on active ACL status. For associated HDR Group and Group Statistics, see Group: sip-acl-oper (87) and Group: sip-acl-status (90).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out of Service</td>
<td>Number of times this session agent went out of service.</td>
</tr>
<tr>
<td>Trans Timeout</td>
<td>Number of SIP transactions that timed out for this session agent.</td>
</tr>
<tr>
<td>Requests Sent</td>
<td>Number of SIP requests sent via this session agent.</td>
</tr>
<tr>
<td>Requests Complete</td>
<td>Number of SIP requests completed for this session agent.</td>
</tr>
<tr>
<td>Seizure</td>
<td>Number of seizures that occurred on this session agent.</td>
</tr>
<tr>
<td>Answer</td>
<td>Number of answered SIP sessions on this session agent.</td>
</tr>
<tr>
<td>ASR Exceeded</td>
<td>Number of times that Access Service Requests (ASRs) were exceeded on this session agent.</td>
</tr>
<tr>
<td>Messages Received</td>
<td>Number of SIP messages received by this session agent.</td>
</tr>
<tr>
<td>Latency</td>
<td>Average and maximum amount of time between the moment the session-agent transmits a SIP packet and the moment it reaches its destination.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP ACL Status</td>
<td></td>
</tr>
<tr>
<td>Total Entries</td>
<td>Total number of ACL entries, both trusted and blocked.</td>
</tr>
<tr>
<td>Trusted</td>
<td>Number of trusted ACL entries</td>
</tr>
<tr>
<td>Blocked</td>
<td>Number of blocked ACL entries</td>
</tr>
<tr>
<td>ACL Operations</td>
<td></td>
</tr>
<tr>
<td>ACL Requests</td>
<td>Number of ACL requests</td>
</tr>
<tr>
<td>Bad Messages</td>
<td>Number of bad messages</td>
</tr>
<tr>
<td>Promotions</td>
<td>Total number of ACL entry promotions. These are the ACL entries that have been promoted from untrusted to trusted status.</td>
</tr>
<tr>
<td>Demotions</td>
<td>Number of ACL entry demotions.</td>
</tr>
<tr>
<td>Trust-&gt;Untrust</td>
<td>Number of ACL entries demoted from trusted to untrusted</td>
</tr>
<tr>
<td>Untrust-&gt;Deny</td>
<td>Number of ACL entries demoted from untrusted to deny</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP ACL Status</td>
<td></td>
</tr>
<tr>
<td>Total Entries</td>
<td>Total number of ACL entries, both trusted and blocked.</td>
</tr>
<tr>
<td>Trusted</td>
<td>Number of trusted ACL entries</td>
</tr>
<tr>
<td>Blocked</td>
<td>Number of blocked ACL entries</td>
</tr>
<tr>
<td>ACL Operations</td>
<td></td>
</tr>
<tr>
<td>ACL Requests</td>
<td>Number of ACL requests</td>
</tr>
<tr>
<td>Bad Messages</td>
<td>Number of bad messages</td>
</tr>
<tr>
<td>Promotions</td>
<td>Total number of ACL entry promotions. These are the ACL entries that have been promoted from untrusted to trusted status.</td>
</tr>
<tr>
<td>Demotions</td>
<td>Number of ACL entry demotions.</td>
</tr>
<tr>
<td>Trust-&gt;Untrust</td>
<td>Number of ACL entries demoted from trusted to untrusted</td>
</tr>
<tr>
<td>Untrust-&gt;Deny</td>
<td>Number of ACL entries demoted from untrusted to deny</td>
</tr>
</tbody>
</table>
**show sipd client**

A SIP client can initiate and terminate SIP sessions. The “**show sipd client**” command displays statistics for SIP client events when the Net-Net SD is acting as a SIP client in its back-to-back User Agent (B2BUA) role. These statistics include SIP client information over Period and Lifetime monitoring spans, as well as information on active SIP client status. For associated HDR Group and Group Statistics, see Group: **sip-client** (92).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All States</td>
<td>Number of all client session transactions</td>
</tr>
<tr>
<td>Initial</td>
<td>Number of times the “Initial” state was entered due to the receipt of a request</td>
</tr>
<tr>
<td>Trying</td>
<td>Number of times the “Trying” state was entered due to the receipt of a request</td>
</tr>
<tr>
<td>Calling</td>
<td>Number of times the “Calling” state was entered due to the receipt of an INVITE request</td>
</tr>
<tr>
<td>Proceeding</td>
<td>Number of times the “Proceeding” state was entered due to the receipt of a provisional response while in the “Calling” state</td>
</tr>
<tr>
<td>Cancelled</td>
<td>Number of INVITE transactions that received a CANCEL</td>
</tr>
<tr>
<td>EarlyMedia</td>
<td>Number of times the “Proceeding” state was entered due to the receipt of a provisional response that contained a Session Description Protocol (SDP) while in the “Calling” state</td>
</tr>
<tr>
<td>Completed</td>
<td>Number of times that the “Completed” state was entered due to the receipt of a status code in the range of 300-699 when either in the “Calling” or “Proceeding” state</td>
</tr>
<tr>
<td>SetMedia</td>
<td>Number of transactions in which the Net-Net SD was setting up NAT and steering ports</td>
</tr>
<tr>
<td>Established</td>
<td>Number of times the client received a 2xx response to an INVITE, but could not forward it because the NAT and steering port information was missing</td>
</tr>
<tr>
<td>Terminated</td>
<td>Number of times the “Terminated” state was entered after a 2xx message</td>
</tr>
</tbody>
</table>
**show sipd server**

A SIP server can receive and terminate SIP sessions. The “`show sipd server`” command displays statistics for SIP server events when the Net-Net SD is acting as a SIP server in its back-to-back User Agent (B2BUA) role. These statistics include SIP server information over Period and Lifetime monitoring spans, as well as information on active SIP server status. For associated HDR Group and Group Statistics, see [Group: sip-server](96).

![show sipd server output](image)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All States</td>
<td>Number of all server session transactions</td>
</tr>
<tr>
<td>Initial</td>
<td>Number of times the “Initial” state was entered due to the receipt of a request</td>
</tr>
<tr>
<td>Queued</td>
<td>Number of times the “Queued” state was entered due to the receipt of a request</td>
</tr>
<tr>
<td>Trying</td>
<td>Number of times the “Trying” state was entered due to the receipt of a request</td>
</tr>
<tr>
<td>Proceeding</td>
<td>Number of times the “Proceeding” state was entered due to the receipt of a provisional response while in the “Calling” state</td>
</tr>
<tr>
<td>Cancelled</td>
<td>Number of INVITE transactions that received a CANCEL</td>
</tr>
<tr>
<td>Established</td>
<td>Number of times the server received a 2xx response to an INVITE, but could not forward it because the NAT and steering port information was missing</td>
</tr>
<tr>
<td>Completed</td>
<td>Number of times that the “Completed” state was entered due to the receipt of a status code in the range of 300-699 when either in the “Calling” or “Proceeding” state</td>
</tr>
<tr>
<td>Confirmed</td>
<td>Number of times that an ACK was received while the server was in “Completed” state, and then transitioned to the “Confirmed” state</td>
</tr>
<tr>
<td>Terminated</td>
<td>Number of times the “Terminated” state was entered after a 2xx message, or never received an ACK in the “Completed” state, and then transitioned to the “Terminated” state</td>
</tr>
</tbody>
</table>
show sipd policy

Multistage local policy routing enables the Net-Net SD to perform multiple stages of route lookups where the result from one stage is used as the lookup key for the next routing stage.

The “show sipd policy” command displays single and multistage local policy lookups. All counters are reported for the recent, lifetime total, and lifetime maximum periods. For associated HDR Group and Group Statistics, see Group: sip-policy (100).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Policy Lookups</td>
<td>Number of local policy lookups</td>
</tr>
<tr>
<td>Local Policy Hits</td>
<td>Number of successful local policy lookups</td>
</tr>
<tr>
<td>Local Policy Misses</td>
<td>Number of local policy lookup failures</td>
</tr>
<tr>
<td>Local Policy Drops</td>
<td>Number of local policy lookups where the next hop session agent group is H.323</td>
</tr>
<tr>
<td>Agent Group Hits</td>
<td>Number of successful local policy lookups for session agent groups</td>
</tr>
<tr>
<td>Agent Group Misses</td>
<td>Number of successful local policy lookups where no session agent was available for the session agent group</td>
</tr>
<tr>
<td>No Routes Found</td>
<td>Number of successful local policy lookups but temporarily unable to route (for example, “session agent out of service”)</td>
</tr>
<tr>
<td>Missing Dialog</td>
<td>Number of local policy lookups where the dialog was not found for a request addressed to the Net-Net SD with a “To” tag or for a NOTIFY-SUBSCRIBE SIP request</td>
</tr>
<tr>
<td>Inb SA Constraints</td>
<td>Number of successful local policy lookups where the inbound session agent (SA) exceeded constraints</td>
</tr>
<tr>
<td>Outb SA Constraints</td>
<td>Number of successful local policy lookups where the outbound SA exceeded constraints</td>
</tr>
<tr>
<td>Inb REG SA Constraint</td>
<td>Number of successful inbound local policy lookups where the registrar (REG) SA exceeded constraints</td>
</tr>
<tr>
<td>Outb REG SA Constraint</td>
<td>Number of successful outbound local policy lookups where the registrar (REG) SA exceeded constraints</td>
</tr>
<tr>
<td>Request Challenged</td>
<td>Number of requests that were challenged.</td>
</tr>
<tr>
<td>Challenge Found</td>
<td>Number of challenges found.</td>
</tr>
<tr>
<td>Challenge Not Found</td>
<td>Number of challenges not found.</td>
</tr>
<tr>
<td>Challenge Dropped</td>
<td>Number of challenges dropped.</td>
</tr>
</tbody>
</table>
show sipd errors

The "show sipd errors" command displays statistics for SIP media event errors. These statistics are errors encountered by the SIP application in processing SIP media sessions, dialogs, and session descriptions (SDP). Error statistics display for the lifetime monitoring span only. For associated HDR Group and Group Statistics, see Group: sip-errors (106).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Policy Inits</td>
<td>Number of times the Net-Net SD made an initial local policy lookup</td>
</tr>
<tr>
<td>Local Policy Results</td>
<td>Number of times the Net-Net SD truncated the number of routes returned for a local policy lookup because the maximum number of routes per local policy lookup (max local policy lookups routes per lookup) threshold was reached.</td>
</tr>
<tr>
<td>Local Policy Exceeded</td>
<td>Number of times the Net-Net SD truncated the number of routes returned for a local policy lookup because the maximum number of routes per message request (total local policy routes) threshold was reached.</td>
</tr>
<tr>
<td>Local Policy Loops</td>
<td>Number of times the Net-Net SD detected a loop while performing a multistage local policy lookup</td>
</tr>
</tbody>
</table>

SDP Offer Errors
Number of errors encountered in setting up the media session for a session description in a SIP request or response which is a Session Description Protocol (SDP) Offer in the Offer/Answer model (RFC 3264)

SDP Answer Errors
Number of errors encountered in setting up the media session for a session description in a SIP request or response which is a Session Description Protocol (SDP) Answer in the Offer/Answer model (RFC 3264)

Drop Media Errors
Number of errors encountered in tearing down the media for a dialog or session that is being terminated due to:
- a non-successful response to an INVITE transaction, or
- a BYE transaction received from one of the participants in a dialog/session, or
- a BYE initiated by the Net-Net SD due to a timeout notification from the Middlebox Control Daemon (MBCD).
### HDR SHOW COMMANDS

#### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Errors</td>
<td>Number of errors in continuing the processing of the SIP client transaction associated with setting up or tearing down of the media session.</td>
</tr>
<tr>
<td>Application Errors</td>
<td>Number of miscellaneous errors in the SIP application that are otherwise uncategorized</td>
</tr>
<tr>
<td>Media Exp Events</td>
<td>Number of flow timer expiration notifications received from the Middlebox Control Daemon (MBCD).</td>
</tr>
<tr>
<td>Early Media Exps</td>
<td>Number of flow timer expiration notifications received for media sessions that were not completely set up due to an incomplete or pending INVITE transaction</td>
</tr>
<tr>
<td>Exp Media Drops</td>
<td>Number of flow timer expiration notifications from the Middlebox Control Daemon (MBCD) that resulted in the termination of the dialog/session by the SIP application.</td>
</tr>
<tr>
<td>Expired Sessions</td>
<td>Number of sessions terminated due to the session timer expiring</td>
</tr>
<tr>
<td>Multiple OK Drops</td>
<td>Number of dialogs terminated upon reception of a 200 OK response from multiple User Agent Servers (UASs) for a given INVITE transaction that was forked by a downstream proxy</td>
</tr>
<tr>
<td>Multiple OK Terms</td>
<td>Number of dialogs terminated upon reception of a 200 OK response that conflicts with an existing established dialog on the Net-Net SD</td>
</tr>
<tr>
<td>Media Failure Drops</td>
<td>Number of dialogs terminated due to a failure in establishing the media session.</td>
</tr>
<tr>
<td>Non-Ack 2xx Drops</td>
<td>Number of sessions terminated because an ACK was not received for a 2xx response</td>
</tr>
<tr>
<td>Invalid Requests</td>
<td>Number of invalid requests (for example, an unsupported header was received).</td>
</tr>
<tr>
<td>Invalid Responses</td>
<td>Number of invalid responses (for example, no &quot;Via&quot; header in response)</td>
</tr>
<tr>
<td>Invalid Messages</td>
<td>Number of messages dropped due to parse failure</td>
</tr>
<tr>
<td>CAC Session Drop</td>
<td>Number of call admission control (CAC) session setup failures</td>
</tr>
<tr>
<td>CAC BW Drop</td>
<td>Number of call admission control (CAC) session setup failures due to insufficient bandwidth (BW)</td>
</tr>
<tr>
<td>Nsep User Exceeded</td>
<td>Number of Emergency Telecommunications Service (ETS), user call sessions that exceeded the calls-per-second rate configured on the Net-Net SD for National Security and Emergency Preparedness (NSEP).</td>
</tr>
<tr>
<td>Nsep SA Exceeded</td>
<td>Number of Emergency Telecommunications Service (ETS), Session Agent (SA) call sessions that exceeded the calls-per-second rate configured on the Net-Net SD for National Security and Emergency Preparedness (NSEP).</td>
</tr>
</tbody>
</table>
show sipd status

The “show sipd status” command displays information about Session Initiation Protocol (SIP) transactions. These statistics are given for the Period and Lifetime monitoring spans. This display also provides statistics related to SIP media events. These statistics include SIP status information over Period and Lifetime monitoring spans, as well as information on active SIP status. For associated HDR Group and Group Statistics, see Group: sip-status (113).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sessions</td>
<td>Number of sessions established by INVITE and SUBSCRIBE messages</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>Number of sessions established by SUBSCRIPTION</td>
</tr>
<tr>
<td>Dialogs</td>
<td>Number of end-to-end SIP signaling connections</td>
</tr>
<tr>
<td>CallID Map</td>
<td>Number of successful session header Call ID mappings</td>
</tr>
<tr>
<td>Rejections</td>
<td>Number of rejected INVITEs</td>
</tr>
<tr>
<td>ReINVITEs</td>
<td>Number of ReINVITEs</td>
</tr>
<tr>
<td>ReINV Suppress</td>
<td>Number of ReINVITEs that were suppressed</td>
</tr>
<tr>
<td>Media Sessions</td>
<td>Number of successful media sessions</td>
</tr>
<tr>
<td>Media Pending</td>
<td>Number of media sessions waiting to be established</td>
</tr>
<tr>
<td>Client Trans</td>
<td>Number of client transactions</td>
</tr>
<tr>
<td>Server Trans</td>
<td>Number of server transactions that have taken place on the Net-Net SD</td>
</tr>
<tr>
<td>Resp Contexts</td>
<td>Number of response contexts</td>
</tr>
<tr>
<td>Saved Contexts</td>
<td>Number of saved contexts</td>
</tr>
<tr>
<td>Sockets</td>
<td>Number of SIP sockets</td>
</tr>
<tr>
<td>Req Dropped</td>
<td>Number of dropped requests</td>
</tr>
<tr>
<td>DNS Trans</td>
<td>Number of Domain Name System (DNS) transactions</td>
</tr>
<tr>
<td>DNS Sockets</td>
<td>Number of Domain Name System (DNS) sockets</td>
</tr>
<tr>
<td>DNS Results</td>
<td>Number of Domain Name System (DNS) results</td>
</tr>
<tr>
<td>Rejected Msgs</td>
<td>Number of rejected messages</td>
</tr>
<tr>
<td>Session Rate</td>
<td>The rate, per second, of SIP invites allowed to or from the Net-Net SD during the sliding window period. The rate is computed every 10 seconds.</td>
</tr>
</tbody>
</table>

AcmePacket> show sipd status
09:05:20-106
SIP Status
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Active</th>
<th>High</th>
<th>Total</th>
<th>Period</th>
<th>Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sessions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dialogs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CallID Map</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rejections</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ReINVITEs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ReINV Suppress</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Media Sessions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Media Pending</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Client Trans</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Server Trans</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Resp Contexts</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Saved Contexts</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sockets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Req Dropped</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DNS Trans</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DNS Sockets</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DNS Results</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rejected Msgs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Session Rate = 0.0
Load Rate = 0.1
Remaining Connections = 20000 (max 20000)
show sipd invite

The “show sipd invite” command displays information about Session Initiation Protocol (SIP) INVITE requests. These statistics are given for both Server and Client and display recent, per maximum, and total for each. For associated HDR Group and Group Statistics, see Group: sip-invites (121).

Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Rate</td>
<td>Average Central Processing Unit (CPU) utilization of the Net-Net SD during the current window. The average is computed every 10 seconds unless the load-limit is configured in the SIPConfig record, in which case it is 5 seconds.</td>
</tr>
<tr>
<td>Remaining Connections</td>
<td>Number of SIP connections currently available</td>
</tr>
</tbody>
</table>

The log output for the command `show sipd invite` is as follows:

```
AcmePacket> show sipd invite
09:05:20-106
INVITE (20:02:28-127)
Message/Event            Recent  Total  PerMax  Recent  Total  PerMax
INVITE Requests          0       0       0       0       0       0
Retransmissions          0       0       0       0       0       0
Response Retrans         0       0       0       0       0       0
Transaction Timeouts     -       -       -       -       -       -
Locally Throttled        -       -       -       -       -       -
Avg Latency=0.000 for 0  Max Latency=0.000
```
show sipd realms

Realms are a logical distinction representing routes (or groups of routes) reachable by the Net-Net SBC and what kinds of resources and special functions apply to those routes. Realms are used as a basis for determining ingress and egress associations to network interfaces, which can reside in different VPNs. The ingress realm is determined by the signaling interface on which traffic arrives. The egress realm is determined by the following:

- Routing policy - Where the egress realm is determined in the session agent configuration or external address of a SIP-NAT
- Realm-bridging - As applied in the SIP-NAT configuration and H.323 stack configurations
- Third-party routing/redirect (i.e., SIP redirect or H.323 LCF) 170 Net-Net 4000

Realms can also be nested in order to form nested realm groups. Nested realms consist of separate realms that are arranged within a hierarchy to support network architectures that have separate backbone networks and VPNs for signaling and media.

The “show sipd realms” command displays information about sessions (both inbound and outbound), out of service sessions, early and successful sessions, and session registration information for realms. This information displays for Period and Lifetime monitoring spans, as well as for active sessions. For associated HDR Group and Group Statistics, see the Group: session-realm (61), and Group: registration-realm (123).

Note: The following example shows the statistics for the realm name of “public”.

```
      AcmePacket# public
      15:23:54-47
Realm access() [In Service]  -- Period -- --------- Lifetime ---------

<table>
<thead>
<tr>
<th></th>
<th>Active</th>
<th>High</th>
<th>Total</th>
<th>Total</th>
<th>PerMax</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound Sessions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rate Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Num Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Burst Rate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reg Rate Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Reg Burst Rate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Outbound Sessions</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rate Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Num Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Burst Rate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reg Rate Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Local Contacts</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>HNT Entries</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-HNT Entries</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>0</td>
<td>42</td>
<td>23</td>
<td>112</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Out of Service</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Trans Timeout</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Requests Sent</td>
<td>-</td>
<td>-</td>
<td>46</td>
<td>222</td>
<td>96</td>
<td>-</td>
</tr>
<tr>
<td>Requests Complete</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Seizure</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Answer</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>ASR Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Requests Received</td>
<td>-</td>
<td>-</td>
<td>46</td>
<td>226</td>
<td>96</td>
<td>-</td>
</tr>
<tr>
<td>QoS Major Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>QoS Critical Exceeded</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
</tbody>
</table>
```
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound Sessions</td>
<td>Total number of active inbound sessions during an Active and Lifetime period.</td>
</tr>
<tr>
<td>Rate Exceeded</td>
<td>Number of times session rate was exceeded for inbound SIP sessions on this realm.</td>
</tr>
<tr>
<td>Num Exceeded</td>
<td>Number of times time constraints were exceeded for inbound sessions.</td>
</tr>
<tr>
<td>Burst Rate</td>
<td>Number of times burst rate was exceeded for this realm on inbound SIP sessions.</td>
</tr>
<tr>
<td>Reg Rate Exceeded</td>
<td>Number of times the registration rate was exceeded for this realm on inbound SIP sessions.</td>
</tr>
<tr>
<td>Reg Burst Rate</td>
<td>Number of times the registration burst rate was exceeded for this realm on inbound SIP sessions.</td>
</tr>
<tr>
<td>Outbound Sessions</td>
<td>Total number of active outbound sessions during an Active and Lifetime period.</td>
</tr>
<tr>
<td>Rate Exceeded</td>
<td>Number of times session rate was exceeded for outbound SIP sessions on this realm.</td>
</tr>
<tr>
<td>Num Exceeded</td>
<td>Number of times time constraints were exceeded for outbound sessions.</td>
</tr>
<tr>
<td>Burst Rate</td>
<td>Number of times burst rate was exceeded for this realm on outbound SIP sessions.</td>
</tr>
<tr>
<td>Reg Rate Exceeded</td>
<td>Number of times the registration rate was exceeded for this realm on outbound SIP sessions.</td>
</tr>
<tr>
<td>Local Contacts</td>
<td>Number of contact entries in the registration cache.</td>
</tr>
<tr>
<td>HNT Entries</td>
<td>Number of hosted NAT traversal (HNT) contact entries that are behind a NAT device.</td>
</tr>
<tr>
<td>Non-HNT Entries</td>
<td>Number of contact entries that are not hosted NAT traversal that are behind a NAT device.</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>Specifies the following:</td>
</tr>
<tr>
<td></td>
<td>• Active Subscriptions: The current global count of active SIP subscriptions during Survivability.</td>
</tr>
<tr>
<td></td>
<td>• Subscriptions PreMax: The maximum global count of SIP subscriptions initiated during any 100 second period since the last SBC re-boot, and during Survivability.</td>
</tr>
<tr>
<td></td>
<td>• Subscriptions High: The maximum global count of active SIP subscriptions since the last SBC re-boot, and during Survivability.</td>
</tr>
<tr>
<td>Out of Service</td>
<td>Number of times this realm went out of service.</td>
</tr>
<tr>
<td>Trans Timeout</td>
<td>Number of transactions timed out for this realm.</td>
</tr>
<tr>
<td>Requests Sent</td>
<td>Number of requests sent via this realm.</td>
</tr>
<tr>
<td>Requests Complete</td>
<td>Number of requests that have been completed for this realm.</td>
</tr>
<tr>
<td>Seizure</td>
<td>Number of seizures that occurred on this realm.</td>
</tr>
<tr>
<td>Answer</td>
<td>Number of answered SIP sessions on this session agent.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ASR Exceeded</td>
<td>Number of times that Access Service Requests (ASRs) were exceeded on this realm.</td>
</tr>
<tr>
<td>Requests Received</td>
<td>Number of requests received on this realm.</td>
</tr>
<tr>
<td>QoS Major Exceeded</td>
<td>Number of times the major Rfactor threshold was exceeded during the sliding window period. The peg count provides counts of calls with different service classes that occur during intervals of frequency which reliability indicate the traffic load. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality.</td>
</tr>
<tr>
<td>QoS Critical Exceeded</td>
<td>Number of times the critical Rfactor threshold was exceeded during the sliding window period. Provides counts of calls with different service classes that occur during intervals of frequency which reliability indicate the traffic load. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality.</td>
</tr>
<tr>
<td>Latency</td>
<td></td>
</tr>
<tr>
<td>Avg</td>
<td>Average amount of time between the moment the realm transmits a SIP packet and the moment it reaches its destination.</td>
</tr>
<tr>
<td>Max</td>
<td>Maximum amount of time between the moment the realm transmits a SIP packet and the moment it reaches its destination.</td>
</tr>
<tr>
<td>QoS R-Factor</td>
<td></td>
</tr>
<tr>
<td>Avg</td>
<td>Average Quality of Service (QoS) factor observed during the current window period. Quality of service shapes traffic to provide different priority and level of performance to different data flows. R-factors are metrics in VoIP, that use a formula to take into account both user perceptions and the cumulative effect of equipment impairments to arrive at a numeric expression of voice quality. This statistic defines the call or transmission quality expressed as an R factor.</td>
</tr>
<tr>
<td>Max</td>
<td>Maximum Quality of Service (QoS) factor observed during the sliding window period. Quality of service shapes traffic to provide different priority and level of performance to different data flows. R-factors are metrics in VoIP that use a formula to determine a numeric expression of voice quality. This statistic defines the call or transmission quality expressed as an R factor.</td>
</tr>
<tr>
<td>Early Sessions</td>
<td>Indicates the number of early sessions for each realm. Each time the Net-Net SBC receives an INVITE on the ingress realm or the egress realm sends an INVITE request, a counter increments if the session is established with a 200 OK response. This counter also increments in sessions when there are no 18x responses (Ringing (180), Call is Being Forwarded (181), Queued (182), Session in Progress (183)), but a 200 OK is established. This counter represents the number of sessions that have reached the early dialog state or later.</td>
</tr>
<tr>
<td>Successful Sessions</td>
<td>Indicates the number of successful sessions for each realm. Successful sessions are when the Net-Net SBC receives a successful 200 OK response from an initial INVITE request.</td>
</tr>
<tr>
<td>Note: This counter is NOT incremented for re-INVITES.</td>
<td></td>
</tr>
<tr>
<td>Initial Registrations</td>
<td>Total number of initial registrations. This counter is incremented once for each initial REGISTER message even when the REGISTER is challenged. This counter is based on ingress (received) messages only.</td>
</tr>
</tbody>
</table>
| Note: This counter is not incremented when registrations are challenged by the following response messages: | • 401 (Unauthorized - user authentication required)  
  • 407 (Proxy authentication required)  
  • 423 (Interval too brief - expiration time of the resource is too short)                                                                                                                                                                                                            |
<p>| Successful                | Number of successful initial registrations. This counter is incremented once for each successful initial registration with a 200 OK response. This counter is based on ingress (received) messages only.                                                                                                                                             |</p>
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unsuccessful</strong></td>
<td>Number of unsuccessful initial registrations. This counter is incremented once for each unsuccessful initial registration when the response to the initial REGISTER has a non-success status code. This counter is based on ingress (received) messages only.</td>
</tr>
</tbody>
</table>
| **Note:** | This counter is not incremented when registrations are challenged by the following response messages:  
• 401 (Unauthorized - user authentication required)  
• 407 (Proxy authentication required)  
• 423 (Interval too brief - expiration time of the resource is too short) |

**Refresh Registrations**

| **Total** | Total number of registrations that were refreshed. This counter is incremented once for every refresh registration. This counter is based on ingress (received) messages only. |
| **Successful** | Total number of registrations that were successfully refreshed. This counter is incremented once for each successful refresh registration. This counter is based on ingress (received) messages only. |
| **Unsuccessful** | Total number of registrations that were unsuccessfully refreshed. This counter is incremented once for each unsuccessful refresh registration. This counter is based on ingress (received) messages only. |

**De-Registrations**

| **Total** | Total number of registrations that de-registered. This counter is incremented once for every de-registration. This counter is based on ingress (received) messages only. In the event a de-registration message is received on a realm that is different than that of the initial registration message, the de-registration counter for the ingress realm of that de-registration message is incremented. |
| **Successful** | Total number of registrations that successfully de-registered. This counter is incremented once for each successful de-registration. This counter is based on ingress (received) messages only. In the event a successful de-registration message is received on a realm that is different than that of the initial registration message, the de-registration counter for the ingress realm of that successful de-registration message is incremented. |
| **Unsuccessful** | Total number of registrations that unsuccessfully de-registered. This counter is incremented once for each unsuccessful de-registration. This counter is based on ingress (received) messages only. In the event an unsuccessful de-registration message is received on a realm that is different than that of the initial registration message, the de-registration counter for the ingress realm of that unsuccessful de-registration message is incremented. |
**show enum**

Telephone Number Mapping (ENUM) is an IETF standard (RFC 2916) for mapping the public telephone number address space into the Domain Name System (DNS). It links a phone number to an Internet address that is published in the DNS system. This allows a number to be reachable anywhere via the best and cheapest route.

The “**show enum**” command displays information about the ENUM Agent. These statistics provide current information only. For associated HDR Group and Group Statistics, see Group: enum-stats (129).

```
AcmePacket> show enum
09:05:20-106

--Queries---- --Successful-- --NotFound-- --Timed Out--
ENUM Agent  Current Total  Current Total  Current Total  Current Total
```

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enum Agent</td>
<td>Name of the ENUM Agent on the Net-Net SD.</td>
</tr>
<tr>
<td>Queries Total</td>
<td>Number of ENUM queries</td>
</tr>
<tr>
<td>Successful Total</td>
<td>Number of successful ENUM queries</td>
</tr>
<tr>
<td>Not Found Total</td>
<td>Number of ENUM queries returning a “not found”</td>
</tr>
<tr>
<td>Times Out Total</td>
<td>Number of ENUM query timeouts</td>
</tr>
</tbody>
</table>
The Media Gateway Control Protocol (MGCP) is an implementation of the MGCP architecture for controlling media gateways on Internet Protocol (IP) networks and the Public Switched Telephone Network (PSTN). It is used to establish, maintain, and terminate calls between two or more endpoints. The Net-Net SD provides MGCP/Network Call Signaling (NCS) Application Layer Gateway (ALG) functionality for MGCP/NCS messages between media gateways and media gateway controllers.

The “show mgcp” command displays information about MGCP. These statistics include MGCP information over Period and Lifetime monitoring spans, as well as information on active MGCP status. For associated HDR Group and Group Statistics, see Group: mgcp-state (131) and Group: mgcp-trans (135).

Note: “MGCP Transaction” displays recent Lifetime monitoring information ONLY.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td></td>
</tr>
<tr>
<td>MGCP Sessions</td>
<td>Number of MGCP sessions</td>
</tr>
<tr>
<td>CA Endpoints</td>
<td>Number of call agent (CA) endpoints</td>
</tr>
<tr>
<td>GW Endpoints</td>
<td>Number of gateway (GW) endpoints</td>
</tr>
<tr>
<td>Media Sessions</td>
<td>Number of media sessions</td>
</tr>
<tr>
<td>Client Trans</td>
<td>Number of client transactions</td>
</tr>
<tr>
<td>Server Trans</td>
<td>Number of server transactions</td>
</tr>
<tr>
<td>Pending MBCD</td>
<td>Number of pending media requests to the Middlebox Control Daemon (MBCD)</td>
</tr>
<tr>
<td>MGCP ALGs</td>
<td>Number of MGCP Application Layer Gateway (ALG) connections</td>
</tr>
<tr>
<td>Free Map Ports</td>
<td>Number of port maps (i.e., IP Ports) available</td>
</tr>
<tr>
<td>Used Map Ports</td>
<td>Number of port maps (i.e., IP Ports) allocated</td>
</tr>
<tr>
<td>MGCP Transactions</td>
<td></td>
</tr>
<tr>
<td>Requests received</td>
<td>Number of requests received</td>
</tr>
<tr>
<td>Responses sent</td>
<td>Number of responses sent</td>
</tr>
<tr>
<td>Duplicates received</td>
<td>Number of duplicate requests received</td>
</tr>
<tr>
<td>Requests sent</td>
<td>Number of requests sent</td>
</tr>
</tbody>
</table>
show mgcp errors

The Media Gateway Control Protocol (MGCP) is an implementation of the MGCP architecture for controlling media gateways on Internet Protocol (IP) networks and the Public Switched Telephone Network (PSTN). It is used to establish, maintain, and terminate calls between two or more endpoints. The Net-Net SD provides MGCP/Network Call Signaling (NCS) Application Layer Gateway (ALG) functionality for MGCP/NCS messages between media gateways and media gateway controllers.

The “show mgcp errors” command displays information about MGCP media event errors. These statistics include MGCP error information over Lifetime monitoring spans only. For associated HDR Group and Group Statistics, see Group: mgcp-media-events (138).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses received</td>
<td>Number of responses received</td>
</tr>
<tr>
<td>Retransmissions sent</td>
<td>Number of retransmissions sent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling SDP Errors</td>
<td>Number of errors encountered in setting up the media session for a session description in a Request or Response which is a Session Description Protocol (SDP) Offer in the Offer/Answer model (RFC 3264)</td>
</tr>
<tr>
<td>Called SDP Errors</td>
<td>Number of errors encountered in setting up the media session for a session description in a Request or Response which is a Session Description Protocol (SDP) Answer in the Offer/Answer model (RFC 3264)</td>
</tr>
<tr>
<td>Drop Media Errors</td>
<td>Number of errors encountered in tearing down the media for a session that is being terminated</td>
</tr>
<tr>
<td>Transaction Errors</td>
<td>Number of errors in continuing the processing of the client transaction associated with the setting up or tearing down of the media session</td>
</tr>
<tr>
<td>Application Errors</td>
<td>Number of miscellaneous errors that are otherwise uncategorized</td>
</tr>
<tr>
<td>Media Exp Events</td>
<td>Number of flow timer expiration notifications received from Middlebox Control Daemon (MBCD).</td>
</tr>
<tr>
<td>Early Media Exp</td>
<td>Number of flow timer expiration notifications received for media sessions that have not been completely set up</td>
</tr>
<tr>
<td>Exp Media Drops</td>
<td>Number of flow timer expiration notifications from the Middlebox Control Daemon (MBCD) that resulted in the termination of the session</td>
</tr>
</tbody>
</table>
The Media Gateway Control Protocol (MGCP) is an implementation of the MGCP architecture for controlling media gateways on Internet Protocol (IP) networks and the Public Switched Telephone Network (PSTN). It is used to establish, maintain, and terminate calls between two or more endpoints. The Net-Net SD provides MGCP/Network Call Signaling (NCS) Application Layer Gateway (ALG) functionality for MGCP/NCS messages between media gateways and media gateway controllers.

The “show mgcp acls” command displays information about MGCP access control lists (ACLs). These statistics include MGCP ACL information over Period and Lifetime monitoring spans, as well as information on active MGCP ACL status. For associated HDR Group and Group Statistics, see Group: mgcp-acl (143).

Note: “ACL Operations” displays recent Lifetime monitoring information ONLY.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGCP ACL Status</td>
<td>Total number of Access Control List (ACL) entries, both trusted and blocked</td>
</tr>
<tr>
<td>Total Entries</td>
<td>Number of trusted ACL entries</td>
</tr>
<tr>
<td>Trusted</td>
<td>Number of blocked ACL entries</td>
</tr>
<tr>
<td>Blocked</td>
<td></td>
</tr>
<tr>
<td>ACL Operations</td>
<td>Number of ACL requests</td>
</tr>
<tr>
<td>ACL Requests</td>
<td>Number of bad messages</td>
</tr>
<tr>
<td>Bad Messages</td>
<td>Number of ACL entry promotions. These are the ACL entries that have</td>
</tr>
<tr>
<td>Promotions</td>
<td>been promoted from untrusted to trusted status</td>
</tr>
<tr>
<td>Demotions</td>
<td>Number of ACL entry demotions. These are the ACL entries that have</td>
</tr>
<tr>
<td>Trust-&gt;Untrust</td>
<td>been demoted from trusted to untrusted.</td>
</tr>
<tr>
<td>Untrust-&gt;Deny</td>
<td>Number of ACL entries demoted from untrusted to deny</td>
</tr>
</tbody>
</table>
show h323

H.323 is a recommendation from the ITU Telecommunication Standardization Sector (ITU-T) that defines the protocols to provide audio-visual communication sessions on any packet network. H.323 addresses call signaling and control, multimedia transport and control, and bandwidth control for point-to-point and multi-point calls. The Net-Net SD responds to and forwards H.323 signaling messages and sets up H.323 sessions based on the Net-Net system configuration.

The “show h323” command displays information about H323 operations. These statistics include H323 information over Period and Lifetime monitoring spans, as well as information on active H323 status. For associated HDR Group and Group Statistics, see Group: h323-stats (145).

**Note:** “H323D Status” displays recent Lifetime monitoring information ONLY.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session Stats</strong></td>
<td></td>
</tr>
<tr>
<td>Incoming Calls</td>
<td>Number of incoming H.323 calls</td>
</tr>
<tr>
<td>Outgoing Calls</td>
<td>Number of outgoing H.323 calls</td>
</tr>
<tr>
<td>Connected Calls</td>
<td>Number of connected calls</td>
</tr>
<tr>
<td>Incoming Channels</td>
<td>Number of established incoming calls</td>
</tr>
<tr>
<td>Outgoing Channels</td>
<td>Number of established outgoing channels</td>
</tr>
<tr>
<td>Contexts</td>
<td>Number of established H.323 contexts (or call terminations)</td>
</tr>
<tr>
<td><strong>H323D Status</strong></td>
<td></td>
</tr>
<tr>
<td>Queued Messages</td>
<td>Number of messages queued</td>
</tr>
<tr>
<td>TPKT Channels</td>
<td>Number of ThroughPacket (TPKT) channels open(ed)</td>
</tr>
<tr>
<td>UDP Channels</td>
<td>Number of User Datagram Protocol (UDP) channels open(ed)</td>
</tr>
<tr>
<td>Load Rate</td>
<td>Total H323 current load rate, in seconds, on the Net-Net SD</td>
</tr>
</tbody>
</table>
CSV File Data Formats

Introduction

When enabled, the HDR collector transmits data to a Comma-Separated-Value (CSV) file. The format of the HDR data in the CSV file is dependant on the type of Group Statistics in the file and the method used to open the file. This appendix describes the data formats of the HDR data in the CSV file.

Methods for Display and Format of CSV File Contents

The HDR collector transmits data to a CSV file in standard format. Each file is formatted as `<Unix timestamp>.csv` (for example, 1302041977.csv). Within the file, each record also has an associated record timestamp. The *filename timestamp* is the time that the CSV file was create. The *record timestamp* is the window of time that the HDR collector used to collect the data. For more information on windows of time, see [Windows of Time (40)](#).

When the HDR collector has created a CSV file, you can open the file in any of the following ways:

- using the UNIX command “`cat <timestamp>.csv`” at the UNIX root prompt (displays raw data)
- using the Microsoft command “`type <timestamp>.csv`” at a Microsoft® Windows DOS command prompt (displays raw data)
- using a rendering agent application (such as a Microsoft® application)

The following examples show each of these methods.

Example 1 - Using the UNIX Command

The following shows the use of the “`cat <timestamp>.csv`” UNIX command to display the contents of a “system” group CSV file in raw data format.

```
[AcmePacket]$ cat 1302041977.csv
TimeStamp,CPU Utilization,Memory Utilization,Health Score,Redundancy State,Signaling Sessions,Signaling Rate (CPS),CAM Utilization (NAT),Cam Utilization (ARP),I2C Bus State,License Capacity,Current Cached SIP Local Contact Registrations,Current MGCP Public Endpoint Gateway Registrations,Current H323 Number of Registrations,Application Load Rate
1302041977,39,22,50,active,0,0,0,online,0,0,0,39
1302042037,100,22,50,active,0,0,0,online,0,0,0,100
```
The following shows the use of the “**type <timestamp>.csv**” Microsoft® Windows DOS command to display the contents of a “sip-sessions” group CSV file in raw data format.

C:\AcmePacket> type 1301702284.csv

Timestamp, Sessions, Sessions Initial, Sessions Early, Sessions Established, Sessions Terminated, Dialogs, Dialogs Early, Dialogs Confirmed, Dialogs Terminated
1301702288, 45, 45, 28, 35, 10, 35, 35, 35, 0
1301702456, 35, 35, 21, 35, 0, 0, 0, 0, 0

The formats in the examples above pertain to **ALL** of the HDR groups specified in [HDR Groups and Group Statistics](#) **EXCEPT** the “sip-invite” Group. For information on the “sip-invite” HDR data format in the CSV file, see the next section.

### “Sip-invite” Format of HDR Data in CSV File

The HDR data for the “sip-invite” group displays on mutiple lines in the CSV file. The first HDR record displays the list of statistics in column format. The second HDR record also displays statistics in column format, and so on. Both client and server totals are included in the data.

The following shows an example of the “sip-invite” group CSV file for a client and a server displayed in a Microsoft DOS window format.

C:\AcmePacket> type 130204198.csv

Timestamp, Message/Event, Server Totals, Client Totals
1301702288, INVITE Requests, 0, 0
1301702288, Retransmission, 0, 0
1301702288, 100 Trying, 0, 0
1301702288, 180 Ringing, 0, 0
1301702288, 181 Forwarded, 0, 0
1301702288, 183 Progress, 0, 0
<table>
<thead>
<tr>
<th>Filename</th>
<th>Timestamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>1301702288</td>
<td>1xxx Provisional,0,0</td>
</tr>
<tr>
<td>1301702288</td>
<td>200 OK,0,0</td>
</tr>
<tr>
<td>1301702288</td>
<td>202 Accepted,0,0</td>
</tr>
<tr>
<td>1301702288</td>
<td>2xx Success,0,0</td>
</tr>
<tr>
<td>1301702288</td>
<td>30x Moved,0,0</td>
</tr>
<tr>
<td>1301702288</td>
<td>Transaction Timeouts,0</td>
</tr>
<tr>
<td>1301702288</td>
<td>Locally Throttled,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>INVITE Requests,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>Retransmission,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>100 Trying,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>180 Ringing,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>181 Forwarded,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>183 Progress,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>1xxx Provisional,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>200 OK,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>202 Accepted,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>2xx Success,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>30x Moved,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>Response Retrans,0,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>Transaction Timeouts,0</td>
</tr>
<tr>
<td>1301702348</td>
<td>Locally Throttled,0</td>
</tr>
</tbody>
</table>
The following shows an example of the “sip-invite” group CSV file for a client and a server displayed in a Microsoft rendering application format.

**Data Caveats**

For those who wish to extract data from HDR CSVs, please note the following:

- Although SNMP presents enumerated fields as integers, HDR translates this data presenting the applicable string in the CSV.

- In some cases, no data is available for a given record. An example of this is a record for an agent that is out of service during the collection window. For these cases, HDR presents only the timestamp and a single field indicating that no data is available, as shown below:

```
enum-stats:
TimeStamp,ENUM Agent,Queries Total,Successful Total,Not Found Total,Timeout Total
1314110727,no data available
```