

# Command-Line Interface (CLI)

Version 7.2

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| Document Name   |
|---|
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| <a href="#">Mediant Cloud Edition SBC Installation Manual</a>                       |

## Document Revision Record

| LTRT  | Description  |
|-------|--|
| 17922 | Initial document release for Ver. 7.2.   |
| 17924 | System-level commands added; Troubleshoot-level commands added; formatting and typos.  |
| 17925 | Network-level commands added.  |
| 17928 | CLI commands, paths and descriptions updated for patch version 7.2.150.  |
| 17931 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.154.007</li> <li>■ New commands: show voip calls statistics siprec; default-window-height;</li> </ul> |

| LTRT  | Description   |
|-------|---|
|       | <p>local-held-tone-index; local-ringback-tone-index; sbc-send-multiple-dtmf-methods; sbc-user-stickiness; publication-ip-group-id; additional-udp-ports</p> <ul style="list-style-type: none"> <li>■ sce (removed); rsilence-compression-mode (removed); miscellaneous formatting; basic and enable mode changed to Basic User and Privileged User mode, respectively</li> </ul>  |
| 17933 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.156.009</li> <li>■ New commands: cli-session-limit; public-key; qoe call-flow-report; siprec-time-stamp; condition-name</li> <li>■ debug persistent-log show ('sip' removed); control-pass-via-snmp (removed); nat-ip-addr (removed)</li> </ul>  |
| 17935 | <ul style="list-style-type: none"> <li>■ Updated to ver. 7.20A.158.009</li> <li>■ Updated commands: show high-availability; ping (hostname); cdr (call-duration-units, cdr-file-name, compression-format, rotation-period); high-availability settings (network-monitor-enabled; network-monitor-threshold removed - net-mon-ping-retries, net-mon-ping-timeout, net-mon-source-interface); sip-definition account (reg-by-served-ipg-status, udp-port-assignment)</li> </ul>   |
| 17936 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.200.019</li> <li>■ New: tail; show network http-proxy; clear voip ids blacklist; admin streaming; copy configuration-pkg; copy nginx-conf-files; automatic-update mt-firmware   vmt-firmware; sbc-performance-settings; http-proxy debug-level; http-proxy directive-sets; http-proxy dns-primary-server; http-proxy dns-secondary-server; http-proxy http-proxy-app; http-proxy upstream-host   upstream-group; public-key display; alternative-name-add; alternative-name-clear; sbc-enhanced-plc; max-streaming-calls; cac-profile; external-media-source; cac-profile; user-info</li> <li>■ Updated: show voip proxy sets status; write; write factory keep-network-and-users-configuration; http-proxy</li> </ul> |
| 17938 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.202.112</li> <li>■ New commands: filter commands descending, first &lt;x&gt;, last &lt;x&gt;, range &lt;x-y&gt;; show activity-log; show admin state; admin state lock   unlock; copy mt-firmware   vmc-firmware; ystem-snapshot; automatic-update &gt; aupd-graceful-shutdown   vmc-firmware; floating-license; time-zone-format; dhcp-server server &gt; name; configure network &gt; mtc; fxs-callid-cat-brazil</li> <li>■ Updates: clear voip ids blacklist entry; "prefix" changed to "pattern"; parent-child tables structure update</li> </ul>  |

| LTRT  | Description  |
|-------|--|
| 17944 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.204.115</li> <li>■ New commands: show system floating-license; show system floating-license reports; output-format; configure troubleshoot &gt; max-startup-fail-attempts; max-startup-fail-attempts; sbc settings &gt; sbc-routing-timeout / uri-comparison-excluded-params</li> <li>■ Updated commands: admin state lock disconnect-client-connections; copy redundant-debug-file; system-snapshot rename; cli-settings &gt; ssh-redundant-proxy-port; http-login-needed (removed); http-num-sockets (removed); http-services &gt; http-policy-between-groups; http-services &gt; group-id / host-priority-in-group; cdr &gt; rest-cdr-http-server / rest-cdr-report-level; ip-group &gt; proxy-keepalive-use-ipg; proxy-set &gt; priority / weight; sbc classification &gt; ip-group-selection / ip-group-tag-name; enable-sip-rec (removed); sip-definition sip-recording settings &gt; siprec-metadata-format; sip-interface &gt; additional-udp-ports-mode / call-setup-rules-set-id</li> </ul> |
| 17945 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.204.108</li> <li>■ New commands: isdn-ignore-18x-without-sdp; isdn-send-progress-for-te; force-generate-to-tag</li> </ul>   |
| 17947 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.250.003</li> <li>■ Updated sections: Privileged User Mode (user levels, RADIUS-LDAP)</li> <li>■ New commands: debug exception-syslog-history; debug reset-syslog-history; ping (tos traffic-class); traceroute (proto); ids global-parameters (enable-ids on); automatic-update &gt; credentials; rules-set-name; ssh-redundant-device-port; oauth-http-service; sbc-server-auth-type; p-preferred-id-list; account-name; re-register-on-invite-failure</li> <li>■ Updated commands: trace-level (notes); copy ini-file (replaced voice-configuration); debug debug-recording; pstn-debug (replaced debug pstn-debug); logging-filters (description); alt-res-name; show system temperature; registrar-stickness; charge-code; message (path); inbound-map-set (path); outbound-map-set (path)</li> </ul>   |
| 17949 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.252.011</li> <li>■ New commands: snmp alarm-customization; qoe additional-parameters; call-end-cdr-sip-reasons-filter; call-end-cdr-zero-duration-filter; export-csv-to; import-csv-from; fxs-offhook-timeout-alarm; http-login-needed (http-services); verify-cert-subject-name (http-services); key-port-configure; obscure-password-mode; hostname (network-settings); keep-alive-time / secondary-server-name / tls / verify-certificate / verify-certificate-subject-name (qoe qoe-settings); operational-state-delay; history at-start show</li> </ul>  |

| LTRT  | Description   |
|-------|---|
|       | <p>system utilization; debug-level-high-threshold; log-level; (test-call test-call-table) allowed-audio-coders-group-name / allowed-coders-mode / media-security-mode / offered-audio-coders-group-name / play-dtmf-method / play-tone-index; dedicated-connection-mode</p> <ul style="list-style-type: none"> <li>■ Updated commands: verify-cert-subject-name (name change); message call-setup-rules ("none" added to action-type / request-key / request-target / request-type with http-post-notify and http-post-query; password-obscurity</li> </ul>   |
| 17952 | <p>New commands: cdr-servers-bulk-size; cdr-servers-send-period; cdr-server (config-troubleshoot)</p>   |
| 17953 | <p>Updated commands (typo): graceful command added to reload without-saving command</p>   |
| 17955 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.254.202</li> <li>■ New commands: topology-hiding-header-list; call-failure-internal-reasons; call-failure-sip-reasons; call-success-internal-reasons; call-success-sip-reasons; call-transferred-after-connect; call-transferred-before-connect; no-user-response-after-connect; no-user-response-before-connect; video-rec-sync-timeout; mfr1-detector-enable; dtmf-detector-enable; alt-route-reasons-set; alt-route-reasons-rules; short-call-seconds; mf-transport-type; sbc-msrp-empty-message-format; sbc-msrp-offer-setup-role; sbc-msrp-reinvite-update-supp; data-diffserv; web-password-change-interval; heartbeat-interval; initial-rto; minimum-rto; maximum-rto; max-path-retransmit; max-association-retransmit; max-data-tx-burst; max-data-chunks-before-sack</li> </ul> |
| 17956 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.254.375</li> <li>■ New commands: web-password-change-interval</li> <li>■ Updated commands: hotline-dia-ltone-duration (typo); energy-detector-cmd (removed); format-dst-phone-number (removed); qsig-tunneling-mode (description); nel open only fo Rx (removed)</li> </ul>  |
| 17959 | <ul style="list-style-type: none"> <li>■ Updated sections: Accessing the CLI (miscellaneous)</li> <li>■ Updated commands: Answer Detector commands removed (answer-detector-activativity-delay, answer-detector-enable, answer-detector-redirect, answer-detector-sensitivity, answer-detector-silence-time); debug ha; show running config (Local Users table)</li> <li>■ New commands: tls-renegotiation; min-web-password-len; internal-media-realm-name; teams-media-optimization-handling; format-dst-phone-number</li> </ul>  |

| LTRT  | Description   |
|-------|---|
| 17962 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.256.024</li> <li>■ Updated commands: rest-message-type (new value); proxy-enable-keep-alive (new value); topology-hiding-headerlist (removed)</li> <li>■ New commands: send-screen-to-isdn-1; send-screen-to-isdn-2; push-notification-servers; pns-reminderperiod; pns-registertimeout; remote-monitoring; remote-monitor-reporting-period; remote-monitor-status; remote-monitor-alarms; remote-monitor-kpi; remote-monitor-registration; sipsource-host-name; sip-topology-hiding-mode; reserve-dsp-onsdp-offer; teams-mo-initial-behavior</li> </ul> |
| 17963 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.256.366</li> <li>■ Updated commands: floating-license (flex); external-media-source (typo); ntp (example typo)</li> <li>■ New commands: ovoc-tunnel-settings (address, path, username, password, secured, verify-server)</li> </ul>  |
| 17964 | <ul style="list-style-type: none"> <li>■ Updated commands: optional values added for ISDN commands</li> <li>■ New commands: user-defined-failure-pm; metering-client</li> </ul>   |
| 17966 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.256.713</li> <li>■ Updated commands: dh-key-size (3072 added); forking-handling; tls-version (TLS 1.3)</li> <li>■ New commands: cdr-history-privacy; fxo-voice-delay-on-200ok; ciphers-client-tls13; ciphers-server-tls13; key-exchange-groups</li> </ul>  |
| 17967 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.258.006</li> <li>■ Updated commands: dh-key-size (4096 removed); teams-media-optimization-handling (name change); teams-mo-initial-behavior (name change)</li> <li>■ New commands: preferred-sourceinterface-name</li> </ul>   |
| 17969 | <ul style="list-style-type: none"> <li>■ Updated commands: ip-group (arm option added); tls-version (missing TLS1.3); amd-timeout (typo)</li> <li>■ New commands: sbc-remove-sips-non-sec-transp</li> </ul>   |
| 17972 | <ul style="list-style-type: none"> <li>■ New commands: show debug-file; dual-powersupply-supported; show system cpu-util history; cid-not-included-notification; deny-access-on-fail-count; DenyAuthenticationTimer; tls-root-cert-incr; play-tone-on-connect-failure-behavior; sbc-receive-multiple-dtmf-methods</li> </ul>  |

| LTRT  | Description   |
|-------|---|
|       | <ul style="list-style-type: none"> <li>■ Updated commands: show voip calls active (siprec added)</li> </ul>   |
| 17975 | <ul style="list-style-type: none"> <li>■ New commands: mc-profile; where (table search); teams-direct-routing-mode; used-by-routing-server (Media Realm); preserve-multipart-content-type; dtls-time-between-transmissions; sbc-renumber-mid; use-conn-sdpes-or-media</li> <li>■ Updated commands: https-cipher-string (removed); fax-sig-method (value)</li> </ul>   |
| 17976 | <ul style="list-style-type: none"> <li>■ New commands: sbc-terminate-options</li> <li>■ Updated commands: ping (Ctrl+C)</li> </ul>  |
| 17982 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.258.661</li> <li>■ New commands: ignore-auth-stale; isdn-ntt-noid-interworking-mode (pri); lock graceful forever; account-registrar-avoidance-time; handle-isdn-facility-on-disconnect</li> <li>■ Updated commands: welcome-msg (display); register-by-served-tg-status; date-header-time-sync; date-header-time-sync-interval; session-exp-method (3); registrar-search-mode (new value)</li> </ul> |
| 17985 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.258.750</li> <li>■ New commands: sync-ims-accounts</li> <li>■ Updated commands: bus-type (removed); TDMBusClockSource (values updated); sbc-no-alert-timeout (typo)</li> </ul>   |
| 17992 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.20A.258.920</li> <li>■ Updated commands: syslog-servers (mode values); crypto (max. IPSec tunnels)</li> <li>■ New commands: sbc-allow-only-negotiated-pt</li> </ul>  |
| 17998 | <ul style="list-style-type: none"> <li>■ Updated to LTS Ver. 7.20A.259.306 (7.2.258-16)</li> <li>■ Updated commands: traceroute (syntax); enable-did; secondary-server-name (removed from qoe-settings)</li> <li>■ New commands: show data bridge info; auth-password (replaces password-4-auth); reload; verify-subject-Name; description (access-list)</li> </ul>   |
| 18009 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.26A.356.174 (M9.1)</li> <li>■ New commands: dyn-dns-server; ipv6 enable; ipv6 address autoconfig extnd-prfx-lan; vrrp &lt;id&gt; ipv6; wan-copper-fiber-mode; ntp-dependency; gw-ignore-multiple-answers</li> </ul>  |



| LTRT  | Description  |
|-------|--|
| 18011 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.26A.356.459 (M10)</li> <li>■ New commands: fxs-emg-call-for-unreg-port; ipv6 dhcp-server vrrp_id; router clat; sim disable-nr5g-mode; apn (cell-profile-config); ip sla responder udp-echo; show data ip sla responder; configuration-pkg (auto-update); default-configuration-package-password (auto-update); show running-config data static-routes; show running-config data tracks; password-history-visible; clear history</li> <li>■ Updated commands: mode ppp (removed); ip dhcp-client request (160); copy configuration-pkg (encrypted / certificates); classification-fail-response-type (typo)</li> </ul>   |
| 18016 | <ul style="list-style-type: none"> <li>■ Updated to Ver. 7.26A.356.630 (M11)</li> <li>■ New commands: debug dsl; debug cellular; direct-exec; nslookup inet.me; debug get-global-ip; ipv6 nd ra propagate-mtu; dynamic-dns service custom</li> <li>■ Updated commands: debug usb-3g cellular (removed); qos match-map (typo); hostname (CLI path); password (Accounts table re question mark); sim_lock_status (renamed sim-lock-status); sim_pin_code_change (renamed sim-pin-code-change); sim_pin_code_unlock (renamed sim-pin-code-unlock); sim_puk_code_unlock (renamed sim-puk-code-unlock); audc_sw_ver (renamed audc-sw-ver); firmware_rev_id (renamed firmware-rev-id); firmware_version (renamed firmware-version); sim_iccid (renamed sim-iccid)</li> </ul> |
| 18017 | <ul style="list-style-type: none"> <li>■ Updated commands: qos match-map (typo); hostname (CLI path); password (Accounts table re question mark); classification-fail-response-type (typo)</li> </ul>  |

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# 1 Introduction

This document describes the Command-Line Interface (CLI) commands for configuring, monitoring and diagnosing AudioCodes Media Gateways and Session Border Controllers (SBC).



- For a detailed description of each command concerned with configuration, refer to the device's *User's Manual*.
- Some AudioCodes products referred to in this document may not have been released in Version 7.2. Therefore, ignore commands that are applicable only to these specific products. For a list of the products released in Version 7.2, refer to the *Release Notes* of the SBC and Media Gateway series, which can be downloaded from AudioCodes [website](#).

# Part I

## Getting Started

## 2 Accessing the CLI

You can access the device's CLI through the following:

- **RS-232:** Device's that are appliances (hardware) can be accessed through RS-232 by connecting a VT100 terminal to the device's console (serial) port or using a terminal emulation program (e.g., HyperTerminal®) with a PC. Once you have connected via a VT100 terminal and started the emulation program, set the program settings as follows:

- 115200 baud rate
- 8 data bits
- No parity
- 1 stop bit
- No flow control

For cabling your device's RS-232 interface (console port), refer to the device's *User's Manual* or *Hardware Installation Manual*.

- **SSH:** For remote access, the device can be accessed through the SSH protocol using third-party SSH client software. A popular freeware SSH client software is [PuTTY](#). By default, SSH access is disabled. To enable SSH, enter the following command set:

```
# configure system
(config-system)# cli-settings
(cli-settings)# ssh on
```

- **Telnet:** For remote access, the device can be accessed through the Telnet protocol using third-party Telnet client software (e.g., PuTTY). Most Windows® computers come with a program called Telnet, which can be activated via the Windows command line:

```
> telnet <Device's OAMP IP Address>
Welcome to ...
Username: <Username>
Password: <Password>
```



- When accessing the device's CLI, you are prompted to enter your management username and password. The credentials are common to all the device's management interfaces (e.g., Web).
- The default username and password of the Administrator user level is **Admin** and **Admin**, respectively.
- The default username and password of the Monitor user level is **User** and **User**, respectively.

## 3 CLI Structure

This section describes the CLI structure.

### CLI Command Modes

Before you begin your CLI session, it is recommended that you familiarize yourself with the CLI command modes. Each mode provides different levels of access to commands, as described below.

#### Basic User Mode

The Basic User command mode is accessed upon a successful CLI login authentication. Any user level can access the mode. The commands available under this mode are limited and only allow you to view information (using the show commands) and activate various debugging capabilities.

```
Welcome to ...
Username: Admin
Password: <Password>
>
```

The Basic User mode prompt is ">".

#### Privileged User Mode

The Privileged User command mode is the high-level tier in the command hierarchy, one step up from the Basic User mode. A password is required to access the mode **after** you have accessed the Basic User mode. The mode allows you to configure all the device's settings. Once you have logged in to the device, the Privileged User mode is accessed by entering the following commands:

> **enable**

```
Password: <Privileged User mode password>
#
```

The Privileged User mode prompt is "#".



- Only management users with Security Administrator or Master user levels can access the Privileged User mode.
- The default password for accessing the Privileged User mode is "Admin" (case-sensitive). To change this password, use the privilege-password command.
- If you enable RADIUS- or LDAP-based user login authentication, when users with Security Administrator privilege level log in to the device's CLI, they are automatically given access to the Privileged User mode.



The Privileged User mode groups the configuration commands under the following configuration command sets:

| Configuration Command Sets | Description   |
|----------------------------|---|
| Network                    | <p>Contains IP network-related commands (e.g., interface and dhcp-server).</p> <p>To access this command set:</p> <pre># configure network (config-network)#</pre>                    |
| System                     | <p>Contains system-related commands (e.g., clock, snmp settings, and web).</p> <p>To access this command set:</p> <pre># configure system (config-system)#</pre>                      |
| Troubleshoot               | <p>Contains troubleshooting-related commands (e.g., syslog, logging and test-call).</p> <p>To access this command set:</p> <pre># configure troubleshoot (config-troubleshoot)#</pre> |
| VoIP                       | <p>Contains voice-over-IP (VoIP) related commands (e.g., ip-group, sbc, and media).</p> <p>To access this command set:</p> <pre># configure voip (config-voip)#</pre>                 |

## Switching between Command Modes

To switch between command modes, use the following commands on the root-level prompt:

- Switching from Basic User to Privileged User mode:

```
> enable
Password: <Password>
#
```

- Switching from Privileged User to Basic User mode:

```
# disable
>
```

## CLI Configuration Wizard

AudioCodes CLI Wizard provides a quick-and-easy tool for configuring your device with basic, initial management settings:

- Login passwords of the Security Administrator ("Admin") and User Monitor user accounts for accessing the device's embedded Web and CLI servers.
- IP network of the operations, administration, maintenance, and provisioning (OAMP) interface
- SNMP community strings (read-only and read-write)

The utility is typically used for first-time configuration of the device and is performed through a direct RS-232 serial cable connection with a computer. Configuration is done using the device's CLI. Once configured through the utility, you can access the device's management interface through the IP network.

To access the CLI Wizard, enter the following command at the root-prompt level:

```
# configure-wizard
```

For more information on how to use this utility, refer to the CLI Wizard User's Guide.

## CLI Shortcut Keys

The device's CLI supports the following shortcut keys to facilitate configuration.

**Table 3-1: CLI Shortcut Keys**

| Shortcut Key | Description  |
|--------------|--|
| ↑            | (Up arrow key) Retypes the previously entered command. Continuing to press the key cycles through all commands entered, starting with the most recent command.     |
| <b>Tab</b>   | Pressing the key after entering a partial, but unique command automatically completes the command name.  |
| <b>?</b>     | (Question mark) Can be used for the following: <ul style="list-style-type: none"> <li>■ To display commands pertaining to the command set, for example:</li> </ul> |

| Shortcut Key | Description  |
|--------------|--|
|              | <pre>(config-network)# ?</pre>   |
|              | <pre>access-list Network access list</pre>   |
|              | <pre>dhcp-server DHCP server configuration</pre>   |
|              | <pre>dns DNS configuration</pre>   |
|              | <pre>...</pre>   |
|              | <p>■ To display commands beginning with certain letters. Enter the letter followed by the "?" mark (no space), for example:</p>  |
|              | <pre>(config-network)# d?</pre>  |
|              | <pre>dhcp-server DHCP server configuration</pre>   |
|              | <pre>dns DNS configuration</pre>   |
|              | <p>■ To display a description of a command. Enter the command followed by the "?" mark (no space), for example:</p>  |
|              | <pre>(config-network)#dns srv2ip?</pre>  |
|              | <pre>srv2ip SRV to IP internal table</pre>   |
|              | <p>■ To display all subcommands for the current command. Enter the command, a space, and then the "?" mark, for example:</p>   |
|              | <pre>(config-network)# dns srv2ip ?</pre>  |
|              | <pre>[0-9] index</pre> <p>If one of the listed items after running the "?" mark is "&lt;cr&gt;", a carriage return (Enter) can be entered to run the command, for example:</p> |

| Shortcut Key     | Description  |
|------------------|--|
|                  | <pre>show active-alarms ?</pre> <pre>&lt;cr&gt;</pre>  |
| <b>Ctrl + A</b>  | Moves the cursor to the beginning of the command line.   |
| <b>Ctrl + E</b>  | Moves the cursor to the end of the command line.   |
| <b>Ctrl + U</b>  | Deletes all characters on the command line.  |
| <b>Space Bar</b> | When pressed after "--MORE--" that appears at the end of a displayed list, the next items are displayed. |

## Common CLI Commands

The table below describes common CLI commands.

**Table 3-2: Common CLI Commands**

| Command  | Description   |
|----------|---|
| <filter> | <p>Filters a command's output by matching the filter string or expression, and thereby displaying only what you need. The syntax includes the command, the vertical bar ( ) and the filter expression:</p> <pre>&lt;command&gt; &lt;filter string or expression&gt;</pre> <p>The filter expression can be:</p> <ul style="list-style-type: none"> <li>■ <b>include &lt;string&gt;</b>: Filters the output to display only lines with the string, for example: <pre># show running-config include sbc routing ip2ip-routing 1 sbc routing ip2ip-routing 1</pre> </li> <li>■ <b>exclude &lt;string&gt;</b>: Filters the output to display all lines except the string.</li> <li>■ <b>grep &lt;options&gt; &lt;expression&gt;</b>: Filters the output according to common options ("-v" and "-w") of the global regular expression print ("grep") UNIX utility.</li> </ul> |

| Command | Description   |
|---------|---|
|         | <p>✓ "-v": Excludes all output lines that match the regular expression. If the "-v" option is not specified, all output lines matching the regular expression are displayed.</p> <p>✓ "-w": Filters the output lines to display only lines matching whole words form of the regular expression.</p> <p>For example:</p> <pre>show system version grep Number ;Serial Number: 2239835;Slot Number: 1</pre> <ul style="list-style-type: none"> <li>■ <b>egrep &lt;expression&gt;</b>: Filters the output according to common options of the "egrep" Unix utility.</li> <li>■ <b>begin &lt;string&gt;</b>: Filters the output to display all lines starting with the matched string, for example: <pre># show running-config begin troubleshoot configure troubleshoot syslog syslog on syslog-ip 10.8.94.236 activate exit activate exit</pre> </li> <li>■ <b>between &lt;string 1&gt; &lt;string 2&gt;</b>: Filters the output to display only lines located between the matched string 1 (top line) and string 2 (last line). If a string contains a space(s), enclose the string in double quotes. For example, the string, sbc malicious-signature-database 0 contains spaces and is therefore enclosed in double quotes: <pre># show running-config between "sbc malicious-signature-database 0" exit sbc malicious-signature-database 0 name "SIPVicious" pattern "Header.User-Agent.content prefix</pre> </li> </ul> |

| Command                                   | Description  |
|---|--|
|   | <pre>'friendly-scanner'   activate   exit</pre> <ul style="list-style-type: none"> <li>■ <b>count:</b> Displays the number of output lines.</li> </ul>   |
| <pre>  tail &lt;number of lines&gt;</pre> | <p>Filters the command output to display a specified number of lines from the end of the output. The syntax includes the command of whose output you want to filter, the vertical bar ( ) followed by the tail command, and then the number of lines to display:</p> <pre>&lt;command&gt;   tail &lt;number of lines (1-1000) to display&gt;</pre> <p>Below shows an example where the last five lines of the show running-config command output are displayed:</p> <pre># show running-config   tail 5   testcall-id "555"   activate   exit   activate   exit</pre>  |
| <pre>activate</pre>                       | <p>Applies (activates) the command setting.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>■ Offline configuration changes require a reset of the device. A reset can be performed at the end of your configuration changes. A required reset is indicated by an asterisk (*) before the command prompt. To reset the device, use the <code>reload now</code> command (resetting the device by powering off-on the device or by pressing the reset pinhole button will not preserve your new configuration).</li> <li>■ The command is applicable to SBC and Gateway functionality.</li> </ul> |
| <pre>defaults</pre>                       | <p>Restores the configuration of the currently accessed command set to factory default settings. For example, the below restores the Automatic Update configuration to</p>   |

| Command    | Description   |
|------------|---|
|            | factory defaults:<br><pre>(auto-update)# defaults</pre>   |
| descending | Displays the command output in descending order, for example:<br><pre># show voip calls active descending</pre> <p><b>Note:</b> Currently, this filter is supported only by certain show commands.</p>  |
| display    | Displays the configuration of current configuration set.  |
| do         | Runs a command from another unrelated command without exiting the current command set. For example, the command to display all active alarms is run from the current command set for clock settings:<br><pre>(clock)# do show active-alarms</pre> <p>The example below runs the <code>show running-config</code> command (which displays device configuration) from the current command set for clock settings:<br/> <pre>(clock)# do show running-config</pre></p> |
| exit       | Leaves the current command-set and returns one level up. For online parameters, if the configuration was changed and no <b>activate</b> command was entered, the <b>exit</b> command applies the <b>activate</b> command automatically. If entered on the top level, the session ends.<br><pre>(config-system)# exit # exit Connection to host lost.</pre>  |
| first <x>  | Filters the command output to display the first x number of entries. For example, the following displays only the first two entries:<br><pre># show voip calls history sbc first 2</pre>  |

| Command     | Description  |
|-------------|--|
|             | <b>Note:</b> Currently, this filter is supported only by certain show commands.  |
| help        | Displays a short help how-to string.   |
| history     | Displays a list of previously run commands in the current CLI session in the command history buffer. You can also clear the command history buffer, using the <code>clear history</code> command.  |
| last <x>    | Filters the command output to display the last x number of entries. For example, the following displays only the last four entries:<br><br><pre># show voip calls active last 4</pre> <b>Note:</b> Currently, this filter is supported only by certain show commands.  |
| list        | Displays a list of the available commands list of the current command-set.   |
| no          | Undoes an issued command, disables a feature or deletes a table row. Enter the <b>no</b> before the command, for example:<br><br><ul style="list-style-type: none"> <li>■ Disables the debug log feature:<br/><br/> <pre># no debug log</pre> </li> <li>■ Deletes the table row at Index 2:<br/><br/> <pre>&lt;config-voip&gt;# no sbc routing ip2ip-routing 2</pre> </li> </ul> |
| pwd         | Displays the full path to the current CLI command, for example:<br><br><pre>(auto-update)# pwd /config-system/auto-update</pre>  |
| quit        | Terminates the CLI session.  |
| range <x-y> | Filters the command output to display a range of entries from x to y. For example, the following displays only the   |



| Command | Description   |
|---------|---|
|         | entries from 1 to 4:<br><pre># show voip calls active range 1-4</pre> <p><b>Note:</b> Currently, this filter is supported only by certain show commands.</p>   |
| where   | Searches a table for a row index that contains a specific value for a specific table column. Use the following format:<br><Table> where <Column Name> <Value><br>The following example searches the table for a row index whose table column 'name' contains the value "ITSP":<br><pre>(config-voip)# ip-group where name ITSP (ip-group-1)#</pre> |

## Working with Tables

This section describes general commands for configuring tables in the CLI.

### Adding New Rows

When you add a new row to a table, it is automatically assigned to the next consecutive, available index.

---

#### Syntax

```
# <table name> new
```

---

#### Command Mode

Privileged User

---

#### Example

If the Accounts table is configured with three existing rows (account-0, account-1, and account-2) and a new row is added, account-3 is automatically created and its configuration mode is accessed:

```
(config-voip)# sip-definition account new
(account-3)#
```

## Adding New Rows to Specific Indices

You can add a new row to any specific index number in the table, even if a row has already been configured for that index. The row that was assigned that index is incremented to the next consecutive index number, as well as all the index rows listed below it in the table.

---

### Syntax

```
# <table name> <row index> insert
```

---

### Note

The command is applicable only to the following tables:

- SBC:
  - IP-to-IP Routing
  - Classification
  - Message Condition
  - IP-to-IP Inbound Manipulation
  - IP-to-IP Outbound Manipulation
- SBC and Gateway:
  - Message Manipulations
- Gateway:
  - Destination Phone Number Manipulation Tables for IP-to-Tel / Tel-to-IP Calls
  - Calling Name Manipulation Tables for IP-to-Tel / Tel-to-IP Calls
  - Source Phone Number Manipulation Tables IP-to-Tel / Tel-to-IP Calls
  - Redirect Number Tel-to-IP

---

### Command Mode

Privileged User

---

### Example

If the IP-to-IP Routing table is configured with three existing rows (ip2ip-routing-0, ip2ip-routing-1, and ip2ip-routing-2) and a new row is added at Index 1, the previous ip2ip-routing-1 becomes ip2ip-routing-2, the previous ip2ip-routing-2 becomes ip2ip-routing-3, and so on:

```
(config-voip)# sbc routing ip2ip routing 1 insert  
(ip2ip-routing-1)#
```

## Changing Index Position of Rows

You can change the position (index) of a table row, by moving it one row up or one row down in the table.

---

### Syntax

```
# <table name> <row index> move-up|move-down
```

---

### Note

The command is applicable only to certain tables.

---

### Command Mode

Privileged User

---

### Example

Moving row at Index 1 down to Index 2 in the IP-to-IP Routing table:

```
<config-voip># sbc routing ip2ip-routing 1 move-down
```

## Deleting Table Rows

You can delete a specific table row, by using the no command.

---

### Syntax

```
# no <table name> <row index to delete>
```

---

### Command Mode

Privileged User

---

### Example

This example deletes a table row at Index 2 in the IP-to-IP Routing table:

```
<config-voip># no sbc routing ip2ip-routing 2
```

## CLI Error Messages

The table below lists common error messages displayed in the CLI.

**Table 3-3: CLI Error Messages**

| Message              | Description   |
|----------------------|---|
| "Invalid command"    | The command may be invalid in the current command mode or you may not have entered sufficient characters for the command to be recognized.  |
| "Incomplete command" | You may not have entered all of the pertinent information required to make the command valid. To view available Command associated with the command, enter a question mark (?) on the command line.   |
| "Invalid argument"   | <p>You have entered an invalid value (argument) for the command.</p> <p>For CLI commands whose value can be any integer within a specific range of numbers, if you enter a number that is outside of the range, the error message also displays the valid range, as shown in the following example:</p> <pre>(cli-settings)# window-height 70000 Invalid argument "70000". Value must be in range [0-65535]</pre> |

## Typographical Conventions

This document uses the following typographical conventions:

**Table 3-4: Typographical Conventions**

| Convention | Description   |
|------------|---|
| bold font  | <p>Bold text indicates commands and keywords, for example:</p> <pre>ping 10.4.0.1 timeout 10</pre>                          |
| < ... >    | Text enclosed by angled brackets indicates Command for which you need to enter a value (digits or characters), for example: |

| Convention | Description   |
|------------|---|
|            | <pre>ping &lt;IP Address&gt; timeout &lt;Duration&gt;</pre>  |
|            | <p>The pipeline (or vertical bar) indicates a choice between commands or keywords, for example:</p> <pre># reload {if-needed now without-saving}</pre>  |
| [...]      | <p>Keywords or command enclosed by square brackets indicate optional commands (i.e., not mandatory). This example shows two optional commands, size and repeat:</p> <pre>ping &lt;IP Address&gt; timeout &lt;Duration&gt; [size &lt;Max Packet Size&gt;] [repeat &lt;1-300&gt;]</pre> |
| {...}      | <p>Keywords or command enclosed by curly brackets (braces) indicate a required (mandatory) choice, for example:</p> <pre># reload {if-needed now without-saving}</pre>   |

# Part II

## Root-Level Commands

## 4 Introduction

This part describes commands located at the root level, which includes the following main commands:

| Command              | Description   |
|----------------------|---|
| debug                | See <a href="#">Debug Commands</a> on page 20         |
| show                 | See <a href="#">Show Commands</a> on page 46          |
| clear                | See <a href="#">Clear Commands</a> on page 101        |
| Maintenance commands | See <a href="#">General Root Commands</a> on page 108 |

## 5 Debug Commands

This section describes the debug commands.

---

### Syntax

```
# debug
```

This command includes the following commands:

| Command                  | Description   |
|--------------------------|---|
| auxiliary-files          | See <a href="#">debug auxiliary-files</a> on the next page    |
| capture                  | See <a href="#">debug capture</a> on page 23                  |
| cli                      | See <a href="#">debug cli delayed-command</a> on page 28      |
| debug-recording          | See <a href="#">debug debug-recording</a> on page 29          |
| dial-plan                | See <a href="#">debug dial plan</a> on page 31                |
| exception-info           | See <a href="#">debug exception-info</a> on page 31           |
| exception-syslog-history | See <a href="#">debug exception-syslog-history</a> on page 32 |
| fax                      | See <a href="#">debug fax</a> on page 32                      |
| ha                       | See <a href="#">debug ha</a> on page 33                       |
| log                      | See <a href="#">debug log</a> on page 34                      |
| persistent-log show      | See <a href="#">debug persistent-log show</a> on page 36      |
| pstn                     | See <a href="#">pstn-debug</a> on page 211                    |
| reset-history            | See <a href="#">debug reset-history</a> on page 37            |
| reset-syslog-history     | See <a href="#">debug reset-syslog-history</a> on page 38     |
| sip                      | See <a href="#">debug sip</a> on page 38                      |
| speedtest                | See <a href="#">debug speedtest</a> on page 39                |
| syslog                   | See <a href="#">debug syslog</a> on page 40                   |
| syslog-server            | See <a href="#">debug syslog-server</a> on page 41            |



| Command   | Description                                    |
|-----------|--|
| test-call | See <a href="#">debug test-call</a> on page 42 |
| usb       | See <a href="#">debug usb</a> on page 44       |
| voip      | See <a href="#">debug voip</a> on page 44      |

## debug auxiliary-files

This command debugs loaded Auxiliary files.

### Syntax

```
# debug auxiliary-files {dial-plan|user-info}
```

| Command   | Description   |
|-----------|---|
| dial-plan | Debugs the dial plan (see <a href="#">debug auxiliary-files dial-plan</a> below).                 |
| user-info | Debugs the User Info file (see <a href="#">debug auxiliary-files user-info</a> on the next page). |

### Command Mode

Privileged User

## debug auxiliary-files dial-plan

This command debugs the Dial Plan file.

### Syntax

```
# debug auxiliary-files dial-plan {info|match-number <Dial Plan Number> <Prefix Number>}
```

| Command      | Description   |
|--------------|---|
| info         | Displays the loaded Dial Plan file and lists the names of its configured Dial Plans.  |
| match-number | Checks whether a specific prefix number is configured in a specific Dial Plan number. If the Dial Plan is used for tags, the command also shows the tag name. |

| Command | Description      |   |
|---------|------------------|---|
|         | Dial Plan Number | Defines the Dial Plan in which to search for the specified prefix number. |
|         | Prefix Number    | Defines the prefix number to search for in the Dial Plan.                 |

**Note**

The index number of the first Dial Plan is 0.

**Command Mode**

Privileged User

**Example**

Checking if the called prefix number 2000 is configured in Dial Plan 1, which is used for obtaining the destination IP address (tag):

```
# debug auxiliary-files dial-plan match-number PLAN1 2000
Match found for 4 digits
Matched prefix: 2000
Tag: 10.33.45.92
```

Displaying the loaded Dial Plan file and listing its configured Dial Plans:

```
# debug auxiliary-files dial-plan info
File Name: dialPlan.txt
Plans:
Plan #0 = PLAN1
Plan #1 = PLAN2
```

**debug auxiliary-files user-info**

This command displays the name of the User-Info file installed on the device.

**Syntax**

```
# debug auxiliary-files user-info info
```

**Command Mode**

Privileged User

---

### Example

Displaying the name of the User-Info file installed on the device:

```
# debug auxiliary-files user-info info
User Info File Name UIF_SBC.txt
```

## debug capture

This command captures network traffic.

---

### Syntax

```
# debug capture {data|trim|voip}
```

| Command | Description   |
|---------|---|
| trim    | See <a href="#">debug capture trim</a> below            |
| voip    | See <a href="#">debug capture voip</a> on the next page |

---

### Command Mode

Privileged User

## debug capture trim

This command trims captured network traffic for USB captures.

---

### Syntax

```
# debug capture trim {in-file <File>|offset <Time>}
```

| Command | Description  |
|---------|--|
| in-file | Trims captured traffic. Uses the existing file on USB storage.   |
| offset  | After a capture has been saved on an attached USB stick, you can trim the capture to include only a relevant time-slice. The command is useful when fetching a large capture file via SSH over a slow network connection. Offset is from the start of the capture, in hours:minutes:seconds. |

**Example**

Offsetting 1 hour 20 minutes from start of capture in order to trim captured USB traffic:

```
debug capture trim offset 00:01:20
```

**debug capture voip**

This command captures network traffic on VoIP network interfaces.

**Syntax**

```
# debug capture voip {interface|physical}
```

| Command                | Description   |
|------------------------|---|
| <code>interface</code> | Captures network traffic on one of the VoIP sub-system network interfaces. See <a href="#">debug capture voip interface</a> below |
| <code>physical</code>  | Captures traffic on the wire. See <a href="#">debug capture voip physical</a> on page 26  |

**debug capture voip interface**

This command captures network traffic on a VoIP network interface (VLAN).

**Syntax**

```
# debug capture voip interface vlan <VLAN ID> proto <Protocol Filter> host <Host Filter> {port <Port Filter> [tftp-server <TFTP Server IP Address>|ftp-server <FTP Server IP Address>]}
```

➤ **To start and stop the capture:**

1. After typing the above command, press Enter.
2. To stop the capture, press Ctrl+C.

| Command      | Description   |
|--------------|---|
| <b>vlan</b>  | Defines the VLAN ID of the network interface on which to start the debug capture. |
| <b>proto</b> | Configures a protocol filter:   |

| Command            | Description  |
|--------------------|--|
|                    | <ul style="list-style-type: none"> <li>■ all (all protocols)</li> <li>■ arp (ARP packets)</li> <li>■ icmp (ICMP packets)</li> <li>■ ip (IP packets)</li> <li>■ ipv6 (IPv6 packets)</li> <li>■ tcp (TCP packets)</li> <li>■ udp (UDP packets)</li> </ul>  |
| <b>host</b>        | Configures a host (IP address) from/to which the packets are captured. To specify all hosts, enter <b>any</b> .  |
| <b>port</b>        | (Optional) Configures a port filter: 1-65535 or <b>any</b> (all ports). When using <b>arp</b> or <b>icmp</b> as the protocol filter, port filter cannot be used and the only valid value is <b>any</b> .   |
| <b>ftp-server</b>  | <p>(Optional) Defines the IP address of the FTP server to which the captured traffic file (in .pcap file format) is sent. If not specified, captured traffic is displayed in the CLI console.</p> <p>After running the command, press Ctrl+C when you want the capture to end and the captured traffic file to be sent to the server.</p> <p><b>Note:</b> The FTP server's IP address must be accessible from one of the VoIP network interfaces for the capture file to be successfully uploaded to the server. Ping the server to make sure it's accessible.</p>   |
| <b>tftp-server</b> | <p>(Optional) Defines the IP address of the TFTP server to which the captured traffic file (in .pcap file format) is sent. If not specified, captured traffic is displayed in the CLI console.</p> <p>After running the command, press Ctrl+C when you want the capture to end and the captured traffic file to be sent to the server.</p> <p><b>Note:</b> The TFTP server's IP address must be accessible from one of the VoIP network interfaces for the capture file to be successfully uploaded to the server. Ping the server to make sure it's accessible.</p> |

---

### Command Mode

Privileged User

---

### Examples

Starting a debug capture on network interface VLAN 12, no host filter, and no port filter; the captured traffic is displayed in the CLI console:

```
# debug capture voip interface vlan 12 proto all host any
```

Starting a debug capture on network interface VLAN 1 with a protocol filter (IP), no host filter, and a port filter (514); the captured traffic is saved to a temporary file and is sent (when you press Ctrl+C) to the TFTP server at address 171.18.1.21:

```
# debug capture voip interface vlan 1 proto ip host any port 514 tftp-server
171.18.1.21
```

### debug capture voip physical

This command captures network traffic on a physical VoIP network interface.

---

#### Syntax

```
# debug capture voip physical {clear|cyclic-buffer|eth-lan|get_last_capture|insert-
pad|show|start|stop|target}
# debug capture voip physical target {ftp|tftp|usb}
# debug capture voip physical get_last_capture <TFTP/FTP Server IP Address>
```

- To start a capture:

```
# debug capture voip physical start
```

- To stop a capture:

```
# debug capture voip physical stop {<TFTP/FTP server IP Address>|usb}
```

| Command                 | Description   |
|-------------------------|---|
| <b>clear</b>            | Deletes captured files from the device's RAM.   |
| <b>cyclic-buffer</b>    | Continuously captures packets in a cyclical buffer. Packets are continuously captured until the <b>Stop</b> command is entered. |
| <b>eth-lan</b>          | Captures LAN frames.  |
| <b>get_last_capture</b> | Retrieves the last captured PCAP file sent to a specified TFTP/FTP server IP address.   |

| Command           | Description  |   |
|-------------------|--|---|
|                   | Note: The file is saved to the device's memory (not flash) and is erased after a device reset.   |   |
| <b>insert-pad</b> | Before running this command, the debug capture must be started. Inserts a PAD packet. A marked packet is shown with black background regardless of the configured coloring rules. Benefit: A marked packet can easily be located later when analyzing in a large capture file. |   |
| <b>show</b>       | Displays debug status and configured rules.  |   |
| <b>start</b>      | Starts the capture.  |   |
| <b>stop</b>       | Stops the capture and sends the capture file to the specified target. The capture file is named: "debug-capture-voip-<timestamp>.pcap"   |   |
| <b>target</b>     | Defines the capture storage target: <ul style="list-style-type: none"> <li>■ ftp</li> <li>■ tftp</li> <li>■ usb</li> </ul>   |   |
|                   | user   | (Only applicable if ftp is specified as the capture storage target) Defines the name of the FTP user.     |
|                   | password   | (Only applicable if ftp is specified as the capture storage target) Defines the password of the FTP user. |

---

### Command Mode

Privileged User

---

### Note

- To free up memory on your device, it is recommended to delete the captured files when you no longer need them, using the following command: **debug capture voip physical clear**
- Capturing to USB is applicable only to devices providing USB port interfaces.
- The command is applicable only to MP-1288, Mediant 5xx, Mediant 8xx; Mediant 1000B, Mediant 2600 and Mediant 4000.

---

### Examples

- Starting a physical VoIP debug capture:

```
# debug capture voip physical eth-lan
# debug capture voip physical start
```

- Retrieving the latest capture (PCAP file) saved on a specified server.

```
# debug capture voip physical get_last_capture 10.15.7.99
```

- Specifying USB as the destination to which to send the PCAP file:

```
# debug capture voip physical target usb
```

## debug cli delayed-command

This command allows you to run a specified command after a user-defined interval.

---

### Syntax

```
# debug cli delayed-command
```

| Command   | Description  |
|---|--|
| <Delay Time><br>{minutes seconds}<br>'<Command Name>' | Configures how much time (in minutes or seconds) to wait before running a specific command. The entire command path must be specified and enclosed in apostrophe. To denote carriage returns in the path, use semi-colons (;). |
| cancel <Command Number>                               | Cancels the delayed timer for a specific command.  |
| show  | Displays configured delayed commands whose timers have not yet expired.  |

---

### Command Mode

Privileged User

---

### Example

This example performs a firmware upgrade after 10 minutes:



```
# debug cli delayed-command 10 minutes 'copy firmware from
http://10.3.1.2:1400/tftp/SIP_F7.20A.150.001.cmp'
```

## debug debug-recording

This command enables debug recording for all trunks.

To collect debug recording packets, use Wireshark open-source packet capturing program. Audiocodes' proprietary plug-in files are required. They can be downloaded from <https://www.audiocodes.com/library/firmware>. After starting Wireshark, type acdr in the 'Filter' field to view the debug recording messages. Note that the source IP address of the messages is always the device's OAMP IP address.

### Syntax

```
# debug debug-recording <Destination IP Address> {ip-trace|port|pstn-
trace|signaling|signaling-media|signaling-media-pcm}
# debug debug-recording status
```

| Command                | Description   |
|------------------------|---|
| Destination IP Address | Defines the destination IP address (IPv4) to which to send the debug recording (i.e., debug recording server).  |
| ip-trace               | Defines the debug recording filter type. Filters debug recording for IP network traces, using Wireshark-like expression (e.g., udp && ip.addr==10.8.6.55). IP traces are used to record any IP stream according to destination and/or source IP address, or port and Layer-4 protocol (UDP, TCP or any other IP type as defined by <a href="http://www.iana.com">http://www.iana.com</a> ). Network traces are typically used to record HTTP. |
| port                   | Defines the port of the debug recording server to which to send the debug recording.  |
| pstn-trace             | Defines the debug recording capture type as PSTN trace. The debug recording includes ISDN and CAS traces.   |
| signaling              | Defines the debug recording capture type as signaling. The debug recording includes signaling information such as SIP signaling messages, Syslog messages, CDRs, and the device's internal processing messages  |
| signaling-media        | Defines the debug recording capture type as signaling   |

| Command                          | Description  |
|----------------------------------|--|
|                                  | and media. The debug recording includes signaling, Syslog messages, and media (RTP/RTCP/T.38).   |
| <code>signaling-media-pcm</code> | Defines the debug recording capture type as signaling, media and PCM. The debug recording includes SIP signalling messages, Syslog messages, media, and PCM (voice signals from and to TDM). |
| <code>status</code>              | Displays the debug recording status.   |

---

### Command Mode

Privileged User

---

### Note

- To configure the PSTN trace level per trunk, use the following command: `configure voip > interface > trace-level`
- To send the PSTN trace to a Syslog server (instead of Wireshark), use the following command: `configure troubleshoot > pstn-debug`
- To configure and start a PSTN trace per trunk, use the following command: `configure troubleshoot > logging logging-filters`.

---

### Example

Displaying the debug recording status:

```
# debug debug-recording status
Debug Recording Configuration:
=====
Debug Recording Destination IP: 10.33.5.231
Debug Recording Destination Port: 925
Debug Recording Status: Stop

Logging Filter Configuration (line 0):
=====
Filter Type: Any
Value:
Capture Type: Signaling
Log Destination: Syslog Server
Mode: Enable
```

## debug dial plan

This command checks whether a specified Dial Plan contains specific digits.

---

### Syntax

```
debug dial-plan <Dial Plan Name> match-digits <Digits to Match>
```

---

### Command Mode

Basic and Privileged User

---

### Example

Searching for digits "2000" in Dial Plan 1:

```
debug dial-plan 1 match-digits 2000
Match succeeded for dial plan 1 and dialed number 2000. Returned tag RmoteUser
```

## debug exception-info

This command displays debug information about exceptions.

---

### Syntax

```
# debug exception-info
```

| Command            | Description   |
|--------------------|---|
| <Exception Number> | Displays debug information of a specified exception number. |

---

### Command Mode

Privileged User

---

### Example

This example shows how to display debug information related to exception 1:

```
# debug exception-info 1
There are 10 Exceptions
```

```

Exception Info of Exception 1:
Trap Message - Force system crash(0) due to HW Watchdog
Board Was Crashed: Signal 0, Task
BOARD MAC : 00908F5B1035
EXCEPTION TIME : 0.0.0 0.0.0
VERSION: Time 13.5.25, Date 16.12.16, major 720, minor 90, fix 485 Cmp
Name:ramESBC_SIP Board Type:77
RELATED DUMP FILE : core_E-SBC_ver_720-90-485_bid_5b1035-177_SIP
ZERO:00000000 AT:00000000 V0:00000000 V1:00000000 A0:00000000
A1:00000000 A2:00000000 A3:00000000
T0:00000000 T1:00000000 T2:00000000 T3:00000000 T4:00000000
T5:00000000 T6:00000000 T7:00000000
S0:00000000 S1:00000000 S2:00000000 S3:00000000 S4:00000000
S5:00000000 S6:00000000 S7:00000000
T8:00000000 T9:00000000 K0:00000000 K1:00000000 GP:00000000
SP:00000000 FP:00000000
stack_t - ss_sp:00000000 ss_size:00000000 ss_flags:00000000
PC:00000000      +0
RA:00000000      +0

```

## debug exception-syslog-history

This command displays the syslog generated for exceptions.

---

### Syntax

```
# debug exception-syslog-history <0-9>
```

Where *0* is the latest syslog generated due to an exception.

---

### Command Mode

Privileged User

---

### Example

This example shows how to display the last two syslog-related exceptions:

```
# debug exception-syslog-history 1
```

## debug fax

This command debugs fax modem with a debug level.

**Syntax**

```
# debug fax
```

| Command | Description  |
|---------|--|
| basic   | Defines debug fax level to Basic. You can define the number of next sessions for debug.  |
| detail  | Defines debug fax level to Detail. You can define the number of next sessions for debug. |

**Note**

- The command is applicable only to devices supporting FXS interfaces.
- To disable debug fax, type no debug fax.

**Command Mode**

Privileged User

**Example**

This example configures detailed fax debug for the next 10 sessions to be traced:

```
# debug fax detail 10
FaxModem debug has been activated in DETAIL mode. The 10 next FaxModem
sessions will be traced.
```

**debug ha**

This command debugs High Availability (HA).

**Syntax**

```
# debug ha
```

| Command        | Description  |
|----------------|--|
| clear-counters | Clears the counters of sent and received HA keep-alive packets periodically sent between Active and Redundant devices. |

| Command  | Description  |
|--|--|
| <code>conn-to-red</code>   | Connects to the Redundant device from the Active device through Telnet.  |
| <code>disconnect-system</code><br><OAMP Address of Redundant Device> | Disables HA mode and returns the two devices to stand-alone devices. In addition, the Redundant device is assigned the specified OAMP address. |
| <code>restart-tpncp-conn</code>                                      | Restarts the HA control protocol between the Active and Redundant devices (for internal debug usage).  |

---

### Note

The command is applicable only to devices supporting HA.

---

### Command Mode

Privileged User

---

### Example

This example accesses the Redundant device from the Active device, and then disconnects HA mode, assigning the Redundant device with a new OAMP address 212.4.55.7:

```
# debug ha conn-to-red

Username: Admin
Password:

> enable
Password:
# debug ha disconnect-system 212.4.55.7
```

## debug log

This command displays debugging messages (e.g., Syslog messages). Also displays activities performed by management users in the devices' management interfaces (CLI and Web interface).

---

### Syntax

```
debug log [full]
```

| Command | Description   |
|---------|---|
| full    | (Optional) Displays more information than the regular debug messages, for example, 'SID' (Session ID) and 'S' (Syslog message sequence). Useful (for example) in determining if there's a network problem resulting from a Loss of Packets. |

---

### Note

- When connected to the CLI through Telnet/SSH, the debug log command affects only the current CLI session.
- To disable logging, type **no debug log**.
  - When connected to the CLI through Telnet/SSH, the **no debug log** command affects only the current CLI session.
  - To cancel log display for all sessions, use the command **no debug log all**.

---

### Command Mode

Basic and Privileged User

---

### Example

Displaying debug messages:

```
debug log
Logging started
Jun 16 13:58:54 Resource SIPMessage deleted - (#144)
Jun 16 13:58:54 (#70) SBCRoutesIterator Deallocated.
Jun 16 13:58:54 (#283) FEATURE Deallocated.
```

Displaying debug messages (full):

```
debug log full
Logging started
Jun 16 13:59:55 local0.notice [S=707517] [SID:1192090812]
(sip_stack)(706869) Resource SIP Message deleted - (#79)
Jun 16 13:59:55 local0.notice [S=707518] [SID:1192090812]
(igr_sbc)(706870)(#69) SBCRoutesIterator Deallocated.
Jun 16 13:59:55 local0.notice [S=707519] [SID:1192090812]
(igr_sbc)(706871) (#282) FEATURE Deallocated.
```

## debug persistent-log show

This command displays logged messages that are stored on the device's Persistent Logging storage.

### Syntax

```
# debug persistent-log show
```

| Command   | Description  |
|---|--|
| <pre>category-list {conf err ha init other}</pre>         | Filters display by category of logged messages. You can filter by more than one category; make sure that you have spaces between the category subcommands (e.g., category-list conf ha).   |
| <pre>count &lt;Number of Logs&gt;</pre>                   | Filters display by number of most recently logged messages.  |
| <pre>offset &lt;Logged Message Index&gt;</pre>            | When the count command is used, it filters display by displaying from this logged message index onward.  |
| <pre>start-date &lt;Date&gt; end- date &lt;Date&gt;</pre> | Filters display by date range of logged event. The date is in the format YYYY-MM-DD, where YYYY is the year (e.g., 2017), MM the month (e.g., 01), and DD the day (e.g., 20).  |
| <pre>stats</pre>  | <p>Displays statistics of the persistent logging:</p> <ul style="list-style-type: none"> <li>■ "Number of received logs": Number of logs that were sent to the Persistent Logging storage.</li> <li>■ "Number of logs sent to DB": Number of logs that were successfully saved to the Persistent Logging storage.</li> <li>■ "Number of dropped logs": Difference between "Number of received logs" and "Number of logs sent to DB". Dropped logs (typically, due to a high load) indicates that the information in the Persistent Logging storage may be inconsequential or missing.</li> </ul> |

### Note



- The command is applicable only to Mediant 9000 and Mediant VE/SE.
- Persistent Logging is always enabled (and cannot be disabled).

---

**Command Mode**

Privileged User

---

**Example**

This example filters persistent logging by displaying two logged messages, starting from logged message at index 120:

```
# debug persistent-log show count 2 offset 120
120|2017-04-26 16:10:26|TPApp: [S=11008][BID=da4aec:20] SNMP
Authentication Failure - source: IP = 172.17.118.45, Port = 1161, failed community
string = public. [File:dosnmpv3.c Line:187]
121|2017-04-26 16:10:46|TPApp: [S=11009][BID=da4aec:20] SNMP
Authentication Failure - source: IP = 172.17.118.45, Port = 1161, failed community
string = public. [File:dosnmpv3.c Line:187]
```

## debug reset-history

This command displays a history (last 20) of device resets and the reasons for the resets (for example, a reset initiated by the user through the Web interface).

---

**Syntax**

```
# debug reset-history
```

---

**Command Mode**

Privileged User

---

**Example**

This example resets debug history:

```
# debug reset-history
Reset History :
Reset History [00]:
Reset Reason: an exception
Time : 6-1-2010 21:17:31
FIRMWARE: Time 12.3.20, Date 8.5.17, major 720, minor 140, fix 716
```

```

Reset Syslog Counter 214
*****
Reset History [01]:
Reset Reason: issuing of a reset from Web interface
Time : 1-1-2010 00:15:26
FIRMWARE: Time 12.3.20, Date 8.5.17, major 720, minor 140, fix 716
Reset Syslog Counter 213
*****
Reset History [02]:
Reset Reason: issuing of a reset from Web interface
Time : 3-1-2010 20:52:03
FIRMWARE: Time 12.3.20, Date 8.5.17, major 720, minor 140, fix 716
Reset Syslog Counter 212
*****
Reset History [03]:
-- More -

```

## debug reset-syslog-history

This command displays a history (last 20) of syslogs generated upon device resets.

---

### Syntax

```
# debug reset-syslog-history <0-19>
```

Where 0 is the latest syslog.

---

### Command Mode

Privileged User

---

### Example

This example debugs the latest syslog reset history:

```
# debug reset-syslog-history
```

## debug sip

This command configures SIP debug level.

---

### Syntax

```
# debug sip {[<Debug Level>]|status}
```

| Command     | Description   |
|-------------|---|
| Debug Level | Defines the SIP debug level: <ul style="list-style-type: none"> <li>■ 0 = (No debug) Debug is disabled and Syslog messages are not sent.</li> <li>■ 1 = (Basic) Sends debug logs of incoming and outgoing SIP messages.</li> <li>■ 5 = (Detailed) Sends debug logs of incoming and outgoing SIP messages as well as many other logged processes.</li> </ul> |
| status      | Displays the current debug level.   |

---

#### Note

- If no level is specified, level 5 is used.
- Typing no debug sip configures the level to 0.

---

#### Command Mode

Privileged User

---

#### Example

Setting the SIP debug level to 5:

```
# debug sip 5
```

## debug speedtest

This command tests the upload and download speed (in bps) to and from a specified URL, respectively.

---

#### Syntax

```
# debug speedtest set {upload|download} <URL>
# debug speedtest set upsize <Upload Transfer Bytes>
# debug speedtest {run|show|stop}
```

| Command | Description   |
|---------|---|
| upload  | Tests the upload speed to a URL (IP address or FQDN). |

| Command  | Description   |
|----------|---|
| upsized  | (Optional) Defines the number of bytes (1-10000000) to upload to the specified URL for testing the upload speed |
| download | Tests the download speed from a URL (IP address or FQDN).   |
| show     | Displays the test results.  |
| stop     | Stops the test.   |
| run      | Starts the test.  |

---

### Example

Testing upload speed to speedy.com:

```
# debug speedtest set upload http://www.speedy.com/speedtest
Upload URL : http://www.speedy.com/speedtest
```

```
# debug speedtest run
Starting speed test. Check results using the command "debug speedtest show".
```

```
# debug speedtest show
Speed test results:
Upload : Complete
URL: http://www.speedy.com/speedtest
      Bytes transferred: 1000000
      Speed: 9.8 Mbps
```

## debug syslog

This command verifies that Syslog messages sent by the device are received by the Syslog server. After you run the command, you need to check the Syslog server to verify whether it has received your Syslog message.

---

### Syntax

```
# debug syslog <String>
```

| Command | Description  |
|---------|--|
| String  | Configures any characters that you want to send in the Syslog message to |

| Command | Description        |
|---------|--------------------|
|         | the Syslog server. |

---

### Command Mode

Privileged User

---

### Related Commands

debug syslog-server

---

### Example

Verifying that a Syslog message containing "hello Joe" is sent to the Syslog server:

```
# debug syslog hello Joe
```

## debug syslog-server

This command configures the IP address and port of the Syslog server.

---

### Syntax

```
# debug syslog-server <IP Address> port <Port Number>
```

| Command    | Description                                   |
|------------|---|
| IP Address | Defines the IP address of the Syslog server.  |
| port       | Defines the port number of the Syslog server. |

---

### Note

To disable Syslog server debugging, use the following command:

```
# no debug syslog-server
```

---

### Command Mode

Privileged User

---

### Example

Enabling Syslog by configuring the Syslog server:

```
# debug syslog-server 10.15.1.0 port 514
Syslog enabled to dest IP Address: 10.15.1.0 Port 514
```

## debug test-call

This command initiates and terminates a call from the device to a remote destination to test whether connectivity, media, etc., are correct. Sends a SIP INVITE message and then manages the call with the call recipient.

### Syntax

```
debug test-call ip
```

- Configures a test call:

```
debug test-call ip dial from {<Calling Number> to <Called Number> [dest-
address <IP Address>] [sip-interface <SIP Interface ID>]}id <Test Call Table
Index>}
```

- Configures a test call:

```
debug test-call ip set called-number <Called number> caller-id <Caller ID>
calling-number <Calling number>dest-address
<IP Address> play <Playback> sip-interfaces <SIP Interface ID> timeout
<Disconnection timeout> transport-type
```

- Terminates a test call:

```
debug test-call ip drop {<Calling Number>}id <Test Call Table Index>}
```

- Displays test call configuration:

```
debug test-call ip show
```

| Command | Description  |
|---------|--|
| ip      | Configures and initiates a test call to an IP address. <ul style="list-style-type: none"> <li>■ dial (Dials using specified parameters)               <ul style="list-style-type: none"> <li>✓ from (Defines the calling number):</li> </ul> </li> </ul> |

| Command | Description  |
|---------|--|
|         | <ul style="list-style-type: none"> <li>✓ [NUMBER] (Calling number)</li> <li>✓ <b>id</b> (uses the Test Call Rules table entry)</li> <li>■ <b>drop</b> (Terminates the latest outgoing test call): <ul style="list-style-type: none"> <li>✓ [Calling Number] (Terminates outgoing test call by number)</li> <li>✓ <b>id</b> (Terminates outgoing test calls by table index)</li> </ul> </li> <li>■ <b>set</b> (Sets test options): <ul style="list-style-type: none"> <li>✓ <b>called-number</b> (Called number)</li> <li>✓ <b>caller-id</b> (Caller ID)</li> <li>✓ <b>calling-number</b> (Calling number)</li> <li>✓ <b>dest-address</b> (Target host)</li> <li>✓ <b>play</b> (Sets playback)</li> <li>✓ <b>sip-interfaces</b> (Sets SIP interfaces to listen on)</li> <li>✓ <b>timeout</b> (Disconnection timeout (seconds))</li> <li>✓ <b>transport-type</b> (Transport type)</li> </ul> </li> <li>■ <b>show</b> (Displays test call configuration)</li> </ul> |

---

### Command Mode

Basic and Privileged User

---

### Note

- The command is applicable only to the SBC application.
- Test calls can be made with the following two recommended commands:
  - (Basic) Making a call from one phone number to another, without performing any configuration:

```
debug test-call ip dial from * to * dest-address * [sip-interface *]
```

- (Advanced) Configuring a row in the Test Call table, and then placing a call by the row index:

```
debug test-call ip dial from id *
```

## debug usb

This command debugs the USB stick connected to the device.

### Syntax

```
# debug usb devices
```

| Command | Description  |
|---------|--|
| devices | Displays information about the USB stick (e.g., manufacturer) connected to the device. |

### Command Mode

Privileged User

## debug voip

This command debugs voice over IP channels.

```
# debug voip
```

| Command  | Description   |
|--|---|
| activate-channel<br>{analog digital virtual}<br><Channel ID> | Configures a specific channel.  |
| close-channels<br>{analog digital virtual}                   | Closes channels. To view the orientation of the device's hardware, use the command, show system assembly.               |
| dial-string<br>{analog digital virtual}                      | Sends a string of DTMF tones. To view the orientation of the device's hardware, use the command, show system assembly.  |
| open-and-activate<br>{analog digital virtual}                | Opens and activates a channel. To view the orientation of the device's hardware, use the command, show system assembly. |
| open-channel<br>{analog digital virtual}<br><Channel ID>     | Opens a channel .   |



---

| Command            | Description                       |
|--------------------|-----------------------------------|
| wait-for-detection | Waits for a digit detection event |

---

**Command Mode**

Privileged User

## 6 Show Commands

This section describes the show commands.

---

### Syntax

```
show
```

This command includes the following commands:

| Command             | Description   |
|---------------------|---|
| activity-log        | See <a href="#">show activity-log</a> below             |
| admin state         | See <a href="#">show admin state</a> on the next page   |
| debug-file          | See <a href="#">show debug-file</a> on page 48          |
| high-availability   | See <a href="#">show high-availability</a> on page 51   |
| ini-file            | See <a href="#">show ini-file</a> on page 52            |
| last-cli-script-log | See <a href="#">show last-cli-script-log</a> on page 53 |
| network             | See <a href="#">show network</a> on page 54             |
| running-config      | See <a href="#">show running-config</a> on page 61      |
| startup-script      | See <a href="#">show startup-script</a> on page 65      |
| storage-history     | See <a href="#">show storage-history</a> on page 66     |
| system              | See <a href="#">show system</a> on page 66              |
| users               | See <a href="#">show users</a> on page 78               |
| voip                | See <a href="#">show voip</a> on page 79                |

### show activity-log

This command displays the device's logged CLI activities.

---

### Syntax

```
show activity-log
```

| Command           | Description  |
|-------------------|--|
| (Carriage Return) | Displays all logged message history.                             |
| > <URL>           | Sends the logged activities to a remote server (TFTP or HTTP/S). |

---

**Command Mode**

Basic and Privileged User

---

**Note**

If you have not enabled logging of user activities in the management interface, nothing is displayed in the output of this show command. To enable logging, see the following command:

```
configure troubleshoot > activity-log
```

---

**Related Command**

■ `configure troubleshoot > activity-log`: Enables logging of activities.

---

**Example**

This example displays the logged messages:

```
show activity log
Jan 4 00:44:39 local0.notice [S=4666] [BID=5b1035:208] HTTPTaskHCTL - Run
selfCheck
Jan 4 00:45:40 local0.notice [S=4667] [BID=5b1035:208] HTTPTaskHCTL - Run
selfCheck
```

## show admin state

This command displays the device's current administrative state (locked or unlocked).

---

**Syntax**

```
show admin state
```

---

**Command Mode**

Basic and Privileged User

---

**Related Command**

admin state – locks or unlocks the device.

---

**Example**

This example displays the administrative state of the device (which is unlocked):

```
# show admin state
current admin-state: unlock
```

## show debug-file

This command displays the debug file.

---

**Syntax**

```
show debug-file
```

| Command     | Description   |
|-------------|---|
| device-logs | See <a href="#">show debug-file device-logs</a> below           |
| reset-info  | See <a href="#">show debug-file reset-info</a> on the next page |

---

**Command Mode**

Basic and Privileged User

## show debug-file device-logs

This command displays the device's debug file.

---

**Syntax**

```
show debug-file device-logs
```

| Command          | Description   |
|------------------|---|
| file <File Name> | Displays the contents of a specified debug file (listed using the below command). |
| list             | Displays a list of the debug files (e.g., ssrc-last-install.log and               |

| Command | Description               |
|---------|---------------------------|
|         | ssbc-rescue-install.log). |

---

### Command Mode

Basic and Privileged User

---

### Example

This example displays the list of debug files:

```
show debug-file device-logs list
DebugFile Device File: ssbc-last-install.log, ssbc-rescue-install.log,
```

### show debug-file reset-info

This command displays logged device resets in the debug file.

---

### Syntax

```
show debug-file reset-info
```

| Command | Description   |
|---------|---|
| list    | <p>Displays a list of logged device resets. Each logged reset is numbered sequentially, displaying the duration (in seconds) that the device was operational (up time) before the reset, the reason for the reset, when it occurred, and the software version, for example:</p> <pre>***** Reset ***** Reset Counter:23 Reset Reason: Web Reset Reset Time: 26.8.2020 9.25.44 SwVersion: 724A-356-833 *****</pre> <p>If the reset was caused due to an error (i.e., crash), "Exception" (instead of "Reset") is displayed at the beginning of the logged reset, as shown in the following example:</p> <pre>***** Exception ***** Reset Counter:24 Exception Reason: CMX Kernel Panic</pre> |

| Command   | Description  |
|---|--|
|   | <pre>EXCEPTION TIME : 4.9.2020 10.21.46 *****</pre>  |
| <pre>reset-counter &lt;Reset Counter&gt; [file &lt;File Name&gt;]</pre> | <p>Displays a logged device reset, specified by its Counter number (use the above command to view all the logged resets and their Counter numbers). The output also shows any associated logged files. To view the file contents in the output, specify the file after the counter number, for example:</p> <pre># show debug-file reset-info reset-counter 23  Reset Files [syslog] ** Summary ** ***** Reset *****  Reset Counter:23 Reset Reason: Web Reset Reset Time: 26.8.2020 9.25.44 SwVersion: 724A-356-833 *****  # show debug-file reset-info reset-counter 23 syslog</pre> |

---

### Command Mode

Basic and Privileged User

---

### Example

This example displays the list of logged device resets:

```
# show debug-file reset-info list
** Current Reset Counter [25] **

***** Exception *****
Reset Counter:24
Exception Reason: CMX Kernel Panic
EXCEPTION TIME : 4.9.2020 10.21.46
*****

***** Reset *****
Reset Counter:23
Reset Reason: Web Reset
```

```

Reset Time: 26.8.2020 9.25.44
SwVersion: 724A-356-833
*****

**** Reset ****
Reset Counter:22
Reset Reason: CLI Reset
Reset Time: 20.7.2020 13.6.12
SwVersion: 724A-356-833
*****

```

## show high-availability

This command displays network monitor status and HA status.

---

### Syntax

```
show high-availability {network-monitor-status|status}
```

| Command                | Description                         |
|------------------------|-------------------------------------|
| network-monitor-status | Displays HA Network Monitor status. |
| status                 | Displays HA status.                 |

---

### Related Commands

- [debug ha](#)
- [ha](#)
- [high-availability](#)

---

### Command Mode

Basic and Privileged User

---

### Example

- To display HA status:

```

# show high-availability status
HA Status:
Unit HA state is: Active

```

```
HA Connection with other unit State is: Connected
Last HA sync. action/state with other unit was: Sync. ended !
```

- To display HA Network Monitor status:

```
# show high-availability network-monitor-status
HA Network monitor is enabled
Number of unreachable table entries: 0
Entries status:
Table row 0: Reachability status is: Reachable, Destination peers status:
    Peer address 10.4.4.69: Reachability status is: Reachable, ping loss
percentage: 0%
Table row 1: Reachability status is: Reachable, Destination peers status:
    Peer address 10.5.5.5: Reachability status is: Reachable, ping loss
percentage: 0%
    Peer address 10.5.5.6: Reachability status is: Reachable, ping loss
percentage: 0%
Note - ping loss percentage refer to the last 5 minutes
```

## show ini-file

This command displays the device's current configuration in ini-file format.

---

### Syntax

```
show ini-file
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show ini-file
.*****
;
; ** Ini File **
;
.*****
;

;Board: Mxx
;HW Board Type: 69 FK Board Type: 84
;Serial Number: 8906721
;Customer SN:
```



```

;Slot Number: 1
;Software Version: 7.20A.140.586
;DSP Software Version: 5011AE3_R => 721.09
;Board IP Address: 192.168.0.2
;Board Subnet Mask: 255.255.255.0
;Board Default Gateway: 192.168.0.1
;Ram size: 512M Flash size: 128M Core speed: 300Mhz
;Num of DSP Cores: 1 Num DSP Channels: 30
;Num of physical LAN ports: 4
;Profile: NONE
;;;Key features;;Board Type: M500L ;Security: IPSEC MediaEncryption
StrongEncryption EncryptControlProtocol ;Eth-Port=32 ;DATA features: Routing
FireW
all&VPN WAN BGP Advanced-Routing 3G FTTX-WAN T1E1-Wan-Trunks=2 ;DSP
Voice features: ;Channel Type: DspCh=30 ;E1Trunks=4 ;T1Trunks=4 ;FXSPorts=4
;FXOPo
rts=4 ;Control Protocols: MGCP MEGACO H323 SIP SBC=4 ;Default
features;;Coders: G711 G726;

;----- HW components-----
;
;
; Slot # : Module type : # of ports
;-----
; 2 : FXS : 4
; 3 : FXO : 4
;-----

[SYSTEM Params]

SyslogServerIP = 10.31.2.44
EnableSyslog = 1
TelnetServerIdleDisconnect = 120
--MORE--

```

## show last-cli-script-log

This command displays the contents of the latest CLI Script file that was loaded (i.e., copy cli-script from) to the device. The device always keeps a log file of the most recently loaded CLI Script file.

---

### Syntax

```
# show last-cli-script-log
```

---

**Command Mode**Privileged User

---

**Note**If the device resets (or powers off), the logged CLI Script file is deleted.

---

**Example**

```
# show last-cli-script-log
-----
# LOG CREATED ON: 26/04/2017 16:21:56
# Running Configuration
# IP NETWORK
# configure network
(config-network)# tls 0
(tls-0)# name default
(tls-0)# tls-version unlimited
...
```

## show network

This command displays networking information.

---

**Syntax**

```
show network
```

| Command      | Description   |
|--------------|---|
| access-list  | See <a href="#">show network access-list</a> on the next page |
| arp          | See <a href="#">show network arp</a> on the next page         |
| dhcp clients | See <a href="#">show network dhcp clients</a> on page 56      |
| ether-group  | See <a href="#">show network ether-group</a> on page 56       |
| http-proxy   | See <a href="#">show network http-proxy</a> on page 57        |
| interface    | See <a href="#">show network interface</a> on page 58         |
| network-dev  | See <a href="#">show network network-dev</a> on page 59       |

| Command       | Description   |
|---------------|---|
| physical-port | See <a href="#">show network physical-port</a> on page 59 |
| route         | See <a href="#">show network route</a> on page 60         |
| tls           | See <a href="#">show network tls</a> on page 60           |

---

### Command Mode

Basic and Privileged User

## show network access-list

This command displays the network access list (firewall) rules, which are configured in the Firewall table.

---

### Syntax

```
show network access-list
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show network access-list
L# Source IP /Pref SrcPort Port Range Protocol Action Count
-----
0 10.6.6.7 / 0 0 0 - 65535 Any ALLOW 616
Total 1 active firewall rules.
```

## show network arp

This command displays the Address Resolution Protocol (ARP) table.

---

### Syntax

```
show network arp
```

---

### Command Mode

Basic and Privileged User

---

**Example**

```
show network arp
IP Address  MAC Address  Interface  Type
10.15.0.1   00:1c:7f:3f:a9:5d  eth0.1    reachable
```

End of arp table, 1 entries displayed

### show network dhcp clients

This command displays DHCP server leases.

---

**Syntax**

```
show network dhcp clients
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show network dhcp clients
Total 0 leases.
```

### show network ether-group

This command displays the Ethernet Groups, which are configured in the Ethernet Groups table.

---

**Syntax**

```
show network ether-group
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show network ether-group
G. Num Group Name Mode State Uplinks Group Members
-----
0 GROUP_1 REDUN_1RX_1TX/2 Up 1 GE_4_1 ,GE_4_2
1 GROUP_2 REDUN_1RX_1TX/2 Down 0 GE_4_3 ,GE_4_4
2 GROUP_3 GROUP_TYPE_NON/0 Up 0 ,
3 GROUP_4 GROUP_TYPE_NON/0 Up 0 ,
```

## show network http-proxy

This command displays the NGINX configuration files for HTTP proxy services.

### Syntax

```
show network http-proxy conf {active|errors|new}
```

| Command | Description   |
|---------|---|
| active  | Displays the nginx.conf file, which is the currently active HTTP Proxy configuration.         |
| errors  | Displays the nginx.errors file, which displays the errors in the temp_nginx.conf file.        |
| new     | Displays the temp_nginx.conf file, which is the new configuration with invalid configuration. |

### Command Mode

Basic and Privileged User

### Example

This example displays the NGINX errors:

```
show network http-proxy conf errors
nginx: [emerg] host not found in upstream "10.1.1.1:45" in /acBin/nginx/temp_n
ginx.conf:34
nginx: configuration file /acBin/nginx/temp_nginx.conf test failed
```

## show network interface

This command displays the IP network interfaces, which are configured in the IP Interfaces table. It also displays packet statistics for each interface, for example, number of transmitted packets. For devices supporting the OSN module, the command also displays the status of the OSN interface.

---

### Syntax

```
show network interface [description|osn]
```

| Command         | Description  |
|-----------------|--|
| Carriage Return | Displays the IP Interfaces and some packet statistics.   |
| description     | (Optional) Displays IP Interfaces in the same format as the IP Interfaces table.                                       |
| osn             | Displays the status of the OSN network interface.<br><b>Note:</b> The OSN module is supported only by certain devices. |

---

### Command Mode

Basic and Privileged User

---

### Example

- Displays IP Interfaces:

```
show network interface
Name: vlan 1
Vlan ID: 1
Underlying Interface: GROUP_1
Hardware address is: 00-90-8f-5b-10-35

Name: Voice
Application Type: O+M+C
IP address: 10.15.7.96/16
Gateway: 10.15.0.1

Uptime: 0:34:40
rx_packets 100724 rx_bytes 6271237 rx_dropped 0 rx_errors 0
tx_packets 566 tx_bytes 257623 tx_dropped 0 tx_errors 0
```

- Displays OSN status:

```
show network interface osn
OSN is Down
Port Mode :FORWARDING
txFrames  0000000000
rxFrames  0000000000
```

## show network network-dev

This command displays the Ethernet Devices, which are configured in the Ethernet Devices table.

---

### Syntax

```
show network network-dev
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show network network-dev
D.Num Device Name VlanID MTU  GroupName
-----
0  vlan 1    1  1400 GROUP_1 # show network interface
```

## show network physical-port

This command displays the Ethernet ports, which are configured in the Physical Ports table.

---

### Syntax

```
show network physical-port
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show network physical-port
```

| Port Num | Port Name | MAC Address       | Speed | Duplexity | Link Status | Native VLAN |
|----------|-----------|-------------------|-------|-----------|-------------|-------------|
| 1        | GE_4_1    | 00:90:8f:5b:10:35 | 1Gbps | FULL      | UP          | 1           |
| 2        | GE_4_2    | 00:90:8f:5b:10:35 |       |           | DOWN        | 1           |
| 3        | GE_4_3    | 00:90:8f:5b:10:35 |       |           | DOWN        | 1           |
| 4        | GE_4_4    | 00:90:8f:5b:10:35 |       |           | DOWN        | 1           |

## show network route

This command displays the status of the static routes, which are configured in the Static Routes table.

---

### Syntax

```
show network route
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show network route
Codes: C - connected, S - static

C 169.253.0.0/16 is directly connected, Internallf 2, Active
C 10.15.0.0/16 is directly connected, vlan 1, Active
S 0.0.0.0/0 [1] via 10.15.0.1, vlan 1, Active
```

## show network tls

This command displays TLS security information (TLS Context), which is configured in the TLS Contexts table.

---

### Syntax

```
show tls
```



| Command  | Description   |
|--|---|
| <code>certificate</code>   | Displays certificate information.   |
| <code>contexts</code>  | Displays TLS security context information.  |
| <code>trusted-root</code><br><code>{detail</code><br><code>&lt;Index&gt; summary}</code> | Displays trusted certificates.<br><ul style="list-style-type: none"> <li>■ detail (Displays a specific trusted certificate)</li> <li>■ summary (Displays all trusted certificates)</li> </ul> |

---

### Command Mode

Basic and Privileged User

---

### Example

```
show tls contexts
Context # Name
-----
0    default
2    ymca

Total 2 active contexts.
Total certificate file size: 4208 bytes.
```

## show running-config

This command displays the device's current configuration.

---

### Syntax

```
show running-config
```

| Command           | Description   |
|-------------------|---|
| (Carriage Return) | Displays the device's full configuration in the format of a CLI command script. You can copy and paste the displayed output in a text-based file (e.g., using Notepad), and then upload the file to another device, or the same device if you want to make configuration changes, as a CLI script file. |

| Command  | Description  |
|--|--|
| <code>&gt; &lt;URL Destination&gt;</code>        | Sends the device's configuration in CLI script format, as a file to a remote destination defined by a URL (TFTP, HTTP or HTTPS).   |
| <code>full [&gt; &lt;URL Destination&gt;]</code> | Displays the device's configuration as well as default configuration settings that were not actively set by the user. In regular mode, only configuration that is not equal to the default is displayed. Can also send the configuration in CLI script format, as a file to a remote destination defined by a URL (TFTP, HTTP or HTTPS). |
| <code>network</code>                             | Displays the device's network configuration ( <code>configure network</code> ).  |
| <code>system</code>                              | Displays the device's system configuration ( <code>configure system</code> ).  |
| <code>troubleshoot</code>                        | Displays the device's troubleshooting configuration ( <code>configure troubleshoot</code> ).   |
| <code>voip</code>                                | Displays the device's VoIP configuration ( <code>configure voip</code> ).  |

---

### Command Mode

Basic and Privileged User

---

### Note

- The Local Users table (in which management users are configured, as described in [user](#) on page 188) is included in the output of this command only if you are in Privileged User command mode.
- You can also run this command from any other command, using the `do` command, for example:

```
(clock)# do show running-config
```

---

### Example

This example sends the device's configuration to an HTTP server:

```
show running-config> http://10.9.9.9
```

## show sctp

This command displays Stream Control Transmission Protocol (SCTP) information.

---

### Syntax

```
show sctp
```

| Command     | Description   |
|-------------|---|
| connections | See <a href="#">show sctp connections</a> below           |
| statistics  | See <a href="#">show sctp statistics</a> on the next page |

---

### Command Mode

Basic and Privileged User

## show sctp connections

This command displays SCTP socket associations status.

---

### Syntax

```
show sctp connections
```

---

### Command Mode

Basic and Privileged User

---

### Note

SCTP is applicable only to Mediant 90xx and Mediant Software.

---

### Related Commands

```
(config-network)# sctp
```

---

### Example

The example below displays the local SCTP endpoint (i.e., device) titled "Association #1", and the SCTP association status with the remote SCTP endpoint (proxy) titled "Association #2).

```
show sctp connections
```

```
-----  
Association #1  
Type:          SERVER  
State:         LISTEN  
Local Addresses: 10.55.3.80, 10.55.2.80  
Local Port:     5060  
-----
```

```
Association #2  
Type:          CLIENT  
State:         ESTABLISHED  
Local Addresses: 10.55.3.80, 10.55.2.80  
Local Port:     50226  
Remote Addresses  Configured  State  
10.55.1.100:5060  Yes      INACTIVE - Primary  
10.55.0.100:5060  Yes      ACTIVE - Secondary
```

## show sctp statistics

This command displays statistics for all SCTP socket associations.

---

### Syntax

```
show sctp statistics
```

---

### Command Mode

Basic and Privileged User

---

### Note

SCTP is applicable only to Mediant 90xx and Mediant Software.

---

### Related Commands

```
(config-network) # sctp
```

---

### Example

The example below displays statistics for all SCTP associations (only a partial output is shown below).

```
show sctp statistics
MIB according to RFC 3873:
discontinuity.sec = 1547641112, discontinuity.usec = 169612, currestab = 3,
activeestab = 2
restartestab = 0, collisionestab = 0, passiveestab = 1, aborted = 1
shutdown = 0, outoftheblue = 0, checksumerrors = 0, outcontrolchunks = 248438
outorderchunks = 1769, outunorderchunks = 349601, incontrolchunks = 243466,
inorderchunks = 1769
inunorderchunks = 466146, fragusrmsgs = 0, reasmusrmsgs = 0, outpackets =
302051, inpackets = 306499
```

```
input statistics:
rcvpackets = 306499, recvdatagrams = 306499, rcvpktwithdata = 281264,
rcvsacks = 241804, rcvdata = 467915
rcvdupdata = 6, rcvheartbeat = 828, rcvheartbeatack = 826, rcvecne = 0,
rcvauth = 1
rcvauthmissing = 0, rcvivalhmacid = 0, rcvivalkeyid = 0, rcvauthfailed = 0,
rcvexpress = 467914
rcvexpressm = 0, rcv_spare = 0, rcvswcrc = 301493, rcvhwrc = 5006
```

```
output statistics:
sendpackets = 302051, sendsacks = 246385, senddata = 351370, sendretransdata
= 75
sendfastretrans = 0, sendmultfastretrans = 0, sendheartbeat = 1210, sendecne = 0
sendauth = 0, senderrors = 0, send_spare = 0, sendswcrc = 297046, sendhwrc =
5005
...
```

## show startup-script

This command displays the Startup Script file log.

---

### Syntax

```
# show startup-script
```

| Commands     | Description                 |
|--------------|-----------------------------|
| recovery-log | Displays the logs generated |

| Commands                 | Description  |
|--------------------------|--|
|                          | during the failed Startup Script process. If the startup process fails, the device is rolled back to its previous configuration. |
| <code>startup-log</code> | Displays the Startup Script log.   |

---

### Command Modes

Privileged User

## show storage-history

This command displays the CDRs stored on the device.

---

### Syntax

```
show storage-history {services|unused}
```

| Command               | Description   |
|-----------------------|---|
| <code>services</code> | Displays registered storage services, e.g., for CDRs. |
| <code>unused</code>   | Displays stored files that are not used.              |

---

### Command Mode

Basic and Privileged User

---

### Related Command

`clear storage-history`

## show system

This command displays system information.

---

### Syntax

```
show system
```

| Command                  | Description   |
|--------------------------|---|
| alarms                   | See <a href="#">show system alarms</a> below                        |
| alarms-history           | See <a href="#">show system alarms-history</a> on the next page     |
| assembly                 | See <a href="#">show system assembly</a> on the next page           |
| clock                    | See <a href="#">show system clock</a> on page 69                    |
| cpu-util                 | See <a href="#">show system cpu-util</a> on page 69                 |
| fax-debug-status         | See <a href="#">show system fax-debug-status</a> on page 70         |
| feature-key              | See <a href="#">show system feature-key</a> on page 71              |
| floating-license         | See <a href="#">show system floating-license</a> on page 71         |
| floating-license reports | See <a href="#">show system floating-license reports</a> on page 72 |
| log                      | See <a href="#">show system log</a> on page 73                      |
| ntp-status               | See <a href="#">show system ntp-status</a> on page 73               |
| radius servers status    | See <a href="#">show system radius servers status</a> on page 74    |
| temperature              | See <a href="#">show system temperature</a> on page 75              |
| uptime                   | See <a href="#">show system uptime</a> on page 75                   |
| utilization              | See <a href="#">show system utilization</a> on page 76              |
| version                  | See <a href="#">show system version</a> on page 77                  |

---

### Command Mode

Basic and Privileged User

### **show system alarms**

This command displays active alarms.

---

### Syntax

```
show system alarms
```

---

**Command Mode**

Basic and Privileged User

---

**Examples**

```
show system alarms
Seq. Source          Severity Date          Description
1. Board#1/EthernetLink#2  minor  11.6.2010 , 14:19:42 Ethernet link
alarm. LAN port number 2 is down.
2. Board#1/EthernetGroup#2  major  11.6.2010 , 14:19:46 Ethernet Group
alarm. Ethernet Group 2 is Down.
```

**show system alarms-history**

This command displays the system alarms history.

---

**Syntax**

```
show system alarms-history
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system alarms-history
Seq. Source          Severity Date          Description
1. Board#1          major  24.2.2011 , 20:20:32 Network element admin
state change alarm. Gateway is locked.
3. Board#1/EthernetLink#2  minor  24.2.2011 , 20:20:34 Ethernet link alarm.
LAN
port number 2 is down.
4. Board#1/EthernetLink#3  minor  24.2.2011 , 20:20:34 Ethernet link alarm.
LAN
port number 3 is down.
```

**show system assembly**

This command displays information about the device's hardware assembly (slots, ports, module type, fan tray and power supply). It also displays virtual NICs for Mediant CE/VE.



---

**Syntax**

```
show system assembly
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system assembly
Board Assembly Info:
|Slot No.      | Ports  |Module Type      |
| 1            | 1      | E1/T1           |
| 2            | 1-4    | FXS             |
| 3            | 0      | Empty           |
| 4            | 1-4    | LAN-GE          |
| 5            | 0      | Empty           |

USB Port 1: Empty
USB Port 2: Empty
```

## show system clock

This command displays the device's time and date.

---

**Syntax**

```
show system clock
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system clock
14:12:48 01/02/2017 (dd/mm/yyyy)
```

## show system cpu-util

This command displays the voice CPU utilization (in percentage).

---

**Syntax**

```
show system cpu-util
```

| Command          | Description  |
|------------------|--|
| refreshing       | (Optional) Refreshes the displayed voice CPU utilization information. Press CTRL+C to stop the refresh.  |
| history<br>voice | Displays (data or voice) CPU utilization in the last 72 hours, 60 minutes, and 60 seconds.<br><br><b>Note:</b> This command is applicable only to Mediant 500/500L/800 MSBR. |

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system cpu-util  
Voice CPU utilization 20%%%
```

## show system fax-debug-status

This command displays fax debug status (off or on).

---

**Syntax**

```
show system fax-debug-status
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system fax-debug-status  
The fax debug is OFF. # show fax-debug-status
```

## show system feature-key

This command displays the device's License Key.

---

### Syntax

```
show system feature-key
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show system feature-key

Key features:
Board Type: Mxx
DATA features:
IP Media: Conf
DSP Voice features: RTCP-XR
Channel Type: DspCh=30
HA
Coders: G723 G729 G728 NETCODER GSM-FR GSM-EFR AMR EVRC-QCELP
G727 ILBC EVRC-B AMR-WB G722 EG711 MS_RTA_NB MS_RTA_WB SILK_NB
SILK_WB SPEEX_NB SPEEX_WB OPUS_NB OPUS_WB
Security: IPSEC MediaEncryption StrongEncryption EncryptControlProtocol
E1Trunks=2
T1Trunks=2
FXSPorts=1
FXOPorts=1
BRITrunks=2
QOE features: VoiceQualityMonitoring MediaEnhancement
Control Protocols: MGCP SIP SBC=30 TRANSCODING=5 TestCall=6 SIPRec=10
CODER-TRANSCODING=2 SIPRec-Redundancy=2
Default features:
Coders: G711 G726
```

## show system floating-license

This command displays information on the Floating License. This includes whether it is enabled, and if so, connection status with OVOC, OVOC Product Key, and SBC allocation resources.

---

### Syntax

```
show system floating-license
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system floating-license
Floating License is on
OVOC IP address: 10.8.6.250
OVOC Connection status: Connected
OVOC product ID: 384
Allocation profile: SIP Trunking
Allocation - FEU (Far End Users): 0
Allocation - signaling sessions: 6000
Allocation - media sessions: 6000
Allocation - transcoding sessions: 1536
User Limit - FEU (Far End Users): No limit
User Limit - signaling sessions: No limit
User Limit - media sessions: No limit
User Limit - transcoding sessions: No limit)
```

## show system floating-license reports

This command displays the Floating License reports that the device sends to OVOC. The report contains the device's SBC resource consumption (signaling sessions, media sessions, transcoding sessions, and far-end user registrations).

---

**Syntax**

```
show system floating-license reports
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system floating-license reports
[2018-09-04 17:17:56] Signaling Sessions: (2111), Media Sessions: (2109),
Transcoding Sessions: (2029), Far End Users: (0)
```

```
[2018-09-04 17:16:55] Signaling Sessions: (2032), Media Sessions: (0),
Transcoding Sessions: (0), Far End Users: (0)
[2018-09-04 17:15:54] Signaling Sessions: (0), Media Sessions: (0), Transcoding
Sessions: (0), Far End Users: (0)
```

## show system log

This command displays the device's logged history.

### Syntax

```
show system log
```

| Command           | Description                                    |
|-------------------|--|
| (Carriage Return) | Displays all logged messages.                  |
| -h                | Displays the log history in a readable format. |

### Command Mode

Basic and Privileged User

### Related Commands

To configure the maximum log file size that is saved on the device, use the command `system-log-size`. This determines the amount of logged information displayed when the `show system log` command is run.

### Example

This example displays the logged messages:

```
show system log
Jan 4 00:44:39 local0.notice [S=4666] [BID=5b1035:208] HTTPTaskHCTL - Run
selfCheck
Jan 4 00:45:40 local0.notice [S=4667] [BID=5b1035:208] HTTPTaskHCTL - Run
selfCheck
```

## show system ntp-status

This command displays NTP information.

---

**Syntax**

```
show system ntp-status
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system ntp-status
Configured NTP server #1 is 0.0.0.0
NTP is not synchronized.
Current local time: 2010-01-04 00:50:52
```

## show system radius servers status

This command displays the status of the RADIUS servers.

---

**Syntax**

```
show system radius servers status
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

```
show system radius servers status
servers 0
ip-address 10.4.4.203
auth-port 1812
auth-ha-state "ACTIVE"
acc-port 1813
acc-ha-state "ACTIVE"
servers 1
ip-address 10.4.4.202
auth-port 1812
auth-ha-state "STANDBY"
acc-port 1813
acc-ha-state "STANDBY"
```

This example shows the following fields per server:

- If the authentication port is 0, the server is not part of the redundancy server selection for authentication.
- If the accounting port is 0, the server is not part of the redundancy server selection for accounting.
- Server authentication redundancy (HA) status. ACTIVE = the server was used for the last sent authentication request.
- Server accounting redundancy (HA) status. ACTIVE = the server was used for the last sent accounting request.

## show system temperature

This command displays the temperature of the device's CPU as well as DSPs (in the Media Processing Module / MPM).

---

### Syntax

```
show system temperature
```

---

### Command Mode

Basic and Privileged User

---

### Note

The command is applicable only to Mediant 4000B SBC.

---

### Example

```
show system temperature
Last Updated Temperature (in Celsius):
  CSM (GA #3 ASM #1): 42
  DSM (GA #7 ASM #0): 59
  DSM (GA #7 ASM #3): 62
```

Where "CSM" is the CPU, "DSM" the DSP module, and "GA" the slot.

## show system uptime

This command displays the device's uptime (time since last restarted).

---

### Syntax

```
show system uptime
```

---

### Command Mode

Basic and Privileged User

---

### Example

```
show system uptime
Uptime: 3 days, 0 hours, 55 minutes, 46 seconds
```

## show system utilization

This command displays the device's CPU and memory utilization (in percentage).

---

### Syntax

```
show system utilization
```

| Command                                      | Description   |
|--|---|
| <code>history {at-start voice}</code>        | <ul style="list-style-type: none"> <li>■ <code>at-start</code>: Displays CPU utilization (in percentage) measured five minutes after the device resets.</li> <li>■ <code>voice</code>: Displays CPU utilization (in percentage) of voice: <ul style="list-style-type: none"> <li>✓ Utilization per hour in the last 72 hours.</li> <li>✓ Utilization per minute in the last hour (60 minutes).</li> </ul> </li> </ul> |
| <code>refreshing &lt;Refresh Rate&gt;</code> | Displays CPU and memory utilization (in percentage) every user-defined refresh rate. To stop the display, press the Ctrl+C key combination.   |

---

### Command Mode

Basic and Privileged User

---

### Example

This example displays system utilization, which is refreshed every 5 seconds:

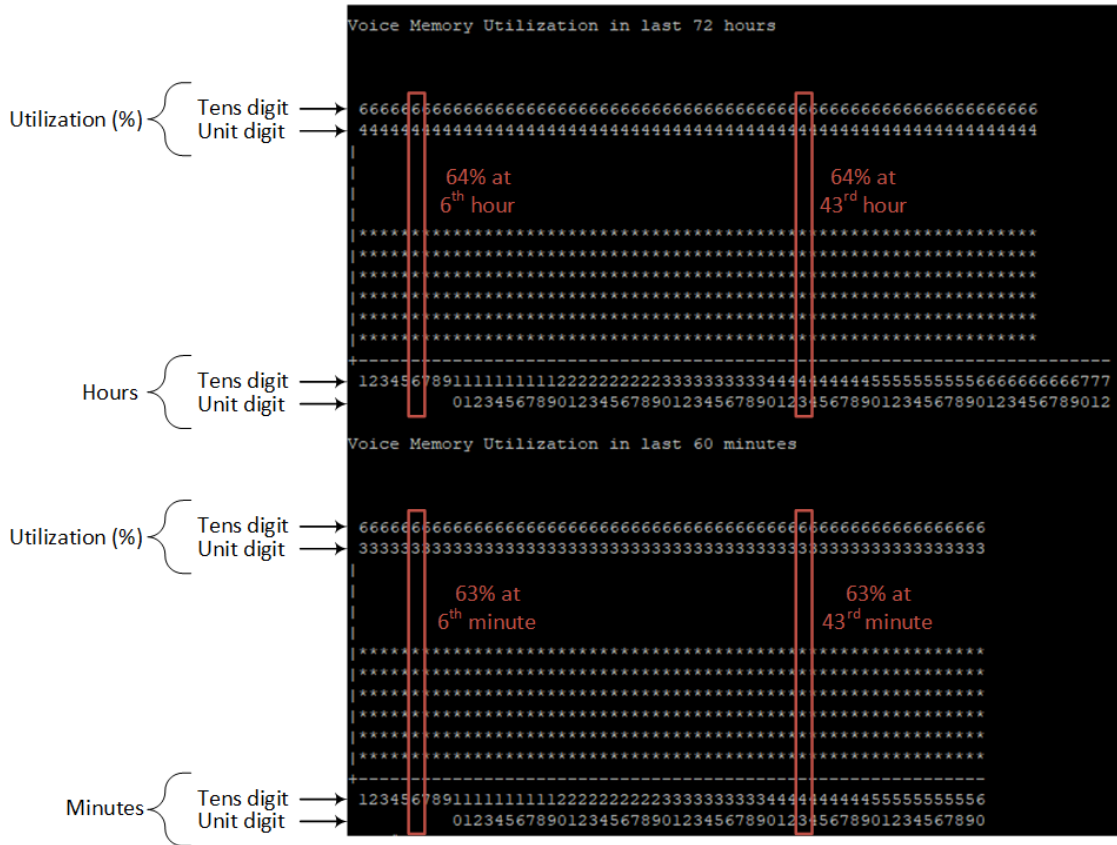


```

show system utilization refreshing 5
CPUs utilization: Data 0% Voice 19%
CPUs Used Memory: Data 0% Voice 56%
System Time 00:58:1

```

The example below displays CPU utilization in the last 72 hours and 60 minutes, using the command, `show system utilization history voice:`



### show system version

This command displays the current running software and hardware version.

#### Syntax

```
show system version
```

#### Command Mode

Basic and Privileged User

#### Example

```
show system version
```

```
Version info:
```

```
-----
;Board: Mxx
;HW Board Type: 69 FK Board Type: 72
;Serial Number: 5967925
;Slot Number: 1
;Software Version: 7.20A.140.652
;DSP Software Version: 5014AE3_R => 721.09
;Board IP Address: 10.15.7.96
;Board Subnet Mask: 255.255.0.0
;Board Default Gateway: 10.15.0.1
;Ram size: 512M Flash size: 64M Core speed: 500Mhz
;Num of DSP Cores: 3 Num DSP Channels: 30
;Num of physical LAN ports: 4
;Profile: NONE
;;;Key features:;Board Type: M800B ;DATA features: ;IP Media: Conf ;DSP Voice
features: RTCP-XR ;Channel Type: DspCh=30 ;HA ;Coders: G723 G729 G728
NETCODER GSM-FR GSM-EFR AMR EVRC-QCELP G727 ILBC EVRC-B AMR-
WB G722
EG711 MS_RTA_NB MS_RTA_WB SILK_NB SILK_WB SPEEX_NB SPEEX_WB
OPUS_NB OPUS_WB ;Security: IPSEC MediaEncryption StrongEncryption
EncryptControlProtocol ;E1Trunks=2 ;T1Trunks=2 ;FXSPorts=1 ;FXOPorts=1
;BRITrunks=2 ;QOE
features: VoiceQualityMonitoring MediaEnhancement ;Control Protocols: MGCP
SIP SBC=30 TRANSCODING=5 TestCall=6 SIPRec=10 CODER-
TRANSCODING=2 SIPRec-Redundancy=2 ;Default features:;Coders: G711
G726;

;----- HW components-----
;
;
; Slot # : Module type : # of ports
;-----
; 1 : FALC56 : 1
; 2 : FXS : 4
; 3 : Empty
;-----
```

## show users

This command displays and terminates users that are currently logged into the device's CLI and applies to users logged into the CLI through RS-232 (console), Telnet, or SSH.

For each logged-in user, the command displays the type of interface (console, Telnet, or SSH), user's username, remote IP address from where the user logged in, and the duration (days and time) of the session. Each user is displayed with a unique index (session ID).

---

### Syntax

```
show users
```

---

### Command Mode

Basic and Privileged User

---

### Note

The device can display management sessions of up to 24 hours. After this time, the duration counter is reset.

---

### Example

Displaying all active calls:

```
show users
[0] console  Admin   local   0d00h03m15s
[1] telnet   John   10.4.2.1 0d01h03m47s
[2]* ssh     Alex   192.168.121.234 12d00h02m34s
```

The current session from which the show command was run is displayed with an asterisk (\*).

## show voip

This command displays VoIP-related information.

---

### Syntax

```
show voip
```

| Command       | Description  |
|---------------|--|
| calls         | See <a href="#">show voip calls</a> on the next page   |
| channel-stats | See <a href="#">show voip channel-stats</a> on page 85 |
| coders-stats  | See <a href="#">show voip coders-stats</a> on page 86  |

| Command      | Description  |
|--------------|--|
| cpu-stats    | See <a href="#">show voip cpu-stats</a> on page 87               |
| dsp          | See <a href="#">show voip dsp</a> on page 87                     |
| e911         | See <a href="#">show voip e911</a> on page 89                    |
| ids          | See <a href="#">show voip ids</a> on page 89                     |
| interface    | See <a href="#">show voip interface</a> on page 90               |
| ip-group     | See <a href="#">show voip ip-group</a> on page 93                |
| ldap         | See <a href="#">show voip ldap</a> on page 94                    |
| other-dialog | See <a href="#">show voip other-dialog statistics</a> on page 95 |
| proxy        | See <a href="#">show voip proxy sets status</a> on page 96       |
| realm        | See <a href="#">show voip realm</a> on page 96                   |
| register     | See <a href="#">show voip register</a> on page 97                |
| subscribe    | See <a href="#">show voip subscribe</a> on page 99               |
| tdm          | See <a href="#">show voip tdm</a> on page 100                    |

---

### Command Mode

Basic and Privileged User

### show voip calls

This command displays active VoIP call information.

---

### Syntax

```
show voip calls {active|history|statistics}
```

| Command    | Description   |
|------------|---|
| active     | See <a href="#">show voip calls active</a> on the next page |
| history    | See <a href="#">show voip calls history</a> on page 82      |
| statistics | See <a href="#">show voip calls statistics</a> on page 83   |

---

**Command Mode**

Basic and Privileged User

**show voip calls active**

This command displays active calls.

---

**Syntax**

```
show voip calls active [<Session ID> |descending|gw|sbc|siprec|summary] [match <String>]
```

| Command           | Description  |
|-------------------|--|
| (Carriage Return) | Displays the total number of active calls and detailed call information.                                 |
| Session ID        | Displays detailed call information for a specific SIP session ID.  |
| descending        | Displays currently active calls, listed in descending order by call duration.                            |
| gw                | Displays call information of currently active Gateway calls, listed in ascending order by call duration. |
| match             | Filters the output according to a matched string.  |
| sbc               | Displays call information of currently active SBC calls, listed in ascending order by call duration.     |
| siprec            | Displays call information of currently active SIPRec calls, listed in ascending order by call duration.  |
| summary           | Displays the total number of currently active calls (Gateway and SBC)                                    |

---

**Command Mode**

Basic and Privileged User

---

**Related Commands**To hide (by displaying an asterisk) the values of the Caller and Callee CDR fields, use the `cdr-history-privacy` command.

---

**Example**

Displaying all active calls:

```
show voip calls active sbc
Total Active Calls: 1000
|Session ID | Caller   | Callee   | Origin | Remote IP |End Point
Type |Duration|Call State
=====
=
|314380675 |1129@10.3.3.194 |100@10.3.91.2 |Incoming|10.3.3.194
(IPG-1) |SBC      |00:05:12|Connected
|314380675 |1129@10.3.3.194 |100@10.3.91.2 |Outgoing|10.3.3.194
(IPG-2) |SBC      |00:05:12|Connected
|314380674 |1128@10.3.3.194 |100@10.3.91.2 |Incoming|10.3.3.194
(IPG-1) |SBC      |00:05:12|Connected
```

### show voip calls history

This command displays CDR history information.

#### Syntax

```
show voip calls history {gw|sbc|siprec} [<Session ID>] [match <String>]
```

| Command    | Description   |
|------------|---|
| gw         | Displays historical Gateway CDRs.   |
| match      | Filters displayed output according to a string.                                   |
| sbc        | Displays historical SBC CDRs.   |
| Session ID | (Optional) Displays historical SBC or Gateway CDRs of a specified SIP session ID. |
| siprec     | Displays historical SIPRec CDRs.  |

#### Command Mode

Basic and Privileged User

#### Related Commands

To hide (by displaying an asterisk) the values of the Caller and Callee CDR fields, use the `cdr-history-privacy` command.

---

### Example

Displaying CDR history information:

```
show voip calls history sbc
```

### show voip calls statistics

This command displays call statistics.

---

### Syntax

```
show voip calls statistics {gw|ipgroup|sbc|siprec}
```

| Command               | Description  |  |
|-----------------------|--|--|
| gw [ip2tel tel2ip]    | Displays all Gateway call statistics or per call direction:  |  |
|                       | ip2tel   | Displays statistics of IP-to-Tel calls |
|                       | tel2ip   | Displays statistics of Tel-to-IP calls |
| ipgroup <IP Group ID> | Displays call statistics per IP Group (ID).  |  |
| sbc                   | Displays SBC call statistics (see the example below).  |  |
| siprec                | Displays the total number of currently active SIPRec signalling sessions with the SIPRec server (SRS). |  |

---

### Command Mode

Basic and Privileged User

---

### Example

- The examples display various SIPRec sessions:
  - Eight recorded calls (Gateway and/or SBC) without SRS redundancy:

```
show voip calls statistics siprec
SIPRec number of active sessions: 8 (redundant sessions: 0)
```

- Eight recorded SBC calls with SRS redundancy (active-standby):

```
show voip calls statistics siprec
SIPRec number of active sessions: 8 (redundant sessions: 8)
```

- Eight recorded SBC calls with SRS redundancy (active-active):

```
show voip calls statistics siprec
SIPRec number of active sessions: 16 (redundant sessions: 0)
```

- The example displays SBC call statistics:

```
show voip calls statistics sbc
SBC Call Statistics:
Active INVITE dialogs: 0
Active incoming INVITE dialogs: 0
Active outgoing INVITE dialogs: 0
Average call duration [min:sec]: 0:00
Call attempts: 0
Incoming call attempts: 0
Outgoing call attempts: 0
Established calls: 0
Incoming established calls: 0
Outgoing established calls: 0
Calls terminated due to busy line: 0
Incoming calls terminated due to busy line: 0
Outgoing calls terminated due to busy line: 0
Calls terminated due to no answer: 0
Incoming calls terminated due to no answer: 0
Outgoing calls terminated due to no answer: 0
Calls terminated due to forward: 0
Incoming calls terminated due to forward: 0
Outgoing calls terminated due to forward: 0
Calls terminated due to resource allocation failure: 0
Incoming calls terminated due to resource allocation failure: 0
Outgoing calls terminated due to resource allocation failure: 0
Calls terminated due to media negotiation failure: 0
Incoming calls terminated due to media negotiation failure: 0
Outgoing calls terminated due to media negotiation failure: 0
Calls terminated due to general failure: 0
```



```

Incoming calls terminated due to general failure: 0
Outgoing calls terminated due to general failure: 0
Calls abnormally terminated: 0
Incoming calls abnormally terminated: 0
Outgoing calls abnormally terminated: 0

```

## show voip channel-stats

This command displays statistics associated with a specific VoIP channel.

### Syntax

```
show voip channel-stats {analog|channel-count|digital|jitter-threshold|pl|pl-
threshold|rtt-threshold|virtual}
```

| Command          | Description  |
|------------------|--|
| analog           | Displays an analog channel's statistics (FXS or FXO). <ul style="list-style-type: none"> <li>channel number (0-255; run the command show system assembly to facilitate defining this command)</li> <li>number of channels (1-256)</li> </ul>   |
| channel-count    | Displays the number of active voice channels.  |
| digital          | Displays a digital channel's statistics (E1/T1 or BRI). <ul style="list-style-type: none"> <li>channel number (0-255; run the command show system assembly to facilitate defining this command)</li> <li>number of channels (1-256)</li> </ul> |
| jitter-threshold | Displays the number of analog channels, digital channels, and virtual channels on which jitter occurred that exceeded the threshold you configured (in the range 0-65535).   |
| pl               | Displays the number of analog channels, digital channels, and virtual channels on which PL (packet loss) occurred.   |
| pl-threshold     | Displays the number of analog channels, digital channels, and virtual channels on which PL (packet loss) occurred that exceeded the threshold you  |

| Command                    | Description  |
|----------------------------|--|
|                            | configured (in the range 0-65535).   |
| <code>rtt-threshold</code> | Displays the number of analog channels, digital channels, and virtual channels on which the RTT (Round Trip Time) exceeded the threshold you configured (in the range 0-65535).  |
| <code>virtual</code>       | Displays a virtual channel's statistics of active calls. <ul style="list-style-type: none"> <li>■ channel number (0-255; run the command <code>show system assembly</code> to facilitate defining this command)</li> <li>■ number of channels (1-256)</li> </ul> |

---

### Command Mode

Basic and Privileged User

### show voip coders-stats

This command displays the number and percentage of active channels using each audio coder.

---

### Syntax

```
show voip coders-stats
```

---

### Command Mode

Basic and Privileged User

---

### Example

Showing that 67 channels (25.18%) of the 266 active channels are using the G.729e coder, 76 (28.57%) are using the G.726 coder, and 123 (46.24%) are using the G.722 coder:

```
show voip coders-stats
There are 266 active channels.
Coder   Number of Channels  Percentage
-----
G729e   67                   25.18
G726    76                   28.57
G722    123                  46.24
```

## show voip cpu-stats

This command displays the device's CPU percentage use.

---

### Syntax

```
show voip cpu-stats
```

---

### Command Mode

Basic and Privileged User

---

### Example

Displaying CPU percentage use:

```
show voip cpu-stats
CPU percentage: 47%
```

## show voip dsp

This command displays DSP information.

---

### Syntax

```
show voip dsp
```

| Command | Description   |
|---------|---|
| perf    | See <a href="#">show voip dsp perf</a> below              |
| status  | See <a href="#">show voip dsp status</a> on the next page |

---

### Command Mode

Basic and Privileged User

## show voip dsp perf

This command displays performance monitoring of DSP data.

---

### Syntax

```
show voip dsp perf
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

Displaying performance monitoring of DSP data:

```
show voip dsp perf
```

DSP Statistics (statistics for 144 seconds):

Active DSP resources: 0

Total DSP resources: 76

DSP usage : 0

**show voip dsp status**

This command displays the current DSP status.

---

**Syntax**

```
show voip dsp status
```

---

**Command Mode**

Basic and Privileged User

---

**Example**

Displaying the current DSP status:

```
show voip dsp status
```

Group:0 DSP firmware:624AE3 Version:0660.07 - Used=0 Free=72 Total=72

DSP device 0: Active Used= 0 Free= 6 Total= 6

DSP device 1: Active Used= 0 Free= 6 Total= 6

DSP device 2: Active Used= 0 Free= 6 Total= 6

DSP device 3: Active Used= 0 Free= 6 Total= 6

DSP device 4: Active Used= 0 Free= 6 Total= 6

DSP device 5: Active Used= 0 Free= 6 Total= 6

DSP device 6: Active Used= 0 Free= 6 Total= 6

```
DSP device 7: Active Used= 0 Free= 6 Total= 6
DSP device 8: Active Used= 0 Free= 6 Total= 6
DSP device 9: Active Used= 0 Free= 6 Total= 6
DSP device 10: Active Used= 0 Free= 6 Total= 6
DSP device 11: Active Used= 0 Free= 6 Total= 6
Group:1 DSP firmware:204IM Version:0660.07 - Used=0 Free=8 Total=8
DSP device 12: Active Used= 0 Free= 4 Total= 4
DSP device 13: Active Used= 0 Free= 4 Total= 4
Group:2 DSP firmware:204IM Version:0660.07 - Used=0 Free=4 Total=4
DSP device 14: Active Used= 0 Free= 4 Total= 4
Group:4 DSP firmware:204IM Version:0660.07 - Used=4 Free=0 Total=4
DSP device 15: Active Used= 4 Free= 0 Total= 4
```

## show voip e911

This command displays the ELIN number per E911 caller and the time of call.

---

### Syntax

```
show voip e911
```

---

### Command Mode

Basic and Privileged User

## show voip ids

This command displays the Intrusion Detection System (IDS) blacklist of remote hosts (IP addresses / ports) considered malicious.

---

### Syntax

```
# show voip ids {blacklist active|active-alarm}
# show voip ids active-alarm {all|match <ID> rule <ID>}
```

| Command      | Description   |
|--------------|---|
| active-alarm | Displays all active blacklist alarms: <ul style="list-style-type: none"> <li>■ all (Displays all active alarms)</li> <li>■ match (Displays active alarms of an IDS matched ID and rule ID)</li> </ul> |

| Command             | Description                 |
|---------------------|-----------------------------|
| blacklist<br>active | Displays blacklisted hosts. |

---

### Command Mode

Privileged User

---

### Related Commands

- ids policy
- ids rule
- clear voip ids blacklist

---

### Example

- Displaying the IDS blacklist:

```
# show voip ids blacklist active
Active blacklist entries:
10.33.5.110(NI:0) remaining 00h:00m:10s in blacklist
```

Where SI is the SIP Interface, and NI is the Network interface.

- Displaying the blacklist of all active IDS alarms:

```
# show voip ids active-alarm all
IDSMatch#0/IDSRule#1: minor alarm active.
```

- Displaying details regarding an active IDS alarm of the specified match and rule IDs:

```
# show voip ids active-alarm match 0 rule 1
IDSMatch#0/IDSRule#1: minor alarm active.
- Scope values crossed while this alarm is active:
10.33.5.110(SI0)
```

## show voip interface

This command displays information (basic configuration, status and Performance Monitoring) of a specified telephony interface.

---

### Syntax

```
show voip interface {e1-t1|bri|fxs-fxo} <Module>/<Port>
```

| Command | Description  |
|---------|--|
| e1-t1   | Displays information on a specified E1/T1 interface.   |
| bri     | Displays information on a specified BRI interface.   |
| fxs-fxo | Displays the current status, main PM parameters and main configuration parameters to a specific analog interface (FXS or FXO). |
| module  | Defines the module slot index as shown on the front panel  |
| port    | Defines the module's analog port number (FXS/FXO) or trunk port number (E1/T1 or BRI) to display.                              |

---

### Command Mode

Basic and Privileged User

---

### Note

- Parameters displayed depend on the PSTN protocol type.
- The command is applicable to devices supporting analog and/or digital PSTN interfaces.

---

### Example

This example displays information of the E1/T1 interface of trunk port 1 of trunk module 3 on the BRI interface:

```
show voip interface e1-t1 3/1
show voip interface e1-t1 3/1
-----
module/port: 3/1
trunk number: 0
protocol: t1_transparent
state: not active
alarm status: LOS 1, LOF 0, RAI 0, AIS 0, RAI_CRC 0
loopback status: no loop
send alarm status: no alarm
main performance monitoring counters collected in the last 470 seconds:
  BitError: 0 EBitErrorDetected: 0
  CRCErrorReceived: 0 LineCodeViolation: 0
```

```
ControlledSlip: 0      ControlledSlipSeconds: 0
ErroredSeconds: 0     BurstyErroredSeconds: 0
UnAvailableSeconds: 470 PathCodingViolation: 0
LineErroredSeconds: 0 SeverelyErroredSeconds: 0
SeverelyErroredFramingSeconds: 0
```

basic configuration:

```
framing: T1_FRAMING_ESF_CRC6
line-code: B8ZS
clock-master: CLOCK_MASTER_OFF
clock-priority: 0
trace-level: no-trace
```

# show voip interface bri

```
show voip interface bri 2/1
```

```
-----
module/port: 2/1
trunk number: 0
protocol: none
state: not active
alarm status: LOS 1, LOF 0
loopback status: no loop
```

performance monitoring was not started on this trunk.

basic configuration:

```
isdn-layer2-mode: BRI_L2_MODE_P2P
trace-level: no-trace
```

```
show voip interface bri 2/2
```

```
-----
module/port: 2/2
trunk number: 1
protocol: none
state: not active
alarm status: LOS 1, LOF 0
loopback status: no loop
```

performance monitoring was not started on this trunk.

basic configuration:

```
isdn-layer2-mode: BRI_L2_MODE_P2P
trace-level: no-trace
```



## show voip ip-group

This command displays the following QoS metrics per IP Group:

- QoE profile metrics per IP Group and its associated Media Realm on currently established calls such as MOS, jitter, packet loss, and delay. Metrics are displayed as average amounts.
- Bandwidth Profile (BW) metrics for Tx and Rx traffic per IP Group and/or Media Realm. Metrics are displayed with a status color for each specific port.
- QoE profile metrics for the remote (far-end) such as MOS, jitter, packet loss, and delay. Each metric is displayed with a specific color.
- Group MSA metrics for the IP Group and the Media Realm. Metrics are displayed as an aggregated value.

---

### Syntax

```
show voip ip-group <IP Groups Table Index> media-statistics
```

---

### Command Mode

Basic and Privileged User

---

### Example

Displaying QoS metrics of IP Group configured in row index 0:

```
show voip ip-group 0 media-statistics
IPGroup 0. BWProfile: -1, QoEProfile: -1
-----
MSA: 0
Averages: MOS 0 Remote MOS 0 Delay 0 Remote Delay 0 Jitter 0 Remote Jitter 0
Fraction loss tx 0 Fraction loss rx 0
Packet sent 0 Packet received 0
Audio Tx BW 0, Audio Tx Status Green
Audio Rx BW 0, Audio Rx Status Green
Total Tx BW 0, Total Tx Status Green
Total Rx BW 0, Total Rx Status Green
Video Tx BW 0, Video Tx Status Green
Video Rx BW 0, Video Rx Status Green
MSA color Gray MSA remote color Gray
MOS color Gray remote MOS color Gray
Delay color Gray remote Delay color Gray
PL color Gray remote PL color Gray
Jitter color Gray remote Jitter color Gray
```

```
color is not relevant
Media Realm -1. BWProfile -1, QoEProfile: -1
```

## show voip ldap

This command displays the number of 'internal AD search requests', i.e., routings requiring information from the AD, including requests answered via the cache and directly from the AD. Routing requests are stored every 15 minutes. The last 96 intervals (24h) are stored.

---

### Syntax

```
show voip ldap {cache-hits-pm|print-cache} {group <Group Matrix Index>}|print-
cache-entry {group <Group Index>}|print-cache-nums|searches-pm|timeout-pm
```

| Command           | Description  |
|-------------------|--|
| cache-hits-pm     | Displays the number of responses answered by the cache in each interval. |
| print-cache       | Displays the cache (by group).   |
| print-cache-entry | Displays a cache entry (by key and group).                               |
| print-cache-nums  | Displays the number of entries and aged entries in the cache.            |
| searches-pm       | Displays performance monitoring results for searches.                    |
| timeout-pm        | Displays performance monitoring results for searches.                    |

---

### Command Mode

Basic and Privileged User

---

### Example

- Displaying the the number of responses answered by the cache in each interval:

```
show voip ldap cache-hits-pm
server 0
00000000000000000000000000000000000000000000000000000000000000000000
000000000000
000000000000000000000000000000000000 server 1
0000000000000000000000000000000000000000000000000000000000000000
```

```
000000000000
00000000000000000000000000000000
```

- Displaying the cache (by group):

```
show voip ldap print-cache
print cache
servers' group number 0 Hash size 0 aged 0
servers' total Hash size 16384
servers' group number 1 Hash size 0 aged 0
```

- Displaying the cache (by key and group):

```
show voip ldap print-cache-entry
servers' group number 0 Hash size 0 aged 0
servers' total Hash size 16384
servers' group number 1 Hash size 0 aged 0
```

## show voip other-dialog statistics

This command displays the number of current incoming and outgoing SIP dialogs (e.g., REGISTER), except for INVITE and SUBSCRIBE messages.

---

### Syntax

```
show voip other-dialog statistics
```

---

### Command Mode

Basic and Privileged User

---

### Note

The command is applicable only to the SBC application.

---

### Example

```
show voip other-dialog statistics
SBC other Dialog Statistics:
Active other dialogs: 0
Active incoming other dialogs: 0
Active outgoing other dialogs: 0
```

## show voip proxy sets status

This command displays the information of Proxy Sets including their status. The status ("OK" or "FAIL") indicates IP connectivity with the proxy server.

---

### Syntax

```
show voip proxy sets status
```

---

### Command Mode

Basic and Privileged User

---

### Example

Displaying status of Proxy Sets:

```
show voip proxy sets status
  Active Proxy Sets Status
ID NAME  MODE  KEEP ALIVE  ADDRESS  PRIORITY WEIGHT
SUCCESS COUNT FAILED COUNT STATUS
0 ITSP-1 Parking Disabled NOT RESOLVED
1 ITSP-2 Homing Enabled 10.8.6.31(10.8.6.31) OK
```

## show voip realm

This command displays statistics relating to Media Realms and Remote Media Subnets.

---

### Syntax

- Displaying Media Realms:

```
show voip realm <Media Realm Table Index> statistics
```

- Displaying Remote Media Subnets:

```
show voip realm <Media Realm Table Index> remote-media-subnet <Remote Media Subnet Table Index> statistics
```

---

### Command Mode

Basic and Privileged User

**Note**

The command is especially useful when Quality of Experience Profile or Bandwidth Profile is associated with the Media Realm or Remote Media Subnets.

**show voip register**

This command displays registration status of users.

**Syntax**

```
show voip register {account|board|db sbc|ports|suppserv gw|user-info}
```

| Command     | Description  |
|-------------|--|
| account     | Displays registration status of user Accounts (Accounts table). <ul style="list-style-type: none"> <li>■ gw (Gateway accounts)</li> <li>■ sbc (SBC accounts)</li> </ul>  |
| board       | Displays registration status for the entire gateway.   |
| db sbc      | Displays SBC users registered with the device (SBC User Information table). <ul style="list-style-type: none"> <li>■ list (Displays the status of all registered SBC users showing their AOR and Contact)</li> <li>■ user &lt;AOR&gt; (Displays detailed information about a specific registered SBC user, including the IP Group to which the user belongs):</li> <li>■ Active:YES = user was successfully registered.<br/>Active:NO = user was registered and is waiting for approval.</li> </ul> <p><b>Note:</b> The command is applicable only to the SBC application.</p> |
| ports       | Displays registration status of the devices' ports.<br><b>Note:</b> The command is applicable only to the Gateway application.   |
| suppserv gw | Displays the number of users in the Supplementary Services table. <ul style="list-style-type: none"> <li>■ list (Displays detailed information about users, including registration status (REGISTERED / NOT REGISTERED)).</li> </ul> <p><b>Note:</b> The command is applicable only to the Gateway application.</p>  |
| user-info   | Displays registration status of users in the User Info table. <ul style="list-style-type: none"> <li>■ gw (Displays total number of Gateway users)</li> </ul>  |

| Command | Description  |
|---------|--|
|         | <ul style="list-style-type: none"> <li>✓ list (Displays detailed information about users, including registration status - REGISTERED / NOT REGISTERED).</li> <li>■ sbc (Displays total number of SBC users)</li> <li>✓ list (Displays detailed information about users, including registration status - REGISTERED / NOT REGISTERED).</li> </ul> |

---

### Command Mode

Basic and Privileged User

---

### Example

- Displaying registration status of SBC users of AOR "2017":

```
show voip register db sbc user 2017
*** SBC Registered Contacts for AOR '2017' ***
sip:2017@10.8.2.225:5080;expire=90; Active: YES; IPG#4; ResourceID#
(#983)
```

- Displaying port registration status:

```
show voip register ports

*** Ports Registration Status ***

Gateway  Port      Status
=====
Module 3  Port 1   FXO     REGISTERED
-----
Module 3  Port 2   FXO     REGISTERED
-----
Module 3  Port 3   FXO     REGISTERED
-----
Module 3  Port 4   FXO     NOT REGISTERED
-----
Module 5  Port 1   FXS     NOT REGISTERED
-----
Module 5  Port 2   FXS     NOT REGISTERED
-----
Module 5  Port 3   FXS     NOT REGISTERED
```

```
-----
Module 5 Port 4 FXS REGISTERED
```

- Displaying detailed information about users in the Supplementary Services table:

```
show voip register suppserv gw list
*** GW Supp Serv Users Registration Status ***
Index Type      Status      Contact
=====
1 EndPoint NOT REGISTERED sip:4000@10.15.7.96:5060
```

## show voip subscribe

This command displays active SIP SUBSCRIBE dialog sessions.

### Syntax

```
show voip subscribe {list|statistics}
show voip subscribe list [<Session ID>|descending|summary]
```

| Command    | Description   |
|------------|---|
| list       | Displays SUBSCRIBE dialog information. One of three options can be selected: <ul style="list-style-type: none"> <li>■ &lt;Session ID&gt; (Displays detailed information for the specified Session ID).</li> <li>■ descending (Displays SUBSCRIBE dialogs sorted in descending order by call duration).</li> <li>■ summary (Displays a summary of SUBSCRIBE dialogs).</li> </ul> |
| statistics | Displays SUBSCRIBE dialog statistics including incoming and outgoing SUBSCRIBEs.  |

### Command Mode

Basic and Privileged User

### Example

Displaying a summary of active SUBSCRIBE dialogs:

```
show voip subscribe statistics
SBC SUBSCRIBE Dialog Statistics:
Active SUBSCRIBE dialogs: 4
Active incoming SUBSCRIBE dialogs: 6
Active outgoing SUBSCRIBE dialogs: 8
```

## show voip tdm

This command displays TDM status.

---

### Syntax

```
show voip tdm
```

---

### Command Mode

Basic and Privileged User

---

### Example

The command is applicable only to devices supporting PSTN interfaces.

---

### Example

```
show voip tdm
Clock status:
  TDM Bus Active Clock Source Internal
Configuration:
  PCM Law Select 3
  TDM Bus Clock Source 1
  TDM Bus Local Reference 0
  TDM Bus Type 2
  Idle ABCD Pattern 15
  Idle PCM Pattern 255
  TDM Bus PSTN Auto Clock Enable 0
  TDM Bus PSTN Auto Clock Reverting Enable 0
```



## 7 Clear Commands

This section describes the clear commands.

---

### Syntax

```
# clear
```

This command includes the following commands:

| Command         | Description  |
|-----------------|--|
| alarms-history  | See <a href="#">clear alarms-history</a> below             |
| debug-file      | See <a href="#">clear debug-file</a> below                 |
| qos             | See <a href="#">clear qos counters</a> on the next page    |
| storage-history | See <a href="#">clear storage-history</a> on the next page |
| system-log      | See <a href="#">clear system-log</a> on page 103           |
| user            | See <a href="#">clear user</a> on page 103                 |
| voip            | See <a href="#">clear voip</a> on page 104                 |

---

### Command Mode

Privileged User

### clear alarms-history

This command deletes the Alarms History table.

---

### Syntax

```
# clear alarms-history
```

---

### Command Mode

Privileged User

### clear debug-file

This command deletes the debug file (and core dump).

**Syntax**

```
# clear debug-file
```

**Command Mode**

Privileged User

**clear qos counters**

This command deletes counter data related to quality of service.

**Syntax**

```
# clear qos counters
```

**Command Mode**

Privileged User

**clear storage-history**

This command deletes the locally stored CDRs.

**Syntax**

```
# clear storage-history <Service Name> {all|unused}
```

| Command      | Description   |
|--------------|---|
| Service Name | <p>The name of the service. To view services, run the show storage-history services command.</p> <p>Currently supported service: cdr-storage-history</p> <p>Includes the following Command:</p> |
| all          | Deletes all stored CDR files  |
| unused       | Deletes unused stored CDR files   |

**Command Mode**

Privileged User

---

**Related Commands**

show storage-history services

---

**Example**

- Deleting all stored CDR files:

```
# clear storage-history cdr-storage-history all
```

- Deleting all unused stored CDR files:

```
# clear storage-history cdr-storage-history unused
```

## clear system-log

This command deletes the system log. This clears the Syslog messages in the CLI, and on the Web interface's Message Log page (Troubleshoot menu > Troubleshoot tab > Message Log) where it does the same as clicking the **Clear** button.

---

**Syntax**

```
# clear system-log
```

---

**Command Mode**

Privileged User

---

**Related Commands**

show system log

## clear user

This command terminates CLI users who are currently logged in through RS-232 (console), Telnet, or SSH. When run, the command drops the Telnet/SSH session or logs out the RS-232 session, and displays the login prompt.

---

**Syntax**

```
# clear user <Session ID>
```

| Command    | Description  |
|------------|--|
| Session ID | Unique identification of each currently logged in CLI user. Allows you to end the active CLI session of a specific CLI user. You can view session IDs by running the show users command. |

---

### Note

The CLI session from which the command is run cannot be terminated.

---

### Command Mode

Privileged User

---

### Related Commands

show users

---

### Example

Ending the CLI session of a specific user:

```
# clear user 1
```

## clear voip

This command deletes VoIP-related information.

---

### Syntax

```
# clear voip {calls|register|statistics}
```

| Command       | Description   |
|---------------|---|
| calls         | See <a href="#">clear voip calls</a> on the next page         |
| ids blacklist | See <a href="#">clear voip ids blacklist</a> on the next page |
| register      | See <a href="#">clear voip register db sbc</a> on page 106    |
| statistics    | See <a href="#">clear voip statistics</a> on page 107         |

---

### Command Mode

Privileged User

## clear voip calls

This command deletes all active calls.

### Syntax

```
# clear voip calls [<Session ID>]
```

| Command           | Description   |
|-------------------|---|
| (Carriage Return) | If Session ID isn't specified, all active VoIP calls are cleared.     |
| Session ID        | (Optional) If Session ID is specified, the specified call is cleared. |

### Command Mode

Privileged User

### Related Commands

show voip calls active

### Example

Displaying and then clearing VoIP calls:

```
# show voip calls
Total Active Calls: 1
|Session ID | Caller | Callee | Origin | Remote IP | End Point
Type |Duration|Call State
=====
=====
=
|326433737 |3005 |2000 |Outgoing|10.8.6.36 |FXS-3/3
|00:00:06|Connected

# clear voip calls 326433737
1 Active Calls were Manually disconnected
```

## clear voip ids blacklist

This command deletes active blacklisted remote hosts in the IDS Active Black List table.

**Syntax**

```
# clear voip ids blacklist {all|entry <Removal Key>}
```

| Command             | Description   |
|---------------------|---|
| all                 | Deletes all blacklisted entries in the IDS Active Black List table.                           |
| entry <Removal Key> | Deletes a blacklisted entry in the IDS Active Black List table, specified by its Removal Key. |

**Command Mode**

Privileged User

**Related Commands**

show voip ids

**Example**

This example deletes a blacklisted entry whose Removal Key is 776-854-3:

```
# clear voip ids blacklist entry 776-854-3
```

**clear voip register db sbc**

This command deletes SBC users registered from the device's registration database.

**Syntax**

```
# clear voip register db sbc user <AOR>
# clear voip register db sbc ip-group <ID or Name>
```

| Command    | Description  |
|------------|--|
| AOR        | Defines the Address of Record (AOR) of the user (user part or user@host).              |
| ID or name | Configures an IP Group (i.e., deletes all registered users belonging to the IP Group). |

**Command Mode**

Privileged User

---

**Note**

The command is applicable only to the SBC application.

---

**Example**

Clearing John@10.33.2.22 from the registration database:

```
# clear voip register db sbc user John@10.33.2.22
```

### clear voip statistics

This command deletes calls statistics.

---

**Syntax**

```
# clear voip statistics
```

---

**Command Mode**

Privileged User

## 8 General Root Commands

This section describes general root commands. These commands are entered at root level.

| Command          | Description                                      |
|------------------|--|
| admin            | See <a href="#">admin</a> below                  |
| copy             | See <a href="#">copy</a> on page 112             |
| dir              | See <a href="#">dir</a> on page 118              |
| erase            | See <a href="#">erase</a> on page 119            |
| ha               | See <a href="#">ha</a> on page 120               |
| nslookup         | See <a href="#">nslookup</a> on page 120         |
| output-format    | See <a href="#">output-format</a> on page 121    |
| ping             | See <a href="#">ping</a> on page 123             |
| pstn             | See <a href="#">pstn</a> on page 124             |
| reload           | See <a href="#">reload</a> on page 125           |
| srd-view         | See <a href="#">srd-view</a> on page 126         |
| system-snapshot  | See <a href="#">system-snapshot</a> on page 127  |
| telnet           | See <a href="#">telnet</a> on page 128           |
| traceroute       | See <a href="#">traceroute</a> on page 129       |
| usb              | see <a href="#">usb</a> on page 131              |
| write            | See <a href="#">write</a> on page 131            |
| write-and-backup | See <a href="#">write-and-backup</a> on page 132 |

### admin

This command provides various administration-related operations.

---

#### Syntax

```
admin
```



| Command    | Description   |
|------------|---|
| register   | See <a href="#">admin register unregister</a> below |
| state      | See <a href="#">admin state</a> on the next page    |
| streaming  | See <a href="#">admin streaming</a> on page 112     |
| unregister | See <a href="#">admin register unregister</a> below |

## admin register|unregister

This command registers (or unregisters) users with a proxy server.

### Syntax

```
admin register|unregister {accounts|gw|ports|suppserv|userinfo}
```

| Command                             | Description   |
|-------------------------------------|---|
| accounts <Account Index>            | Registers user Accounts, configured in the Accounts table.  |
| gw                                  | Registers the device as a single entity (Gateway).  |
| ports <Module Number> <Port Number> | Registers the device's ports. You need to specify the module number and port number.                              |
| suppserv <Extension Number>         | Registers an FXS endpoint by phone number and BRI line extensions configured in the Supplementary Services table. |
| userinfo {gw sbc} <Local User>      | Registers users configured in the User Info table.  |

### Command Mode

Basic and Privileged User

### Example

This example registers Port 1 located on Module 3:

```
admin register ports 3 1
Registering module 3 port 1 (200)
```

## admin state

This command locks and unlocks the device.

---

### Syntax

- Locks the device:

```
# admin state lock {graceful <timeout>|no-graceful} [disconnect-client-connections]
```

- Unlocks the device:

```
# admin state unlock
```

| Command                            | Description  |
|------------------------------------|--|
| lock graceful<br><timeout> forever | Gracefully locks the device after a user-defined interval (seconds), during which new calls are rejected and existing calls continue. If the existing calls do not end on their own accord during the interval, the device terminates (disconnects) them when the timeout expires.<br><br>To wait until all calls end on |

| Command                                    | Description   |
|--|---|
|  | their own before locking the device (no timeout), use the <code>forever</code> option. During this time, no new calls are accepted. |
| <code>lock no-graceful</code>              | Immediately ends (disconnects) all active calls (if any exist) and locks the device.  |
| <code>disconnect-client-connections</code> | Closes existing TLS/TCP client connections and rejects incoming TLS/TCP client connections when the device is in locked state.      |
| <code>unlock</code>                        | Unlocks the device.   |

---

### Command Mode

Privileged User

---

### Related Commands

`show admin state` – displays the current administrative state

---

### Example

This example locks the device after 50 seconds and closes existing TLS/TCP connections:

```
# admin state lock graceful 50 disconnect-client-connections
```

## admin streaming

This command stops or starts audio streaming of Music on Hold (MoH) from an external media player connected to an FXS port.

### Syntax

```
admin streaming {start|stop}
```

| Command                | Description   |
|------------------------|---|
| start {<FXS Port> all} | Starts audio streaming on a specific FXS port or all FXS ports. |
| stop {<FXS Port> all}  | Stops audio streaming on a specific FXS port or all FXS ports.  |

### Command Mode

Basic and Privileged User

### Example

This example starts audio streaming on FXS port 1:

```
admin streaming start 1
```

## copy

This command downloads and uploads files from and to the device, respectively.

### Syntax

```
# copy <File Type> {from|to} {<URL>|console|usb:///<Filename>}
```

| Command     | Description  |
|-------------|--|
| File Type   |  |
| aux-package | Defines the file type as an auxiliary package file, allowing you |

| Command                                | Description  |
|--|--|
|  | <p>to download or upload a batch of auxiliary files, using a TAR (Tape ARchive) file (.tar).</p> <p>The TAR file can contain any number and type of Auxiliary files, for example, a Dial Plan file and a CPT file.</p>   |
| <pre>call-progress- tones from</pre>   | <p>Defines the file type as a Call Progress Tones (CPT) file.</p> <p><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).</p>  |
| <pre>cas-table from</pre>              | <p>Defines the file type as a Channel Associated Signaling (CAS) table file.</p> <p><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).</p>   |
| <pre>cli-script {from to}</pre>        | <p>Defines the file type as a CLI script file.</p>   |
| <pre>configuration-pkg {from to}</pre> | <p>Defines the file type as a Configuration Package file (.tar.gz), which includes all files.</p>  |
| <pre>debug-file to</pre>               | <p>Defines the file type as a debug file and copies the file from the device to a destination. The debug file contains the following information:</p> <ul style="list-style-type: none"> <li>■ Exception information, indicating the specific point in the code where the crash occurred and a list of up to 50 of the most recent SNMP alarms that were raised by the device before it crashed.</li> <li>■ Latest log messages that were recorded prior to the crash.</li> <li>■ Core dump. The core dump is included only if core dump generation is enabled, no IP address has been configured, and the device has sufficient memory on its flash memory.</li> </ul> <p>May include additional application-proprietary debug information. The debug file is saved as a zipped file with the following file name: "debug_&lt;device name&gt;_ver_&lt;firmware version&gt;_mac_&lt;MAC address&gt;_&lt;date&gt;_&lt;time&gt;". For example, debug_acMediant_ver_700-8-4_mac_00908F099096_1-03-2015_3-29-29.</p> |
| <pre>dial-plan from</pre>              | <p>Defines the file type as a Dial Plan file.</p> <p><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).</p>  |

| Command                                | Description   |
|--|---|
| <code>firmware from</code>             | Defines the file type as a firmware file (.cmp).<br><b>Note:</b> After the .cmp file is loaded to the device, it's automatically saved to the device's flash memory with a device reset.  |
| <code>incremental-ini-file from</code> | Defines the file type as an ini file, whereby parameters that are not included in the ini file remain at their current settings.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).  |
| <code>ini-file {from to}</code>        | Defines the file type as an ini file, whereby parameters that are not included in the ini file are restored to default values.<br><b>Note:</b> The file can be uploaded to or downloaded from the device.   |
| <code>mt-firmware</code>               | Defines the file type as a firmware file (.cmp) for Media Transcoders (MT) in the Media Transcoding Cluster feature.  |
| <code>nginx-conf-files to</code>       | Defines the file type as an NGINX configuration file (for HTTP Proxy services). The following files are copied: <ul style="list-style-type: none"> <li>■ <code>/acBin/nginx/nginx.conf</code>: Contains the currently active configuration</li> <li>■ <code>/acBin/nginx/temp_nginx.conf</code>: Contains the new configuration that has errors, which is not applied to the device</li> <li>■ <code>/acBin/nginx/nginx.errors</code>: Contains error messages relating to the new configuration</li> </ul> |
| <code>prerecorded-tones from</code>    | Defines the file type as a Prerecorded Tones (PRT) file.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).  |
| <code>redundant-debug-file to</code>   | Defines the file type as a debug file of the Redundant device in the High-Availability (HA) system, and copies the file from the device to a destination.<br><b>Note:</b> The file can only be downloaded from the device (see the command 'to' below).   |
| <code>sbc-wizard from</code>           | Defines the file type as a SBC Wizard Configuration Template file, which is used by the Configuration Wizard.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).   |

| Command                               | Description  |
|---------------------------------------|--|
| <code>startup-script<br/>from</code>  | Defines the file type as a Startup CLI script file.  |
| <code>storage-history</code>          | Defines the file type as a locally stored Call Detail Record (CDR) file. Define the name of the service. To view services, run the command <code>show storage-history services</code> . Currently supported service: <code>cdr-storage-history</code>            |
| <code>tls-cert from</code>            | Defines the file type as a TLS certificate file.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).   |
| <code>tls-private-key<br/>from</code> | Defines the file type as a TLS private key file.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).   |
| <code>tls-root-cert<br/>from</code>   | Defines the file type as a TLS trusted root certificate file.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).  |
| <code>user-info from</code>           | Defines the file type as a User Info file.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).   |
| <code>vmc-firmware</code>             | Defines the file type as a firmware file (.cmp) for Media Components (MC) in the Media Cluster feature.  |
| <code>voice-prompts</code>            | Defines the file type as a Voice Prompts (VP) file.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).  |
| <code>web-favicon from</code>         | Defines the file type as an icon file associated with the device's URL saved as a favorite bookmark on your browser's toolbar when using the device's Web interface.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below). |
| <code>web-logo from</code>            | Defines the file type as an image file, which is displayed as the logo in the device's Web interface.<br><b>Note:</b> The file can only be uploaded to the device (see the command 'from' below).  |
| Download/Upload                       |  |

| Command            | Description   |
|--------------------|---|
| from               | Uploads a file to the device.   |
| to                 | Downloads a file from the device to a specified destination.  |
| File Location      |   |
| URL                | <p>Defines the URL from which / to which to upload / download the file.</p> <p>The file transfer protocol can be one of the following:</p> <ul style="list-style-type: none"> <li>■ HTTP</li> <li>■ HTTPS</li> <li>■ TFTP</li> </ul> <p><b>Note:</b> The URL for HTTP/S can include the authentication username and password, using the following syntax (e.g., HTTPS):</p> <p><code>https://&lt;Username&gt;:&lt;Password&gt;@&lt;IP&gt;/&lt;Path&gt;</code></p> <p>For example:</p> <pre>copy firmware from https://sue:1234@10.4.10.0/firmware.cmp</pre> |
| console            | <p>Displays the current .ini configuration file on the CLI console.</p> <p><b>Note:</b> The command is applicable only to the .ini configuration file (copy ini-file to).</p>   |
| usb:///<file name> | <p>Uploads the file from a USB stick, connected to the device, to the device, or downloads the file from the device to a USB stick connected to the device.</p> <p><b>Note:</b> The command is applicable only to devices that provide a USB port interface.</p>  |

---

### Command Mode

Privileged User

---

### Related Commands

- erase
- dir
- write



**Note**

- When you load a file to the device, you must run the write command to save the file to flash memory, otherwise, the file is deleted when the device resets or powers off.
- For more information on the different file types, refer to the User's Manual.
- During firmware file (.cmp) load, a message is displayed showing load progress information. The message is also displayed in the console of all other users that are currently connected to the device through CLI. The message forcibly stops the users from performing further actions, preventing them from interrupting the load process. Below shows an example of such a message:

```
# copy firmware from http://10.3.1.2:1400/tftp/SIP_F7.20A.140.226.cmp
% Total  % Received % Xferd Average Speed  Time  Time  Time Current
Dload Upload Total Spent Left Speed
100 40.7M 100 40.7M 0 0 1288k 0 0:00:32 0:00:32 --:--:-- 1979k
Firmware file http://10.3.1.2:1400/tftp/SIP_F7.20A.140.226.cmp was loaded.
(user: Admin, IP local)
The system will reboot when done
DO NOT unplug/reset the device
.....
Firmware process done. Restarting now...
Restarting.....
```

The displayed information includes:

- %: Percentage of total bytes downloaded and uploaded; downloaded is displayed only when downloading a file (i.e., copy from command)
- Total: Total bytes downloaded and uploaded.
- %: Percentage of downloaded bytes (copy from command only).
- Received: Currently downloaded bytes (copy from command only).
- %: Percentage of uploaded bytes (copy to command only).
- Xferd: Currently uploaded bytes (copy to command only).
- Average Dload: Average download speed in bytes/sec (copy from command only).
- Speed Upload: Average upload speed in bytes/sec (copy to command).
- Time Spent: Elapsed time.
- Time Left: Time remaining for the file upload/download to complete.
- Current Speed: Current upload/download speed in bytes/sec.

**Example**

- Copying firmware file from an HTTP server:

```
# copy firmware from http://192.169.11.11:80/SIP_F7.20A.260.002.cmp
```

- Displaying (copying) the ini configuration file to the CLI console:

```
# copy ini-file to console
```

- Auxilliary file batch:

```
# copy myauxfiles.tar from http://www.exmample.com/auxiliary
```

- Copying CLI-based configuration from TFTP server:

```
# copy cli-script from tftp://192.168.0.3/script1.txt
```

- Upgrading the device's firmware from a source URL file:

```
# copy firmware from http://www.exmample.com/firmware.cmp
```

- Copying the dial plan file:

```
copy dial-plan from http://10.4.2.2/MyHistoryFiles/
```

## dir

This command displays the device's current auxiliary files directory.

---

### Syntax

```
# dir
```

---

### Command Mode

Privileged User

---

### Example

Displaying the device's current auxiliary files directory:

```
# dir
directory listing:
call-progress-tones [usa_tones_13.dat] 9260 Bytes
```

```
cas-table [Earth_Calling.dat] 43852 Bytes
tls-private-key [pkey.pem] 940 Bytes
tls-cert [server.pem] 643 Bytes
```

## erase

This command deletes an Auxiliary file from the device's memory.

---

### Syntax

```
# erase <Auxiliary File>
```

---

### Note

- View files using the dir command.
- To make sure the file type is correctly entered, copy it from the dir command output.
- The erase command only deletes the file from the device's RAM (and from the device's current usage). To delete the file permanently (from flash memory), enter the write command after issuing the dir command.

---

### Command Mode

Privileged User

---

### Related Commands

- dir
- write

---

### Example

- Viewing Auxilliary files:

```
# dir
directory listing:
call-progress-tones [usa_tones_13.dat] 9260 Bytes
cas-table [Earth_Calling.dat] 43852 Bytes
tls-private-key [pkey.pem] 940 Bytes
tls-cert [server.pem] 643 Bytes
```

- Erasing the CPT file from flash memory:

```
# erase call-progress-tones
# write
```

## ha

This command performs various High-Availability (HA) maintenance operations.

---

### Syntax

```
# ha
```

| Command              | Description  |
|----------------------|--|
| manual-switch-over   | Forces an HA switchover from active to redundant unit. |
| reset-redundant-unit | Resets the redundant unit.                             |

---

### Note

The command is applicable only to HA-supporting devices.

---

### Command Mode

Privileged User

## nslookup

This command queries the Domain Name System (DNS) to obtain domain name mapping or IP address mapping.

---

### Syntax

```
nslookup <Hostname> [source voip interface vlan <VLAN ID>] [type
{a|aaaa|naptr|srv}]
```

| Command                       | Description                                |
|-------------------------------|--|
| Hostname                      | Defines the host name.                     |
| source voip<br>interface vlan | (Optional) Configures a VLAN ID (1 -3999). |

| Command | Description  |
|---------|--|
| type    | (Optional) Defines the type of DNS: <ul style="list-style-type: none"> <li>■ a (Use a Host address)</li> <li>■ aaaa (Use an IPv6 Address)</li> <li>■ naptr (Use NAPTR - Naming Authority PoinTeR)</li> <li>■ srv (Use Server selection)</li> </ul> |

---

### Note

The DNS server must be configured for this command to function. The DNS server can be configured using:

- Internal DNS table: configure network > dns dns-to-ip
- Internal SRV table : configure network > dns srv2ip
- IP Interfaces table: configure network > interface network-if

---

### Command Mode

Basic and Privileged User

---

### Example

The following displays an example of an nslookup for Google:

```
nslookup google.com
google.com resolved to 216.58.213.174
```

## output-format

This command enables the output of certain show commands to be displayed in JSON format.

---

### Syntax

```
output-format
```

| Command | Description                                       |
|---------|---|
| json    | Displays the output in JSON format.               |
| plain   | Displays the output in regular plain text format. |

---

**Note**

The JSON format is supported only by certain show commands. For filtering the output, see the first, last, range and descending commands in Section [Common CLI Commands](#) on page 8.

---

**Command Mode**

Basic User and Privileged User

---

**Example**

The example displays only the first two calls and in JSON format:

```
output-format json
show voip calls history sbc first 2
{
  "History" : [
    {
      "CallEndTime": "08:21:41.376 UTC Wed Mar 28 2018",
      "IpGroup": "Linux",
      "Caller": "sipp",
      "Callee": "service",
      "Direction": "Incoming",
      "Duration": "00:00:17",
      "RemoteIP": "10.33.5.141",
      "TermReas": "NORMAL_CALL_CLEAR",
      "SessionId": "3c71d9:152:621"
    },
    {
      "CallEndTime": "08:21:41.366 UTC Wed Mar 28 2018",
      "IpGroup": "Linux",
      "Caller": "sipp",
      "Callee": "service",
      "Direction": "Outgoing",
      "Duration": "00:00:17",
      "RemoteIP": "10.33.5.141",
      "TermReas": "NORMAL_CALL_CLEAR",
      "SessionId": "3c71d9:152:621"
    }
  ]
}
```

## ping

This command sends (pings) ICMP echo request messages to a remote destination (IP address or FQDN) to check connectivity. Pings have an IP and ICMP header, followed by a struct timeval and then an arbitrary number of "pad" bytes used to fill out the packet. Ping works with both IPv4 and IPv6.

---

### Syntax

```
ping {<IPv4 Address>|ipv6 <IPv6 Address>|<Hostname>} [source voip interface
{vlan <VLAN ID>|name <Interface Name>}] [repeat <Echo Requests>] [size
<Payload Size>] [tos|traffic-class <0-254>]
```

| Command               | Description  |
|-----------------------|--|
| <IPv4 Address>        | Configures an IPv4 IP address in dotted-decimal notation.  |
| ipv6 <IPv6 Address>   | Configures an IPv6 address as X:X::X:X.  |
| <Hostname>            | Configures a hostname or FQDN (.g., abc.com).  |
| source voip interface | (Optional) Defines the interface from where you want to ping. This can be one of the following: <ul style="list-style-type: none"> <li>■ vlan (configures the VLAN ID)</li> <li>■ name (configures the IP network interface name)</li> </ul> |
| repeat                | (Optional) Defines the number (1-300) of echo requests.  |
| size                  | (Optional) Defines the payload size (0-max packet size).   |
| tos traffic-class     | (Optional) Defines the QoS of the ping packets by setting a value (0-254) in the IPv4 (tos) or IPv6 (traffic-class) header.  |

---

### Command Mode

Basic and Privileged User

---

**Note**

To terminate the ping, use the key combination Ctrl+C.

---

**Example**

- Sending 3 ICMP packets with 555 bytes payload size to 10.4.0.1 via interface VLAN 1:

```
ping 10.4.0.1 source voip interface vlan 1 repeat 3 size 555
PING 10.4.0.1 (10.4.0.1): 555 data bytes
563 bytes from 10.4.0.1: icmp_seq=0 ttl=255 time=1.3 ms
563 bytes from 10.4.0.1: icmp_seq=1 ttl=255 time=1.1 ms
563 bytes from 10.4.0.1: icmp_seq=2 ttl=255 time=1.2 ms
--- 10.4.0.1 ping statistics ---
3 packets transmitted, 3 packets received, 0 packet loss
round-trip min/avg/max = 1.1/1.2/1.3 ms
```

- Pinging an FQDN:

```
ping corp.abc.com source voip interface vlan 1
```

- Pinging an IPv6 destination address with QoS definition:

```
ping ipv6 2001:15::300 traffic-class 100
```

## pstn

This command initiates a manual switchover between D-channels (primary and backup) pertaining to the same Non-Facility Associated Signaling (NFAS) group.

---

**Syntax**

```
# pstn nfas-group-switch-activity <NFAS Group Number>
```

---

**Note**

The command is applicable only devices supporting digital PSTN interfaces.

---

**Command Mode**

Privileged User

---

**Example**



```
# pstn nfas-group-switch-activity 2
```

## reload

This command resets the device with or without saving the configuration to flash memory.

### Syntax

```
# reload {if-needed|now|without-saving}
```

| Command   | Description   |
|---|---|
| <code>if-needed [graceful]</code>   | <p>Resets the device only if you have configured parameters that require a device reset for their new settings to take effect.</p> <p>The restart can be done immediately or upon certain conditions:</p> <ul style="list-style-type: none"> <li>■ <code>reload if-needed</code>: Restarts the device immediately.</li> <li>■ <code>reload if-needed graceful &lt;seconds&gt;</code>: Restarts the device only after the user-defined period (in seconds) elapses.</li> </ul> |
| <code>now [graceful]</code>   | <p>Resets the device immediately and saves configuration (including Auxiliary files) to flash memory (before reset). The reset can be done immediately or upon certain conditions:</p> <ul style="list-style-type: none"> <li>■ <code>reload now</code>: Resets the device immediately.</li> <li>■ <code>reload now graceful &lt;seconds&gt;</code>: Resets the device only after the user-defined period (in seconds) elapses.</li> </ul>                                    |
| <code>without-saving [in &lt;Minutes&gt; graceful &lt;Seconds&gt;]</code> | <p>Resets the device without saving configuration to flash memory. You can also configure a delay time before reset occurs:</p> <ul style="list-style-type: none"> <li>■ <code>in</code>: Resets the device only after a user-defined period (in minutes). Use this</li> </ul>  |

| Command | Description   |
|---------|---|
|         | <p>before making changes to sensitive settings. If your changes cause the device to lose connectivity, wait for the device to restart with the previous working configuration.</p> <ul style="list-style-type: none"> <li>■ <code>graceful</code>: Resets the device within a user-defined graceful period (in seconds) to allow currently active calls (if any) to end. During this graceful period, no new calls are accepted. If all currently active calls end before the graceful period expires, the device resets immediately (instead of waiting for the graceful period to expire). If there are active calls when the graceful period expires, the device terminates the calls and resets.</li> </ul> <p>To cancel the delayed reset, use the <code>no reload</code> command.</p> |

---

#### Command Mode

Privileged User

---

#### Related Command

`write`

---

#### Example

This example resets the device only if there are parameters that have been modified which require a reset to take affect:

```
# reload if-needed
```

### srd-view

This command access a specific SRD (tenant) view. To facilitate configuration of the Multi-Tenancy feature through the CLI, the administrator can access a specific tenant view. Once in a specific tenant view, all configuration commands apply only to that specific tenant and the tenant's name (SRD name) forms part of the CLI prompt. Only table rows (indexes) belonging to

the viewed tenant can be modified. New table rows are automatically associated with the viewed tenant (i.e., SRD name).

---

### Syntax

```
srd-view <SRD Name>
```

---

### Command Mode

Basic and Privileged User

---

### Note

To exit the tenant view, enter the following command:

```
no srd-view
```

---

### Example

Accessing the 'itsp' tenant view:

```
srd-view itsp
(srd-itsp)#
```

## system-snapshot

This command is for managing snapshots that can be used for system recovery. The device can maintain up to 10 snapshots. If 10 snapshots exist and you create a new one, the oldest snapshot is removed to accommodate the newly created snapshot.

---

### Syntax

```
# system-snapshot
```

| Command                                 | Description   |
|---|---|
| create<br><Snapshot<br>Name><br>[force] | Creates a snapshot of the system. If no name is defined, a default name is given to the snapshot. If you enter the force command, the device overrides the oldest snapshot with this one if the maximum number of system snapshots has been reached.<br><br>The final snapshot name is in the following format: <Snapshot Name>-<Version>-<Creation Time> |

| Command                                    | Description   |
|--|---|
|  | The device's version is automatically added as well as the date and time of the snapshot creation.  |
| default<br><Snapshot<br>Name>              | Defines the default rescue snapshot. If no name is specified, the current snapshot is made default. |
| delete<br><Snapshot<br>Name>               | Deletes a snapshot.   |
| load<br><Snapshot<br>Name>                 | Recovers the device by loading a snapshot. If no name is entered, the default snapshot is loaded.   |
| rename<br><existing<br>name> <new<br>name> | Modifies the name of a snapshot.  |
| show                                       | Displays all saved snapshots. The default system snapshot is shown with an asterisk (*).            |

---

### Command Mode

Privileged User

---

### Note

The command is applicable only to Mediant 9000 and Mediant SE/VE.

---

### Example

This example creates a snapshot of the system with the name "My-Snapshot":

```
# system-snapshot create My-Snapshot
```

## telnet

This command invokes a Telnet session from the device towards a remote host for remote management. A remote administrator can access the device's CLI from the WAN leg while performing the full authentication process. The administrator can then invoke Telnet sessions

towards other devices in the LAN to manage them. No special pin-holes or forwarding rules need be declared to manage them.

---

### Syntax

```
# telnet <Address> <Port> interface vlan <VLAN ID>
```

| Command        | Description   |
|----------------|---|
| Address        | Remote host IP address.   |
| Port           | (Optional) Remote host port number.   |
| interface vlan | (Optional) Device's VLAN ID from where you want to create the Telnet session. |

---

### Command Mode

Privileged User

---

### Example

Invoking a Telnet session:

```
# telnet 10.4.4.25
```

- Invoking a Telnet session to a device located on the LAN:

```
# telnet 11.11.11.201 23 interface vlan 1
```

## traceroute

This command performs a traceroute and displays the route (path) and packet transit delays across an IP network, for diagnostic purposes.

---

### Syntax

```
traceroute {<IPv4 Address or Hostname>|ethernet|ipv6}
```

```
traceroute ethernet mpid <Endpoint Identifier> domain <Domain Name>
```

```
traceroute {ipv6 <IPv6 Address>|<IPv4 Address or Hostname>}
```

```
traceroute {ipv6 <IPv6 Address>|<IPv4 Address or Hostname>} interface {name
<Interface Name>|vlan <VLAN ID>} [proto udp|icmp]
```

```
traceroute {ipv6 <IPv6 Address>|<IPv4 Address or Hostname>} proto udp|icmp
```

| Command                  | Description  |
|--------------------------|--|
| IPv4 Address or Hostname | The IPv4 address or hostname to which the trace is sent.   |
| interface {name vlan}    | Name of the IP Interface or VLAN ID.   |
| proto {icmp udp}         | Defines the protocol type. The default is UDP. IPv4 traceroute also supports icmp protocol type. |

#### Note

- Supports both IPv4 and IPv6 addresses.
- In IPv4, it supports hostname resolution as well.
- Sends three requests to each hop on the way to the destination.

#### Command Mode

Basic and Privileged User

#### Example

Examples of using this command:

- IPv6:

```
traceroute ipv6 2014:6666::dddd
 1 2014:7777::aa55 (2014:7777::aa55) 2.421 ms 2.022 ms 2.155 ms
 2 2014:6666::dddd (2014:6666::dddd) 2.633 ms 2.481 ms 2.568 ms
Traceroute: Destination reached
```

- IPv4:

```
traceroute 10.3.0.2
 1 1 (10.4.0.1) 2.037 ms 3.665 ms 1.267 ms
 2 1 (10.3.0.2) 1.068 ms 0.796 ms 1.070 ms
Traceroute: Destination reached
```

## usb

This command allows maintenance on USB sticks plugged into the device.

---

### Syntax

```
# usb
```

| Command | Description   |
|---------|---|
| list    | Displays files located on the USB.                          |
| remove  | Safely removes a USB stick that is plugged into the device. |

---

### Command Mode

Privileged User

---

### Note

The command is applicable only devices that provide USB port interfaces.

## write

This command saves the device's current configuration to flash memory or optional, restores the device to factory defaults.

---

### Syntax

```
# write
```

| Command  | Description  |
|--|--|
| (Carriage Return)                              | Saves configuration to flash memory .  |
| factory [keep-network-and-users-configuration] | Restores the device's configuration to factory defaults. The optional command, <b>keep-network-and-users-configuration</b> restores all configuration to factory defaults except network settings, which ensures that the device's management interfaces can be accessed using the current OAMP network interface address after the device is restored to default. |

---

### Command Mode

Privileged User

---

### Note

- The `write` command does not reset the device. For parameters that require a reset for their settings to take effect, use the `reload now` command instead, or use it after the `write` command.
- The `write factory` command (without `keep-network-and-users-configuration`) erases all current network configuration and thus, remote connectivity to the device (Telnet/SSH) may fail immediately after you run this command.
- When the `write factory` command is run, Auxiliary files are also erased.

---

### Related Commands

`reload now`

---

### Example

Saving the configuration to flash memory:

```
# write
Writing configuration...done
```

## write-and-backup

This command saves the device's configuration file to flash memory and uploads it to a specified destination. The feature provides a method to back up your saved configuration.

---

### Syntax

```
# write-and-backup to {<URL>|usb}
```

| Command | Description  |
|---------|--|
| URL     | Defines the destination as a URL (TFTP or HTTP/S) to a remote server.                |
| usb     | Defines the destination to a folder on a USB storage stick plugged in to the device. |

---

### Command Mode

Privileged User



---

**Note**

- The USB option applies only to devices with USB interfaces.
- The configuration of the backed-up file is based only on CLI commands.
- The device first saves the configuration file to flash memory and then sends the file to the configured destination.

---

**Related Commands**

write

---

**Example**

- Saving a device's configuration to flash memory and sends it to a HTTP remote server:

```
# write-and-backup to http://www.example.com/configuration.txt
```

- Saving a device's configuration to flash memory and sends it to the plugged-in USB stick:

```
# write-and-backup to usb:///configuration.txt
```

# Part III

## System-Level Commands

## 9 Introduction

This part describes the commands located on the System configuration level. The commands of this level are accessed by entering the following command at the root prompt:

### Syntax

```
# configure system
(config-system)#
```

This level includes the following commands:

| Command               | Description   |
|-----------------------|---|
| additional-mgmt-if    | See <a href="#">additional-mgmt-if</a> on page 137    |
| automatic-update      | See <a href="#">automatic-update</a> on page 138      |
| cli-settings          | See <a href="#">cli-settings</a> on page 147          |
| clock                 | See <a href="#">clock</a> on page 151                 |
| configuration-version | See <a href="#">configuration-version</a> on page 152 |
| feature-key           | See <a href="#">feature-key</a> on page 153           |
| floating-license      | See <a href="#">floating-license</a> on page 154      |
| http-services         | See <a href="#">http-services</a> on page 156         |
| hw                    | See <a href="#">hw</a> on page 161                    |
| hostname              | See <a href="#">hostname</a> on page 162              |
| ldap                  | See <a href="#">ldap</a> on page 163                  |
| metering-client       | See <a href="#">metering-client</a> on page 169       |
| mgmt-access-list      | See <a href="#">mgmt-access-list</a> on page 170      |
| mgmt-auth             | See <a href="#">mgmt-auth</a> on page 171             |
| ntp                   | See <a href="#">ntp</a> on page 173                   |
| packetsmart           | See <a href="#">packetsmart</a> on page 174           |
| performance-profile   | See <a href="#">performance-profile</a> on page 176   |

| Command                  | Description  |
|--------------------------|--|
| provision                | See <a href="#">provision</a> on page 175                |
| radius                   | See <a href="#">radius</a> on page 178                   |
| sbc-performance-settings | See <a href="#">sbc-performance-settings</a> on page 181 |
| snmp                     | See <a href="#">snmp</a> on page 182                     |
| user                     | See <a href="#">user</a> on page 188                     |
| user-defined-failure-pm  | See <a href="#">user-defined-failure-pm</a> on page 191  |
| web                      | See <a href="#">web</a> on page 192                      |
| welcome-msg              | See <a href="#">welcome-msg</a> on page 194              |

---

**Command Mode**

Privileged User

## 10 additional-mgmt-if

This command configures the Additional Management Interfaces table, which lets you define additional management interfaces.

### Syntax

```
(config-system)# additional-mgmt-if <Index>
(additional-mgmt-if-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| https-only-val {http-and-https https-only use-global-definition} | Defines the protocol required for accessing the management interface.                       |
| interface-name   | Assigns an IP network interface (from the IP Interfaces table) to the management interface. |
| tls-context-name   | Assigns a TLS Context (from the TLS Contexts table) to the management interface.            |

### Command Mode

Privileged User

### Example

This example configures an additional management interface on IP network interface "ITSP", using TLS certification and HTTPS:

```
(config-system)# additional-mgmt-if 0
(additional-mgmt-if-0)# interface-name ITSP
(additional-mgmt-if-0)# tls-context-name ITSP
(additional-mgmt-if-0)# https-only-val https-only
(additional-mgmt-if-0)# activate
```

# 11 automatic-update

This command configures the Automatic Update feature.

## Syntax

```
(config-system)# automatic-update
(auto-update)#
```

| Command                                       | Description  |
|---|--|
| File  | Automatically uploads specified files to the device from a remote server. For more information, see <a href="#">Files</a> on the next page.  |
| aupd-graceful-shutdown <Seconds>              | Enables the graceful lock period for Automatic Update and defines the period.  |
| crc-check<br>{off regular voice-conf-ordered} | Enables the device to run a Cyclic Redundancy Check (CRC) on the downloaded configuration file to determine whether the file content (regardless of file timestamp) has changed compared to the previously downloaded file. Depending on the CRC result, the device installs or discards the downloaded file.<br><br>regular: CRC considers order of lines in the file (i.e., same text must be on the same lines).<br><br>voice-conf-ordered: CRC ignores the order of lines in the file (i.e., same text can be on different lines). |
| credentials                                   | Defines the username and password for digest (MD5 cryptographic hashing) and basic access authentication with the HTTP server on which the files to download are located for the Automatic Update feature.   |
| http-user-agent                               | Defines the information sent in the HTTP User-Agent header. For more information, see <a href="#">http-user-agent</a> on page 142.   |
| predefined-time                               | Defines the time of day in the format hh:mm (i.e., hour:minutes).  |
| run   | Triggers the Automatic Update feature.<br><br>Note: The command does not replace the activate command  |

| Command   | Description   |
|---|---|
| <code>run-on-reboot</code><br>{off on}            | Enables the Automatic Update feature to run when the device resets (or powers up).  |
| <code>template-files-list</code>                  | Defines the type of files in the file template to download from a provisioning server for the Automatic Update process. For more information, see <a href="#">template-files-list</a> on page 143.  |
| <code>template-url</code>                         | Defines the URL address of the provisioning server on which the file types, specified in the file template using the <code>template-files-list</code> command are located for download for the Automatic Update process. For more information, see <a href="#">template-url</a> on page 144.  |
| <code>tftp-block-size</code>                      | Defines the TFTP block size according to RFC 2348.  |
| <code>update-firmware</code><br>{off on}          | Enables automatic update of the device's software file (.cmp).  |
| <code>update-frequency-sec</code>                 | Defines the interval (in seconds) between subsequent Automatic Update processes.  |
| <code>verify-certificate</code><br>{off on}       | Enables verification of the server certificate over HTTPS. The device authenticates the certificate against the trusted root certificate store of the associated TLS Context. Only if authentication succeeds does the device allow communication.  |
| <code>verify-cert-subject-name</code><br>{off on} | Enables verification of the SSL Subject Name (Common Name) in the server's certificate when using HTTPS. If the server's URL contains a hostname, the device validates the server's certificate subject name (CN/SAN) against this hostname (and not IP address); otherwise, the device validates the server's certificate subject name against the server's IP address |

---

### Command Mode

Privileged User

## Files

This command automatically uploads specified files to the device from a remote server.

**Syntax**

```
(config-system)# automatic-update
(auto-update)#
```

| Command             | Description   |
|---------------------|---|
| auto-firmware       | Defines the URL path to a remote server from where the software file (.cmp) can be loaded. This is based on timestamp.  |
| call-progress-tones | Defines the URL path to a remote server from where the Call Progress Tone (CPT) file can be loaded.   |
| cas-table           | Defines the URL path to a remote server from where the Channel Associated Signaling (CAS) file can be loaded.   |
| cli-script          | Defines the URL path to a remote server from where the CLI Script file can be loaded.   |
| dial-plan           | Defines the URL path to a remote server from where the Dial Plan file can be loaded.  |
| dial-plan-csv       | Defines the URL path to a remote server from where the Dial Plan file (.csv) can be loaded.   |
| feature-key         | Defines the URL path to a remote server from where the License Key file can be loaded.  |
| firmware            | Defines the URL path to a remote server from where the software file (.cmp) file can be loaded.<br><b>Note:</b> This is a one-time file update; once loaded, the device does not load it again. |
| mt-firmware         | Defines the URL path to a remote server from where the software file (.cmp) for the MT device, participating in the Media Transcoding Cluster, can be loaded.                                   |
| prerecorded-tones   | Defines the URL path to a remote server from where the Prerecorded Tone file can be loaded.   |
| startup-script      | Defines the URL path to a remote server from where the Startup Script file can be loaded.   |



| Command                          | Description  |
|----------------------------------|--|
| <code>tls-cert</code>            | Defines the URL path to a remote server from where the TLS certificate file can be loaded.   |
| <code>tls-private-key</code>     | Defines the URL path to a remote server from where the TLS private key file can be loaded.   |
| <code>tls-root-cert</code>       | Defines the URL path to a remote server from where the TLS root CA file can be loaded (replaces existing files).   |
| <code>tls-root-cert-incr</code>  | Defines the URL path to a remote server from where the TLS root CA file can be loaded (incremental file load).   |
| <code>user-info</code>           | Defines the URL path to a remote server from where the User Info file can be loaded.   |
| <code>vmc-firmware</code>        | Defines the URL path to a remote server from where the software file (.cmp) for the Media Component (MT), participating in the Media Cluster, can be loaded.                       |
| <code>vmt-firmware</code>        | Defines the URL path to a remote server from where the software file (.cmp) for the vMT device, participating in the Media Transcoding Cluster, can be loaded.                     |
| <code>voice-configuration</code> | Defines the URL path to a remote server from where the voice configuration file can be loaded.   |
| <code>voice-prompts</code>       | Defines the URL path to a remote server from where the Voice Prompts file can be loaded.   |
| <code>web-favicon</code>         | Defines the URL path to a remote server from where the favicon image file for the favorite bookmark on your Web browser's toolbar associated with the device's URL, can be loaded. |
| <code>web-logo</code>            | Defines the URL path to a remote server from where the logo image file for the Web interface can be loaded.  |

---

**Command Mode**

Privileged User

---

**Note**

The URL can be IPv4 or IPv6. If IPv6, enclose the address in square brackets:

- URL with host name (FQDN) for DNS resolution into an IPv6 address:

```
http://[FQDN]:<port>/<filename>
```

- URL with IPv6 address:

```
http://[IPv6 address]:<port>/<filename>
```

---

**Example**

Automatic update of a CLI script file:

```
# configure system
(config-system)# automatic-update
(auto-update)# cli-script "http://192.168.0.199/cliconf.txt"
Note: Changes to this parameter will take effect when applying the
'activate' or 'exit' command
(automatic-update)# activate
```

## http-user-agent

This command configures the information sent in the HTTP User-Agent header in HTTP Get requests.

---

**Syntax**

```
(config-system)# automatic-update
(auto-update)# http-user-agent <String>
```

---

**Command Mode**

Privileged User

---

**Note**

Refer to the User's Manual for detailed information on configuring the string using placeholders (e.g., "<NAME>", "<MAC>", "<VER>", and "<CONF>").

---

**Example**

Configuring HTTP User-Agent header using placeholders:

```
(config-system)# automatic-update
(auto-update)# http-user-agent ITSPWorld-<NAME>;<VER>(<MAC>)
```

Above configuration may generate the following in the header:

```
User-Agent: ITSPWorld-Mediant;7.20.200.001(00908F1DD0D3)
```

## template-files-list

This command configures which type of files in the file template to download from a provisioning server for the Automatic Update process. For more information on file templates, refer to the User's Manual.

### Syntax

```
(config-system)# automatic-update
(auto-update)# template-files-list <File Types>
```

| Command      | Description  |
|--------------|--|
| <File Types> | <p>Defines the file types:</p> <ul style="list-style-type: none"> <li>■ ini: ini file</li> <li>■ init: ini template file</li> <li>■ cli: CLI Script file</li> <li>■ clis: CLI Startup Script file</li> <li>■ acmp: CMP file based on timestamp</li> <li>■ vp: Voice Prompts (VP) file (applies only to Mediant 1000B)</li> <li>■ usrinf: User Info file</li> <li>■ cmp: CMP file</li> <li>■ fk: Feature Key file</li> <li>■ cpt: Call Progress Tone (CPT) file</li> <li>■ prt: Prerecorded Tones (PRT) file</li> <li>■ cas: CAS file (applies only to Digital PSTN supporting devices)</li> <li>■ dpln: Dial Plan file</li> <li>■ amd: Answering Machine Detection (AMD) file</li> </ul> |

| Command | Description   |
|---------|---|
|         | <ul style="list-style-type: none"> <li>■ sslp: SSL/TLS Private Key file</li> <li>■ sslr: SSL/TLS Root Certificate file</li> <li>■ sslc: SSL/TLS Certificate file</li> </ul> |

---

### Command Mode

Privileged User

---

### Note

The file types must be separated by commas, but without spaces.

---

### Related Commands

template-url

---

### Example

Specifying the ini, License Key, and CPT file types to download:

```
(config-system)# automatic-update
(auto-update)# template-files-list ini,fk,cpt
```

## template-url

This command configures the URL address of the provisioning server on which the file types, specified in the file template using the template-files-list command are located for download during the Automatic Update process. For more information on file templates, refer to the User's Manual.

---

### Syntax

```
(config-system)# automatic-update
(auto-update)# template-url <URL>/<File Name <FILE>>
```

| Command             | Description  |
|---------------------|--|
| <URL>               | Defines the URL address of the provisioning server (HTTP/S, FTP, or TFTP).   |
| File Name<br><FILE> | Defines the file name using the <FILE> placeholder. The placeholder is replaced by the following hard-coded strings, depending on file type as |

| Command                         | Description  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
|---------------------------------|--|---------------------------------|-------------------|-----|------------|------|--------------------|-----|---------------|------|----------------------|------|------------------|----|---|--------|--------------|-----|--------------|----|--------|-----|---------|-----|---------|-----|---|------|--------------|-----|---------|------|----------|------|----------|------|----------|
|                                 | configured by the template-files-list command:   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
|                                 | <table border="1"> <thead> <tr> <th>File Type (template-files-list)</th> <th>Hard-coded String</th> </tr> </thead> <tbody> <tr> <td>ini</td> <td>device.ini</td> </tr> <tr> <td>init</td> <td>deviceTemplate.ini</td> </tr> <tr> <td>cli</td> <td>cliScript.txt</td> </tr> <tr> <td>clis</td> <td>cliStartupScript.txt</td> </tr> <tr> <td>acmp</td> <td>autoFirmware.cmp</td> </tr> <tr> <td>vp</td> <td>vp.dat<br/>(applies only to Mediant 1000B)</td> </tr> <tr> <td>usrinf</td> <td>userInfo.txt</td> </tr> <tr> <td>cmp</td> <td>firmware.cmp</td> </tr> <tr> <td>fk</td> <td>fk.ini</td> </tr> <tr> <td>cpt</td> <td>cpt.dat</td> </tr> <tr> <td>prt</td> <td>prt.dat</td> </tr> <tr> <td>cas</td> <td>cas.dat<br/>(applies only to Digital PSTN devices)</td> </tr> <tr> <td>dpln</td> <td>dialPlan.dat</td> </tr> <tr> <td>amd</td> <td>amd.dat</td> </tr> <tr> <td>sslp</td> <td>pkey.pem</td> </tr> <tr> <td>sslr</td> <td>root.pem</td> </tr> <tr> <td>sslc</td> <td>cert.pem</td> </tr> </tbody> </table> | File Type (template-files-list) | Hard-coded String | ini | device.ini | init | deviceTemplate.ini | cli | cliScript.txt | clis | cliStartupScript.txt | acmp | autoFirmware.cmp | vp | vp.dat<br>(applies only to Mediant 1000B) | usrinf | userInfo.txt | cmp | firmware.cmp | fk | fk.ini | cpt | cpt.dat | prt | prt.dat | cas | cas.dat<br>(applies only to Digital PSTN devices) | dpln | dialPlan.dat | amd | amd.dat | sslp | pkey.pem | sslr | root.pem | sslc | cert.pem |
| File Type (template-files-list) | Hard-coded String  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| ini                             | device.ini   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| init                            | deviceTemplate.ini   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| cli                             | cliScript.txt  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| clis                            | cliStartupScript.txt   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| acmp                            | autoFirmware.cmp   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| vp                              | vp.dat<br>(applies only to Mediant 1000B)  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| usrinf                          | userInfo.txt   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| cmp                             | firmware.cmp   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| fk                              | fk.ini   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| cpt                             | cpt.dat  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| prt                             | prt.dat  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| cas                             | cas.dat<br>(applies only to Digital PSTN devices)  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| dpln                            | dialPlan.dat   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| amd                             | amd.dat  |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| sslp                            | pkey.pem   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| sslr                            | root.pem   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |
| sslc                            | cert.pem   |                                 |                   |     |            |      |                    |     |               |      |                      |      |                  |    |   |        |              |     |              |    |        |     |         |     |         |     |   |      |              |     |         |      |          |      |          |      |          |

**Command Mode**

Privileged User

**Related Commands**

template-files-list

---

**Example**

Specifying the URL of an HTTP server at 10.8.8.20 from which the files specified in the file template can be downloaded:

```
 #(config-system)# automatic-update
 (auto-update)# template-url http://10.8.8.20/Site1_<FILE>
```

If the template file list is configured as follows:

```
 (auto-update)# template-files-list ini,fk,cpt
```

the device sends HTTP requests to the following URLs:

- http://10.8.8.20/Site1\_device.ini
- http://10.8.8.20/Site1\_fk.ini
- http://10.8.8.20/Site1\_cpt.data

## 12 cli-settings

This command configures various CLI settings.

### Syntax

```
(config-system)# cli-settings
(cli-settings)#
```

| Command                            | Description  |
|------------------------------------|--|
| <code>default-window-height</code> | <p>Defines the number (height) of output lines displayed in the CLI terminal window. This applies to all new CLI sessions and is preserved after device resets.</p> <p>The valid value range is -1 (default) and 0-65535:</p> <ul style="list-style-type: none"> <li>■ A value of -1 means that the parameter is disabled and the settings of the CLI command <code>window-height</code> is used.</li> <li>■ A value of 0 means that all the CLI output is displayed in the window. If the window is too small to display all the lines, the window displays all the lines by automatically scrolling down the lines until the last line (i.e., the “—MORE—” prompt is not displayed).</li> <li>■ A value of 1 or greater displays that many output lines in the window and if there is more output, the “—MORE—” prompt is displayed. For example, if you configure the parameter to 4, up to four output lines are displayed in the window and if there is more output, the “—MORE—” prompt is displayed (at which you can press the spacebar to display the next four output lines).</li> </ul> <p><b>Note:</b> You can override this parameter for a specific CLI session and configure a different number of output lines, by using the <code>window-height</code> CLI command in the currently active CLI session.</p> |
| <code>idle-timeout {off on}</code> | <p>Defines the maximum duration (in minutes) that a CLI session may remain idle, before being</p>  |

| Command                            | Description   |
|------------------------------------|---|
|                                    | disconnected.   |
| password-obscurity<br>{off on}     | Displays passwords in encrypted (obscured) format in the output of the <code>show running-config</code> command. The word "obscured" is also shown to indicate that it's an encrypted password. Below shows an example of an obscured password configured for a Remote Web Service ( <code>http-remote-services</code> ):<br><br><pre>rest-password 8ZybmJHEXMTM obscured</pre> |
| privilege-password                 | Defines the password for the privilege (Enable) mode.   |
| ssh {off on}                       | Enables secure access using SSH.  |
| ssh-acl                            | Assigns an Access List entry (client) permitted to access the SSH interface. The Access List is configured by the <code>access-list</code> command.   |
| ssh-admin-key                      | Defines the RSA public key (hexadecimal) for SSH client login.  |
| ssh-last-login-message<br>{off on} | Enables the display of the last address from which the user logged into the SSH server.   |
| ssh-max-binary-packet-size         | Defines the maximum SSH binary packet size.   |
| ssh-max-login-attempts             | Defines the maximum number of SSH login attempts.   |
| ssh-max-payload-size               | Defines the maximum size of the SSH payload (in bytes).   |
| ssh-max-sessions                   | Defines the maximum number of SSH sessions.   |
| ssh-port                           | Defines the local port for SSH.   |
| ssh-require-public-key<br>{off on} | Enables SSH authentication via RSA public key.  |
| ssh-red-device-port                | Defines the proxy SSH port number on the active device for accessing the redundant device's   |



| Command                                  | Description   |
|--|---|
|  | <p>embedded SSH server from the active device for downloading files from the redundant device.</p> <p><b>Note:</b> The command is applicable only to device's in HA mode.</p>   |
| telnet-mode<br>{disable enable ssl-only} | Enables Telnet access to the device.  |
| telnet-acl                               | Assigns an Access List entry (client) permitted to access the Telnet interface. The Access List is configured by the access-list command.   |
| telnet-port                              | Defines the local port number for Telnet.   |
| telnet-max-sessions                      | Defines the maximum number of Telnet sessions.  |
| verify-telnet-cert<br>{disable require}  | Enables or disables verification of peer (client) certificate by Telnet server.   |
| window-height {0 1-65535 automatic}      | <p>Defines the height of the CLI terminal window for the current CLI session <b>only</b>:</p> <ul style="list-style-type: none"> <li>■ 0: All the CLI output lines are displayed. If the window is too small to display all the lines, the window displays all the lines by automatically scrolling down the lines until the last line (i.e., the "—MORE—" prompt is not displayed).</li> <li>■ 1-65535: Defines the number of lines to display in the window.</li> <li>■ automatic: Whenever you manually change the height of the window (i.e., by dragging with the mouse), the new size is automatically saved.</li> </ul> <p><b>Note:</b> The window height can be configured for all sessions using the CLI command, default-window-height.</p> |

---

### Command Mode

Privileged User

---

### Example

The example configures the CLI terminal window height to 15 lines:

```
(config-system)# cli-settings  
(cli-settings)# window-height 15
```

## 13 clock

This command configures the date and time of the device.

---

### Syntax

```
(config-system)# clock
(clock)#
```

| Command                        | Description   |
|--------------------------------|---|
| date                           | Defines the date in the format dd/mm/yyyy (i.e., day/month/year).   |
| date-header-time-sync          | Enables the device to obtain its date and time for its internal clock from the SIP Date header in 200 OK messages received in response to sent REGISTER messages. |
| date-header-time-sync-interval | Defines the minimum time (in seconds) between synchronization updates using the SIP Date header method for clock synchronization.                                 |
| summer-time                    | Configures daylight saving time.  |
| time                           | Defines the current time in the format hh:mm:ss (i.e., hour:minutes:seconds).   |
| utc-offset                     | Defines the time zone (offset from UTC) in seconds.   |

---

### Command Mode

Privileged User

---

### Example

This example configures the date of the device.

```
(config-system)# clock
(clock)# date 23/11/2016
```

## 14 configuration-version

This command configures the ini file version number when saving the device's configuration to an ini file. The version number appears in the file as: "INIFileVersion = <number>"

---

### Syntax

```
(config-system)# configuration-version <Number>
```

---

### Command Mode

Privileged User

---

### Example

This example configures the ini file version to 72101:

```
(config-system)# configuration-version 72101
```

## 15 feature-key

This command updates the License Key.

---

### Syntax

```
(config-system)# feature-key <"License Key">
```

---

### Command Mode

Privileged User

---

### Note

You must enclose the License Key string in quotes ("...").

---

### Example

This example updates the License Key:

```
(config-system)# feature-key  
"r6wmr5to25smaB12d21aiSI94yMCf3lsfjBjagcch1kq9AZ9MJqqCOw44ywFcMllbi  
BaeNcsjh878ld1f2wKbY3IXJj1SOlcbiBfc6FBj1fROIJ9XvAw8k1IXdoFcOpeQJp2e  
0sti1s0blNecypomhgU5yTIPREPQtI2e1wpiNgx7IRfeyXV?2s9@coFcOofdayWjWh  
QuJelgb5VbfyENc2w46O6OG3lf7NJnbkF5mxkka5xccyoVedYq1gMc"
```

## 16 floating-license

This command enables the Floating License or Flex License model and configures an Allocation Profile for the model.

### Syntax

```
(config-system)# floating-license
(floating-license)#
```

| Command  | Description  |
|--|--|
| allocation-media-sessions                                    | Defines media session capacity for the customized Allocation Profile.      |
| allocation-profile<br>{custom registered-users sip-trunking} | Defines the Allocation Profile type.                                       |
| allocation-registered-users                                  | Defines registered user capacity for the customized Allocation Profile.    |
| allocation-signaling-sessions                                | Defines SIP signaling capacity for the customized Allocation Profile.      |
| floating-license {off on}                                    | Enables the Floating License or Flex License.                              |
| limit-media-sessions   | Defines a media session limit for the customized Allocation Profile.       |
| limit-registered-users                                       | Defines a registered user limit for the customized Allocation Profile.     |
| limit-signaling-sessions                                     | Defines a signaling capacity limit for the customized Allocation Profile.  |
| limit-transcoding-sessions                                   | Defines a transcoding session limit for the customized Allocation Profile. |

### Command Mode

Privileged User

### Example

This example enables the Floating License or Flex License and configures it for the factory default Allocation Profile that is suited for SIP Trunking applications:

```
(config-system)# floating-license  
(floating-license)# floating-license on  
(floating-license)# allocation-profile sip-trunking
```

## 17 http-services

This command configures Web (HTTP) services.

### Syntax

```
(config-system)# http-services
(http-client-services)#
```

| Command                                      | Description  |
|--|--|
| http-remote-services                         | Defines the HTTP Remote Services table for REST. For more information, see <a href="#">http-remote-services</a> on the next page.    |
| remote-monitoring {off on}                   | Enables the device to send monitoring reports to a remote monitoring server when the device is located behind NAT.                   |
| remote-monitor-alarms                        | Enables the device to send a remote monitoring report of currently active alarms to the monitoring server.                           |
| remote-monitor-kpi                           | Enables the device to send a remote monitoring report of performance monitoring statistics to the monitoring server.                 |
| remote-monitor-registration                  | Enables the device to send a remote monitoring report of users registered with the device to the monitoring server.                  |
| remote-monitor-reporting-period              | Defines the time interval (in seconds) between each remote monitoring report that is sent to the monitoring server.                  |
| remote-monitor-status                        | Enables the device to send a remote monitoring report of its status to the monitoring server.  |
| rest-debug-mode {0-3}                        | Defines the level of debug messages of HTTP services, which are sent to Syslog. 0 blocks all messages; 3 is the most detailed level. |
| routing-qos-status {disable enable}          | Enables QoS-based routing by the routing server.   |
| routing-qos-status-rate                      | Defines the rate (in sec) at which the device sends QoS reports to the routing server.   |
| routing-server-group-status {disable enable} | Enables the reporting of the device's topology status (using the REST TopologyStatus API command) to HTTP remote hosts.              |



| Command   | Description   |
|---|---|
| <code>routing-server-registration-status</code> | Enables the synchronization of the device's registration database with remote HTTP hosts. |

---

### Command Mode

Privileged User

## http-remote-services

This command configures the Remote Web Services table, which lets you define Web-based (HTTP/S) services provided by third-party, remote HTTP/S hosts.

---

### Syntax

```
(config-system)# http-services
(http-client-services)# http-remote-services <Index>
(http-remote-services-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| <code>http-login-needed</code><br>{disable enable}                      | Enables the use of AudioCodes proprietary REST API Login and Logout commands for connecting to the remote host.                                  |
| <code>http-persistent-connection</code><br>{disable enable}             | Configures whether the HTTP connection with the host remains open or is only opened per request.   |
| <code>http-policy</code> {round-robin sticky-next sticky-primary}       | Defines the mode of operation when you have configured multiple remote hosts (in the HTTP Remote Hosts table) for a specific remote Web service. |
| <code>http-policy-between-groups</code><br>{sticky-primary sticky-next} | Defines the mode of operation between groups of hosts, which are configured in the HTTP Remote Hosts table for the specific remote Web service.  |

| Command  | Description   |
|--|---|
| <code>http-remote-hosts</code>   | Defines the HTTP Remote Hosts table, which lets you define remote HTTP hosts per Remote Web Service. The table is a "child" of the Remote Web Services table. For more information, see <a href="#">http-remote-hosts</a> on the next page. |
| <code>rest-ka-timeout</code>   | Defines the duration (in seconds) in which HTTP-REST keep-alive messages are sent by the device if no other messages are sent.  |
| <code>rest-message-type {call-status general qos registration-status remote-monitoring routing topology-status}</code> | Defines the type of service provided by the HTTP remote host.   |
| <code>rest-name</code>   | Defines the name to easily identify the row.  |
| <code>rest-password</code>   | Defines the password for HTTP authentication.   |
| <code>rest-path</code>   | Defines the path (prefix) to the REST APIs.   |
| <code>rest-timeout</code>  | Defines the TCP response timeout (in seconds) from the remote host.   |
| <code>rest-tls-context</code>  | Assigns a TLS context (if HTTPS).   |
| <code>rest-user-name</code>  | Defines the username for HTTP authentication.   |
| <code>rest-verify-certificates {disable enable}</code>   | Enables certificate verification when connection with the host is based on HTTPS.   |
| <code>verify-cert-subject-name {disable enable}</code>   | Enables the verification of the TLS certificate subject name (Common Name / CN or Subject Alternative Name / SAN) when connection with the host is based on HTTPS that is   |

| Command | Description   |
|---------|---|
|         | used in the incoming connection request from the OVOC server. |

---

### Command Mode

Privileged User

---

### Example

This example configures an HTTP service for routing:

```
(config-system)# http-services
(http-client-services)# http-remote-services 0
(http-client-services-0)# rest-message-type routing
(http-client-services-0)# rest-name ARM
```

## http-remote-hosts

This command configures the HTTP Remote Hosts table, which lets you define remote HTTP hosts per Remote Web Service. The table is a "child" of the Remote Web Services table.

---

### Syntax

```
(config-system)# http-services
(http-client-services)# http-remote-services <Index>
(http-client-services-<Index>)# http-remote-hosts <Index>
(http-remote-hosts-<Index>/<Index>)#
```

| Command                                 | Description   |
|---|---|
| Index                                   | Defines the table row index.                                      |
| group-id<br><0-4>                       | Defines the host's group ID.                                      |
| host-<br>priority-<br>in-group<br><0-9> | Defines the priority level of the host within the assigned group. |
| rest-<br>address                        | Defines the IP address or FQDN of the remote HTTP host.           |

| Command   | Description  |
|---|--|
| <code>rest-interface</code>                             | Defines the IP network interface to use.           |
| <code>rest-port</code>                                  | Defines the port of the remote HTTP host.          |
| <code>rest-name</code>                                  | Configures an arbitrary name to identify the host. |
| <code>rest-transport-type {rest-http rest-https}</code> | Defines the HTTP protocol.                         |

---

**Command Mode**

Privileged User

---

**Example**

This example configures an HTTP remote host "ARM" at 10.15.7.8:

```
(config-system)# http-services
(http-client-services)# http-remote-services 0
(http-client-services-0)# http-remote-hosts 1
(http-remote-hosts-0/1)# rest-address 10.15.7.8
(http-remote-hosts-0/1)# rest-interface 0
(http-remote-hosts-0/1)# rest-servers ARM
(http-remote-hosts-0/1)# rest-transport-type rest-http
```

## 17 hw

This command configures hardware-related settings.

---

### Syntax

```
(config-system)# hw
(hw)#
```

| Command                             | Description  |
|-------------------------------------|--|
| dual-powersupply-supported {no yes} | Enables the device to send an SNMP alarm (acPowerSupplyAlarm) for one or both Power Supply modules if a module is removed from the chassis or not operating correctly (failure). |

---

### Command Mode

Privileged User

---

### Note

The command is applicable only to Mediant 800, Mediant 9000, AND mp-1288.

---

### Example

This example enables sending an alarm if a Power Supply module is removed or fails.

```
(config-system)# hw
(hw)# dual-powersupply-supported yes
```

## 18 hostname

This command configures the product name, which is displayed in the management interfaces (as the prompt in CLI, and in the Web interface).

---

### Syntax

```
(config-system)# hostname <String>
```

---

### Command Mode

Privileged User

---

### Example

This example configures the product name from "Mediant" to "routerABC":

```
(config-system)# hostname routerABC
```

## 19 ldap

This command configures LDAP and includes the following subcommands:

---

### Syntax

```
(config-system)# ldap
```

| Command            | Description   |
|--------------------|---|
| ldap-configuration | See <a href="#">ldap ldap-configuration</a> below       |
| ldap-server-groups | See <a href="#">ldap ldap-server-groups</a> on page 166 |
| settings           | See <a href="#">ldap settings</a> on page 167           |

---

### Command Mode

Privileged User

### ldap ldap-configuration

This command configures the LDAP Servers table, which lets you define LDAP servers.

---

### Syntax

```
(config-system)# ldap ldap-configuration <Index>
(ldap-configuration-<Index>)#
```

| Command                 | Description   |
|-------------------------|---|
| index                   | Defines the table row index.  |
| bind-dn                 | Defines the LDAP server's bind Distinguished Name (DN) or username.   |
| domain-name             | Defines the domain name (FQDN) of the LDAP server.  |
| interface               | Defines the interface on which to send LDAP queries.  |
| ldap-servers-search-dns | Defines the LDAP Search DN table, which lets you define LDAP base paths per LDAP Servers table. For more information, see <a href="#">ldap ldap-servers-search-dns</a> on page 165. |

| Command                         | Description   |
|---------------------------------|---|
| max-respond-time                | Defines the duration (in msec) that the device waits for LDAP server responses.   |
| mgmt-attr                       | Defines the LDAP attribute name to query, which contains a list of groups to which the user is a member of.   |
| mgmt-ldap-groups                | Defines the Management LDAP Groups table, which lets you define an access level per management groups per LDAP Servers table. For more information, <a href="#">ldap mgmt-ldap-groups</a> on the next page. |
| password                        | Defines the user password for accessing the LDAP server during connection and binding operations.   |
| server-group                    | Assigns the LDAP server to an LDAP Server Group, configured in the LDAP Server Groups table.  |
| server-ip                       | Defines the LDAP server's IP address.   |
| server-port                     | Defines the LDAP server's port.   |
| tls-context                     | Assigns a TLS Context if the connection with the LDAP server is TLS.  |
| use-tls<br>{no yes}             | Enables the device to encrypt the username and password (for Control and Management related queries) using TLS when sending them to the LDAP server.  |
| verify-certificate<br>{no yes}  | Enables certificate verification when the connection with the LDAP server uses TLS.   |
| verify-subject-Name<br>{no yes} | Enables the verification of the TLS certificate subject name (Common Name / CN or Subject Alternative Name / SAN) that is used in the incoming connection request from the LDAP server.                     |

---

### Command Mode

Privileged User

---

### Example

This example configures an LDAP server with IP address 10.15.7.8 and password "itsp1234":



```
(config-system)# ldap ldap-configuration 0
(ldap-configuration-0)# server-ip 10.15.7.8
(ldap-configuration-0)# password itsp1234
```

## ldap ldap-servers-search-dns

This command configures the LDAP Search DN table, which lets you define LDAP base paths, per LDAP Servers table.

### Syntax

```
(config-system)# ldap ldap-configuration <Index>
(ldap-configuration-<Index>)# ldap-servers-search-dns <Index>
(ldap-servers-search-dns-<Index>/<Index>)#
```

| Command   | Description                                    |
|-----------|--|
| Index     | Defines the table row index.                   |
| base-path | Defines the base path Distinguished Name (DN). |

### Command Mode

Privileged User

### Example

This example configures the LDAP base path "OU=NY,DC=OCSR2,DC=local":

```
(config-system)# ldap ldap-configuration 0
(ldap-configuration-0)# ldap-servers-search-dns 1
(ldap-servers-search-dns-0/1)# base-path OU=NY,DC=OCSR2,DC=local
```

## ldap mgmt-ldap-groups

This command configures the Management LDAP Groups table, which lets you define an access level per management groups per LDAP Servers table.

### Syntax

```
(config-system)# ldap ldap-configuration <Index>
(ldap-configuration-<Index>)# mgmt-ldap-groups <Index>
(mgmt-ldap-groups-<Index>/<Index>)#
```

| Command | Description   |
|---------|---|
| Index   | Defines the table row index.                                  |
| groups  | Defines the Attribute names of the groups in the LDAP server. |
| level   | Defines the access level of the group(s).                     |

---

### Command Mode

Privileged User

---

### Example

This example configures the LDAP server with monitor access level:

```
(config-system)# ldap ldap-configuration 0
(ldap-configuration-0)# mgmt-ldap-groups 1
(mgmt-ldap-groups-0/1)# level monitor
```

## ldap ldap-server-groups

This command configures the LDAP Server Groups table, which lets you define LDAP Server Groups. An LDAP Server Group is a logical configuration entity that contains up to two LDAP servers.

---

### Syntax

```
(config-system)# ldap ldap-server-groups <Index>
(ldap-server-groups-<Index>)#
```

| Command                                     | Description   |
|---|---|
| Index                                       | Defines the table row index.  |
| cache-entry-removal-timeout                 | Defines the cache entry removal timeout.                                |
| cache-entry-timeout                         | Defines the cache entry timeout.  |
| search-dn-method<br>{parallel sequentially} | Defines the method for querying the DN objects within each LDAP server. |
| server-search-method                        | Defines the method for querying between the two                         |

| Command                             | Description   |
|-------------------------------------|---|
| {parallel sequentialy}              | LDAP servers in the group.  |
| server-type<br>{control management} | Configures whether the servers in the group are used for SIP-related LDAP queries (Control) or management login authentication-related LDAP queries (Management). |

---

### Command Mode

Privileged User

---

### Example

This example configures the LDAP Server Group for management-login authentication LDAP queries and where the search between the servers is done one after the other:

```
(config-system)# ldap ldap-server-groups 0
(ldap-server-groups-0)# server-type management
(ldap-server-groups-0)# server-search-method sequentialy
```

## ldap settings

This command configures various LDAP settings.

---

### Syntax

```
(config-system)# ldap settings
(ldap)#
```

| Command                         | Description  |
|---------------------------------|--|
| auth-filter                     | Defines the filter (string) to search the user during the authentication process.    |
| cache {clear-all refresh-entry} | Configures LDAP cache actions.   |
| enable-mgmt-login {off on}      | Enables the device to use LDAP for authenticating management interface access.       |
| entry-removal-timeout           | Defines the duration (in hours) after which an entry is removed from the LDAP cache. |

| Command   | Description  |
|---|--|
| entry-timeout   | Defines the duration (minutes) an entry in the LDAP cache is valid.  |
| ldap-cache-enable<br>{off on}                           | Enables the LDAP cache.  |
| ldap-search-server-<br>method<br>{parallel sequentialy} | Defines the search method in the LDAP servers if more than one LDAP server is configured.                    |
| ldap-service {off on}                                   | Enables the LDAP service.  |
| search-dns-in-parallel<br>{parallel sequentialy}        | Configures whether DNSs should be checked in parallel or sequentially when there is more than one search DN. |

---

### Command Mode

Privileged User

---

### Example

This example enables the LDAP cache and sets the valid duration of a cached entry to 1200 minutes.

```
(config-system)# ldap settings
(ldap)# ldap-cache-enable on
(ldap)# entry-timeout 1200
```

## 19 metering-client

This command configures the network interface (e.g., eth1) that is associated with the Elastic IP address for the Metered License model (pay-as-you-go) when the device is deployed in the Amazon Web Services (AWS) cloud.

---

### Syntax

```
(config-system)# metering-client <Index>
(metering-client-<Index>)#
```

| Command           | Description   |
|-------------------|---|
| Index             | Defines the table row index.  |
| network-interface | Defines the network interface associated with the Elastic IP address. |

---

### Command Mode

Privileged User

---

### Note

The command is applicable only to Mediant VE.

---

### Example

This example configures network interface "eth1" as associated with the Elastic IP address:

```
(config-system)# metering-client 0
(metering-client-0)# eth 1
```

## 20 mgmt-access-list

This command configures the Access List table, which lets you restrict access to the device's management interfaces (Web and CLI) by specifying IP addresses of management clients that are permitted to access the device.

---

### Syntax

```
(config-system)# mgmt-access-list <Index>  
(mgmt-access-list <Index>)# ip-address <IP address>
```

---

### Command Mode

Privileged User

---

### Example

This example allows the host at IP address 10.11.12.120 to connect to the management interface:

```
(config-system)# mgmt-access-list 0  
(mgmt-access-list 0)# ip-address 10.11.12.120
```

## 21 mgmt-auth

This command configures various management settings.

### Syntax

```
(config-system)# mgmt-auth
(mgmt-auth)#
```

| Command  | Description  |
|--|--|
| <code>default-access-level</code>  | Defines the device's default access level when the LDAP/RADIUS response doesn't include an access level attribute for determining the user's management access level.  |
| <code>local-cache-mode {absolute-expiry-timer reset-expiry-upon-access}</code> | Defines the password's local cache timeout to reset after successful authorization.  |
| <code>local-cache-timeout</code>   | Defines the locally stored login password's expiry time, in seconds. When expired, the request to the Authentication server is repeated.   |
| <code>obscure-password-mode {off on}</code>                                    | Enables the device to enforce obscured (i.e., encrypted) passwords whenever you create a new management user or modify the password of an existing user (Local Users table) through CLI ( <code>configure system &gt; user</code> ). For more information, see the command <code>configure system &gt; user &gt; password</code> . |
| <code>timeout-behavior {VerifyAccessLocally deny-access}</code>                | Defines the device to search in the Local Users table if the Authentication server is inaccessible.  |
| <code>use-local-users-db {always when-no-auth-server}</code>                   | Configures when to use the Local Users table in addition to the Authentication server.   |

### Command Mode

Privileged User

---

**Example**

This example configures the device's default access level as 200:

```
(config-system)# mgmt-auth  
(mgmt-auth)# default-access-level 200
```



## 22 ntp

This command configures Network Time Protocol (NTP) for updating the device's date and time.

---

### Syntax

```
(config-system)# ntp
(ntp)#
```

| Command                | Description   |
|------------------------|---|
| auth-key-id            | Defines the NTP authentication key identifier (string) for authenticating NTP messages.   |
| auth-key-md5           | Defines the authentication key (string) shared between the device (client) and the NTP server, for authenticating NTP messages. |
| ntp-as-oam<br>{off on} | Defines the location of the Network Time Protocol (NTP).  |
| primary-server         | Defines the NTP server FQDN or IP address.  |
| secondary-server       | Defines the NTP secondary server FQDN or IP address.  |
| update-interval        | Defines the NTP update time interval (in seconds).  |

---

### Command Mode

Privileged User

---

### Example

This example configures an NTP server with IP address 10.15.7.8 and updated every hour (3,600 seconds):

```
(config-system)# ntp
(ntp)# primary-server 10.15.7.8
(ntp)# update-interval 3600
```

## 23 packetsmart

This command configures the device to send voice traffic data to BroadSoft's BroadCloud PacketSmart solution for monitoring and assessing the network in which the device is deployed.

---

### Syntax

```
(config-system)# packetsmart
```

| Command                                | Description   |
|--|---|
| <code>enable</code>                    | Enables the PacketSmart feature.  |
| <code>monitor voip interface-if</code> | Defines the IP network interface ID for voice traffic.                  |
| <code>network voip interface-if</code> | Defines the IP network interface ID for communication with PacketSmart. |
| <code>server address [port]</code>     | Defines the PacketSmart server address and port.                        |

---

### Command Mode

Privileged User

---

### Note

PacketSmart is applicable only to the Mediant 5xx and Mediant 8xx series.

---

### Example

This example configures PacketSmart server IP address 10.15.7.8:

```
(config-system)# packetsmart enable
(config-system)# packetsmart monitor voip interface-if 0
(config-system)# packetsmart network voip interface-if 0
(config-system)# packetsmart server address 10.15.7.8
```

## 23 provision

This command configures automatic provisioning of the device by a remote HTTP/S provisioning server (Remote Web Service).

---

### Syntax

```
(config-system)# provision
```

| Command                      | Description   |
|------------------------------|---|
| <code>enable {off on}</code> | Enables this automatic provisioning feature.  |
| <code>max-retries</code>     | Defines the maximum number of attempts to send the request before provisioning is considered a failure. |
| <code>retry-interval</code>  | Defines the time (in seconds) between each sent HTTP request that failed.                               |
| <code>server-password</code> | Defines the password for authentication with the server.  |
| <code>server-url</code>      | Defines the provisioning server's URL path where the requests must be sent.                             |
| <code>server-username</code> | Defines the username for authentication with the server.  |

---

### Command Mode

Privileged User

## 24 performance-profile

This command configures the Performance Profile table, which configures thresholds of performance-monitoring call metrics for Major and Minor severity alarms.

### Syntax

```
(config-system)# performance-profile <Index>
(performance-profile-<Index>)#
```

| Command                      | Description  |
|------------------------------|--|
| Index                        | Defines the table row index.   |
| entity {global ip-group srd} | Defines the entity.  |
| hysteresis                   | Defines the amount of fluctuation (hysteresis) from the configured threshold in order for the threshold to be considered as crossed. |
| ip-group-name                | Defines the IP Group (string).   |
| major-threshold              | Defines the Major threshold.   |
| minimum-samples              | Calculates the performance monitoring (only if at least 'minimum samples' is configured in the command 'window-size' (see below).    |
| minor-threshold              | Defines the Minor threshold.   |
| pmtype {acd asr ner}         | Defines the type of performance monitoring.  |
| srd-name                     | Defines the SRD (string).  |
| window-size                  | Configures how often performance monitoring is calculated (in minutes).  |

### Command Mode

Privileged User

### Example

This example configures a Performance Profile based on the ASR of a call, where the Major threshold is configured at 70%, the Minor threshold at 90% and the hysteresis for both thresholds at 2%:

```
(config-system)# performance-profile 0
(performance-profile-0)# entity ip-group
(performance-profile-0)# ip-group-name ITSP
(performance-profile-0)# pmtype asr
(performance-profile-0)# major-threshold 70
(performance-profile-0)# minor-threshold 90
(performance-profile-0)# hysteresis 2
```

## 25 radius

This command configures Remote Authentication Dial-In User Service (RADIUS) settings to enhance device security.

---

### Syntax

```
(config-system)# radius
```

| Command                      | Description  |
|------------------------------|--|
| <code>radius servers</code>  | See <a href="#">radius servers</a> below             |
| <code>radius settings</code> | See <a href="#">radius settings</a> on the next page |

### radius servers

This command configures the RADIUS Servers table, which configures RADIUS servers.

---

### Syntax

```
(config-system)# radius servers <Index>  
(servers-<Index>)#
```

| Command                    | Description  |
|----------------------------|--|
| <code>Index</code>         | Defines the table row index.   |
| <code>acc-port</code>      | Defines the RADIUS server's accounting port.                               |
| <code>auth-port</code>     | Defines the RADIUS server's authentication port.                           |
| <code>ip-address</code>    | Defines the RADIUS server's IP address.                                    |
| <code>shared-secret</code> | Defines the shared secret between the RADIUS client and the RADIUS server. |

---

### Command Mode

Privileged User

---

### Example

This example configures a RADIUS server with IP address 10.15.7.8:

```
(config-system)# radius servers 0
(servers-0)# ip-address 10.15.7.8
```

## radius settings

This command configures various RADIUS settings.

### Syntax

```
(config-system)# radius settings
(radius)#
```

| Command                                 | Description  |
|---|--|
| <code>double-decode-url {off on}</code> | Enables an additional decoding of authentication credentials that are sent to the RADIUS server via URL.                     |
| <code>enable {off on}</code>            | Enables or disables the RADIUS application.  |
| <code>enable-mgmt-login {off on}</code> | Uses RADIUS for authentication of management interface access.   |
| <code>local-cache-mode {0 1}</code>     | Defines the capability to reset the expiry time of the local RADIUS password cache.  |
| <code>local-cache-timeout</code>        | Defines the expiry time, in seconds of the locally stored RADIUS password cache.   |
| <code>nas-id-attribute</code>           | Defines the RADIUS NAS Identifier attribute.   |
| <code>timeout-behavior</code>           | Configures device behavior when RADIUS times out.  |
| <code>vsa-access-level</code>           | Defines the 'Security Access Level' attribute code in the VSA section of the RADIUS packet that the device should relate to. |
| <code>vsa-vendor-id</code>              | Defines the vendor ID that the device should accept when parsing a RADIUS response packet.                                   |

---

**Command Mode**

Privileged User

---

**Example**

This example demonstrates configuring VSA vendor ID:

```
(config-system)# radius settings  
(radius)# vsa-vendor-id 5003
```



## 26 sbc-performance-settings

This command defines a service for optimization of CPU core allocation.

---

### Syntax

```
(config-system)# sbc-performance-settings
(sbc-performance-settings)# sbc-performance-profile {optimized-for-sip|optimized-
for-srtp|optimized-for-transcoding}
```

---

### Command Mode

Privileged User

---

### Note

- For the command to take effect, a device reset with a burn to flash is required.
- The command is applicable only to Mediant 9000 and Mediant VE/SE.

---

### Example

This example specifies CPU core allocation optimization for SRTP:

```
(config-system)# sbc-performance-settings
(sbc-performance-settings)# sbc-performance-profile optimized-for-srtp
```

## 27 snmp

This command configures Simple Network Management Protocol (SNMP).

---

### Syntax

```
(config-system)# snmp
```

| Command             | Description   |
|---------------------|---|
| alarm-customization | See <a href="#">snmp alarm-customization</a> below    |
| settings            | See <a href="#">snmp settings</a> on the next page    |
| trap                | See <a href="#">snmp trap</a> on page 185             |
| trap-destination    | See <a href="#">snmp trap-destination</a> on page 185 |
| v3-users            | See <a href="#">snmp v3-users</a> on page 186         |

---

### Command Mode

Privileged User

### snmp alarm-customization

This command configures the Alarms Customization table, which customizes the severity level of SNMP trap alarms.

---

### Syntax

```
(config-system)# snmp alarm-customization <Index>
(alarm-customization-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.                        |
| alarm-customized-severity<br>{critical indeterminate major minor suppressed warning} | Defines the new (customized) severity of the alarm. |
| alarm-original-severity  | Defines the original                                |

| Command  | Description  |
|--|--|
| {critical default indeterminate major minor warning} | severity of the alarm according to the MIB.  |
| name <0-199>   | Defines the SNMP alarm that you want to customize. The alarm is configured using the last digits of the alarm's SNMP OID. For example, configure the parameter to "12" for the acActiveAlarmTableOverflow alarm (OID is 1.3.6.1.4.15003.9.10.1.21.2.0.12). |

---

#### Command Mode

Privileged User

---

#### Example

This example customizes the acActiveAlarmTableOverflow alarm severity from major to warning level:

```
(config-system)# snmp alarm-customization 0
(alarm-customization-0)# name 1
(alarm-customization-0)# alarm-original-severity major
(alarm-customization-0)# alarm-customized-severity warning
```

## snmp settings

This command configures various SNMP settings.

---

#### Syntax

```
(config-system)# snmp settings
(snmp)#
```

| Command  | Description  |
|--|--|
| <code>activate-keep-alive-trap [interval]</code>       | Enables a keep-alive trap for the agent behind NAT.                    |
| <code>delete-ro-community-string</code>                | Deletes the read-only community string.                                |
| <code>delete-rw-community-string</code>                | Deletes the read-write community string.                               |
| <code>disable {no yes}</code>                          | Enables SNMP.  |
| <code>engine-id</code>                                 | Defines the SNMP Engine ID. 12 HEX Octets in the format: xx:xx:....:xx |
| <code>port</code>                                      | Defines the port number for SNMP requests and responses.               |
| <code>ro-community-string</code>                       | Configures a read-only community string.                               |
| <code>rw-community-string</code>                       | Configures a read-write community string.                              |
| <code>snmp-acl {community string}</code>               | Sets the configuration.  |
| <code>sys-contact</code>                               | Defines the contact person for this managed node (string) .            |
| <code>sys-location</code>                              | Defines the physical location of the node (string).                    |
| <code>sys-name</code>                                  | Defines the sysName as described in MIB-2 (string).                    |
| <code>sys-oid</code>                                   | Defines the base product system OID - SNMP SysOid (string).            |
| <code>trusted-managers {0-4} &lt;IP Address&gt;</code> | Defines the IP address of Trusted SNMP Managers.                       |

---

### Command Mode

Privileged User

---

### Example

This example configures the SysOID:

```
(config-system)# snmp settings
(snmp)# sys-oid 1.3.6.1.4.1.5003.10.10.2.21.1.3
```

## snmp trap

This command configures SNMP traps.

---

### Syntax

```
(config-system)# snmp trap
(snmp-trap)#
```

| Command                                  | Description   |
|--|---|
| auto-send-keep-alive<br>{disable enable} | Invokes a keep-alive trap and sends it every 9/10 of the time configured by the parameter NatBindingDefaultTimeout. |
| community-string                         | Defines the community string used in traps.   |
| manager-host-name                        | Defines the FQDN of the remote host that is used as an SNMP Trap Manager.   |
| reset-community-string                   | Returns to the default trap community string.   |

---

### Command Mode

Privileged User

---

### Example

This example configures the FQDN of the remote host used as the SNMP Trap Manager:

```
(config-system)# snmp trap
(snmp-trap)# manager-host-name John
```

## snmp trap-destination

This command configures the SNMP Trap Destinations table, which configures SNMP trap destinations (Managers).

---

### Syntax

```
(config-system)# snmp trap-destination <Index>
(trap-destination-<Index>)#
```

| Command                    | Description   |
|----------------------------|---|
| Index                      | Defines the table row index.  |
| ip-address                 | Defines the SNMP manager's IP address.                                  |
| port                       | Defines the SNMP manager's port.  |
| reset-trap-user            | Returns to the default trap user.                                       |
| send-trap {disable enable} | Enables the sending of traps to the SNMP manager.                       |
| trap-user                  | SNMPv3 USM user or SNMPv2 user to associate with this trap destination. |

---

#### Command Mode

Privileged User

---

#### Example

This example demonstrates configuring a trap destination:

```
(config-system)# snmp trap-destination 0
(trap-destination 0)# ip-address 10.13.4.145
(trap-destination 0)# send-trap
```

## snmp v3-users

This command configures the SNMPv3 Users table, which configures SNMPv3 users.

---

#### Syntax

```
(config-system)# snmp v3-users <Index>
(v3-users-<Index>#
```

| Command                                  | Description   |
|--|---|
| Index                                    | Defines the table row index.  |
| auth-key                                 | Defines the authentication key. The hex string should be in xx:xx:xx... format (string).              |
| auth-protocol<br>{md5 none sha-1}        | Defines the authentication protocol.  |
| group {read-only read-write trap}        | Defines the group that this user is associated with.  |
| priv-key                                 | Defines the privacy key. The hex string should be in xx:xx:xx... format.                              |
| priv-protocol<br>{3des aes-128 des none} | Defines the privacy protocol (string).  |
| username                                 | Defines the name of the SNMP user. Must be unique in the scope of SNMPv3 users and community strings. |

---

### Command Mode

Privileged User

---

### Example

This example configures an SNMPv3 user:

```
(config-system)# snmp v3-users 0
(v3-users-0)# username JaneD
```

## 28 user

This command configures the Local Users table, which configures management user accounts.

### Syntax

```
(config-system)# user <Username>
(user-<Username>#
```

| Command  | Description   |
|--|---|
| <code>block-duration</code><br><code>&lt;Time&gt;</code>   | Defines the duration (in seconds) for which the user is blocked when the user exceeds a user-defined number of failed login attempts.   |
| <code>cli-session-limit</code> <code>&lt;Max. Sessions&gt;</code>  | Defines the maximum number of concurrent CLI sessions logged in with the same username-password.  |
| <code>password</code><br><code>&lt;displayed</code><br><code>password&gt; &lt;Enter</code><br><code>key for hidden</code><br><code>password&gt;</code> | <p>Defines the user's password.</p> <ul style="list-style-type: none"> <li>■ To show the password as you type, type the <code>password</code> command and then the password.</li> <li>■ To hide the password as you type, type the <code>password</code> command, press the Enter key, and then type the password.</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>■ For obscured (encrypted) passwords, do one of the following: <ul style="list-style-type: none"> <li>✓ After typing the <code>password</code> command, paste (or type) the obscured password, and then type the <code>obscured</code> command, for example:</li> </ul> </li> </ul> <pre>(config-system)# user John Configure new user John (user-John)# password db6bce85685c6634f6115456a083ea753f6d1 7bc228ffa3ea306a4ec6f7f66e405b3904b 8476465cca64 962af33cafd1 obscured</pre> <p>To generate an encrypted password, configure the password through the Web interface, and then save the device's configuration to an ini file. As the ini file displays passwords in obscured format by default, simply copy-and-past the</p> |



| Command   | Description   |
|---|---|
|   | <p>encrypted password from the ini file into the CLI.</p> <ul style="list-style-type: none"> <li>✓ After typing the <code>password</code> command, press Enter, and then type the password, which is hidden when you type. This method is typically used when you don't have an obscured password; the device converts your typed password (e.g., "1234") into an obscured password. For example:           <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> <pre>(config-system)# user John Configure new user John (user-John)# password  Please enter hidden password (press CTRL+C to exit):</pre> </div> </li> <li>■ To enforce password configuration in obscured format, use the command <code>obscure-password-mode on</code>.</li> <li>■ The device displays all configured passwords as encrypted (obscured) in its CLI outputs.</li> </ul> |
| <code>password-age</code><br><Days>                     | Defines the validity duration (in days) of the password.  |
| <code>privilege</code><br>{admin master sec-admin user} | Defines the user's privilege level.   |
| <code>public-key</code>                                 | Defines a Secure Socket Shell (SSH) public key for RSA public-key authentication (PKI) of the remote user when logging into the device's CLI through SSH.   |
| <code>session-limit</code><br><Max. Sessions>           | Defines the maximum number of concurrent Web sessions logged in with the same username-password.  |
| <code>session-timeout</code><br><Number>                | Defines the duration (in minutes) of inactivity of a logged-in user, after which the user is automatically logged off the Web session.  |
| <code>status</code> {failed-login inactivity new valid} | Defines the status of the user.   |

**Command Mode**

## Privileged User

---

### Example

This example configures a new user "John" and hides the password when typed:

```
(config-system)# user John
Configure new user John
(user-John)# password
```

```
Please enter hidden password (press CTRL+C to exit):
```

```
New password successfully configured!
```

## 28 user-defined-failure-pm

This command configures the User Defined Failure PM table, which lets you configure user-defined Performance Monitoring (PM) SNMP MIB rules for SBC calls.

### Syntax

```
(config-system)# user-defined-failure-pm <Index>
(user-defined-failure-pm-<Index>)#
```

| Command                        | Description  |
|--------------------------------|--|
| Index                          | Defines the table row index.   |
| description                    | Defines a descriptive name for the rule.   |
| internal-reason                | Defines the failure reason(s) that is generated internally by the device to count. |
| method {invite register}       | Defines the SIP method to which the rule is applied.                               |
| sip-reason                     | Defines the SIP failure reason(s) to count.  |
| user-defined-failure-pm {1-26} | Defines the ID of the SNMP MIB group that you want to configure.                   |

### Command Mode

Privileged User

### Example

This example configures a user-defined Performance Monitoring (PM) SNMP MIB group (#1) that counts SIP 403 responses due to INVITE messages:

```
(config-system)# user-defined-failure-pm 0
(user-defined-failure-pm-0)# method -invite
(user-defined-failure-pm-0)# sip-reason 403
(user-defined-failure-pm-0)# user-defined-failure-pm 1
```

## 29 web

This command configures various Web interface settings.

### Syntax

```
(config-system)# web
(web)#
```

| Command  | Description  |
|--|--|
| blocking-duration-factor                                     | Defines the number to multiple the previous blocking time for blocking the IP address (management station) or user upon the next failed login scenario.  |
| deny-auth-timer  | Defines the duration (in seconds) for which login to the Web interface is denied from a specific IP address (management station) for all users, when the number of failed login attempts has exceeded the maximum. |
| deny-access-counting-valid-time                              | Defines the maximum time interval (in seconds) between failed login attempts to be included in the count of failed login attempts for denying access to the user   |
| dns-rebinding-protection-enabled                             | Enables protection against DNS rebinding attacks.  |
| enforce-password-complexity {0 1}                            | Enforces definition of a complex login password.   |
| http-auth-mode {basic digest-http-only digest-when-possible} | Selects HTTP basic (clear text) or digest (MD5) authentication for the Web interface.  |
| http-port  | Defines the device's LAN HTTP port for Web interface access.   |
| https-port   | Defines the device's LAN HTTPS port for secure Web interface access.   |
| min-web-password-len   | Defines the minimum length (number of characters) of the management user's login password when password complexity is enabled (using the [EnforcePasswordComplexity]   |

| Command   | Description   |
|---|---|
|   | parameter).   |
| <code>req-client-cert {off on}</code>                       | Enables requirement of client certificates for HTTPS Web interface connections. |
| <code>secured-connection {http-and-https https-only}</code> | Defines the protocol (HTTP or HTTPS) for accessing the Web interface.           |

---

**Command Mode**

Privileged User

---

**Note**

For more information on the commands, refer to the User's Manual.

---

**Example**

This example enables requirement of client certificates for HTTPS Web interface connections:

```
(config-system)# web
(web)# req-client-cert on
```

## 30 welcome-msg

This command configures a banner message, which is displayed when you connect to the device's management interfaces (Web and CLI).

---

### Syntax

```
(config-system)# welcome-msg <Index>  
(welcome-msg-<Index>)# text <Message>
```

| Command        | Description                               |
|----------------|---|
| Index          | Defines the table row index.              |
| text <Message> | Defines the message (string) for the row. |
| display        | Displays the banner message.              |

---

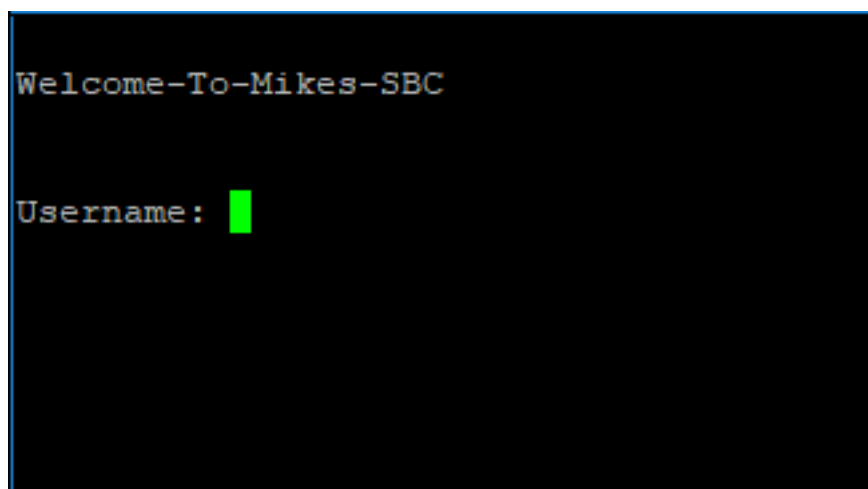
### Command Mode

Privileged User

---

### Note

- The message string must not contain spaces between characters. Use hyphens to separate words.
- The location of the displayed message depends on how you access the device:
  - **Web interface or Telnet CLI:** The message is displayed before you enter your login username, as shown in the following example for Telnet:



```
Welcome-To-Mikes-SBC  
  
Username: █
```

- **SSH CLI:** The message is displayed after you enter your login username (before the login password prompt), as shown in the following example:

```
login as: Admin
Pre-authentication banner message from server:
| Welcome-To-Mikes-SBC
End of banner message from server
Admin@10.15.7.96's password: █
```

### Example

- This example configures a banner message:

```
(config-system)# welcome-msg 0
(welcome-msg-0)# text Hello-World-of-SBC
(welcome-msg-0)# activate
(welcome-msg-0)# exit
(config-system)# welcome-msg 1
(welcome-msg-1)# text Configure-Me
(welcome-msg-1)# activate
```

- This example displays the message:

```
(config-system)# welcome-msg display
welcome-msg 0
  text "Hello-World-of-SBC"
welcome-msg 1
  text "Configure-Me"
```

- The message is displayed when you connect to the device's management interface:

```
Hello-World-of-SBC
Configure-Me
Username: Admin
```

# Part IV

## Troubleshoot-Level Commands



## 31 Introduction

This part describes the commands located on the Troubleshoot configuration level. The commands of this level are accessed by entering the following command at the root prompt:

---

### Syntax

```
# configure troubleshoot
(config-troubleshoot)#
```

This level includes the following commands:

| Command                   | Description   |
|---------------------------|---|
| activity-log              | See <a href="#">activity-log</a> on page 198              |
| activity-trap             | See <a href="#">activity-trap</a> on page 200             |
| cdr                       | See <a href="#">cdr</a> on page 201                       |
| cdr-server                | See <a href="#">cdr-server</a> on page 209                |
| pstn-debug                | See <a href="#">pstn-debug</a> on page 211                |
| fax-debug                 | See <a href="#">fax-debug</a> on page 212                 |
| logging                   | See <a href="#">logging</a> on page 213                   |
| max-startup-fail-attempts | See <a href="#">max-startup-fail-attempts</a> on page 216 |
| pstn-debug                | See <a href="#">pstn-debug</a> on page 217                |
| startup-n-recovery        | See <a href="#">startup-n-recovery</a> on page 218        |
| syslog                    | See <a href="#">syslog</a> on page 219                    |
| test-call                 | See <a href="#">test-call</a> on page 221                 |

---

### Command Mode

Privileged User

## 32 activity-log

This command configures event types performed in the management interface (Web and CLI) to report in syslog messages or in an SNMP trap.

### Syntax

```
(config-troubleshoot)# activity-log
(activity-log)#
```

| Command                           | Description  |
|-----------------------------------|--|
| action-execute {on off}           | Enables logging notifications on actions executed events.                  |
| cli-commands-log {on off}         | Enables logging of CLI commands.   |
| config-changes {on off}           | Enables logging notifications on parameters-value-change events.           |
| device-reset {on off}             | Enables logging notifications on device-reset events.                      |
| files-loading {on off}            | Enables logging notifications on auxiliary-files-loading events.           |
| flash-burning {on off}            | Enables logging notifications on flash-memory-burning events.              |
| login-and-logout {on off}         | Enables logging notifications on login-and-logout events.                  |
| sensitive-config-changes {on off} | Enables logging notifications on sensitive-parameters-value-change events. |
| software-update {on off}          | Enables logging notifications on device-software-update events.            |
| unauthorized-access {on off}      | Enables logging notifications on non-authorized-access events.             |

### Command Mode

Privileged User

### Related Command

- activity-trap - enables an SNMP trap to report Web user activities
- show activity-log – displays logged activities

---

**Example**

This example enables reporting of login and logout attempts:

```
(config-troubleshoot)# activity-log  
(activity-log)# login-and-logout on
```

## 33 activity-trap

This command enables the device to send an SNMP trap to notify of Web user activities in the Web interface.

---

### Syntax

```
(config-troubleshoot)# activity-trap {on|off}
```

---

### Command Mode

Privileged User

---

### Related Command

activity-log - configures the activity types to report.

---

### Example

This example demonstrates configuring the activity trap:

```
(config-troubleshoot)# activity-trap on
```

## 34 cdr

This command provides sub-commands that configure various settings for CDRs.

### Syntax

```
(config-troubleshoot)# cdr
(cdr)#
```

| Command  | Description  |
|--|--|
| <code>aaa-indications {accounting-only none}</code>                                | Configures which Authentication, Authorization and Accounting indications to use.  |
| <code>call-duration-units {centi-seconds deci-seconds milliseconds seconds}</code> | Defines the units of measurement for the call duration field in CDRs.  |
| <code>call-end-cdr-sip-reasons-filter</code>                                       | Defines SIP release cause codes that if received for the call, the device does not send Call-End CDRs for the call.  |
| <code>call-end-cdr-zero-duration-filter {off on}</code>                            | Enables the device to not send Call-End CDRs if the call's duration is zero (0).   |
| <code>call-failure-internal-reasons</code>   | Defines the internal response codes (generated by the device) that you want the device to consider as call failure, which is indicated by the optional 'Call Success' field in the sent CDR. |
| <code>call-failure-sip-reasons</code>  | Defines the SIP response codes that you want the device to consider as call failure, which is indicated by the optional 'Call Success' field in the sent CDR.                                |
| <code>call-success-internal-reasons</code>   | Defines the internal response codes (generated by the device) that you want the device to consider as call success, which is indicated by the optional 'Call Success' field in the sent CDR. |
| <code>call-success-sip-reasons</code>  | Defines the SIP response code that you want the device to consider as call   |

| Command  | Description  |
|--|--|
|  | success, which is indicated by the optional 'Call Success' field in the sent CDR.  |
| <code>call-transferred-after-connect</code>  | Defines if the device considers a call as a success or failure when the internal response (generated by the device) "RELEASE_BECAUSE_CALL_TRANSFERRED" (807) is generated after call connect (SIP 200 OK).   |
| <code>call-transferred-before-connect</code>   | Defines if the device considers a call as a success or failure when the internal response (generated by the device) "RELEASE_BECAUSE_CALL_TRANSFERRED" (807) is generated before call connect (SIP 200 OK).  |
| <code>cdr-file-name</code>   | Defines the filename using format specifiers for locally stored CDRs.  |
| <code>cdr-format</code>  | Customizes the CDR format (see <a href="#">cdr-format</a> on page 204).  |
| <code>cdr-history-privacy [disable hide-caller-and-callee]</code>  | Enables the device to hide (by displaying an asterisk) the values of the Caller and Callee fields in CDRs that are displayed by the device: SBC CDR History table (Web), Gateway CDR History table (Web), <code>show voip calls history</code> (CLI), and <code>show voip calls active</code> (CLI). |
| <code>cdr-report-level {connect-and-end-call end-call none start-and-end-and-connect-call start-and-end-call}</code> | Defines the call stage at which media- and signaling-related CDRs are sent to a Syslog server.   |
| <code>cdr-seq-num {off on}</code>  | Enables sequence numbering of SIP CDR syslog messages.   |
| <code>cdr-servers-bulk-size</code>   | Defines the maximum number of locally stored CDR files (i.e., batch of files) that the device sends to the remote server in each transfer operation.   |

| Command   | Description   |
|---|---|
| <code>cdr-servers-send-period</code>  | Defines the periodic interval (in seconds) when the device checks if a locally stored CDR file is available for sending to the remote CDR server.   |
| <code>cdr-srvr-ip-adrr</code>   | Defines the syslog server IP address for sending CDRs.  |
| <code>compression-format</code><br>{gzip none zip}  | Defines the file compression type for locally stored CDRs.  |
| <code>enable</code> {off on}  | Enables or disables the RADIUS application.   |
| <code>file-size</code>  | Defines the maximum size per locally stored CDR file, in KB.  |
| <code>files-num</code>  | Defines the maximum number of locally stored CDR files.   |
| <code>rotation-period</code>  | Defines the interval size for locally stored CDR files, in minutes.   |
| <code>media-cdr-rprt-level</code><br>{end none start-and-end start-end-and-update update-and-end} | Enables media-related CDRs of SBC calls to be sent to a Syslog server and configures the call stage at which they are sent.   |
| <code>no-user-response-after-connect</code>   | Defines if the device considers a call as a success or failure when the internal response (generated by the device) "GWAPP_NO_USER_RESPONDING" (18) is received after call connect (SIP 200 OK).            |
| <code>no-user-response-before-connect</code>  | Defines if the device considers a call as a success or failure when the internal response (generated by the device) "RELEASE_BECAUSE_CALL_TRANSFERRED" (807) is generated before call connect (SIP 200 OK). |
| <code>non-call-cdr-rprt</code> {off on}   | Enables creation of CDR messages for non-call SIP dialogs (such as SUBSCRIBE, OPTIONS, and REGISTER).   |
| <code>radius-accounting</code> {end-  | Configures at what stage of the call  |

| Command  | Description   |
|--|---|
| <code>call   connect-and-end-call   start-and-end-call</code>  | RADIUS accounting messages are sent to the RADIUS accounting server.  |
| <code>rest-cdr-http-server</code>  | Defines the REST server (by name) to where the device sends CDRs through REST API.                            |
| <code>rest-cdr-report-level {connect-and-end-call   connect-only   end-call   none   start-and-end-and-connect-call   start-and-end-call}</code> | Enables signaling-related CDRs to be sent to a REST server and defines the call stage at which they are sent. |
| <code>time-zone-format</code>  | Defines the time zone string (only for display purposes).   |

---

### Command Mode

Privileged User

---

### Example

This example configures the call stage at which CDRs are generated:

```
(config-troubleshoot)# cdr
(cdr)# cdr-report-level start-and-end-call
```

## cdr-format

This command customizes the format of CDRs for gateway (Gateway CDR Format table) and SBC (SBC CDR Format table) calls.

---

### Syntax

```
(config-troubleshoot)# cdr
(cdr)# cdr-format
```

| Command                     | Value  |
|-----------------------------|--|
| <code>gw-cdr-format</code>  | See <a href="#">gw-cdr-format</a> on the next page |
| <code>sbc-cdr-format</code> | See <a href="#">sb-cdr-format</a> on page 206      |



| Command    | Value                                      |
|------------|--|
| show-title | See <a href="#">show-title</a> on page 207 |

---

### Command Mode

Privileged User

## gw-cdr-format

This command customizes the format of CDRs for gateway (Gateway CDR Format table) calls.

---

### Syntax

```
(config-troubleshoot)# cdr
(cdr)# cdr-format gw-cdr-format <Index>
(gw-cdr-format-<Index>)#
```

| Command   | Value  |
|---|--|
| Index   | Defines the table row index.                               |
| cdr-type {local-storage-gw radius-gw syslog-gw} | Defines the type of CDRs that you want customized.         |
| col-type  | Defines the CDR field (column) that you want to customize. |
| radius-id                                       | Defines the ID of the RADIUS Attribute.                    |
| radius-type {standard vendor-specific}          | Defines the RADIUS Attribute type.                         |
| title   | Configures a new name for the CDR field name.              |

---

### Command Mode

Privileged User

---

### Example

This example changes the CDR field name "call-duration" to "Phone-Duration" for Syslog messages:

```
(config-troubleshoot)# cdr
(cdr)# cdr-format gw-cdr-format 0
(gw-cdr-format-0)# cdr-type syslog-media
(gw-cdr-format-0)# col-type call-duration
(gw-cdr-format-0)# title Phone-Duration
```

## sb-cdr-format

This command customizes the format of CDRs for SBC (SBC CDR Format table) calls.

### Syntax

```
(config-troubleshoot)# cdr
(cdr)# cdr-format sbc-cdr-format <Index>
(sbc-cdr-format-<Index>)#
```

| Command   | Value  |
|---|--|
| Index   | Defines the table row index.                               |
| cdr-type {local-storage-gw radius-gw syslog-gw} | Defines the type of CDRs that you want customized.         |
| col-type  | Defines the CDR field (column) that you want to customize. |
| radius-id                                       | Defines the ID of the RADIUS Attribute.                    |
| radius-type {standard vendor-specific}          | Defines the RADIUS Attribute type.                         |
| title   | Configures a new name for the CDR field name.              |

### Command Mode

Privileged User

### Example

This example changes the CDR field name "connect-time" to "Call-Connect-Time=" and the RADIUS Attribute to 281 for RADIUS messages:

```
(cdr)# cdr-format sbc-cdr-format 0
(sbc-cdr-format-0)# cdr-type radius-sbc
```

```
(sbc-cdr-format-0)# col-type connect-time
(sbc-cdr-format-0)# title Call-Connect-Time=
(sbc-cdr-format-0)# radius-type vendor-specific
(sbc-cdr-format-0)# radius-id 281
```

## show-title

This command displays CDR column titles of a specific CDR type.

### Syntax

```
(config-troubleshoot)# cdr
(cdr)# cdr-format show-title
```

| Command           | Value  |
|-------------------|--|
| local-storage-gw  | Displays CDR column titles of locally stored Gateway CDRs. |
| local-storage-sbc | Displays CDR column titles of locally stored SBC CDRs.     |
| syslog-gw         | Displays CDR column titles of Syslog Gateway CDRs.         |
| syslog-media      | Displays CDR column titles of Syslog media CDRs.           |
| syslog-sbc        | Displays CDR column titles of Syslog SBC CDRs.             |

### Command Mode

Privileged User

### Example

This example displays column titles of Syslog Gateway CDRs:

```
(config-troubleshoot)# cdr
(cdr)# cdr-format show-title syslog-gw
|GWReportType |Cid |SessionId |LegId|Trunk|BChan|ConId|TG |EPTyp |Orig
|SourceIp |DestIp |TON |NPI |SrcPhoneNum |SrcNumBeforeMap |TON |NPI
|DstPhoneNum |DstNumBeforeMap |Durat|Coder |Intrv|RtpIp |Port
|TrmSd|TrmReason |Fax |InPackets |OutPackets|PackLoss
|RemotePackLoss|SIPCallId |SetupTime |ConnectTime |ReleaseTime |RTPdelay
|RTPjitter|RTPssrc |RemoteRTPssrc |RedirectReason |TON |NPI
|RedirectPhonNum |MeteringPulses |SrcHost |SrcHostBeforeMap |DstHost
```

```
|DstHostBeforeMap |IPG (name) |LocalRtpIp |LocalRtpPort |Amount |Mult  
|TrmReasonCategory|RedirectNumBeforeMap|SrdId (name) |SIPInterfaceId  
(name) |ProxySetId (name) |IpProfileId (name) |MediaRealmId  
(name)|SigTransportType|TxRTPIPDiffServ |  
TxSigIPDiffServ|LocalRFactor|RemoteRFactor|LocalMosCQ|RemoteMosCQ|SigS  
ourcePort|SigDestPort|MediaType |AMD| % |SIPTrmReason|SIPTermDesc  
|PstnTermReason|LatchedRtpIp |LatchedRtpPort |LatchedT38Ip |LatchedT38Port  
|CoderTranscoding
```

## 34 cdr-server

This command configures the SBC CDR Remote Servers table, which configures remote SFTP servers to where the device sends the locally stored CDRs.

### Syntax

```
(config-troubleshoot)# cdr-server
(cdr-server-<Index>)#
```

| Command                     | Value   |
|-----------------------------|---|
| Index                       | Defines the table row index.  |
| address                     | Defines the address of the server.  |
| connect-timeout <1-600>     | Defines the connection timeout (in seconds) with the server.  |
| max-transfer-time <1-65535> | Defines the maximum time (in seconds) allowed to spend for each individual CDR file transfer process. |
| name                        | Defines an arbitrary name to easily identify the rule.  |
| password                    | Defines the password for authentication with the server.  |
| port                        | Defines the SSH port number of the server.  |
| priority <0-10>             | Defines the priority of the server.   |
| remote-path                 | Defines the directory path to the folder on the server where you want the CDR files to be sent.       |
| username                    | Defines the username for authentication with the server.  |

### Command Mode

Privileged User

### Example

This example configures an SFTP server at index 0:

```
(config-troubleshoot)# cdr-server 0
(cdr-server-0)# name CDR-Server
(cdr-server-0)# address 170.10.2.5
```

```
(cdr-server-0)# password 1234  
(cdr-server-0)# username sftp-my  
(cdr-server-0)# remote-path /cdr  
(cdr-server-0)# name CDR-Server  
(cdr-server-0)# name CDR-Server  
(cdr-server-0)# activate
```

## 34 pstn-debug

This command enables PSTN debugging, which is sent to a Syslog server.

---

### Syntax

```
# pstn-debug {off|on}
```

---

### Note

To disable PSTN debugging, type **pstn-debug off**.

---

### Command Mode

Privileged User

---

### Related Commands

To configure the PSTN trace level, use the command: `configure voip > interface > trace-level`

---

### Example

Enables PSTN debugging:

```
# pstn-debug on
```

## 35 fax-debug

This command configures fax / modem debugging.

---

### Syntax

```
(config-troubleshoot)# fax-debug
```

| Command              | Description  |
|----------------------|--|
| level {basic detail} | Defines the fax / modem debug level.                             |
| max-sessions         | Configures debugging the maximum number of fax / modem sessions. |
| off                  | Disables fax / modem debugging.                                  |
| on                   | Enables fax / modem debugging.                                   |

---

### Command Mode

Privileged User

---

### Example

This example configures fax / modem debug basic level:

```
(config-troubleshoot)# fax-debug level basic  
(config-troubleshoot)# on
```



## 36 logging

This command configures logging and includes the following subcommands:

- logging-filters (see [logging-filters](#) below)
- settings (see [settings](#) on the next page)

### logging-filters

This command configures the Logging Filters table, which configures filtering rules of debug recording packets, Syslog messages, and Call Detail Records (CDR). The table allows you to enable and disable configured Log Filter rules. Enabling a rule activates the rule, whereby the device starts generating the debug recording packets, Syslog messages, or CDRs.

#### Syntax

```
(config-troubleshoot)# logging logging-filters <Index>
(logging-filters-<Index>)#
```

| Command   | Description                       |
|---|-----------------------------------|
| Index   | Defines the table row index.      |
| filter-type {any classification fxs-fxo ip-group  ip-to-ip-routing ip-to-tel ip-trace sip-interface srd tel-to-ip trunk-bch trunk-group-id trunk-id user} | Type of logging filter.           |
| log-dest {debug-rec local-storage syslog}   | Log destination.                  |
| log-type {cdr-only none pstn-trace signaling signaling-media signaling-media-pcm}   | Log type.                         |
| mode {disable enable}   | Enables or disables the log rule. |
| value   | Value of log filter (string).     |

#### Command Mode

Privileged User

---

**Note**

- To configure the PSTN trace level per trunk, use the following command: `configure voip > interface > trace-level`
- To configure PSTN traces for all trunks (that have been configured with a trace level), use the following command: `debug debug-recording <Destination IP Address> pstn-trace`
- To send the PSTN trace to a Syslog server (instead of Wireshark), use the following command: `configure troubleshoot > pstn-debug`

---

**Example**

This example configures a Logging Filter rule (Index 0) that sends SIP signaling syslog messages of IP Group 1 to a Syslog server:

```
(config-troubleshoot)# logging logging-filters 0
(logging-filters-0)# filter-type ip-group
(logging-filters-0)# log-dest syslog
(logging-filters-0)# log-type signaling
(logging-filters-0)# mode enable
(logging-filters-0)# value 1
```

## settings

This command configures debug recording settings.

---

**Syntax**

```
(config-troubleshoot)# logging settings
(logging-settings)#
```

| Command  | Description   |
|--|---|
| <code>dbg-rec-dest-ip</code>                             | Defines the destination IP address for debug recording. |
| <code>dbg-rec-dest-port</code>                           | Defines the destination UDP port for debug recording.   |
| <code>dbg-rec-status</code><br><code>{start stop}</code> | Starts and stops debug recording.                       |

---

**Command Mode**

Privileged User

---

**Example**

This example configures the debug recoding server at 10.13.28.10 and starts the recording:

```
(config-troubleshoot)# logging settings
(logging-settings)# dbg-rec-dest-ip 10.13.28.10
(logging-settings)# dbg-rec-status start
```

## 37 max-startup-fail-attempts

This command defines the number of consecutive failed device restarts (boots), after which the device automatically restores its software and configuration based on (by loading) the default System Snapshot.

---

### Syntax

```
(config-troubleshoot)# max-startup-fail-attempts {1-10}
```

---

### Command Mode

Privileged User

---

### Note

The command is applicable only to Mediant 9000 and Mediant SE/VE.

---

### Example

This example defines automatic recovery to be triggered after three consecutive failed restart attempts:

```
(config-troubleshoot)# max-startup-fail-attempts 3
```

## 38 pstn-debug

This command enables or disables PSTN debugging.

---

### Syntax

```
(config-troubleshoot)# pstn-debug {on|off}
```

---

### Command Mode

Privileged User

---

### Example

This example enables PSTN debugging:

```
(config-troubleshoot)# pstn-debug on
```

## 39 startup-n-recovery

This command is for performing various management tasks.

---

### Syntax

```
(config-troubleshoot)# startup-n-recovery
(startup-n-recovery)#
```

| Command  | Description   |
|--|---|
| <code>enable-kernel-dump {core-dump disable exception-info}</code> | Enables kernel dump mode.   |
| <code>startup-dark-mode {off on}</code>                            | Hides the bootup log messages from being displayed in the CLI console during a device reset (boot up). However, if the device fails to load, serial darkening is disabled in the next bootup attempt. |
| <code>system-console-mode {rs232 vga}</code>                       | Defines the access mode for the console   |

---

### Command Mode

Privileged User

---

### Note

The command is applicable only to Mediant 9000 and Mediant SE/VE.

---

### Example

This example configures the console mode to RS-232:

```
(config-troubleshoot)# startup-n-recovery
(startup-n-recovery)# system-console-mode rs232
(startup-n-recovery)# activate
```

## 40 syslog

This command configures syslog debugging.

### Syntax

```
(config-troubleshoot)# syslog
(syslog)#
```

| Command  | Description   |
|--|---|
| <code>debug-level {basic detailed no-debug}</code>   | Defines the SIP media gateway's debug level.  |
| <code>debug-level-high-threshold</code>  | Defines the threshold for auto-switching of debug level.  |
| <code>log-level {alert  critical  debug-notrecommended   error  fatal  info-notrecommended   notice  warning}</code> | Defines the minimum severity level of messages included in the Syslog message that is generated by the device |
| <code>specific-debug-names-list</code>   | Configures a specific debug names list (string).  |
| <code>syslog {on off}</code>   | Enables or disables syslog messages.  |
| <code>syslog-cpu-protection {on off}</code>  | Enables or disables downgrading the debug level when CPU idle is dangerously low.                             |
| <code>syslog-ip</code>   | Defines the syslog server's IP address.   |
| <code>syslog-optimization {disable enable}</code>  | Enables or disables bundling debug syslog messages for performance.   |
| <code>syslog-port</code>   | Defines the syslog server's port number.  |
| <code>system-log-size</code>   | Defines the maximum size (in KB) of the local system log file.  |

---

**Command Mode**

Privileged User

---

**Example**

This example disables syslog:

```
(config-troubleshoot)# syslog
(syslog)# debug-level no-debug
```



## 41 test-call

This command configures test calls.

---

### Syntax

```
(config-troubleshoot)# test-call
```

| Command         | Value  |
|-----------------|--|
| settings        | See <a href="#">settings</a> below                   |
| test-call-table | See <a href="#">test-call-table</a> on the next page |

---

### Command Mode

Privileged User

### settings

This command configures various test call settings.

---

### Syntax

```
(config-troubleshoot)# test-call settings
(test-call)#
```

| Command              | Description  |
|----------------------|--|
| testcall-dtmf-string | Configures a DTMF string (tone) that is played for answered test calls.  |
| testcall-id          | Defines the incoming test call prefix that identifies it as a test call. |

---

### Command Mode

Privileged User

---

### Example

This example configures a test call ID:

```
(config-troubleshoot)# test-call
(test-call)# testcall-id 03
```

## test-call-table

This command configures the Test Call Rules table, which allows you to test SIP signaling (setup and registration) and media (DTMF signals) of calls between a simulated phone on the device and a remote IP endpoint.

### Syntax

```
(config-troubleshoot)# test-call test-call-table <Index>
(test-call-table-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| allowed-audio-coders-group-name  | Assigns an Allowed Audio Coders Group, configured in the Allowed Audio Coders Groups table, which defines only the coders that can be used for the test call. |
| allowed-coders-mode {not-configured preference restriction restriction-and-preference} | Defines the mode of the Allowed Coders feature for the Test Call.   |
| application-type {gw sbc}  | Application type.   |
| auto-register {disable enable}   | Automatic register.   |
| bandwidth-profile  | Bandwidth Profile.  |

| Command  | Description   |
|--|---|
| call-duration  | Call duration in seconds (-1 for auto, 0 for infinite).   |
| call-party {called caller}                               | Test call party.  |
| called-uri   | Called URI.   |
| calls-per-second   | Calls per second.   |
| dst-address  | Destination address and optional port.  |
| dst-transport {not-configured sctp tcp tls udp}          | Destination transport type.   |
| endpoint-uri   | Endpoint URI ('user' or 'user@host').   |
| ip-group-name  | IP Group.   |
| max-channels   | Maximum concurrent channels for session.  |
| media-security-mode {as-is both not-configured rtp srtp} | Defines the handling of RTP and SRTP  |
| offered-audio-coders-group-name                          | Assigns a Coder Group, configured in the Coder Groups table, whose coders are added to the SDP Offer in the outgoing Test Call. |
| password   | Password for registration.  |

| Command   | Description  |
|---|--|
| <code>play {disable dtmf prt}</code>                          | Playback mode.   |
| <code>play-dtmf-method {inband not-configured rfc2833}</code> | Defines the method used by the device for sending DTMF digits that are played to the called party when the call is answered. |
| <code>play-tone-index</code>                                  | Defines a tone to play from the installed PRT file.  |
| <code>qoe-profile</code>                                      | Quality of Experience (QOE) Profile.   |
| <code>route-by {dst-address ip-group}</code>                  | Routing method.  |
| <code>schedule-interval</code>                                | 0 disables scheduling, any positive number configures the interval between scheduled calls (in minutes).                     |
| <code>sip-interface-name</code>                               | SIP Interface.   |
| <code>test-duration</code>                                    | Test duration (minutes).   |
| <code>test-mode {continuous once}</code>                      | Test mode.   |
| <code>user-name</code>  | User name for registration.  |

---

### Command Mode

Privileged User

---

### Example

This example partially configures a test call rule that calls endpoint URI 101 at IP address 10.13.4.12:

```
(config-troubleshoot)# test-call test-call-table 0
(test-call-table-0)# called-uri 101
(test-call-table-0)# route-by dst-address
(test-call-table-0)# dst-address 10.13.4.12
```

# Part V

## Network-Level Commands

## 42 Introduction

This part describes the commands located on the Network configuration level. The commands of this level are accessed by entering the following command at the root prompt:

```
# configure network
(config-network)#
```

This level includes the following commands:

| Command              | Description  |
|----------------------|--|
| access-list          | See <a href="#">access-list</a> on page 229          |
| dhcp-server          | See <a href="#">dhcp-server</a> on page 231          |
| dns                  | See <a href="#">dns</a> on page 237                  |
| ether-group          | See <a href="#">ether-group</a> on page 242          |
| high-availability    | See <a href="#">high-availability</a> on page 243    |
| http-proxy           | See <a href="#">http-proxy</a> on page 247           |
| interface            | See <a href="#">interface</a> on page 259            |
| mtc                  | See <a href="#">mtc</a> on page 262                  |
| nat-translation      | See <a href="#">nat-translation</a> on page 266      |
| network-dev          | See <a href="#">network-dev</a> on page 268          |
| network-settings     | See <a href="#">network-settings</a> on page 269     |
| ovoc-tunnel-settings | See <a href="#">ovoc-tunnel-settings</a> on page 270 |
| physical-port        | See <a href="#">physical-port</a> on page 271        |
| qos                  | See <a href="#">qos</a> on page 272                  |
| sctp                 | See <a href="#">sctp</a> on page 274                 |
| security-settings    | See <a href="#">security-settings</a> on page 276    |
| static               | See <a href="#">static</a> on page 278               |
| tls                  | See <a href="#">tls</a> on page 280                  |

---

**Command Mode**

Privileged User



## 43 access-list

This command configures the Firewall table, which lets you define firewall rules that define network traffic filtering rules.

### Syntax

```
(config-network)# access-list <Index>
(access-list-<Index>)#
```

| Command                                 | Description   |
|---|---|
| Index                                   | Defines the table row index.  |
| allow-type {allow block}                | Defines the firewall action if the rule is matched.                     |
| byte-burst                              | Defines the allowed traffic burst in bytes.                             |
| byte-rate                               | Defines the allowed traffic bandwidth in bytes per second.              |
| description                             | Defines a brief description for the rule.                               |
| end-port                                | Defines the destination ending port.                                    |
| network-interface-name                  | Defines the IP Network Interface (string) for which the rule applies.   |
| packet-size                             | Defines the maximum allowed packet size.                                |
| prefixLen                               | Defines the prefix length of the source IP address (defining a subnet). |
| protocol                                | Defines the IP user-level protocol.                                     |
| source-ip                               | Defines the source IP address from where the packets are received.      |
| src-port                                | Defines the source port from where the packets are received.            |
| start-port                              | Defines the destination starting port.                                  |
| use-specific-interface {disable enable} | Use the rule for a specific interface or for all interfaces.            |

---

**Command Mode**

Privileged User

---

**Example**

This example configures a firewall rule allowing a maximum packet size of 1500 bytes on the "ITSP" network interface:

```
(config-network)# access-list
(access-list-0)# network-interface-name ITSP
(access-list-0)# allow-type allow
(access-list-0)# packet-size 1500
```

## 44 dhcp-server

This command configures DHCP and includes the following subcommands:

- `delete-client` (see [dhcp-server delete-client](#) below)
- `option` (see [dhcp-server option](#) on the next page)
- `server` (see [dhcp-server server](#) on the next page)
- `static-ip` (see [dhcp-server static-ip](#) on page 235)
- `vendor-class` (see [dhcp-server vendor-class](#) on page 236)

### dhcp-server delete-client

This command removes IP addresses of DHCP clients leased from a DHCP server.

---

#### Syntax

```
(config-network)# dhcp-server delete-client
```

| Command                            | Description                                       |
|------------------------------------|---|
| <code>all-dynamic</code>           | Removes all dynamic leases.                       |
| <code>all-static</code>            | Removes all static lease reservations.            |
| <code>black-list</code>            | Clears the blacklist of conflicting IP addresses. |
| <code>ip &lt;IP Address&gt;</code> | Removes a specified leased IP address.            |
| <code>mac</code>                   | Removes a specified lease MAC address.            |

---

#### Command Mode

Privileged User

---

#### Example

This example removes the leased IP address 10.13.2.10:

```
(config-network)# dhcp-server delete-client ip 10.13.2.10
```

## dhcp-server option

This command configures the DHCP Option table, which lets you define additional DHCP Options that the DHCP server can use to service the DHCP client. These DHCP Options are included in the DHCP Offer response sent by the DHCP server. The table is a "child" of the DHCP Servers table.

---

### Syntax

```
(config-network)# dhcp-server option <Index>
(option-<Index>)#
```

| Command                  | Description   |
|--------------------------|---|
| Index                    | Defines the table row index.  |
| dhcp-server-number       | Defines the index of the DHCP Servers table.  |
| expand-value<br>{no yes} | Enables the use of the special placeholder strings, "<MAC>" and "<IP>" for configuring the value. |
| option                   | Defines the DHCP Option number.   |
| type {ascii hex ip}      | Defines the format (type) of the DHCP Option value.   |
| value                    | Defines the DHCP option value.  |

---

### Command Mode

Privileged User

---

### Example

This example configures an additional DHCP Option 159 for the DHCP server configured in Index 0:

```
(config-network)# dhcp-server option 0
(option-0)# dhcp-server-number 0
(option-0)# option 159
```

## dhcp-server server

This command configures the DHCP Servers table, which defines DHCP servers.

**Syntax**

```
(config-network)# dhcp-server server <Index>
(server-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| boot-file-name   | Defines the name of the boot file image for the DHCP client.  |
| dns-server-1   | Defines the IP address (IPv4) of the primary DNS server that the DHCP server assigns to the DHCP client.  |
| dns-server-2   | Defines the IP address (IPv4) of the secondary DNS server that the DHCP server assigns to the DHCP client.  |
| end-address  | Defines the ending IP address (IPv4 address in dotted-decimal format) of the IP address pool range used by the DHCP server to allocate addresses. |
| expand-boot-file-name {no yes}                             | Enables the use of the placeholders in the boot file name, defined in 'boot-file-name'.   |
| lease-time   | Defines the duration (in minutes) of the lease time to a DHCP client for using an assigned IP address.  |
| name   | Defines the name of the DHCP server.  |
| netbios-node-type<br>{broadcast hybrid mixed peer-to-peer} | Defines the NetBIOS (WINS) node type.   |
| netbios-server   | Defines the IP address (IPv4) of the NetBIOS WINS server that is available to a Microsoft DHCP client.  |
| network-if   | Assigns a network interface to the DHCP server.   |

| Command                               | Description   |
|---------------------------------------|---|
| <code>ntp-server-1</code>             | Defines the IP address (IPv4) of the primary NTP server that the DHCP server assigns to the DHCP client.  |
| <code>ntp-server-2</code>             | Defines the IP address (IPv4) of the secondary NTP server that the DHCP server assigns to the DHCP client.  |
| <code>override-router-address</code>  | Defines the IP address (IPv4 in dotted-decimal notation) of the default router that the DHCP server assigns the DHCP client.                        |
| <code>sip-server</code>               | Defines the IP address or DNS name of the SIP server that the DHCP server assigns the DHCP client.  |
| <code>sip-server-type {dns IP}</code> | Defines the type of SIP server address.   |
| <code>start-address</code>            | Defines the starting IP address (IPv4 address in dotted-decimal format) of the IP address pool range used by the DHCP server to allocate addresses. |
| <code>subnet-mask</code>              | Defines the subnet mask (for IPv4 addresses) for the DHCP client.   |
| <code>tftp-server-name</code>         | Defines the IP address or name of the TFTP server that the DHCP server assigns to the DHCP client.  |
| <code>time-offset</code>              | Defines the Greenwich Mean Time (GMT) offset (in seconds) that the DHCP server assigns to the DHCP client.  |

---

### Command Mode

Privileged User

---

### Example

This example configures a DHCP server with a pool of addresses for allocation from 10.13.1.0 to 10.13.1.5 and a lease time of an hour:

```
(config-network)# dhcp-server server
(server-0)# start-address 10.13.1.0
(server-0)# end-address 10.13.1.5
(server-0)# lease-time 60
```

## dhcp-server static-ip

This command configures the DHCP Static IP table, which lets you define static IP addresses for DHCP clients. The table is a "child" of the DHCP Servers table.

### Syntax

```
(config-network)# dhcp-server static-ip <Index>
(static-ip-<Index>)#
```

| Command            | Description   |
|--------------------|---|
| Index              | Defines the table row index.  |
| dhcp-server-number | Associates the DHCP Static IP table entry with a DHCP server that you already configured. |
| ip-address         | Defines the "reserved", static IP address (IPv4) to assign the DHCP client.               |
| mac-address        | Defines the DHCP client by MAC address (in hexadecimal format).                           |

### Command Mode

Privileged User

### Example

This example configures the DHCP client whose MAC address is 00:90:8f:00:00:00 with a static IP address 10.13.1.6:

```
(config-network)# dhcp-server static-ip 0
(static-ip-0)# dhcp-server-number 0
(static-ip-0)# ip-address 10.13.1.6
(static-ip-0)# mac-address 00:90:8f:00:00:00
```

## dhcp-server vendor-class

This command configures the DHCP Vendor Class table, which lets you define Vendor Class Identifier (VCI) names (DHCP Option 60).

---

### Syntax

```
(config-network)# dhcp-server vendor-class <Index>  
(vendor-class-<Index>)#
```

| Command            | Description  |
|--------------------|--|
| Index              | Defines the table row index.   |
| dhcp-server-number | Associates the DHCP Vendor Class entry with a DHCP server that you configured. |
| vendor-class       | Defines the value of the VCI DHCP Option 60.                                   |

---

### Command Mode

Privileged User

---

### Example

This example configures the vendor class identifier as "product-ABC":

```
(config-network)# dhcp-server vendor-class 0  
(vendor-class-0)# dhcp-server-number 0  
(vendor-class-0)# vendor-class product-ABC
```



## 45 dns

This command configures DNS and includes the following subcommands:

- dns-to-ip (see [dns dns-to-ip](#) on the next page)
- override (see [dns override](#) on the next page)
- settings (see [dns settings](#) on page 239)
- srv2ip (see [dns srv2ip](#) on page 240)

---

### Syntax

```
(config-network)# dns <Index>
```

| Command   | Description  |
|-----------|--|
| Index     | Defines the table row index.   |
| dns-to-ip | Defines the internal DNS table for resolving host names into IP addresses.   |
| override  | Defines the DNS override interface.  |
| settings  | Configures DNS settings.   |
| srv2ip    | Defines the SRV to IP internal table. The table defines the internal SRV table for resolving host names into DNS A-Records. Three different A-Records can be assigned to a host name. Each A-Record contains the host name, priority, weight and port. |

---

### Command Mode

Privileged User

---

### Example

This example configures the SRV to IP internal table:

```
configure network
(config-network)# dns srv2ip 0
(srv2ip-0)#
```

## dns dns-to-ip

This command configures the Internal DNS table, which lets you resolve hostnames into IP addresses.

---

### Syntax

```
(config-network)# dns dns-to-ip <Index>
(dns-to-ip-<Index>)#
```

| Command           | Description   |
|-------------------|---|
| Index             | Defines the table row index.  |
| domain-name       | Defines the host name to be translated.   |
| first-ip-address  | Defines the first IP address (in dotted-decimal format notation) to which the host name is translated.  |
| second-ip-address | Defines the second IP address (in dotted-decimal format notation) to which the host name is translated. |
| third-ip-address  | Defines the third IP address (in dotted-decimal format notation) to which the host name is translated.  |

---

### Command Mode

Privileged User

---

### Example

This example configures the domain name "proxy.com" with a resolved IP address of 210.1.1.2:

```
(config-network)# dns dns-to-ip 0
(dns-to-ip-0)# domain-name proxy.com
(dns-to-ip-0)# first-ip-address 210.1.1.2
```

## dns override

This command configures the DNS override interface, which overrides the Internal DSN table settings.

---

### Syntax

```
(config-network)# dns override interface <String>
```

---

### Command Mode

Privileged User

---

### Example

This example configures the DNS override interface:

```
configure network
(config-network)# dns override interface ITSP-1
```

## dns settings

This command configures the default primary and secondary DNS servers.

---

### Syntax

```
(config-network)# dns settings
(dns-settings)#
```

| Command                         | Description   |
|---------------------------------|---|
| dns-default-primary-server-ip   | Defines the IP address of the default primary DNS server.   |
| dns-default-secondary-server-ip | Defines the IP address of the default secondary DNS server. |

---

### Command Mode

Privileged User

---

### Example

This example configures the IP address of the default primary DNS server to 210.1.1.2:

```
(config-network)# dns settings
(dns-settings)# dns-default-primary-server-ip 210.1.1.2
```

## dns srv2ip

This command configures the Internal SRV table, which lets you resolve hostnames into DNS A-Records.

### Syntax

```
(config-network)# dns srv2ip <Index>
(srv2ip-<Index>)#
```

| Command                         | Description   |
|---------------------------------|---|
| Index                           | Defines the table row index.  |
| dns-name-1                      | Defines the first, second or third DNS A-Record to which the host name is translated.   |
| dns-name-2                      |   |
| dns-name-3                      |   |
| domain-name                     | Defines the host name to be translated.   |
| port-1                          | Defines the port on which the service is to be found.                                   |
| port-2                          |   |
| port-3                          |   |
| priority-1                      | Defines the priority of the target host. A lower value means that it is more preferred. |
| priority-2                      |   |
| priority-3                      |   |
| transport-type<br>{udp tcp tls} | Defines the transport type.   |
| weight-1                        | Configures a relative weight for records with the same priority.                        |
| weight-2                        |   |
| weight-3                        |   |

### Command Mode

Privileged User

---

**Example**

This example configures DNS SRV to IP address 208.93.64.253:

```
(config-network)# dns srv2ip 0
(srv2ip-0)# domain-name proxy.com
(srv2ip-0)# transport-type tcp
(srv2ip-0)# dns-name-1 208.93.64.253
```

## 46 ether-group

This command configures the Ethernet Groups table, which lets you define Ethernet Groups by assigning them up to two Ethernet ports.

### Syntax

```
(config-network)# ether-group <Index>
(ether-group-<Index>)#
```

| Command                                    | Description  |
|--|--|
| Index                                      | Defines the table row index.   |
| member1                                    | Assigns a port to the Ethernet Group.  |
| member2                                    | Assigns another port to the Ethernet Group.  |
| mode {1rx-1tx 2rx-1tx 2rx-2tx none single} | Defines the mode of operation of the ports in the Ethernet Group. This applies only to Ethernet Groups containing two ports. |

### Command Mode

Privileged User

### Example

This example configures Ethernet Group 0 with ports GE\_4\_1 and GE\_4\_1 and RX/TX mode:

```
(config-network)# ether-group 0
(ether-group-0)# member1 GE_4_1
(ether-group-0)# member2 GE_4_2
(ether-group-0)# mode 1rx-1tx
```

## 47 high-availability

This command configures the High Availability (HA) feature and includes the following subcommands:

### Syntax

```
(config-network)# high-availability
```

| Command                      | Description                                   |
|------------------------------|---|
| <code>network-monitor</code> | See <a href="#">network-monitor</a> below     |
| <code>settings</code>        | See <a href="#">settings</a> on the next page |

### Command Mode

Privileged User

### network-monitor

This command configures monitored network entities for the HA Network Monitor feature, whereby the device pings the entities and if a user-defined number of entities are offline, triggers an HA switchover.

### Syntax

```
(config-network)# high-availability network-monitor <Index>
(network-monitor-<Index>)#
```

| Command  | Description  |
|--|--|
| <code>Index</code>                             | Defines the table row index.   |
| <code>dest-address &lt;IP Addresses&gt;</code> | Defines the IP address of the destination to ping. You can configure multiple IP addresses, where each is separated by a comma or space. |
| <code>network-interface</code>                 | Assigns a local IP network interface (listed in the IP Interfaces table) from where the device sends the                                 |

| Command      | Description   |
|--------------|---|
|              | ping requests.  |
| ping-count   | Defines the number of consecutive failed pings to the monitored entity, before the device considers the entity as unavailable.    |
| ping-timeout | Defines the timeout (in milliseconds) for which the device waits for a reply from the monitored entity for its sent ping request. |

---

### Command Mode

Privileged User

---

### Example

This example configures a monitored entity with three destinations, pings sent from IP interface "OAMP", ping timeout for a response is 1000 ms, and HA switchover triggered after three failed pings:

```
(config-network)# high-availability network-monitor 0
(network-monitor-0#) dest-address 10.4.4.69,10.4.5.60
(network-monitor-0#) network-interface OAMP
(network-monitor-0#) ping-timeout 1000
(network-monitor-0#) ping-count 3
```

## settings

This command configures various HA settings.

---

### Syntax

```
(config-network)# high-availability settings
(ha)#
```

| Command  | Description  |
|----------|--|
| network- | Enables the HA Network Monitor feature (see also the high-availability |



| Command                             | Description  |
|-------------------------------------|--|
| monitor-enabled<br>{off on}         | network-monitor command).  |
| network-monitor-threshold<br><1-10> | Defines the number of failed (no ping responses) network monitored entries that trigger HA switchover.   |
| operational-state-delay             | Defines the duration (in seconds) to delay the transition from HA non-operational state, which occurs during HA synchronization between active and redundant devices, to HA operational state. |
| priority<br><1-10>                  | Defines the priority of the active device used in the HA Preempt mechanism.  |
| redundant-priority<br><1-10>        | Defines the priority of the redundant device used in the HA Preempt mechanism.   |
| redundant-unit-id-name<br><Name>    | Configures a name (string) for the redundant device.   |
| remote-address<br><IP Address>      | Defines the Maintenance interface address of the redundant device in the HA system.<br><b>Note:</b> For the parameter to take effect, a device reset is required.                              |
| revertive-mode<br>{off on}          | Enables HA switchover based on HA priority.<br><b>Note:</b> For the parameter to take effect, a device reset is required.  |
| unit-id-name<br><Name>              | Configures a name (string) for the active device.  |

---

### Command Mode

Privileged User

---

### Example

This example enables the **HA Network Monitor feature**:

```
(config-network)# high-availability settings  
(ha)# network-monitor-enabled on
```

## 48 http-proxy

This command configures HTTP proxy and includes the following subcommands:

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)#
```

| Command                   | Description   |
|---------------------------|---|
| debug-level               | See <a href="#">http-proxy debug-level</a> below                |
| directive-sets            | See <a href="#">http-proxy directive-sets</a> on the next page  |
| dns-primary-server        | See <a href="#">http-proxy dns-primary-server</a> on page 249   |
| dns-secondary-server      | See <a href="#">http-proxy dns-secondary-server</a> on page 249 |
| http-proxy-app            | See <a href="#">http-proxy http-proxy-app</a> on page 250       |
| http-proxy-global-address | See <a href="#">http-proxy-global-address</a> on page 250       |
| http-server               | See <a href="#">http-proxy http-server</a> on page 251          |
| ovoc-serv                 | See <a href="#">http-proxy ovoc-serv</a> on page 253            |
| tcp-udp-server            | See <a href="#">http-proxy tcp-udp-server</a> on page 255       |
| upstream-group            | See <a href="#">http-proxy upstream-group</a> on page 256       |

---

### Command Mode

Privileged User

### http-proxy debug-level

This command configures the debug level for the HTTP proxy application.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# debug-level {alert|critical|emergency|error|info|no-
debug|notice|warning}
```

---

**Command Mode**Privileged User

---

**Note**To disable debugging, use the no-debug option.

---

**Example**

This example configures the debug level to warning:

```
(config-network)# http-proxy
(http-proxy)# debug-level warning
```

## http-proxy directive-sets

This command configures the HTTP Directive Sets table, which lets you define directive sets.

---

**Syntax**

```
(config-network)# http-proxy
(http-proxy)# directive-sets <Index>
(directive-sets-<Index>)#
```

| Command         | Description   |
|-----------------|---|
| Index           | Defines the table row index.  |
| directives      | Defines directives. Once run, use the command directive to define the directive.    |
| set-description | Defines a brief description for the HTTP Directive Set.                             |
| set-name        | Defines a descriptive name, which is used when associating the row in other tables. |

---

**Command Mode**Privileged User

---

**Example**

This example configures an HTTP Directive Set called "ITSP-A" and configures a directive for it:

```
(config-network)# http-proxy
(http-proxy)# directive-sets 0
(directive-sets-0)# set-name ITSP-A
(directive-sets-0)# directives 0
(directives-0/0)# directive limit_rate 0;
```

## http-proxy dns-primary-server

This command configures a primary DNS server for the HTTP Proxy.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# dns-primary-server <IP Address>
```

---

### Command Mode

Privileged User

---

### Example

This example configures a primary DNS server address of 100.1.10.2:

```
(config-network)# http-proxy
(http-proxy)# dns-primary-server 100.1.10.2
```

## http-proxy dns-secondary-server

This command configures a secondary DNS server for the HTTP Proxy.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# dns-secondary-server <IP Address>
```

---

### Command Mode

Privileged User

---

### Example

This example configures a secondary DNS server address of 100.1.10.4:

```
(config-network)# http-proxy
(http-proxy)# dns-secondary-server 100.1.10.4
```

## http-proxy-global-address

This command configures a public IP address for the device's NGINX server, which is used for the HTTP Proxy. This is used when the device is located behind NAT.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# http-proxy-global-address <IP Address>
```

---

### Command Mode

Privileged User

---

### Example

This example configures a public address of 89.50.10.4:

```
(config-network)# http-proxy
(http-proxy)# http-proxy-global-address 89.50.10.4
```

## http-proxy http-proxy-app

This command enables the HTTP Proxy application.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# http-proxy-app {off|on}
```

---

### Command Mode

Privileged User

---

### Example

This example enables the HTTP Proxy application:

```
(config-network)# http-proxy
(http-proxy)# http-proxy-app on
```

## http-proxy http-server

This command configures the HTTP Proxy Servers table, which lets you define HTTP proxy servers.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# http-server <Index>
(http-server-<Index>)#
```

| Command                                | Description  |
|--|--|
| Index                                  | Defines the table row index.   |
| directive-set                          | Assigns a Directive Set.   |
| domain-name                            | Defines a domain name (FQDN).  |
| http-port                              | Defines the HTTP listening port, which is the local port for incoming packets for the HTTP service.  |
| https-port                             | Defines the HTTPS listening port, which is the local port for incoming packets for the HTTP service. |
| listen-interface                       | Assigns an IP Interface from the IP Interfaces table to the HTTP Proxy service.                      |
| location                               | Configures HTTP locations (see <a href="#">location</a> on the next page).                           |
| name                                   | Defines a descriptive name, which is used when associating the row in other tables.                  |
| tls-context                            | Assigns a TLS Context (TLS certificate) from the TLS Contexts table.                                 |
| verify-client-cert<br>{disable enable} | Enables the verification of the client TLS certificate,  |

---

### Command Mode

Privileged User

---

### Example

This example configures an HTTP proxy server:

```
(config-network)# http-proxy
(http-proxy)# http-server 0
(http-server-0)# name ITSP-A
(http-server-0)# listen-interface Voice
(http-server-0)# http-port 5999
```

### location

This command configures the HTTP Locations table, which lets you define HTTP locations per HTTP proxy servers.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# http-server <Index>
(http-server-<Index>)# locations <Index>
(location-<Index>/<Index>)#
```

| Command                | Description   |
|------------------------|---|
| Index                  | Defines the table row index.  |
| cache {disable enable} | Enables the caching of files in this location.                                    |
| directive-set          | Assigns an NGINX directive set for the HTTP location.                             |
| outbound-intfc         | Assigns a local, IP network interface for sending requests to the Upstream Group. |
| tls-context            | Assigns a TLS Context for the TLS connection with the HTTP location.              |
| upstream-group         | Assigns a group of servers (Upstream Group) to handle the HTTP requests.          |
| upstream-path          | Defines a path to prepend to the URL  |



| Command   | Description   |
|---|---|
|   | before sending the request to the Upstream Group.   |
| <code>upstream-scheme {HTTP  HTTPS}</code>  | Defines the protocol for sending requests to the Upstream Group.                              |
| <code>url-pattern</code>  | Defines the URL pattern.  |
| <code>url-pattern-type {case-insensitive-regex exact prefix prefix-ignore-regex regex}</code> | Defines the type of URL pattern used for configuring the url-pattern parameter.               |
| <code>verify-cert {disable enable}</code>   | Enables TLS certificate verification when the connection with the location is based on HTTPS. |

---

### Command Mode

Privileged User

---

### Example

This example configures an HTTP location for an HTTP proxy server:

```
(http-proxy)# http-server 0
(http-server-0)# location 0
(location-0/0)# outbound-intfc Voice
(location-0/0)# upstream-group ITSP-UP
```

## http-proxy ovoc-serv

This command configures the OVOC Services table, which lets you define an OVOC service.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# ovoc-serv <Index>
(ovoc-serv-<Index>)#
```

| Command  | Description  |
|--|--|
| Index  | Defines the table row index.   |
| backup-server                                    | Defines the address of the secondary OVOC server.  |
| device-interface-verify-cert<br>{disable enable} | Enables the verification of the TLS certificate that is used in the incoming client connection request.    |
| device-login-interface                           | Assigns an IP network interface (local, listening HTTP interface:port) for communication with the client.  |
| device-login-port                                | Defines the login port of the requesting client.   |
| device-login-tls-context                         | Assigns a TLS Context (TLS certificate) for the interface with the requesting client.                      |
| device-scheme<br>{http https}                    | Defines the protocol for communication with the requesting client.   |
| ovoc-interface                                   | Assigns an IP network interface (local, listening HTTP interface:port) for communication with OVOC.        |
| ovoc-interface-tls-context                       | Assigns a TLS Context (TLS certificate) for the OVOC listening interface.                                  |
| ovoc-port  | Defines the listening port for the OVOC interface.   |
| ovoc-scheme<br>{http https}                      | Defines the security scheme for the connection with OVOC.  |
| ovoc-verify-cert<br>{disable enable}             | Enables the verification of the TLS certificate that is used in the incoming connection request from OVOC. |
| primary-server                                   | Defines the address of the primary OVOC server.  |
| service-name                                     | Defines a descriptive name, which is used when associating the row in other tables.                        |

---

### Command Mode

Privileged User

---

### Example

This example configures an OVOC service with 222.1.5.6:

```
(config-network)# http-proxy
(http-proxy)# ovoc-serv 0
(ovoc-serv-0)# service-name OVOC-1
(ovoc-serv-0)# device-login-interface Voice
(ovoc-serv-0)# device-login-port 6011
(ovoc-serv-0)# ovoc-interface Voice
(ovoc-serv-0)# ovoc-port 6021
(ovoc-serv-0)# primary-server 222.1.5.6
```

## http-proxy tcp-udp-server

This command configures the TCP/UDP Proxy Servers table, which lets you define TCP/UDP proxy servers.

### Syntax

```
(config-network)# http-proxy
(http-proxy)# tcp-udp-server <Index>
(tcp-udp-server-<Index>)#
```

| Command                         | Description  |
|---------------------------------|--|
| Index                           | Defines the table row index.   |
| directive-set                   | Assigns an NGINX Directive Set for the HTTP service.   |
| listen-interface                | Assigns a local IP network interface for the listening (source) interface for communication with the TCP-UDP proxy server. |
| listen-tls-context              | Assigns a TLS Context (TLS certificate) for the listening side.  |
| listen-use-ssl {disable enable} | Enables SSL on the listening side (i.e., listening to incoming connection requests).                                       |
| name                            | Defines a descriptive name, which is used when associating the row in other tables.  |
| outbound-interface              | Assigns a local, IP network interface for communicating with the Upstream Group.   |
| tcp-port                        | Defines the TCP port of the listening interface.   |
| udp-port                        | Defines the TCP port of the listening interface.   |

| Command                                  | Description  |
|--|--|
| upstream-group                           | Assigns a group of servers (Upstream Group) to which to forward connection requests.   |
| upstream-tls-context                     | Assigns a TLS Context for the TLS connection with the HTTP location.   |
| upstream-use-ssl<br>{disable enable}     | Enables SSL for securing connection requests with the Upstream Group.  |
| upstream-verify-cert<br>{disable enable} | Enables TLS certificate verification of the Upstream Host on outgoing connection requests to the Upstream Group, when the connection is SSL. |

---

### Command Mode

Privileged User

---

### Example

This example configures a TCP/UDP proxy server:

```
(config-network)# http-proxy
(http-proxy)# tcp-udp-server 0
(tcp-udp-server-0)# name TCP-Proxy
(tcp-udp-server-0)# listen-interface Voice
(tcp-udp-server-0)# tcp-port 5060
(tcp-udp-server-0)# outbound-interface Voice
(tcp-udp-server-0)# upstream-group TCP-UP
```

## http-proxy upstream-group

This command configures the Upstream Groups table, which lets you define Upstream Groups.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# upstream-group <Index>
(upstream-group-<Index>)#
```

| Command   | Description   |
|---|---|
| Index   | Defines the table row index.  |
| load-balancing-mode {ip-hash least-connections round-robin} | Defines the load-balancing of traffic method for the hosts belonging to the Upstream Group.                                   |
| name  | Defines a descriptive name, which is used when associating the row in other tables.   |
| protocol<br>{HTTP\HTTPS TCP\UDP}                            | Defines the protocol.   |
| upstream-host   | Defines Upstream Hosts, which are hosts belonging to the Upstream Group (see <a href="#">http-proxy upstream-host</a> below). |

---

### Command Mode

Privileged User

---

### Example

This example configures an Upstream Group called Prov-Server:

```
(config-network)# http-proxy
(http-proxy)# upstream-group 0
(upstream-group-0)# name Prov-Server
```

## http-proxy upstream-host

This command configures the Upstream Hosts table, which lets you define Upstream Hosts per Upstream Groups.

---

### Syntax

```
(config-network)# http-proxy
(http-proxy)# upstream-group <Index>
(upstream-group-<Index>)# upstream-host <Index>
(upstream-host-<Index>/<Index>)#
```

| Command                    | Description   |
|----------------------------|---|
| Index                      | Defines the table row index.  |
| backup<br>{disable enable} | Enables the host to serve as a backup host.   |
| host                       | Defines the address of the host as an FQDN or IP address (in dotted-decimal notation).      |
| max-connections            | Defines the maximum number of simultaneous active connections to the proxied Upstream Host. |
| port                       | Defines the port number.  |
| weight                     | Defines the weight for the load balancer.   |

---

**Command Mode**

Privileged User

---

**Example**

This example configures an Upstream Host for an Upstream Group:

```
(config-network)# http-proxy
(http-proxy)# upstream-group 0
(upstream-group-0)# upstream-host 0
(upstream-host-0/0)# host 10.6.7.8
```

## 49 interface

This command configures network interfaces and includes the following sub-commands:

- network-interface (see [interface network-interface](#) below)
- osn (see [interface osn](#) on the next page)

### interface network-interface

This command configures the IP Interfaces table, which lets you define local IP network interfaces.

#### Syntax

```
(config-network)# interface network-interface <Index>
(network-if-<Index>)#
```

| Command  | Description  |
|--|--|
| Index  | Defines the table row index.   |
| application-type {cluster-media-control control maintenance media media-control oamp oamp-control oamp-media oamp-media-control} | Defines the applications allowed on the IP interface.                              |
| gateway  | Defines the IPv4/IPv6 address of the default gateway.                              |
| ip-address   | Defines the IPv4/IPv6 address in dotted-decimal notation of the network interface. |
| mode {ipv4-manual ipv6-manual ipv6-manual-prefix}  | Defines the method that the interface uses to acquire its IP address.              |
| name   | Configures a name for the network interface.                                       |
| prefix-length  | Defines the prefix length of the IP address.                                       |

| Command                     | Description   |
|-----------------------------|---|
| <code>primary-dns</code>    | Defines the primary DNS server's IP address (in dotted-decimal notation), which is used for translating domain names into IP addresses for the interface.   |
| <code>secondary-dns</code>  | Defines the secondary DNS server's IP address (in dotted-decimal notation), which is used for translating domain names into IP addresses for the interface. |
| <code>underlying-dev</code> | Assigns an Ethernet Device (see <a href="#">network-dev</a> on page 268) to the network interface.  |

---

### Command Mode

Privileged User

---

### Example

This example configures the OAMP, Media and Control network interface:

```
(config-network)# interface network-if 0
(network-if-0)# application-type oamp-media-control
(network-if-0)# mode ipv4-manual
(network-if-0)# ip-address 10.15.7.96
(network-if-0)# prefix-length 16
(network-if-0)# gateway 10.15.0.1
(network-if-0)# underlying-dev vlan1
```

## interface osn

This command configures the Open Solutions Network (OSN) interface.

---

### Syntax



```
(config-network)# interface osn
(conf-net-if-OSN)#
```

| Command     | Description   |
|-------------|---|
| native-vlan | Defines the OSN Native VLAN ID. When set to 0 (default), the OSN uses the device's OAMP VLAN ID. When set to any other value, it specifies a VLAN ID configured in the Ethernet Devices table and which is assigned to a Media and/or Control application in the IP Interfaces table. |
| shutdown    | Disables the Ethernet port of the internal switch that interfaces between the Gateway/SBC and OSN.  |

---

### Command Mode

Privileged User

---

### Example

This example configures the VLAN ID of the OSN network interface:

```
(config-network)# interface osn
(conf-net-if-OSN)# native-vlan 1
```

## 50 mtc

This command configures the Media Cluster feature.

---

### Syntax

```
(config-network)# mtc
```

| Command   | Description                                   |
|-----------|---|
| entity    | See <a href="#">entity</a> below              |
| lock-mt   | See <a href="#">lock-mt</a> on the next page  |
| reset-mt  | See <a href="#">reset-mt</a> on the next page |
| settings  | See <a href="#">settings</a> on page 264      |
| unlock-mt | See <a href="#">unlock-mt</a> on page 265     |

### entity

This command configures the Media Components table, which lets you define Media Components (MC) for the Media Cluster feature.

---

### Syntax

```
(config-network)# mtc entity <Index>
(entity-<Index>)#
```

| Command         | Description   |
|-----------------|---|
| Index           | Defines the table row index.                                    |
| interface       | Defines the Cluster interface of the Media Component.           |
| name            | Defines a name for the Media Component.                         |
| oamp-ip-address | Defines the IP address of the Media Component's OAMP interface. |

---

### Command Mode

Privileged User

---

**Example**

This example configures an MC:

```
(config-network)# mtc entity 0
(entity-0)# name MC-1
(entity-0)# oamp-ip-address 192.60.1.2
(entity-0)# interface MC-1-Cluster
```

## lock-mt

This command locks a Media Component (MC) that is configured for the Media Cluster feature.

---

**Syntax**

```
(config-network)# mtc lock-mt <OAMP IP address of MC>
```

---

**Command Mode**

Privileged User

---

**Example**

This example locks the MC whose OAMP address is 192.60.1.2:

```
(config-network)# mtc lock-mt 192.60.1.2
```

## reset-mt

This command resets a Media Component (MC) that is configured for the Media Cluster feature.

---

**Syntax**

```
(config-network)# mtc reset-mt <OAMP IP address of MC>
```

---

**Command Mode**

Privileged User

---

**Example**

This example resets the MC whose OAMP address is 192.60.1.2:

```
(config-network)# mtc reset-mt 192.60.1.2
```

## settings

This command configures various Media Cluster settings.

### Syntax

```
(config-network)# mtc settings
(mtc)#
```

| Command   | Description   |
|---|---|
| cluster-manager-ip-address  | Defines the IP address of the Cluster Manager.  |
| cluster-network-max-bandwidth   | Defines the maximum bandwidth allowed on each Cluster interface.  |
| graceful-timeout  | Defines a "grace" period (graceful timeout) before an action (e.g., lock, unlock, and reset) is done on an MC by the Cluster Manager. |
| mc-profile  | Defines the operational mode (transcoding or no transcoding) of the Mediant CE SBC's Media Component (MC).                            |
| redundancy-mode {best-effort ha-mode}   | Defines the Cluster redundancy mode, which provides load-sharing and redundancy (in case of failure) between Media Components.        |
| sbc-cluster-mode {default disabled media-cluster media-transcoding-cluster- (mtc) } | Enables the specific Cluster feature (Media Cluster or Media Transcoding Cluster).  |
| sbc-device-role {default media-component- (mc)  sbc-or-signaling-component- (sc) }  | Defines the role of the device in the Cluster – Signaling or Media Component.   |

### Command Mode

Privileged User

---

**Example**

This example enables the Media Cluster feature:

```
(config-network)# mtc settings
(mtc)# sbc-cluster-mode media-cluster
```

**unlock-mt**

This command unlocks a locked Media Component (MC) that is configured for the Media Cluster feature.

---

**Syntax**

```
(config-network)# mtc unlock-mt <OAMP IP address of MC>
```

---

**Command Mode**

Privileged User

---

**Example**

This example unlocks the MC whose OAMP address is 192.60.1.2:

```
(config-network)# mtc unlock-mt 192.60.1.2
```

## 51 nat-translation

This command configures the NAT Translation table, which lets you define network address translation (NAT) rules for translating source IP addresses per VoIP interface (SIP control and RTP media traffic) into NAT IP addresses (global - public) when the device is located behind NAT.

### Syntax

```
(config-network)# nat-translation <Index>
(nat-translation-<Index>)#
```

| Command               | Description  |
|-----------------------|--|
| Index                 | Defines the table row index.   |
| remote-interface-name | Assigns a media IP interface (listed in the Remote Media Interface table) of the remote Media Component(s) operating under the Cluster Manager (Signaling Component).<br><b>Note:</b> This command is applicable only to Mediant CE SBC. |
| src-end-port          | Defines the optional ending port range (0-65535) of the IP interface, used as matching criteria for the NAT rule.  |
| src-interface-name    | Assigns an IP network interface (configured in the IP Interfaces table) to the rule. Outgoing packets sent from the specified network interface are NAT'ed.  |
| src-start-port        | Defines the optional starting port range (0-65535) of the IP interface, used as matching criteria for the NAT rule.  |
| tar-ip-mode           | Defines the NAT IP address mode when the device is deployed in an Amazon Web Services (AWS) cloud-computing environment.   |
| target-end-port       | Defines the optional ending port range (0-65535) of the global address.  |
| target-ip-address     | Defines the global (public) IP address.  |
| target-start-port     | Defines the optional starting port range (0-65535) of the global address.  |

### Command Mode

Privileged User

---

**Example**

This example configures a NATed IP address (202.1.1.1) for all traffic sent from IP network interface "voice":

```
# configure network
(config-network)# nat-translation 0
(nat-translation-0)# src-interface-name voice
(nat-translation-0)# target-ip-address 202.1.1.1
```

## 52 network-dev

This command configures the Ethernet Devices table, which lets you define Ethernet Devices. An Ethernet Device represents a Layer-2 bridging device and is assigned a unique VLAN ID and an Ethernet Group (Ethernet port group).

---

### Syntax

```
(config-network)# network-dev <Index>
(network-dev-<Index>)#
```

| Command                   | Description                                       |
|---------------------------|---|
| Index                     | Defines the table row index.                      |
| mtu                       | Defines the Maximum Transmission Unit (MTU) size. |
| name                      | Configures a name for the Ethernet Device.        |
| tagging {tagged untagged} | Configures VLAN tagging for the Ethernet Device.  |
| underlying-if             | Assigns an Ethernet Group to the Ethernet Device. |
| vlan-id                   | Configures a VLAN ID for the Ethernet Device.     |

---

### Command Mode

Privileged User

---

### Example

This example configures an Ethernet Device with VLAN ID 2 for Ethernet Group 0 and untagged:

```
(config-network-0)# network-dev
(network-dev-0)# name VLAN 2
(network-dev-0)# vlan-id 2
(network-dev-0)# underlying-if 0
(network-dev-0)# tagging untagged
```



## 53 network-settings

This command configures the network settings.

---

### Syntax

```
(config-network)# network-settings
(network-settings)#
```

| Command                           | Description   |
|-----------------------------------|---|
| hostname                          | Defines the device's hostname.  |
| icmp-disable-redirect<br>{0 1}    | Enables sending and receiving of ICMP Redirect messages.  |
| icmp-disable-unreachable<br>{0 1} | Enables sending of ICMP Unreachable messages.   |
| osn-internal-vlan<br>{off on}     | Enables a single management platform when the device is deployed as a Survivable Branch Appliance (SBA) in a Microsoft Skype for Business environment. It allows configuration and monitoring of the Gateway/SBC device through the SBA Management Interface. |

---

### Command Mode

Privileged User

---

### Example

This example sending and receiving of ICMP Redirect messages:

```
(config-network)# network-settings
(network-settings)# icmp-disable-redirect 1
```

## 53 ovoc-tunnel-settings

This command configures WebSocket tunnel connection settings for communication between the device and OVOC.

### Syntax

```
(config-network)# ovoc-tunnel-settings
(ovoc-tunnel-settings)#
```

| Command                | Description   |
|------------------------|---|
| address                | Defines the address of the WebSocket tunnel server (OVOC).  |
| password               | Defines the password for connecting the device to the WebSocket tunnel server (OVOC).   |
| path                   | Defines the path of the WebSocket tunnel server.  |
| secured {off on}       | Enables secured (HTTPS) WebSocket tunneling connection.   |
| username               | Defines the username for connecting the device to the WebSocket tunnel server (OVOC).   |
| verify-server {off on} | Enables the device to verify the TLS certificate that is used in the incoming WebSocket tunneling connection request from OVOC. |

### Command Mode

Privileged User

### Example

This example configures the WebSocket server's address to 200.1.10.20:

```
(config-network)# ovoc-tunnel-settings
(ovoc-tunnel-settings)# address 200.1.10.20
```

## 54 physical-port

This command configures the Physical Ports table, which lets you define the device's Ethernet ports.

---

### Syntax

```
(config-network)# physical-port <Index>
(physical-port-<Index>)#
```

| Command   | Description                                    |
|---|--|
| Index   | Defines the table row index.                   |
| port-description  | Configures a textual description of the port.  |
| speed-duplex {1000baset-full-duplex 1000baset-half-duplex 100baset-full-duplex 100baset-half-duplex 10baset-full-duplex 10baset-half-duplex auto-negotiation} | Defines the speed and duplex mode of the port. |

---

### Command Mode

Privileged User

---

### Example

This example configures port 0 to auto-negotiation:

```
(config-network)# physical-port 0
(physical-port-0)# speed-duplex auto-negotiation
```

## 55 qos

This command configures Quality of Service (QoS) and includes the following subcommands:

- application-mapping (see [qos vlan-mapping](#) below)
- vlan-mapping (see [qos application-mapping](#) below)

### qos vlan-mapping

This command configures the QoS Mapping table, which lets you define DiffServ-to-VLAN priority mapping (IEEE 802.1p) for Layer 3 and Layer-2 QoS.

---

#### Syntax

```
(config-network)# qos vlan-mapping <Index>
(vlan-mapping-<Index>)#
```

| Command             | Description                      |
|---------------------|----------------------------------|
| Index               | Defines the table row index.     |
| diff-serv {0-63}    | Defines the DiffServ value.      |
| vlan-priority {0-7} | Defines the VLAN priority level. |

---

#### Command Mode

Privileged User

---

#### Example

This example maps DiffServ 60 to VLAN Priority (Class of Service) level 0:

```
(config-network)# qos vlan-mapping 0
(vlan-mapping-0)# diff-serv 60
(vlan-mapping-0)# vlan-priority 0
```

### qos application-mapping

This command configures the QoS Settings table, which lets you define Layer-3 Class-of-Service QoS.

---

#### Syntax

```
(config-network)# qos application-mapping
(app-map)#
```

| Command            | Description   |
|--------------------|---|
| bronze-qos {0-63}  | Defines the DiffServ value for the Bronze CoS content (OAMP applications).              |
| control-qos {0-63} | Defines the DiffServ value for Premium Control CoS content (Call Control applications). |
| gold-qos {0-63}    | Defines the DiffServ value for the Gold CoS content (Streaming applications).           |
| media-qos {0-63}   | Defines the DiffServ value for Premium Media CoS content.                               |

---

### Command Mode

Privileged User

---

### Example

This example maps DiffServ 60 to VLAN Priority (Class of Service) level 0:

```
(config-network)# qos application-mapping
(app-map)# gold-qos 63
```

## 55 sctp

This command configures Stream Control Transmission Protocol (SCTP) settings.

### Syntax

```
(config-network)# sctp
(sctp)#
```

| Command                     | Description   |
|-----------------------------|---|
| heartbeat-interval          | Defines the SCTP heartbeat Interval (in seconds), where a heartbeat is sent to an idle destination to monitor reachability every time the interval expires. |
| initial-rto                 | Defines the initial retransmission timeout (RTO) in msec for all the destination addresses of the peer.   |
| max-association-retransmit  | Defines the maximum number of consecutive association retransmissions before the peer is considered unreachable and the association is closed.              |
| max-data-chunks-before-sack | Defines after how many received packets is Selective Acknowledgement (SACK) sent.   |
| max-data-tx-burst           | Defines the maximum number of DATA chunks (packets) that can be transmitted at one time (in a burst).   |
| max-path-retransmit         | Defines the maximum number of path retransmissions per remote transport address before it is considered as inactive.  |
| maximum-rto                 | Defines the maximum retransmission timeout (RTO) in msec for all the destination addresses of the peer.   |
| minimum-rto                 | Defines the minimum retransmission timeout (RTO) in msec for all the destination addresses of the peer.   |
| timeout-before-sack         | Defines the timeout (msec) since the packet was received after which SACK is sent (i.e., delayed SACK).   |

### Command Mode

Privileged User

---

**Note**

SCTP is applicable only to Mediant 90xx and Mediant Software.

---

**Related Commands**

```
show sctp
```

---

**Example**

This example configures the SCTP heartbeat interval to 60 seconds:

```
(config-network)# sctp
(sctp)# heartbeat-interval 60
```

## 56 security-settings

This command configures various TLS certificate security settings.

### Syntax

```
(config-network)# security-settings
(network-security)#
```

| Command                                  | Description   |
|--|---|
| PEERHOSTNAMEVERIFICATIONMODE<br>{0 1 2}  | <p>Enables the device to verify the Subject Name of a TLS certificate received from SIP entities for authentication and establishing TLS connections:</p> <ul style="list-style-type: none"> <li>■ 0 = Disable (default)</li> <li>■ 1 = Verify Subject Name only when acting as a client for the TLS connection.</li> <li>■ 2 = Verify Subject Name when acting as a server or client for the TLS connection.</li> </ul>  |
| SIPSREQUIRECLIENTCERTIFICATE<br>{off on} | <p>Defines the device's mode of operation regarding mutual authentication and certificate verification for TLS connections.</p> <ul style="list-style-type: none"> <li>■ off = Disable <ul style="list-style-type: none"> <li>✓ Device acts as a client: Verification of the server's certificate depends on the VerifyServerCertificate parameter.</li> <li>✓ Device acts as a server: The device does not request the client certificate.</li> </ul> </li> <li>■ on = Enable <ul style="list-style-type: none"> <li>✓ Device acts as a client: Verification of the server certificate is required to establish the TLS connection.</li> <li>✓ Device acts as a server: The device requires the receipt and verification of the client certificate to establish the TLS connection.</li> </ul> </li> </ul> |



| Command                                  | Description  |
|--|--|
|  | <b>Note:</b> For the parameter to take effect, a device reset is required.   |
| <code>fips140mode {off on}</code>        | Enables FIPS 140-2 conformance mode for TLS.<br><b>Note:</b> Applicable only to specific products.   |
| <code>tls-re-hndshk-int</code>           | Defines the time interval (in minutes) between TLS Re-Handshakes initiated by the device.  |
| <code>tls-rmt-subs-name</code>           | Defines the Subject Name that is compared with the name defined in the remote side certificate when establishing TLS connections.                            |
| <code>tls-vrfy-srvr-cert {off on}</code> | Enables the device, when acting as a client for TLS connections, to verify the Server certificate. The certificate is verified with the Root CA information. |

---

**Command Mode**

Privileged User

---

**Example**

This example enables the device to verify the Server certificate with the Root CA information:

```
(config-network)# security-settings
(network-security)# tls-vrfy-srvr-cert on
```

## 57 static

This command configures the Static Routes table, which lets you define static IP routing rules.

---

### Syntax

```
(config-network)# static <Index>
(static-<Index>)#
```

| Command                         | Description  |
|---------------------------------|--|
| Index                           | Defines the table row index.   |
| description                     | Configures a name for the rule.  |
| destination                     | Defines the IP address of the destination host/network.  |
| device-name                     | Associates an IP network interface through which the static route's Gateway is reached. The association is done by assigning the parameter the same Ethernet Device that is assigned to the IP network interface in the IP Interfaces table. |
| gateway                         | Defines the IP address of the Gateway (next hop) used for traffic destined to the subnet/host defined in 'destination' / 'prefix-length'.  |
| preferred-source-interface-name | Defines a specific local source IP address for outgoing packets using the static route, by assigning an IP Interface listed in the IP Interfaces table. The IP address configured for the assigned IP Interface is used.                     |
| prefix-length                   | Defines the Classless Inter-Domain Routing (CIDR)-style representation of a dotted-decimal subnet notation of the destination host/network.  |

---

### Command Mode

Privileged User

---

### Example

This example configures a static routing rule to specify the gateway (10.15.7.22) in order to reach 10.1.1.10:

```
(config-network)# static
(static-0)# destination 10.1.1.0
(static-0)# prefix-length 24
(static-0)# device-name vlan 1
(static-0)# gateway 10.15.7.22
```

## 58 tls

This command configures the TLS Contexts table, which lets you define TLS certificates, referred to as TLS Contexts.

### Syntax

```
(config-network)# tls <Index>
(tls-<Index>)#
```

| Command                      | Description  |
|------------------------------|--|
| Index                        | Defines the table row index.   |
| certificate                  | Certification actions - see <a href="#">certificate</a> on page 283.                       |
| ciphers                      | Displays ciphers.  |
| ciphers-client               | Defines the supported cipher suite for TLS clients.  |
| ciphers-client-tls13         | Defines the supported cipher suite for TLS 1.3 clients.                                    |
| ciphers-server               | Defines the supported cipher suite for the TLS server (in OpenSSL cipher list format).     |
| ciphers-server-tls13         | Defines the supported cipher suite for the TLS 1.3 server (in OpenSSL cipher list format). |
| dh-key-size {1024 2048 3072} | Defines the Diffie-Hellman (DH) key size (in bits).  |

| Command   | Description  |
|---|--|
|   | <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>■ For supported key sizes, refer to the <i>User's Manual</i>.</li> <li>■ 1024 is not recommended (it's not displayed as an optional value in the CLI, but it can be configured).</li> </ul> |
| <pre>dtls-version {dtls-v1.0  dtls-v1.2  unlimited}</pre> | <p>Defines the Datagram Transport Layer Security (DTLS) version, which is used to negotiate keys for WebRTC calls.</p>   |
| <pre>key-exchange-groups</pre>                            | <p>Defines the groups that are supported for key exchange, ordered from most preferred to least preferred.</p>   |
| <pre>name</pre>   | <p>Defines a descriptive name, which is used when associating the row in other tables.</p>   |
| <pre>ocsp-default-response {allow reject}</pre>           | <p>Determines whether the device allows or rejects peer certificates if it cannot connect to the OCSP server.</p>  |
| <pre>ocsp-port</pre>                                      | <p>Defines the OCSP server's TCP port number.</p>  |
| <pre>ocsp-server {disable enable}</pre>                   | <p>Enables or disables</p>   |

| Command  | Description   |
|--|---|
|  | certificate checking using OCSP.  |
| <code>ocsp-server-primary</code>   | Defines the IP address (in dotted-decimal notation) of the primary OCSP server.   |
| <code>ocsp-server-secondary</code>   | Defines the IP address (in dotted-decimal notation) of the secondary OCSP server (optional).  |
| <code>private-key {delete generate import}</code>  | Private key actions - see <a href="#">private-key</a> on page 285.  |
| <code>public-key display</code>  | Displays the public key of the certificate.   |
| <code>require-strict-cert {off on}</code>  | Enables the validation of the extensions (keyUsage and extenedKeyUsage) of peer certificates.   |
| <code>tls-renegotiation {disable enable}</code>  | Enables multiple TLS renegotiations (handshakes) initiated by the client (peer) with the device.  |
| <code>tls-version {tls-v1.0 tls-v1.0_1.1 tls-v1.0_1.1_1.2 tls-v1.0_1.1_1.2_1.3 tls-v1.0_1.2 tls-v1.1 tls-v1.1_1.2 tls-v1.1_1.2_1.3  tls-v1.2 tls-v1.2_1.3 tls-v1.3 unlimited}</code> | Defines the supported SSL/TLS protocol version. Clients attempting to communicate with the device using a different TLS version are rejected. |
| <code>trusted-root {clear-and-import delete detail export import summary}</code>   | Trusted root certificate actions -  |

| Command | Description                                   |
|---------|---|
|         | see <a href="#">trusted-root</a> on page 286. |

---

### Command Mode

Privileged User

---

### Example

This example configures a TLS Context with TLS Ver. 1.2:

```
(config-network)# tls 1
(tls-1)# name ITSP
(tls-1)# tls-version tls-v1.2
(tls-1)# activate
```

## certificate

This subcommand lets you do various actions on TLS certificates.

---

### Syntax

```
(tls-<Index>)# certificate
```

| Command   | Description   |
|---|---|
| Index   | Defines the table row index.  |
| alternative-name-add<br>{dns email ip-addr uri} | Defines the Subject Alternative Name (SAN) fields, which can be a DNS, e-mail, IP address or URI. |
| alternative-name-clear                          | Deletes all the Subject Alternative Name (SAN) fields.  |
| create-self-signed                              | Creates a self-signed certificate (by the device) with the current key.                           |
| delete  | Deletes the certificate.  |
| detail  | Displays certificate information.   |

| Command                                     | Description   |
|---|---|
| export                                      | Displays the certificate in the console ("BEGIN CERTIFICATE" to "END CERTIFICATE"). |
| import                                      | Imports a certificate. Type the certificate after the command.                      |
| signature-algorithm {sha-1 sha-256 sha-512} | Defines the signature algorithm.  |
| signing-request                             | Creates a certificate signing request to send to the CA.                            |
| status                                      | Displays active status of certificate (e.g., expiration day).                       |
| subject<br>{clear copy display field-set}   | Operations on the certification subject name.                                       |

---

### Command Mode

Privileged User

---

### Example

This example displays information on a TLS certificate:

```
(config-network)# tls 0
(tls-0)# certificate details
Certificate:
  Data:
    Version: 1 (0x0)
    Serial Number: 0 (0x0)
  Signature Algorithm: sha1WithRSAEncryption
  Issuer: CN=ACL_5967925
  Validity
    Not Before: Jan  5 07:26:31 2010 GMT
    Not After : Dec 31 07:26:31 2029 GMT
  Subject: CN=ACL_5967925
  Subject Public Key Info:
    Public Key Algorithm: rsaEncryption
    Public-Key: (1024 bit)
    Modulus:
```



```

00:aa:1f:fa:82:5b:2b:2f:26:08:64:96:cb:50:a9:
c2:5b:ec:57:66:58:16:aa:17:79:0a:0f:77:5d:dd:
15:88:3c:b1:f7:c4:c4:b9:e8:a9:af:88:0f:fa:5e:
85:be:1c:34:c1:15:5d:b5:07:93:e2:0d:2f:5e:2f:
7e:f3:5c:ee:bf:c5:ac:43:8a:7b:f2:3e:0d:1b:c4:
84:2e:07:53:b4:52:af:c8:d0:23:0b:f9:a2:ac:72:
2e:f1:65:59:f1:0b:7a:d2:77:cd:e8:c9:5e:81:93:
0b:f5:f2:93:85:5e:06:c5:9a:b8:3d:81:d9:b7:e7:
4b:44:fe:9e:fd:53:e6:7d:d1

```

Exponent: 65537 (0x10001)

Signature Algorithm: sha1WithRSAEncryption

```

3e:f5:97:07:96:e4:36:27:19:8b:e7:7d:5d:04:8c:ba:46:d8:
d7:31:6c:75:2b:3a:c8:4d:6b:cb:56:d0:29:21:d1:7b:8b:79:
57:6e:35:71:8e:e6:eb:5d:17:77:ac:b6:ec:20:6d:6a:9b:17:
9a:28:17:e1:a1:d5:11:7e:a4:95:04:df:15:cb:84:e0:3a:7d:
bd:15:2c:62:2e:f2:40:2f:00:6d:ba:28:16:fe:bd:87:86:d0:
4b:a0:c0:a6:06:b8:22:4d:67:ed:af:1d:83:83:ae:92:c4:06:
f3:e2:e5:8c:17:66:3c:ed:80:f0:96:a3:e0:95:e3:88:9e:61:
d7:b8

```

## private-key

This subcommand lets you do various actions on private keys.

### Syntax

```
(tls-<Index>)# private-key
```

| Command                                   | Description  |
|---|--|
| delete                                    | Deletes the private key.   |
| generate<br>{1024 2048 4096}<br>password  | Generates new private key based on private key size (bit RSA key) with an optional password (passphrase) to encrypt the private key file, and generates a self-signed certificate. |
| import<br>{password without-<br>password} | Imports a private key file, with an optional passphrase. Type the private key in the console.  |

### Command Mode

Privileged User

---

**Example**

This example deletes a private key:

```
(config-network)# tls 0
(tls-0)# private-key delete
Private key deleted.
```

**trusted-root**

This subcommand lets you do various actions on the Trusted Root Certificate Store.

---

**Syntax**

```
(tls-<Index>)# trusted-root
```

| Command                                  | Description   |
|--|---|
| <code>clear-and-import</code>            | Deletes all trusted root certificates and imports new ones. Type the certificate directly in the console. |
| <code>delete {&lt;number&gt; all}</code> | Deletes a specific trusted root certificates or all.  |
| <code>detail &lt;number&gt;</code>       | Displays the details of a specific trusted root certificate.  |
| <code>export</code>                      | Displays the trusted root certificate in the console.   |
| <code>import</code>                      | Imports a trusted root certificate. Type the certificate after the command.                               |
| <code>summary</code>                     | Displays a summary of the trusted root certificate.   |

---

**Command Mode**

Privileged User

---

**Example**

This example displays a summary of the root certificate:

```
(config-network)# tls 0
(tls-0)# trusted-root summary
1 trusted certificates.
```

| Num | Subject         | Issuer          | Expires    |
|-----|-----------------|-----------------|------------|
| 1   | ilync15-DC15-CA | ilync15-DC15-CA | 11/01/2022 |

# Part VI

## VoIP-Level Commands

## 59 Introduction

This part describes the commands located on the voice-over-IP (VoIP) configuration level. The commands of this level are accessed by entering the following command at the root prompt:

```
# configure voip
(config-voip)#
```

This level includes the following commands:

| Command             | Description   |
|---------------------|---|
| application         | See <a href="#">application</a> on page 290         |
| coders-and-profiles | See <a href="#">coders-and-profiles</a> on page 359 |
| gateway             | See <a href="#">gateway</a> on page 291             |
| ids                 | See <a href="#">ids</a> on page 376                 |
| interface           | See <a href="#">interface</a> on page 381           |
| ip-group            | See <a href="#">ip-group</a> on page 390            |
| media               | See <a href="#">media</a> on page 396               |
| message             | See <a href="#">message</a> on page 410             |
| proxy-set           | See <a href="#">proxy-set</a> on page 418           |
| qoe                 | See <a href="#">qoe</a> on page 422                 |
| realm               | See <a href="#">realm</a> on page 430               |
| remote-interface    | See <a href="#">remote-interface</a> on page 435    |
| sbc                 | See <a href="#">sbc</a> on page 436                 |
| sip-definition      | See <a href="#">sip-definition</a> on page 468      |
| sip-interface       | See <a href="#">sip-interface</a> on page 494       |
| srd                 | See <a href="#">srd</a> on page 497                 |

---

### Command Mode

Privileged User

## 60 application

This command enables the SBC application.

---

### Syntax

```
(config-voip)# application  
(sip-application)#
```

| Command                            | Description                             |
|------------------------------------|---|
| <code>enable-sbc {off   on}</code> | Enables / disables the SBC application. |

---

### Command Mode

Privileged User

---

### Example

This example shows how to enable the SBC application:

```
(config-voip)# application  
(sip-application)# enable-sbc on
```

## 61 gateway

This command configures the gateway and includes the following subcommands:

- advanced (see [advanced](#) below)
- analog (see [analog](#) on the next page)
- digital (see [digital](#) on page 307)
- dtmf-supp-service (see [dtmf-supp-service](#) on page 318)
- manipulation (see [manipulation](#) on page 327)
- routing (see [routing](#) on page 344)
- trunk-group (see [trunk-group](#) on page 353)
- trunk-group-setting (see [trunk-group-setting](#) on page 354)
- voice-mail-setting (see [voice-mail-setting](#) on page 355)

### advanced

This command configures advanced gateway parameters.

#### Syntax

```
(config-voip)# gateway advanced
(gw-settings)#
```

| Command  | Description  |
|--|--|
| attempted-call-count-on-start<br>{off on}                | Enables the device to count calls only at call start stage for SNMP performance monitoring MIBs that count attempted calls (IP-to-Tel and Tel-to-IP), for example, acPMSIPAttemptedCallsTable. |
| enable-rai {off on}                                      | Enables generation of an RAI (Resource Available Indication) alarm if the device's busy endpoints exceed a user-defined threshold.   |
| forking-handling {parallel-handling sequential-handling} | Defines how the device handles the receipt of multiple SIP 18x forking responses for Tel-to-IP calls.  |
| forking-timeout  | Defines the timeout (in seconds) that is   |

| Command  | Description   |
|--|---|
|  | started after the first SIP 2xx response has been received for a User Agent when a Proxy server performs call forking (Proxy server forwards the INVITE to multiple SIP User Agents).                     |
| <code>reans-info-enbl {off on}</code>                                      | Enables the device to send a SIP INFO message with the On-Hook/Off-Hook parameter when the FXS phone goes on-hook during an ongoing call and then off-hook again, within the user-defined regret timeout. |
| <code>register-by-served-tg-status</code>                                  | Defines if the device sends a registration request (SIP REGISTER) to a Serving IP Group (SIP registrar), based on the Trunk Group's status (in-service or out-of-service) for ISDN PRI and CAS.           |
| <code>tel2ip-no-ans-timeout</code>   | Defines the time (in seconds) that the device waits for a 200 OK response from the called party (IP side) after sending an INVITE message, for Tel-to-IP calls.   |
| <code>time-b4-reordr-tn</code>   | Defines the delay interval (in seconds) from when the device receives a SIP BYE message (i.e., remote party terminates call) until the device starts playing a reorder tone to the FXS phone.             |
| <code>use-conn-sdp-ses-or-media {dont-care session-only media-only}</code> | Defines how the device displays the Connection ("c=") line in the SDP Offer/Answer model.   |

---

### Command Mode

Privileged User

## analog

This command configures analog parameters.

---

### Syntax



```
(config-voip)# gateway analog
```

| Command                | Description  |
|------------------------|--|
| authentication         | See <a href="#">authentication</a> below               |
| automatic-dialing      | See <a href="#">automatic-dialing</a> on the next page |
| call-forward           | See <a href="#">call-forward</a> on page 295           |
| call-waiting           | See <a href="#">call-waiting</a> on page 296           |
| caller-display-info    | See <a href="#">caller-display-info</a> on page 297    |
| enable-caller-id       | See <a href="#">enable-caller-id</a> on page 298       |
| enable-did             | See <a href="#">enable-did</a> on page 299             |
| fxo-setting            | See <a href="#">fxo-setting</a> on page 300            |
| fxs-setting            | See <a href="#">fxs-setting</a> on page 302            |
| keypad-features        | See <a href="#">keypad-features</a> on page 303        |
| metering-tones         | See <a href="#">metering-tones</a> on page 304         |
| reject-anonymous-calls | See <a href="#">reject-anonymous-calls</a> on page 305 |
| tone-index             | See <a href="#">tone-index</a> on page 306             |

---

### Command Mode

Privileged User

### authentication

This command configures the Authentication table, which lets you define an authentication username and password per FXS and FXO port.

---

### Syntax

```
(config-voip)# gateway analog authentication <Port>
(authentication-<Port>)#
```

| Command   | Description  |
|-----------|--|
| port      | Defines the port.                                  |
| password  | Defines the password for authenticating the port.  |
| user-name | Defines the user name for authenticating the port. |

---

### Command Mode

Privileged User

---

### Note

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(authentication-0)# display
```

---

### Example

This example configures authentication credentials for a port:

```
(config-voip)# gateway analog authentication 0
(authentication-0)# password 1234
(authentication-0)# user-name JDoe
```

## automatic-dialing

This command configures the Automatic Dialing table, which lets you define telephone numbers that are automatically dialed when FXS or FXO ports go off-hook.

---

### Syntax

```
(config-voip)# gateway analog automatic-dialing <Index>
(automatic-dialing-<Index>)#
```

| Command                                      | Description                  |
|--|------------------------------|
| Index  | Defines the table row index. |
| auto-dial-status<br>{disable enable hotline} | Enables automatic dialing.   |

| Command                    | Description   |
|----------------------------|---|
| dst-number                 | Defines the destination telephone number to automatically dial.                                     |
| hotline-dial-tone-duration | Defines the duration (in seconds) after which the destination phone number is automatically dialed. |

---

### Command Mode

Privileged User

---

### Note

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(automatic-dialing-0)# display
```

---

### Example

This example configures automatic dialing where the number dialed is 9764401:

```
(config-voip)# gateway analog automatic-dialing 0
(automatic-dialing-0)# auto-dial-status enable
(automatic-dialing-0)# dst-number 9764401
```

## call-forward

This command configures the Call Forward table, which lets you define call forwarding per FXS or FXO port for IP-to-Tel calls.

---

### Syntax

```
(config-voip)# gateway analog call-forward <Index>
(call-forward-<Index>)#
```

| Command     | Description   |
|-------------|---|
| Index       | Defines the table row index.  |
| destination | Defines the telephone number or URI (<number>@<IP address>) to where the call is forwarded. |

| Command  | Description  |
|--|--|
| <code>no-reply-time</code>   | If you have set type for this port to no-answer or on-busy-or-no-answer, then configure the number of seconds the device waits before forwarding the call to the specified phone number. |
| <code>type {deactivate dont-disturb no-answer on-busy on-busy-or-no-answer unconditional}</code> | Defines the condition upon which the call is forwarded.  |

---

### Command Mode

Privileged User

---

### Note

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(call-forward-0)# display
```

---

### Example

This example configures unconditional call forwarding to phone 9764410:

```
(config-voip)# gateway analog call-forward 0
(call-forward-0)# destination 9764410
(call-forward-0)# type unconditional
(call-forward-0)# activate
```

## call-waiting

This command configures the Call Waiting table, which lets you enable call waiting per FXS port.

---

### Syntax

```
(config-voip)# gateway analog call-waiting <Index>
(call-waiting-<Index>)#
```

| Command   | Description                        |
|---|------------------------------------|
| Index   | Defines the table row index.       |
| <code>enable-call-waiting {disable enable not-configure}</code> | Enables call waiting for the port. |

---

### Command Mode

Privileged User

---

### Note

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(call-waiting-0)# display
```

---

### Example

This example enables call waiting:

```
(config-voip)# gateway call-waiting 0
(call-waiting-0)# enable-call-waiting enable
(call-waiting-0)# activate
```

## caller-display-info

This command configures the Caller Display Information table, which lets you define caller identification strings (Caller ID) per FXS and FXO port.

---

### Syntax

```
(config-voip)# gateway analog caller-display-info <Index>
(caller-display-info-<Index>)#
```

| Command                     | Description                   |
|-----------------------------|-------------------------------|
| Index                       | Defines the table row index.  |
| <code>display-string</code> | Defines the Caller ID string. |

| Command                              | Description                                  |
|--------------------------------------|--|
| presentation<br>{allowed restricted} | Enables the sending of the caller ID string. |

---

### Command Mode

Privileged User

---

### Note

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(caller-display-info-0)# display
```

---

### Example

This example configures caller ID as "Joe Do":

```
(config-voip)# gateway caller-display-info 0
(caller-display-info-0)# display-string Joe Doe
(caller-display-info-0)# presentation allowed
(caller-display-info-0)# activate
```

## enable-caller-id

This command configures the Caller ID Permissions table, which lets you enable Caller ID generation for FXS interfaces and detection for FXO interfaces, per port.

---

### Syntax

```
(config-voip)# gateway analog enable-caller-id <Index>
(enable-caller-id-<Index>)#
```

| Command  | Description                  |
|--|------------------------------|
| Index  | Defines the table row index. |
| caller-id<br>{disable enable not-<br>configured} | Enables Caller ID.           |

---

**Command Mode**Privileged User

---

**Note**

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(enable-caller-id-0)# display
```

---

**Example**

This example enables caller ID:

```
(config-voip)# gateway enable-caller-id 0
(enable-caller-id-0)# caller-id enable
(enable-caller-id-0)# activate
```

**enable-did**

This command configures the Enable DID table, which lets you enable support for Japan NTT 'Modem' DID per FXS port.

---

**Syntax**

```
(config-voip)# gateway analog enable-did <Index>
(enable-did-<Index>)#
```

| Command                                    | Description           |
|--|-----------------------|
| Index                                      | Defines the FXS port. |
| did<br>{disable enable not-<br>configured} | Enables DID.          |

---

**Command Mode**Privileged User

---

**Note**

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(enable-did-0)# display
```

---

### Example

This example enables Japan DID:

```
(config-voip)# gateway enable-did 0
(enable-did-0)# did enable
(enable-did-0)# activate
```

## fxo-setting

This command configures various FXO parameters.

---

### Syntax

```
(config-voip)# gateway analog fxo-setting
(gw-analog-fxo)#
```

| Command                                | Description  |
|--|--|
| answer-supervision<br>{disable enable} | Enables sending a SIP 200 OK when speech, fax or modem is detected.  |
| dialing-mode {one-stage two-stages}    | Global parameter configuring the dialing mode for IP-to-Tel (FXO) calls.   |
| disc-on-busy-tone-c {off on}           | Global parameter enabling call disconnection when a busy tone is detected.   |
| disc-on-dial-tone {off on}             | Determines whether the device disconnects a call when a dial tone is detected from the PBX.  |
| fxo-autodial-play-bsytn<br>{off on}    | Determines whether the device plays a busy / reorder tone to the PSTN side if a Tel-to-IP call is rejected by a SIP error response (4xx, 5xx or 6xx). If a SIP error response is received, the device seizes the line (off-hook), and then plays a busy / reorder tone to the PSTN side (for the duration defined by the parameter |



| Command                                       | Description   |
|---|---|
|   | TimeForReorderTone).  |
| <code>fxo-dbl-ans {off on}</code>             | Enables FXO Double Answer. {@}all incoming TEL2IP call are refused.   |
| <code>fxo-number-of-rings</code>              | Defines the number of rings before the device's FXO interface answers a call by seizing the line.   |
| <code>fxo-ring-timeout</code>                 | Defines the delay (in 100 msec) for generating INVITE after RING_START detection. The valid range is 0 to 50.   |
| <code>fxo-seize-line {off on}</code>          | If not set, the FXO will not seize the line.  |
| <code>fxo-voice-delay-on-200ok</code>         | Defines the time (in msec) that the device waits before opening the RTP (voice) channel with the FXO endpoint, after receiving a 200 OK from the IP side. |
| <code>ground-start-use-ring {off on}</code>   | Ground start use regular ring.  |
| <code>guard-time-btwn-calls</code>            | Defines the time interval (in seconds) after a call has ended and a new call can be accepted for IP-to-Tel calls.   |
| <code>psap-support {off on}</code>            | Enables the PSAP Call flow.   |
| <code>reorder-tone-duration</code>            | Global parameter configuring the duration (in seconds) that the device plays a busy or reorder tone before releasing the line.                            |
| <code>ring-detection-tout</code>              | Defines the timeout (in seconds) for detecting the second ring after the first detected ring.   |
| <code>rings-b4-det-callerid</code>            | Number of rings after which the Caller ID is detected.  |
| <code>snd-mtr-msg-2ip {disable enable}</code> | Send metering messages to IP on detection of analog metering pulses.  |
| <code>time-wait-b4-dialing</code>             | Defines the delay before the device starts dialing on the FXO line.   |
| <code>waiting-4-dial-tone</code>              | Determines whether or not the device waits  |

| Command          | Description  |
|------------------|--|
| {disable enable} | for a dial tone before dialing the phone number for IP-to-Tel calls. |

---

### Command Mode

Privileged User

---

### Example

This example configures two rings before Caller ID is sent:

```
(config-voip)# gateway fxo-setting
(gw-analog-fxo)# rings-b4-det-callerid 2
(gw-analog-fxo)# activate
```

### fxs-setting

This command configures various FXS parameters.

---

### Syntax

```
(config-voip)# gateway analog fxs-setting
(gw-analog-fxs)#
```

| Command                     | Description  |
|-----------------------------|--|
| fxs-callid-cat-brazil       | Enables interworking of Calling Party Category (cpc) from INVITE to FXS Caller ID first digit for Brazil Telecom.  |
| fxs-offhook-timeout-alarm   | Defines the duration (in seconds) of an FXS phone in off-hook state after which the device sends the SNMP alarm, acAnalogLineLeftOffhookAlarm.                               |
| max-streaming-calls         | Defines the maximum concurrent on-held sessions to which the device can play Music on Hold (MoH) originating from an external media (audio) source connected to an FXS port. |
| fxs-emg-call-for-unreg-port | Enables the device to allow FXS endpoints (ports) to make emergency calls (Tel-to-IP) even if registration of a specific port to the SIP proxy server has failed.            |

---

**Command Mode**Privileged User

---

**Example**

This example configures a maximum of 10 streaming sessions for MoH:

```
(config-voip)# gateway fxs-setting
(gw-analog-fxs)# max-streaming-calls 10
(gw-analog-fxs)# activate
```

**keypad-features**

This command configures phone keypad features.

---

**Syntax**

```
(config-voip)# gateway analog keypad-features
(gw-analog-keypad)#
```

| Command                   | Description  |
|---------------------------|--|
| blind-transfer            | Defines the keypad sequence to activate blind transfer for established Tel-to-IP calls |
| caller-id-restriction-act | Defines the keypad sequence to activate the restricted Caller ID option                |
| cw-act                    | Defines the keypad sequence to activate the Call Waiting option                        |
| cw-deact                  | Defines the keypad sequence to deactivate the Call Waiting option                      |
| fwd-busy-or-no-ans        | Defines the keypad sequence to activate the forward on 'busy or no answer' option      |
| fwd-deactivate            | Defines the keypad sequence to deactivate any of the call forward options              |
| fwd-dnd                   | Defines the keypad sequence to activate the Do Not Disturb option                      |
| fwd-no-answer             | Defines the keypad sequence to activate the forward on no                              |

| Command                                   | Description  |
|---|--|
|   | answer option  |
| <code>fwd-on-busy</code>                  | Defines the keypad sequence to activate the forward on busy option   |
| <code>fwd-unconditional</code>            | Defines the keypad sequence to activate the immediate call forward option  |
| <code>hotline-act</code>                  | Defines the keypad sequence to activate the delayed hotline option   |
| <code>hotline-deact</code>                | Defines the keypad sequence to deactivate the delayed hotline option   |
| <code>id-restriction-deact</code>         | Defines the keypad sequence to deactivate the restricted Caller ID option  |
| <code>key-port-configure</code>           | Defines the keypad sequence for configuring a telephone number for the FXS phone.  |
| <code>reject-anony-call-activate</code>   | Defines the keypad sequence to activate the reject anonymous call option, whereby the device rejects incoming anonymous calls. |
| <code>reject-anony-call-deactivate</code> | Defines the keypad sequence that de-activates the reject anonymous call option.  |

---

### Command Mode

Privileged User

---

### Example

This example configures the call forwarding on-busy or no answer keypad sequence:

```
(config-voip)# gateway keypad-features
(gw-analog-keypad)# fwd-busy-or-no-ans 567
(gw-analog-keypad)# activate
```

### metering-tones

This command configures metering tones settings.

**Syntax**

```
(config-voip)# gateway analog metering-tones
(gw-analog-mtrtone)#
```

| Command  | Description  |
|--|--|
| gen-mtr-tones {aoc-sip-interworking disable internal-table sip-interval-provided sip-raw-data-incr-provided sip-raw-data-provided} | Defines the method for automatically generating payphone metering pulses.                                |
| metering-type {12-kHz-sinusoidal-bursts 16-kHz-sinusoidal-bursts polarity-reversal-pulses}   | Defines the metering method for generating pulses (sinusoidal metering burst frequency) by the FXS port. |

**Command Mode**

Privileged User

**Example**

This example configures metering tone to be based the Charge Codes table:

```
(config-voip)# gateway analog metering-tones
(gw-analog-mtrtone)# gen-mtr-tones internal-table
(gw-analog-mtrtone)# activate
```

**reject-anonymous-calls**

This command configures the Reject Anonymous Call Per Port table, which lets the device reject incoming anonymous calls per FXS port.

**Syntax**

```
(config-voip)# gateway analog reject-anonymous-calls <Index>
(reject-anonymous-calls-<Index>)#
```

| Command | Description                  |
|---------|------------------------------|
| Index   | Defines the table row index. |

| Command                                    | Description                           |
|--|---------------------------------------|
| <code>reject-calls {disable enable}</code> | Enables rejection of anonymous calls. |

---

### Command Mode

Privileged User

---

### Note

To view the port-module numbers and port type, enter the display command at the index prompt, for example:

```
(reject-anonymous-calls-0)# display
```

---

### Example

This example configures metering tone to be based the Charge Codes table:

```
(config-voip)# gateway analog reject-anonymous-calls 0
(reject-anonymous-calls-0)# reject-calls enable
(reject-anonymous-calls-0)# activate
```

## tone-index

This command configures the Tone Index table, which lets you define distinctive ringing tones and call waiting tones per calling (source) and called (destination) number (or prefix) for IP-to-Tel calls.

---

### Syntax

```
(config-voip)# gateway analog tone-index <Index>
(tone-index-<Index>)#
```

| Command        | Description                                   |
|----------------|---|
| Index          | Defines the table row index.                  |
| dst-pattern    | Defines the prefix of the called number.      |
| fxs-port-first | Defines the first port in the FXS port range. |
| fxs-port-last  | Defines the last port in the FXS port range.  |

| Command     | Description  |
|-------------|--|
| priority    | Defines the index of the distinctive ringing and call waiting tones. |
| src-pattern | Defines the prefix of the calling number.                            |

---

### Command Mode

Privileged User

---

### Example

This example configures distinctive tone Index 12 for FXS ports 1-4 for called prefix number "976":

```
(config-voip)# gateway analog tone-index 0
(tone-index-0)# fxs-port-first 1
(tone-index-0)# fxs-port-last 4
(tone-index-0)# dst-pattern 976
(tone-index-0)# priority 12
(tone-index-0)# activate
```

## digital

This command configures the various digital parameters.

---

### Syntax

```
(config-voip)# gateway digital
```

| Command            | Description                                   |
|--------------------|---|
| rp-network-domains | See <a href="#">rp-network-domains</a> below  |
| settings           | See <a href="#">settings</a> on the next page |

---

### Command Mode

Privileged User

## rp-network-domains

This command configures user-defined MLPP network domain names (namespaces), **which is used in the AS-SIP Resource-Priority header of the outgoing SIP INVITE request.** The

command also maps the Resource-Priority field value of the SIP Resource-Priority header to the ISDN Precedence Level IE.

---

### Syntax

```
(config-voip)# gateway digital rp-network-domains <Index>
(rp-network-domains-<Index>)#
```

| Command                                    | Description                     |
|--|---------------------------------|
| Index                                      | Defines the table row index.    |
| ip-to-tel-interworking<br>{disable enable} | Enables IP-to-Tel interworking. |
| name                                       | Defines a name.                 |

---

### Command Mode

Privileged User

---

### Example

This example configures supplementary service for port 2:

```
(config-voip)# gateway digital rp-network-domains 0
(rp-network-domains-0)# ip-to-tel-interworking enable
(rp-network-domains-0)# name dsn
(rp-network-domains-0)# activate
```

## settings

This command configures various digital settings.

---

### Syntax

```
(config-voip)# gateway digital settings
(gw-digital-settings>)#
```

| Command                            | Description                              |
|------------------------------------|--|
| 911-location-id-in-ni2<br>{off on} | Enables 911 Location Id in NI2 protocol. |



| Command   | Description  |
|---|--|
| <code>add-ie-in-setup</code>                            | Additional information element to send in ISDN Setup message.  |
| <code>add-pref-to-redirect-nb</code>                    | Prefix added to Redirect phone number.   |
| <code>amd-timeout</code>                                | AMD Detection Timeout <msec>.  |
| <code>b-ch-negotiation {any exclusive preferred}</code> | ISDN B-Channel negotiation mode.   |
| <code>binary-redirect {off on}</code>                   | Search for Redirect number coded in binary 4 bit style.  |
| <code>blind-xfer-add-prefix {off on}</code>             | Add keying sequence for performing blind transfer as transfer number prefix.   |
| <code>blind-xfer-disc-tmo</code>                        | Maximum time (milliseconds) to wait for disconnect from Tel before performing blind transfer.  |
| <code>as-sndhook-flsh</code>                            | Hookflash forwarding.  |
| <code>cic-support {off on}</code>                       | Enables CIC -> ISDN TNS IE interworking.   |
| <code>cid-not-included-notification {off on}</code>     | Enables presentation in the outgoing SIP message when the incoming ISDN message doesn't include presentation.                                |
| <code>cid-notification {off on}</code>                  | Enables presentation in the outgoing SIP message when the presentation indicator in the incoming ISDN message has the value "not available". |
| <code>cind-mode {none r2-charge-info-int}</code>        | Charge Indicator Mode.   |
| <code>cisco-sce-mode {off on}</code>                    | In use with G.729 - if enabled and SCE=2 then AnnexB=no.   |
| <code>clir-reason-support {off on}</code>               | Enables sending of Reason for Non Notification of Caller Id.   |
| <code>connect-on-progress-ind {off on}</code>           | FXS: generate Caller Id signals during ringing<br>FXO: collect Caller Id and use it in Setup message.  |

| Command   | Description   |
|---|---|
| <code>copy-dst-on-empty-src {off on}</code>   | In case there is an empty source number from PSTN the source number will be the same as the destination.                                |
| <code>cp-dst-nb-2-redirect-nb {cp-after-ph-num-manipulation cp-b4-ph-num-manipulation dont-copy}</code> | Copy Destination Number to Redirect Number.   |
| <code>cpc-mode { argentina-r2 brazil-r2  none}</code>   | Calling Party Category Mode.  |
| <code>cut-through-enable {off on}</code>  | Enable call connection without On-Hook/Off-Hook process 'Cut-Through'.  |
| <code>cut-thru-reord-dur</code>   | Duration of reorder tone played after release from IP side for CutThrogh application  |
| <code>dflt-call-prio</code>   | SIP Default Call Priority.  |
| <code>dflt-cse-map-isdn2sip</code>  | Common cause value to use for most ISDN release causes.   |
| <code>dig-oos-behavior {alarm block  d-channel  default service  service-and-dchannel}</code>           | Digital OOS Behavior.   |
| <code>disc-call-pi8-alt-rte {off on}</code>   | If set to 1 and ISDN DISCONNECT with PI is received, 183 with SDP will be sent toward IP only if no IP-to-Tel alternative route exists. |
| <code>disc-on-busy-tone-c {off on}</code>   | Disconnect Call on Busy Tone Detection – CAS.   |
| <code>disc-on-busy-tone-I {off on}</code>   | Disconnect Call on Busy Tone Detection – ISDN.  |
| <code>dscp-4-mlpp-flsh</code>   | RTP DSCP for MLPP Flash.  |
| <code>dscp-4-mlpp-flsh-ov {dscp-4-mlpp-flsh-ov}</code>  | RTP DSCP for MLPP Flash Override.   |

| Command   | Description  |
|---|--|
| <code>dscp-4-mlpp-flsh-ov-ov</code>   | RTP DSCP for MLPP Flash-Override-Override.   |
| <code>dscp-4-mlpp-immed</code>  | RTP DSCP for MLPP Immediate.   |
| <code>dscp-for-mlpp-prio</code>   | RTP DSCP for MLPP Priority.  |
| <code>dscp-for-mlpp-rtn</code>  | RTP DSCP for MLPP Routine.   |
| <code>dst-number-plan {Private e164-public  not-included  unknown}</code>   | Enforce this Q.931 Destination Number Type.  |
| <code>dst-number-type {abbreviated  international-level2-regional  national-level1-regional  network-pisn-specific  not-included  subscriber-level0-regional  unknown}</code> | Enforce this Q.931 Destination Number Type.  |
| <code>dtmf-used {off on}</code>   | Send DTMFs on the Signaling path (not on the Media path).  |
| <code>e911-mlpp-bhvr {routine  standard}</code>   | Defines the MLPP E911 Preemption mode.   |
| <code>early-amd {off on}</code>   | If set to 1, AMD detection is started on PSTN alerting otherwise on connect.                             |
| <code>early-answer-timeout</code>   | Max time (in seconds) to wait from sending Setup message to PSTN to receiving Connect message from PSTN. |
| <code>epn-as-cpn-ip2tel {off on}</code>   | Use endpoint number as calling number for IP-to-Tel.   |
| <code>epn-as-cpn-tel2ip {off on}</code>   | Use endpoint number as calling number for Tel-to-IP.   |
| <code>etsi-diversion {off on}</code>  | Use supplementary service ETSI Diverting Leg Information 2 to send redirect number.                      |
| <code>fallback-transfer-to-tdm {off on}</code>  | Disable fallback from ISDN call transfer to TDM.   |

| Command  | Description  |
|--|--|
| <code>fax-rerouting-delay</code>   | Defines the time interval (in sec) to wait for CNG detection to re-route call to fax destinations.   |
| <code>fax-rerouting-mode {connect-and-delay  disabled  progress-and-delay  without-delay}</code> | Enables the detection of the fax CNG tone in incoming calls, before sending the INVITE.  |
| <code>first-call-waiting-tone-id</code>  | Defines the index of the first Call Waiting tone in the Call Progress Tones file.  |
| <code>format-dst-phone-number {remove-params  transparent}</code>                                | Defines if the destination phone number that the device sends to the Tel side (for IP-to-Tel calls) includes the user-part parameters (e.g., 'password' and 'phone-context') of the destination URI received in the incoming SIP INVITE message. |
| <code>gw-app-sw-wd {off on}</code>   | Uses the software watchdog for gateway tasks.  |
| <code>gw-dest-src-id</code>  | Defines gateway H.323-ID source field.   |
| <code>ign-isdn-disc-w-pi {off on}</code>   | Enable ignoring of ISDN Disconnect messages with PI 1 or 8.  |
| <code>isdn-ignore-18x-without-sdp {off on}</code>  | Enables interworking SIP 18x without SDP and ISDN Q.931 Progress/Alerting messages.  |
| <code>isdn-ntt-noid-interworking-mode {both  ip2tel  none  tel2ip}</code>                        | Defines SIP-ISDN interworking between NTT Japan's No-ID cause in the Facility information element (IE) of the ISDN Setup message, and the calling party number (display name) in the From header of the SIP INVITE message.                      |
| <code>isdn-send-progress-for-te {off on}</code>  | Defines whether the device sends Q.931 Progress messages to the ISDN trunk if the trunk is configured as User side (TE) and/or Network (NT) side, for IP-to-Tel calls.   |
| <code>ignore-alert-after-early-media {off on}</code>   | Interwork of Alert from ISDN to SIP.   |

| Command   | Description   |
|---|---|
| <code>ignore-bri-los-alarm {off on}</code>  | Ignore LOS alarms for BRI user side trunk.  |
| <code>ip-to-cas-ani-dnis-del</code>   | IP to CAS list of ANI and DNIS delimiters.  |
| <code>isdn-facility-trace {off on}</code>   | Enable ISDN Facility Trace.   |
| <code>isdn-subaddr-frmt {ascii bcd  user-specified}</code>  | ISDN SubAddress format.   |
| <code>isdn-tnl-ip2tel {disable using-body  using-header}</code>   | Enable ISDN Tunneling IP to Tel.  |
| <code>isdn-tnl-tel2ip {disable using-body  using-header}</code>   | Enable ISDN Tunneling Tel to IP.  |
| <code>isdn-trsfr-on-conn {alert connect}</code>   | Send TBCT/ECT/RLT request only when second leg call is connected.   |
| <code>isdn-xfer-complete-cause</code>   | If such a cause received in ISDN DISCONNECT message of the first leg, NOTIFY 200 is sent toward IP.                 |
| <code>iso8859-charset {arabic center-euro  cyrillic hebrew  no-accented  north-euro  south-euro  turkish  west-euro}</code> | ISO 8859 Character Set Part.  |
| <code>isub-number-of-digits</code>  | Number of digits that will be taken from end of phone number as Subaddress.   |
| <code>local-time-on-connect {always-send-local-time  dont-send-local-time  send-local-time-only-if-missing}</code>          | 0 - Don't Send Local Date and Time,1 - Send Local Date and Time Only If Missing,2 - Always Send Local Date and Time |
| <code>max-message-length</code>   | Limit the maximum length in KB for SIP message.   |
| <code>media-ip-ver-pref {ipv4-only  ipv6-only  prefer-ipv4  prefer-ipv6}</code>   | Select the preference of Media IP version.  |
| <code>mfcrr2-category</code>  | MFC/R2 Calling Party's category.  |

| Command  | Description  |
|--|--|
| <code>mfc-r2-debug {off on}</code>   | Enable MFC-R2 protocol debug.  |
| <code>mlpp-dflt-namespace {cuc <br/>dod  drsn  dsn  interworking <br/>uc  user-def}</code> | MLPP Default Namespace.  |
| <code>mlpp-dflt-srv-domain</code>  | MLPP Default Service Domain String (6 Hex Digits).   |
| <code>mlpp-norm-ser-dmn</code>   | MLPP Normalized Service Domain String (6 Hex Digits).  |
| <code>mlpp-nwrk-id</code>  | Sets the Network identifier value which is represented as the first 2 octets in the MLPP service domain field. values are [1-999]. |
| <code>mrd-cas-support</code>   | Enable/Disable MRD CAS behavior.   |
| <code>mx-syslog-lgth</code>  | Maximum length used for bundling syslog at debug level 7.  |
| <code>ni2-cpc</code>   | Enables NI2 calling party category translation to SIP.   |
| <code>notification-ip-group-id</code>  | IP Group ID for notification purposes.   |
| <code>np-n-ton-2-redirnb</code>  | Add NPI and TON as prefix to Redirect number.  |
| <code>number-type-and-plan</code>  | If selected, ISDN Type & Plan relayed from IP. Otherwise, ISDN Type & Plan are set to 'Unknown'.                                   |
| <code>overlap-used</code>  | Enables Overlap mode.  |
| <code>pi-4-setup-msg</code>  | Progress Indicator for ISDN Setup Message.   |
| <code>play-l-rbt-isdn-trsfr</code>   | Play local RBT on TBCT/ECT/RLT transfer.   |
| <code>play-rb-tone-xfer-success</code>   | Play RB tone on transfer success.  |
| <code>preemp-tone-dur</code>   | Preemption Tone Duration.  |
| <code>prefix-to-ext-line</code>  | Prefix to dial for external line.  |

| Command                          | Description  |
|----------------------------------|--|
| q850-reason-code-2play-user-tone | Q850 Reason Code which cause playing special PRT Tone.   |
| qsig-path-replacement            | 0 - Enable IP to QSIG transfer,1 - Enable QSIG to IP Transfer  |
| qsig-tunneling                   | Enables QSIG Tunneling over SIP.   |
| qsig-tunneling-mode              | Defines the format of encapsulated QSIG message data in the SIP message MIME body.   |
| qsig-xfer-update                 | Enable QSIG Transfer Update.   |
| r2-for-brazil-telecom            | Enable Interworking of Calling Party Category (cpc) from sip INVITE to MFCCR2 category for Brazil Telecom.                         |
| rekey-after-181                  | Send re-INVITE after 181 with new SRTP keys.   |
| replace-tel-to-ip-calnum-to      | Maximum Time to wait between call setup and Facility with Redirecting Number for replacing calling number (msec).                  |
| restarts-after-so                | Enable sending restarts to PSTN on channels experienced mismatch in CONNID usage.  |
| rls-ip-to-isdn-on-pro-cause      | Defines whether to disconnect call while receiving ISDN PROGRESS with Cause 0 - never, 1- disconnect if not Early media,2 - always |
| rmv-calling-name                 | If set to 1 - Removes Calling Name from IP->TEL calls.   |
| rmv-cli-when-restr               | Removes CLI from IP->TEL calls if received CLI is restricted   |
| rtcp-act-mode                    | RTCP activation policy.  |
| rtp-only-mode                    | immediately. -1 - takes the RTPONLYMODE global value per gatewa0 - regular call establishment. 1 - The RTP channel open for        |

| Command                                | Description   |
|--|---|
|  | Rx & Tx. 2-The RTP channel open only for Tx<br>3 -The RTP channel open only for Rx  |
| <code>send-screen-to-ip</code>         | Override screening indicator value in Setup messages to IP  |
| <code>send-screen-to-isdn</code>       | Override screening indicator value in Setup messages to ISDN  |
| <code>send-screen-to-isdn-1</code>     | Overrides the screening indicator for the first calling party number when the device includes two calling party numbers in the outgoing ISDN Setup message for IP-to-Tel ISDN calls.  |
| <code>send-screen-to-isdn-2</code>     | Overrides the screening indicator for the second calling party number when the device includes two calling party numbers in the outgoing ISDN Setup message for IP-to-Tel ISDN calls. |
| <code>setup-ack-used</code>            | Enable SetupAck messages for overlap mode   |
| <code>silence-supp-in-sdp</code>       | SilenceSupp in SDP used for fax VBD   |
| <code>src-number-plan</code>           | if defined, enforce this Q.931 Source Number Plan   |
| <code>src-number-type</code>           | if defined, enforce this Q.931 Source Number Type   |
| <code>swap-rdr-n-called-nb</code>      | Swap Redirect and Called numbers  |
| <code>tdm-over-ip-initiate-time</code> | Time between first INVITE issued within the same trunk (msec)   |
| <code>tdm-over-ip-min-calls</code>     | Minimum connected calls for trunk activation, if 0 - trunk is always active   |
| <code>tdm-over-ip-retry-time</code>    | Time between call release and new INVITE (msec)   |
| <code>tdm-tunneling</code>             | Enable gateway to maintain a permanent RTP connection   |



| Command   | Description  |
|---|--|
| tel-to-ip-dflt-redir-rsn  | Tel2IP Default Redirect Reason   |
| third-party-transcoding   | Enables Third Party Call Control Transcoding functionality   |
| time-b4-reordr-tn   | Delay time before playing Reorder tone   |
| transparent-on-data-call  | In case the transfer capability of a call from ISDN is data open with transparent coder  |
| trk-alm-disc-timeout  | Trunk alarm call disconnect timeout in seconds   |
| trkgrps-to-snd-ie   | Configure trunk groups on which to send additional IE  |
| trunk-restart-mode-on-powerup<br>{no-restart per-b-channel per-trunk} | Trunk Restart Mode on Power Up.  |
| trunk-status-reporting  | When TrunkGroup #1 is present and active response to options and/or send keep-alive to associated proxy(ies)   |
| use-to-header-as-called-num   | Use the user part of To header URL as called number (IP->TEL)  |
| user-info   | Provides a link to the user information file, to be downloaded using Automatic Update.   |
| user-info-file-name   | The file name to be loaded using TFTP  |
| usr2usr-hdr-frmt  | (0): X-UserToUser, (1): format: User-to-UserUser with protocol discriminator, (2): format: User-to-User with 'encoding=hex' at the end, (3): format: User-to-User with text presentation |
| uui-ie-for-ip2tel   | Enable User-User IE to pass in Setup from IP to ISDN   |
| uui-ie-for-tel2ip   | Enable User-User IE to pass in Setup from ISDN to IP   |
| wait-befor-pstn-rel-ack   | Defines the timeout (in milliseconds) to wait for the release ACK from the PSTN  |

| Command                               | Description  |
|---------------------------------------|--|
|                                       | before releasing the channel.  |
| <code>wait-for-busy-time</code>       | Time to wait to detect busy and reorder tones. Currently used in semi supervised PBX transfer  |
| <code>warning-tone-duration</code>    | OfHook Warning Tone Duration [Sec]   |
| <code>xfer-across-trunk-groups</code> | if set ECT RLT 2BCT call transfer is allowed across different trunks and trunkgroups   |
| <code>xfer-cap-for-data-calls</code>  | 0: ISDN Transfer Capability for data calls will be 64k unrestricted (data), 1:ISDN Transfer Capabilityfor Data calls will be set according to ISDNTransferCapability parameter |
| <code>xfer-prefix-ip2tel</code>       | Defines the prefix that is added to the destination number received in the SIP Refer-To header (for IP-to-Tel calls).  |

---

### Command Mode

Privileged User

## dtmf-supp-service

This command configures the DTMF supplementary services.

---

### Syntax

```
(config-voip)# gateway dtmf-supp-service
```

| Command                            | Description   |
|------------------------------------|---|
| <code>charge-code</code>           | See <a href="#">charge-code</a> on the next page      |
| <code>dtmf-and-dialing</code>      | See <a href="#">dtmf-and-dialing</a> on page 320      |
| <code>isdn-supp-serv</code>        | See <a href="#">isdn-supp-serv</a> on page 321        |
| <code>supp-service-settings</code> | See <a href="#">supp-service-settings</a> on page 323 |

---

### Command Mode

Privileged User

## charge-code

This command configures the Charge Codes table, which lets you define metering tones.

### Syntax

```
(config-voip)# gateway dtmf-supp-service charge-code <Index>
(charge-code-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| charge-code-name  | Defines a descriptive name.  |
| end-time-1, end-time-2, end-time-3,<br>end-time-4                                 | Defines the end of the time period in a 24 hour format.                  |
| pulse-interval-1, pulse-interval-2,<br>pulse-interval-3, pulse-interval-4         | Defines the time interval between pulses (in tenths of a second).        |
| pulses-on-answer-1, pulses-on-answer-2,<br>pulses-on-answer-3, pulses-on-answer-4 | Defines the number of pulses that the device generates upon call answer. |

### Command Mode

Privileged User

### Example

This example configures a Charge Code:

```
(config-voip)# gateway dtmf-supp-service charge-code 0
(charge-code-0)# charge-code-name INT
(charge-code-0)# end-time-1 04
(charge-code-0)# pulse-interval-1 2
(charge-code-0)# activate
```

## dtmf-and-dialing

This command configures DTMF and dialing parameters.

### Syntax

```
(config-voip)# gateway dtmf-supp-service dtmf-and-dialing
(gw-dtmf-and-dial)#
```

| Command                    | Description  |
|----------------------------|--|
| auto-dtmf-mute             | Enables automatic muting of DTMF digits when out-of-band DTMF transmission is used.  |
| char-conversion            | Configures Unicode-to-ASCII character conversion rules.  |
| dflt-dest-nb               | Defines the default destination phone number which is used if the received message doesn't contain a called party number and no phone number is configured in the Trunk Group table. |
| dial-plan-index            | Defines the Dial Plan Index.   |
| digitmapping               | Defines the digit map pattern used to reduce the dialing period when ISDN overlap dialing for digital interfaces.  |
| dt-duration                | Defines the duration, in seconds, that the dial tone is played, for digital interfaces, to an ISDN terminal.   |
| dtmf-inter-digit-threshold | Defines the threshold of the received DTMF InterDigitTime, in milliseconds.  |
| first-dtmf-option-type     | Defines the first preferred transmit DTMF negotiation method.  |
| hook-flash-option          | Defines the hook-flash transport type.   |
| hotline-dt-dur             | Defines the duration, in seconds, of the hotline dial tone.  |
| isdn-tx-overlap            | Enables ISDN overlap dialing for IP-to-Tel calls.  |
| min-dg-b4-routing          | Defines the minimum number of overlap digits to collect - for ISDN overlap dialing - before sending  |

| Command                                       | Description  |
|---|--|
|   | the first SIP message for routing Tel-to-IP calls.   |
| <code>mxdig-b4-dialing</code>                 | Defines the maximum number of collected destination number digits that can be received.  |
| <code>oob-dtmf-format</code>                  | Defines the DTMF Out-of-Band transport method.   |
| <code>rfc-2833-in-sdp</code>                  | Global parameter that enables the device to declare the RFC 2833 'telephony-event' parameter in the SDP.   |
| <code>second-dtmf-option-type</code>          | Defines the second preferred transmit DTMF negotiation method.   |
| <code>special-digit-rep</code>                | Defines the representation for 'special' digits '*' and '#'. that are used for out-of-band DTMF signaling using SIP INFO/NOTIFY.   |
| <code>special-digits</code>                   | Determines whether the asterisk*. and pound#. digits can be used in DTMF.  |
| <code>strict-dial-plan</code>                 | Enables Strict Dial Plan.  |
| <code>telephony-events-payload-type-tx</code> | Defines the Tx RFC 2833 DTMF relay dynamic payload type for outbound calls.  |
| <code>time-btwn-dial-digs</code>              | Analog: Defines the time, in seconds, that the device waits between digits that are dialed by the user. ISDN overlap dialing: Defines the time, in seconds, that the device waits between digits that are received from the PSTN or IP during overlap dialing. |

---

### Command Mode

Privileged User

### isdn-supp-serv

This command configures the Supplementary Services table, which lets you define supplementary services for endpoints (FXS and ISDN BRI) connected to the device.

---

### Syntax

```
(config-voip)# gateway dtmf-supply-service isdn-supply-serv <Index>
(isdn-supply-serv-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| caller-id-enable<br>{allowed not-<br>configured restricted}        | Enables the receipt of Caller ID.   |
| caller-id-number   | Defines the caller ID name of the endpoint (sent to the IP side).   |
| cfu-to_phone-number  | Defines the phone number for BRI Call Forward Unconditional (CFU) services.                                     |
| cfb-to_phone-number  | Defines the phone number for BRI Call Forward Busy (CFB) services.  |
| cfnr-to_phone-number   | Defines the phone number for BRI Call Forward No Reply (CFNR) services.   |
| local-phone-number   | Configures a local telephone extension number for the endpoint.   |
| module   | Defines the device's module number to which the endpoint is connected.  |
| no-reply-time  | Defines the timeout, in seconds.  |
| phone-number   | Configures a global telephone extension number for the endpoint.  |
| port   | Defines the port number on the module to which the endpoint is connected.                                       |
| presentation-restricted<br>{allowed not-<br>configured restricted} | Determines whether the endpoint sends its Caller ID information to the IP when a call is made.                  |
| user-id  | Defines the User ID for registering the endpoint to a third-party softswitch for authentication and/or billing. |
| user-password  | Defines the user password for registering the endpoint to a third-party softswitch for                          |

| Command | Description                    |
|---------|--------------------------------|
|         | authentication and/or billing. |

---

### Command Mode

Privileged User

---

### Example

This example configures supplementary service for port 2:

```
(config-voip)# gateway dtmf-supp-service isdn-supp-serv 0
(isdn-supp-serv-0)# phone-number +15032638005
(isdn-supp-serv-0)# local-phone-number 402
(isdn-supp-serv-0)# module 1
(isdn-supp-serv-0)# port 2
(isdn-supp-serv-0)# user-id JoeD
(isdn-supp-serv-0)# user-password 1234
(isdn-supp-serv-0)# caller-id-enable allowed
(isdn-supp-serv-0)# activate
```

## supp-service-settings

This command configures supplementary services.

---

### Syntax

```
(config-voip)# gateway dtmf-supp-service supp-service-settings
(gw-suppl-serv)#
```

| Command               | Description   |
|-----------------------|---|
| 3w-conf-mode          | Defines the mode of operation for three-way conferencing.         |
| 3w-conf-nonalloc-prts | Define the ports that are not affected by three-way conferencing. |
| aoc-support           | Enables AoC-D and AoC-E from ISDN to SIP.                         |
| as-subs-ipgroupid     | IP Group ID for AS subscribe purposes.                            |
| blind-transfer        | Keying sequence for performing blind transfer.                    |

| Command                | Description   |
|------------------------|---|
| call-forward           | Enable Call Forward service.  |
| call-hold-remnd-rng    | Call-hold reminder ring maximum ringing time, in seconds.               |
| call-prio-mode         | Priority mode.  |
| call-waiting           | Enables Call Waiting service.   |
| caller-id-type         | Defines the Caller ID standard.   |
| cfb-code               | Supplementary Service code for activating Call Forward Busy.            |
| cfb-deactivation-code  | Supplementary Service code for deactivating Call Forward Busy.          |
| cfe-ring-tone-id       | Ringtone type for Call forward notification.                            |
| cfnr-code              | Supplementary Service code for activating Call Forward No Reply.        |
| cfnr-deactivation-code | Supplementary Service code for deactivating Call Forward No Reply.      |
| cfu-code               | Supplementary Service code for activating Call Forward Unconditional.   |
| cfu-deactivation-code  | Supplementary Service code for deactivating Call Forward Unconditional. |
| conf-id                | Identification of conference call used by SIP INVITE.                   |
| connected-number-plan  | Enforces Q.931 Connected Number Type.                                   |
| connected-number-type  | Enforces Q.931 Connected Number Type.                                   |
| dtmf-during-hold       | Enables playing DTMF to Tel during hold.                                |
| enable-3w-conf         | Enables 3-way conferencing feature.                                     |



| Command                                 | Description  |
|---|--|
| <code>enable-caller-id</code>           | FXS: Generate Caller ID; FXO: Collect Caller ID information.   |
| <code>enable-mwi</code>                 | Enables MWI.   |
| <code>enable-transfer</code>            | Enables Call Transfer service.   |
| <code>estb-conf-code</code>             | Control Key activation for 3-way conference.   |
| <code>flash-key-seq-style</code>        | Flash key sequence.  |
| <code>flash-key-seq-tmout</code>        | Flash key sequence timeout.  |
| <code>held-timeout</code>               | Maximum time allowed for call to be retrieved from IP, in seconds.   |
| <code>hold</code>                       | Enables Call Hold service.   |
| <code>hold-format</code>                | Call hold format.  |
| <code>hold-to-isdn</code>               | Enables Hold/Retrieve from and to ISDN.  |
| <code>hook-flash-code</code>            | If Rx during session, act as if hook flash Rx from Tel side.   |
| <code>ignore-isdn-subaddress</code>     | Ignores ISDN Subaddress.   |
| <code>isdn-xfer-complete-timeout</code> | Max time, in seconds, to wait for transfer response from PSTN.   |
| <code>mlpp-diffserv</code>              | DiffServ value for MLPP calls.   |
| <code>music-on-hold</code>              | Enables playing Music On Hold.   |
| <code>mute-dtmf-in-overlap</code>       | In overlap mode if set mute in-band DTMF till destination number is received.  |
| <code>mwi-analog-lamp</code>            | Enables MWI using an analog lamp 110 Volt.   |
| <code>mwi-display</code>                | Enables MWI using Caller ID interface.   |
| <code>mwi-ntf-timeout</code>            | Defines the maximum duration (timeout) that a message waiting indication (MWI) is displayed on endpoint equipment (phones' |

| Command                                  | Description   |
|--|---|
|  | LED, screen notification or voice tone).  |
| mwi-qsig-party-num                       | Party Number from msgCentreId in MWIactivate and MWIdeactivate.                   |
| mwi-srvr-ip-addr                         | MWI server IP address.  |
| mwi-srvr-transp-type                     | MWI server transport type.  |
| mwi-subs-expr-time                       | MWI service subscription expiration time, in seconds.                             |
| mwi-subs-ipgrp-id                        | IP Group ID for MWI subscribe purposes.   |
| mwi-subs-rtry-time                       | MWI service subscriptions retry time after last subscription failure, in seconds. |
| mx-3w-conf-onboard                       | Max on-board conference calls.  |
| nb-of-cw-ind                             | Number of call waiting indications to be played to the user.                      |
| nrt-sub-retry-time                       | NRT subscribe retry time.   |
| nrt-subscription                         | Enable subscription for Call forward ringtone indicator services.                 |
| precedence-ringing                       | Index of the first Call RB tone in the call-progress tones file.                  |
| qsig-calltransfer-reverse-enddesignation | QSIG Call Transfer Reverse End Designation.                                       |
| reminder-ring {disable enable}           | Enables the reminder ring.  |
| send-all-cdrs-on-rtrv                    | Send only chosen coder or all supported coders.                                   |

| Command                   | Description  |
|---------------------------|--|
| should-subscribe          | Related to Subscribe/UnSubscribe buttons.                                    |
| snd-isdn-ser-aftr-restart | ISDN SERVICE message is sent after restart.                                  |
| sttr-tone-duration        | Time for playing confirmation tone before normal dial tone is played (msec). |
| subscribe-to-mwi          | Enable subscription for MWI service.   |
| time-b4-cw-ind            | Time before call waiting indication is sent to a busy line, in seconds.      |
| time-between-cw           | Time between one call waiting indication to the next, in seconds.            |
| transfer-prefix           | Prefix added to the called number of a transferred call.                     |
| waiting-beep-dur          | Call Waiting tone beep length (msec).  |

---

### Command Mode

Privileged User

---

### Example

This example enables the reminder ring feature:

```
(config-voip)# gateway dtmf-supp-service supp-service-settings
(gw-suppl-serv)# reminder-ring enable
(gw-suppl-serv)# reminder-ring enable
```

## manipulation

This subcommand configures the gateway's advanced parameters.

---

### Syntax

```
(config-voip)# gateway manipulation
```

| Command                    | Description  |
|----------------------------|--|
| calling-name-map-ip2tel    | See <a href="#">calling-name-map-ip2tel</a> below            |
| calling-name-map-tel2ip    | See <a href="#">calling-name-map-tel2ip</a> on the next page |
| cause-map-isdn2isdn        | See <a href="#">cause-map-isdn2isdn</a> on page 331          |
| cause-map-isdn2sip         | See <a href="#">cause-map-isdn2sip</a> on page 331           |
| cause-map-sip2isdn         | See <a href="#">cause-map-sip2isdn</a> on page 332           |
| dst-number-map-ip2tel      | See <a href="#">dst-number-map-ip2tel</a> on page 333        |
| dst-number-map-tel2ip      | See <a href="#">dst-number-map-tel2ip</a> on page 334        |
| phone-context-table        | See <a href="#">phone-context-table</a> on page 335          |
| redirect-number-map-ip2tel | See <a href="#">redirect-number-map-ip2tel</a> on page 336   |
| redirect-number-map-tel2ip | See <a href="#">redirect-number-map-tel2ip</a> on page 338   |
| settings                   | See <a href="#">settings</a> on page 339                     |
| src-number-map-ip2tel      | See <a href="#">src-number-map-ip2tel</a> on page 341        |
| src-number-map-tel2ip      | See <a href="#">src-number-map-tel2ip</a> on page 343        |

---

### Command Mode

Privileged User

### calling-name-map-ip2tel

This command configures the Calling Name Manipulation for IP-to-Tel Calls table, which lets you define manipulation rules for manipulating the calling name (i.e., caller ID) in SIP messages for IP-to-Tel calls.

---

### Syntax

```
(config-voip)# gateway manipulation calling-name-map-ip2tel <Index>
(calling-name-map-ip2tel-<Index>)#
```

| Command                | Description  |
|------------------------|--|
| Index                  | Defines the table row index.   |
| calling-name-pattern   | Defines the caller name (i.e., caller ID) prefix.  |
| dst-host-pattern       | Defines the Request-URI host name prefix of the incoming SIP INVITE message.               |
| dst-pattern            | Defines the destination (called) telephone number prefix and/or suffix.                    |
| manipulation-name      | Defines a descriptive name, which is used when associating the row in other tables.        |
| num-of-digits-to-leave | Defines the number of characters that you want to keep from the right of the calling name. |
| prefix-to-add          | Defines the number or string to add at the front of the calling name.                      |
| remove-from-left       | Defines the number of characters to remove from the left of the calling name.              |
| remove-from-right      | Defines the number of characters to remove from the right of the calling name.             |
| src-host-pattern       | Defines the URI host name prefix of the incoming SIP INVITE message in the From header.    |
| src-ip-address         | Defines the source IP address of the caller for IP-to-Tel calls.                           |
| src-pattern            | Defines the source (calling) telephone number prefix and/or suffix.                        |
| suffix-to-add          | Defines the number or string to add at the end of the calling name.                        |

---

### Command Mode

Privileged User

### calling-name-map-tel2ip

This command configures the Calling Name Manipulation for Tel-to-IP Calls table, which lets you define manipulation rules for manipulating the calling name (i.e., caller ID) in SIP messages

for Tel-to-IP calls.

---

### Syntax

```
(config-voip)# gateway manipulation calling-name-map-tel2ip <Index>
(calling-name-map-tel2ip-<Index>)#
```

| Command                | Description  |
|------------------------|--|
| Index                  | Defines the table row index.   |
| calling-name-pattern   | Defines the caller name (i.e., caller ID) prefix.  |
| dst-pattern            | Defines the destination (called) telephone number prefix and/or suffix.                    |
| manipulation-name      | Defines a descriptive name, which is used when associating the row in other tables.        |
| num-of-digits-to-leave | Defines the number of characters that you want to keep from the right of the calling name. |
| prefix-to-add          | Defines the number or string to add at the front of the calling name.                      |
| remove-from-left       | Defines the number of characters to remove from the left of the calling name.              |
| remove-from-right      | Defines the number of characters to remove from the right of the calling name.             |
| src-pattern            | Defines the source (calling) telephone number prefix and/or suffix.                        |
| src-trunk-group-id     | Defines the source Trunk Group ID from where the Tel-to-IP call was received.              |
| suffix-to-add          | Defines the number or string to add at the end of the calling name.                        |

---

### Command Mode

Privileged User

## cause-map-isdn2isdn

This command configures the Release Cause ISDN to ISDN table, which lets you define ISDN ITU-T Q.850 release cause code (call failure) to ISDN ITU-T Q.850 release cause code mapping rules.

---

### Syntax

```
(config-voip)# gateway manipulation cause-map-isdn2isdn <Index>
(cause-map-isdn2isdn-<Index>)#
```

| Command         | Description   |
|-----------------|---|
| Index           | Defines the table row index.  |
| map-q850-cause  | Defines the ISDN Q.850 cause code to which you want to change the originally received cause code. |
| orig-q850-cause | Defines the originally received ISDN Q.850 cause code.  |

---

### Command Mode

Privileged User

---

### Example

This example maps ISDN cause code 127 to 16:

```
(config-voip)# gateway manipulation cause-map-isdn2isdn 0
(cause-map-isdn2isdn-0)# orig-q850-cause 127
(cause-map-isdn2isdn-0)# map-q850-cause 16
(cause-map-isdn2isdn-0)# activate
```

## cause-map-isdn2sip

This command configures the Release Cause Mapping from ISDN to SIP table, which lets you define ISDN ITU-T Q.850 release cause code (call failure) to SIP response code mapping rules.

---

### Syntax

```
(config-voip)# gateway manipulation cause-map-isdn2sip <Index>
(cause-map-isdn2sip-<Index>)#
```

| Command      | Description                        |
|--------------|------------------------------------|
| Index        | Defines the table row index.       |
| q850-causes  | Defines the ISDN Q.850 cause code. |
| sip-response | Defines the SIP response code.     |

---

### Command Mode

Privileged User

---

### Example

This example maps ISDN cause code 6 to SIP code 406:

```
(config-voip)# gateway manipulation cause-map-isdn2sip 0
(cause-map-isdn2sip-0)# q850-causes 6
(cause-map-isdn2sip-0)# sip-response 406
(cause-map-isdn2sip-0)# activate
```

## cause-map-sip2isdn

This command configures the Release Cause Mapping from SIP to ISDN table, which lets you define SIP response code to ISDN ITU-T Q.850 release cause code (call failure) mapping rules.

---

### Syntax

```
(config-voip)# gateway manipulation cause-map-sip2isdn <Index>
(cause-map-sip2isdn-<Index>)#
```

| Command      | Description                        |
|--------------|------------------------------------|
| Index        | Defines the table row index.       |
| q850-causes  | Defines the ISDN Q.850 cause code. |
| sip-response | Defines the SIP response code.     |

---

### Command Mode

Privileged User



**Example**

This example maps SIP code 406 to ISDN cause code 6:

```
(config-voip)# gateway manipulation cause-map-sip2isdn 0
(cause-map-sip2isdn-0)# q850-causes 6
(cause-map-sip2isdn-0)# sip-response 406
(cause-map-sip2isdn-0)# activate
```

**dst-number-map-ip2tel**

This command configures the Destination Phone Number Manipulation for IP-to-Tel Calls table, which lets you define manipulation rules for manipulating the destination number for IP-to-Tel calls.

**Syntax**

```
(config-voip)# gateway manipulation dst-number-map-ip2tel <Index>
(dst-number-map-ip2tel-<Index>)#
```

| Command                    | Description  |
|----------------------------|--|
| Index                      | Defines the table row index.   |
| dst-host-pattern           | Defines the Request-URI host name prefix of the incoming SIP INVITE message.           |
| dst-pattern                | Defines the destination (called) telephone number prefix and/or suffix.                |
| is-presentation-restricted | Enables caller ID.   |
| manipulation-name          | Defines a descriptive name, which is used when associating the row in other tables.    |
| npi                        | Defines the Numbering Plan Indicator (NPI).  |
| num-of-digits-to-leave     | Defines the number of digits that you want to keep from the right of the phone number. |
| prefix-to-add              | Defines the number or string that you want added to the front of the telephone number. |
| remove-from-left           | Defines the number of digits to remove from the left of the                            |

| Command                        | Description   |
|--------------------------------|---|
|                                | telephone number prefix.  |
| <code>remove-from-right</code> | Defines the number of digits to remove from the right of the telephone number prefix.   |
| <code>src-host-pattern</code>  | Defines the URI host name prefix of the incoming SIP INVITE message in the From header. |
| <code>src-ip-address</code>    | Defines the source IP address of the caller.  |
| <code>src-ip-group-name</code> | Defines the IP Group to where the call is sent.   |
| <code>src-pattern</code>       | Defines the source (calling) telephone number prefix and/or suffix.                     |
| <code>suffix-to-add</code>     | Defines the number or string that you want added to the end of the telephone number.    |
| <code>ton</code>               | Defines the Type of Number (TON).   |

---

### Command Mode

Privileged User

### dst-number-map-tel2ip

This command configures the Destination Phone Number Manipulation for IP-to-Tel Calls table, which lets you define manipulation rules for manipulating the destination number for Tel-to-IP calls.

---

### Syntax

```
(config-voip)# gateway manipulation dst-number-map-tel2ip <Index>
(dst-number-map-tel2ip-<Index>)#
```

| Command                         | Description   |
|---------------------------------|---|
| Index                           | Defines the table row index.  |
| <code>dest-ip-group-name</code> | Defines the IP Group to where the call is sent.                         |
| <code>dst-pattern</code>        | Defines the destination (called) telephone number prefix and/or suffix. |

| Command                    | Description  |
|----------------------------|--|
| is-presentation-restricted | Enables caller ID.   |
| manipulation-name          | Defines a descriptive name, which is used when associating the row in other tables.    |
| npi                        | Defines the Numbering Plan Indicator (NPI).  |
| num-of-digits-to-leave     | Defines the number of digits that you want to keep from the right of the phone number. |
| prefix-to-add              | Defines the number or string that you want added to the front of the telephone number. |
| remove-from-left           | Defines the number of digits to remove from the left of the telephone number prefix.   |
| remove-from-right          | Defines the number of digits to remove from the right of the telephone number prefix.  |
| src-pattern                | Defines the source (calling) telephone number prefix and/or suffix.                    |
| src-trunk-group-id         | Defines the source Trunk Group for Tel-to-IP calls.                                    |
| suffix-to-add              | Defines the number or string that you want added to the end of the telephone number.   |
| ton                        | Defines the Type of Number (TON).  |

---

### Command Mode

Privileged User

### phone-context-table

This command configures the Phone Contexts table, which lets you define rules for mapping the Numbering Plan Indication (NPI) and Type of Number (TON) to the SIP 'phone-context' parameter, and vice versa.

---

### Syntax

```
(config-voip)# gateway manipulation phone-context-table <Index>
(phone-context-table-<Index>)#
```

| Command  | Description                                    |
|--|--|
| Index  | Defines the table row index.                   |
| context  | Defines the SIP 'phone-context' URI parameter. |
| npi {e164-public not-included private unknown} | Defines the NPI.                               |
| ton  | Defines the TON.                               |

---

### Command Mode

Privileged User

---

### Example

This example maps NPI E.164 to "context= na.e.164.nt.com":

```
(config-voip)# gateway manipulation phone-context-table 0
(phone-context-table-0)# npi e164-public
(phone-context-table-0)# context na.e.164.nt.com
(phone-context-table-0)# activate
```

## redirect-number-map-ip2tel

This command configures the Redirect Number IP-to-Tel table, which lets you define manipulation rules for manipulating the redirect number received in SIP messages for IP-to-Tel calls.

---

### Syntax

```
(config-voip)# gateway manipulation redirect-number-map-ip2tel <Index>
(redirect-number-map-ip2tel-<Index>)#
```

| Command | Description                  |
|---------|------------------------------|
| Index   | Defines the table row index. |

| Command  | Description   |
|--|---|
| <code>dst-host-pattern</code>  | Defines the Request-URI host name prefix, which appears in the incoming SIP INVITE message. |
| <code>dst-pattern</code>   | Defines the destination (called) telephone number prefix.                                   |
| <code>is-presentation-restricted</code><br>{allowed not-configured restricted} | Enables caller ID.  |
| <code>manipulation-name</code>   | Defines a descriptive name, which is used when associating the row in other tables.         |
| <code>npi</code> {e164-public not-included private unknown}                    | Defines the Numbering Plan Indicator (NPI).   |
| <code>num-of-digits-to-leave</code>  | Defines the number of digits that you want to retain from the right of the redirect number. |
| <code>prefix-to-add</code>   | Defines the number or string that you want added to the front of the redirect number.       |
| <code>redirect-pattern</code>  | Defines the redirect telephone number prefix.   |
| <code>remove-from-left</code>  | Defines the number of digits to remove from the left of the redirect number prefix.         |
| <code>remove-from-right</code>   | Defines the number of digits to remove from the right of the redirect number prefix.        |
| <code>src-host-pattern</code>  | Defines the URI host name prefix of the caller.   |
| <code>src-ip-address</code>  | Defines the IP address of the caller.   |

| Command  | Description   |
|--|---|
| suffix-to-add  | Defines the number or string that you want added to the end of the redirect number. |
| ton {abbreviated international-level2-regional national-level1-regional network-pstn-specific not-included subscriber-level0-regional unknown} | Defines the Type of Number (TON).   |

### Command Mode

Privileged User

### redirect-number-map-tel2ip

This command configures the Redirect Number IP-to-Tel table, which lets you define manipulation rules for manipulating the redirect number received in SIP messages for IP-to-Tel calls.

### Syntax

```
(config-voip)# gateway manipulation redirect-number-map-tel2ip <Index>
(redirect-number-map-tel2ip-<Index>)#
```

| Command   | Description   |
|---|---|
| Index   | Defines the table row index.  |
| dst-pattern   | Defines the destination (called) telephone number prefix.                           |
| is-presentation-restricted<br>{allowed not-configured restricted} | Enables caller ID.  |
| manipulation-name   | Defines a descriptive name, which is used when associating the row in other tables. |
| npi {e164-public not-included private unknown}                    | Defines the Numbering Plan Indicator (NPI).   |

| Command   | Description   |
|---|---|
| <code>num-of-digits-to-leave</code>   | Defines the number of digits that you want to retain from the right of the redirect number. |
| <code>prefix-to-add</code>  | Defines the number or string that you want added to the front of the redirect number.       |
| <code>redirect-pattern</code>   | Defines the redirect telephone number prefix.   |
| <code>remove-from-left</code>   | Defines the number of digits to remove from the left of the redirect number prefix.         |
| <code>remove-from-right</code>  | Defines the number of digits to remove from the right of the redirect number prefix.        |
| <code>src-trunk-group-id</code>   | Defines the Trunk Group from where the Tel call is received.                                |
| <code>suffix-to-add</code>  | Defines the number or string that you want added to the end of the redirect number.         |
| <code>ton {abbreviated international-level2-regional national-level1-regional network-pstn-specific not-included subscriber-level0-regional unknown}</code> | Defines the Type of Number (TON).   |

---

### Command Mode

Privileged User

### settings

This command configures the Redirect Number IP-to-Tel table, which lets you define manipulation rules for manipulating the redirect number received in SIP messages for IP-to-Tel calls.

---

### Syntax

```
(config-voip)# gateway manipulation settings
(gw-manip-settings)#
```

| Command                      | Description  |
|------------------------------|--|
| add-cic                      | If add carrier identification code as prefix.  |
| add-ph-cntxt-as-pref         | Adds the phone context to src/dest phone number as prefix.   |
| add-prefix-for-isdn-hlc-fax  | If set and incoming ISDN SETUP contains High Layer Compatability IE with Facsimile, prefix FAX will be added to received Calling number. |
| alt-map-tel-to-ip            | Enables different number manipulation rules for redundant calls.   |
| ip2tel-redir-reason          | Set the IP-to-TEL Redirect Reason.   |
| map-ip-to-pstn-refer-to      | if set to 1, manipulate destination number from REFER-TO in TDM blind transfer.  |
| prefix-2-ext-line            | FXS: If enabled (1) and Prefix2ExtLine is detected, it is added to the dial number as prefix   |
| prfm-ip-to-tel-dst-map       | Perform Additional IP2TEL Destination Manipulation   |
| prfm-ip-to-tel-src-map       | Perform Additional IP2TEL Source Manipulation  |
| swap-tel-to-ip-phone-num     | Swaps calling and called numbers received from Tel side.   |
| tel-to-ip-dflt-redir-rsn     | Tel-to-IP Default Redirect Reason.   |
| tel2ip-dst-nb-map-dial-index | Tel to IP Destination Number Mapping Dial Plan Index.  |
| tel2ip-redir-reason          | Tel-to-IP Redirect Reason.   |
| tel2ip-src-                  | Tel to IP Source Number Mapping Dial Plan Index.   |



| Command                      | Description  |
|------------------------------|--|
| nb-map-dial-index            |  |
| tel2ip-src-nb-map-dial-mode  | Tel to IP Source Number Mapping Dial Plan Mode.  |
| use-refer-by-for-calling-num | If set to 1, use a number from Referred-By URI, as a calling number in outgoing Q.931 SETUP. |

### Command Mode

Privileged User

### src-number-map-ip2tel

This command configures the Source Phone Number Manipulation for IP-to-Tel Calls table, which lets you define manipulation rules for manipulating the source number for IP-to-Tel calls.

### Syntax

```
(config-voip)# gateway manipulation src-number-map-ip2tel <Index>
(src-number-map-ip2tel-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| dst-host-pattern  | Defines the Request-URI host name prefix of the incoming SIP INVITE message. |
| dst-pattern   | Defines the destination (called) telephone number prefix and/or suffix.      |
| is-presentation-restricted<br>{allowed not-configured restricted} | Enables caller ID.   |
| manipulation-name   | Defines a descriptive name, which is used when associating the row in        |

| Command   | Description   |
|---|---|
|   | other tables.   |
| <code>npi {e164-public not-included private unknown}</code>   | Defines the Numbering Plan Indicator (NPI).   |
| <code>num-of-digits-to-leave</code>   | Defines the number of digits that you want to keep from the right of the phone number.  |
| <code>prefix-to-add</code>  | Defines the number or string that you want added to the front of the telephone number.  |
| <code>remove-from-left</code>   | Defines the number of digits to remove from the left of the telephone number prefix.    |
| <code>remove-from-right</code>  | Defines the number of digits to remove from the right of the telephone number prefix.   |
| <code>src-host-pattern</code>   | Defines the URI host name prefix of the incoming SIP INVITE message in the From header. |
| <code>src-ip-address</code>   | Defines the source IP address of the caller.  |
| <code>src-ip-group-name</code>  | Defines the IP Group to where the call is sent.   |
| <code>src-pattern</code>  | Defines the source (calling) telephone number prefix and/or suffix.                     |
| <code>suffix-to-add</code>  | Defines the number or string that you want added to the end of the telephone number.    |
| <code>ton {abbreviated international-level2-regional national-level1-regional network-pstn-specific not-included subscriber-level0-regional unknown}</code> | Defines the Type of Number (TON).   |

---

**Command Mode**

Privileged User

## src-number-map-tel2ip

This command configures the Source Phone Number Manipulation for Tel-to-IP Calls table, which lets you define manipulation rules for manipulating the source number for Tel-to-IP calls.

### Syntax

```
(config-voip)# gateway manipulation src-number-map-tel2ip <Index>
(src-number-map-tel2ip-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| dst-pattern   | Defines the destination (called) telephone number prefix and/or suffix.                |
| is-presentation-restricted<br>{allowed not-configured restricted} | Enables caller ID.   |
| manipulation-name   | Defines a descriptive name, which is used when associating the row in other tables.    |
| npi {e164-public not-included private unknown}                    | Defines the Numbering Plan Indicator (NPI).  |
| num-of-digits-to-leave  | Defines the number of digits that you want to keep from the right of the phone number. |
| prefix-to-add   | Defines the number or string that you want added to the front of the telephone number. |
| remove-from-left  | Defines the number of digits to remove from the left of the telephone number prefix.   |
| remove-from-right   | Defines the number of digits to remove from the right of the telephone number prefix.  |

| Command  | Description  |
|--|--|
| src-pattern  | Defines the source (calling) telephone number prefix and/or suffix.                  |
| src-trunk-group-id   | Defines the source Trunk Group for Tel-to-IP calls.                                  |
| suffix-to-add  | Defines the number or string that you want added to the end of the telephone number. |
| ton {abbreviated international-level2-regional national-level1-regional network-pstn-specific not-included subscriber-level0-regional unknown} | Defines the Type of Number (TON).  |

---

### Command Mode

Privileged User

## routing

This subcommand configures gateway routing.

---

### Syntax

```
(config-voip)# gateway routing
```

| Command                | Description   |
|------------------------|---|
| alt-route-cause-ip2tel | See <a href="#">alt-route-cause-ip2tel</a> on the next page |
| alt-route-cause-tel2ip | See <a href="#">alt-route-cause-tel2ip</a> on the next page |
| fwd-on-busy-trk-dst    | See <a href="#">fwd-on-busy-trk-dst</a> on page 346         |
| gw-routing-policy      | See <a href="#">gw-routing-policy</a> on page 347           |
| ip2tel-routing         | See <a href="#">ip2tel-routing</a> on page 348              |
| settings               | See <a href="#">settings</a> on page 349                    |
| tel2ip-routing         | See <a href="#">tel2ip-routing</a> on page 351              |

---

**Command Mode**

Privileged User

**alt-route-cause-ip2tel**

This command configures the Reasons for IP-to-Tel Alternative Routing table, which lets you define ISDN Q.931 release cause codes that if received from the Tel side, the device reroutes the IP-to-Tel call to an alternative Trunk Group.

---

**Syntax**

```
(config-voip)# gateway routing alt-route-cause-ip2tel <Index>
(alt-route-cause-ip2tel-<Index>)#
```

| Command   | Description                          |
|-----------|--------------------------------------|
| Index     | Defines the table row index.         |
| rel-cause | <b>Defines a Q.931 release code.</b> |

---

**Command Mode**

Privileged User

---

**Example**

This example configures an ISDN release code 17 for alternative routing:

```
(config-voip)# gateway routing alt-route-cause-ip2tel 0
(alt-route-cause-ip2tel-0)# rel-cause 17
(alt-route-cause-ip2tel-0)# activate
```

**alt-route-cause-tel2ip**

This command configures the Reasons for Tel-to-IP Alternative Routing table, which lets you define SIP response codes that if received from the IP side, the device reroutes the call to an alternative destination.

---

**Syntax**

```
(config-voip)# gateway routing alt-route-cause-tel2ip <Index>
(alt-route-cause-tel2ip-<Index>)#
```

| Command   | Description                  |
|-----------|------------------------------|
| Index     | Defines the table row index. |
| rel-cause | Defines a SIP response code. |

---

### Command Mode

Privileged User

---

### Example

This example configures a SIP response code 406 for alternative routing:

```
(config-voip)# gateway routing alt-route-cause-ip2tel 0
(alt-route-cause-tel2ip-0)# rel-cause 406
(alt-route-cause-tel2ip-0)# activate
```

### fwd-on-busy-trk-dst

This command configures the Forward on Busy Trunk Destination table, which lets you define alternative routing rules for forwarding (i.e., call redirection) IP-to-Tel calls to an alternative IP destination using SIP 3xx responses.

---

### Syntax

```
(config-voip)# gateway routing fwd-on-busy-trk-dst <Index>
(fwd-on-busy-trk-dst-<Index>)#
```

| Command        | Description   |
|----------------|---|
| Index          | Defines the table row index.  |
| forward-dst    | Defines the alternative IP destination for the call used if the Trunk Group is busy or unavailable. |
| trunk-group-id | Defines the Trunk Group ID to where the IP call is destined.  |

---

### Command Mode

Privileged User

---

### Example

This example configures 10.15.7.96 as the alternative destination for calls destined for Trunk Group 1:

```
(config-voip)# gateway routing fwd-on-bsy-trk-dst 0
(fwd-on-bsy-trk-dst-0)# forward-dst 10.15.7.96
(fwd-on-bsy-trk-dst-0)# trunk-group-id 1
(fwd-on-bsy-trk-dst-0)# activate
```

## gw-routing-policy

This command configures the Routing Policies table, which lets you edit the default Routing Policy rule.

---

### Syntax

```
(config-voip)# gateway routing gw-routing-policy <Index>
(gw-routing-policy-<Index>)#
```

| Command                          | Description   |
|----------------------------------|---|
| Index                            | Defines the table row index.  |
| lcr-call-length                  | Defines the average call duration (in minutes) and is used to calculate the variable portion of the call cost.  |
| lcr-default-cost                 | Defines whether routing rules in the Tel-to-IP Routing table that are not assigned a Cost Group are considered a higher cost or lower cost route compared to other matched routing rules that are assigned Cost Groups. |
| lcr-enable<br>{disabled enabled} | Enables the Least Cost Routing (LCR) feature for the Routing Policy.  |
| ldap-srv-group-name              | Assigns an LDAP Server Group to the Routing Policy.   |
| name                             | Defines a descriptive name, which is used when associating the row in other tables.   |

---

### Command Mode

Privileged User

**Example**

This example configures a Routing Policy "ITSP", which uses LDAP Servers Group "ITSP-LDAP":

```
(config-voip)# gateway routing gw-routing-policy 0
(gw-routing-policy-0)# name ITSP
(gw-routing-policy-0)# ldap-srv-group-name ITSP-LDAP
(gw-routing-policy-0)# activate
```

**ip2tel-routing**

This command configures the IP-to-Tel Routing table, which lets you define IP-to-Tel routing rules.

**Syntax**

```
(config-voip)# gateway routing ip2tel-routing <Index>
(ip2tel-routing-<Index>)#
```

| Command                         | Description  |
|---------------------------------|--|
| Index                           | Defines the table row index.   |
| call-setup-rules-set-id         | Assigns a Call Setup Rule Set ID to the routing rule.                                      |
| dst-host-pattern                | Defines the prefix or suffix of the called (destined) telephone number.                    |
| dst-phone-pattern               | Defines the Request-URI host name prefix of the incoming INVITE message.                   |
| dst-type<br>{trunk trunk-group} | Defines the type of Tel destination.   |
| ip-profile-name                 | Assigns an IP Profile to the call.   |
| route-name                      | Defines a descriptive name, which is used when associating the row in other tables.        |
| src-host-pattern                | Defines the prefix of the URI host name in the From header of the incoming INVITE message. |



| Command                             | Description  |
|-------------------------------------|--|
| <code>src-ip-address</code>         | Defines the source IP address of the incoming IP call.                 |
| <code>src-ip-group-name</code>      | Assigns an IP Group from where the SIP message (INVITE) is received.   |
| <code>dst-phone-pattern</code>      | Defines the prefix or suffix of the calling (source) telephone number. |
| <code>src-sip-interface-name</code> | Defines the SIP Interface on which the incoming IP call is received.   |
| <code>trunk-group-id</code>         | Defines the Trunk Group ID to where the incoming SIP call is sent.     |
| <code>trunk-id</code>               | Defines the Trunk to where the incoming SIP call is sent.              |

---

### Command Mode

Privileged User

---

### Example

This example configures a routing rule that routes calls from IP Group "ITSP" to Trunk Group 1:

```
(config-voip)# gateway routing ip2tel-routing 0
(ip2tel-routing-0)# name PSTN-to-ITSP
(ip2tel-routing-0)# src-ip-group-name ITSP
(ip2tel-routing-0)# trunk-group-id 1
(ip2tel-routing-0)# activate
```

### settings

This command configures gateway routing parameter.

---

### Syntax

```
(config-voip)# gateway routing settings
(gw-routing-settings)#
```

| Command                         | Description                            |
|---------------------------------|--|
| <code>alt-routing-tel2ip</code> | Enables Alternative Routing Tel to IP. |

| Command                    | Description   |
|----------------------------|---|
| alt-rte-tel2ip-keep-alive  | Time interval between OPTIONS Keep-Alive messages for IP connectivity (seconds).                        |
| alt-rte-tel2ip-method      | Tel to IP Alternative Routing Connectivity Method.  |
| alt-rte-tel2ip-mode        | Methods used for Alternative Routing operation.   |
| alt-rte-tone-duration      | Alternative Routing Tone Duration (milliseconds).   |
| empty-dst-w-bch-nb         | Replace empty destination number (received from Tel side) with port number.                             |
| gw-routing-server          | Enables Gateway Routing Server.   |
| ip-dial-plan-name          | Assigns a Dial Plan (by name) for tag-based IP-to-Tel routing rules.                                    |
| ip-to-tel-tagging-dst      | IP-to-Tel Tagging Destination Dial Plan Index.  |
| ip-to-tel-tagging-src      | IP-to-Tel Tagging Source Dial Plan Index.   |
| ip2tel-rmv-rte-tbl         | Remove prefix defined in IP to Trunk Group table (IP-to-Tel calls).                                     |
| ip2tel-rte-mode            | Defines order between routing incoming calls from IP side and performing manipulations.                 |
| mx-all-dly-4-alt-rte       | The maximum delay that will not prevent normal routing (msec).  |
| mx-pkt-loss-4-alt-rte      | The maximum percentage of packet loss that will not prevent normal routing.                             |
| npi-n-ton-to-cld-nb        | Add NPI and TON as prefix to called number.   |
| npi-n-ton-to-cng-nb        | Add NPI and TON as prefix to calling number.  |
| probability-on-qos-problem | If QoS problem, a call has this probability (in percentage) to continue in order to reevaluate the QoS. |
| redir-nb-si-to-tel         | Override screening indicator value of the redirect number in Setup messages to PSTN interface..         |

| Command            | Description  |
|--------------------|--|
| src-ip-addr-input  | Source IP address input.   |
| src-manipulation   | Describes the hdrs containing source nb after manipulation.                              |
| tel-dial-plan-name | Assigns a Dial Plan (by name) for tag-based IP-to-Tel routing rules.                     |
| tel2ip-rte-mode    | Defines order between routing incoming calls from Tel side and performing manipulations. |
| tgrp-routing-prec  | TGRP Routing Precedence.   |
| trk-id-as-prefix   | Add Trunk/Port as nb prefix.   |
| trkgrp-id-prefix   | Add Trunk Group ID as prefix.  |

---

### Command Mode

Privileged User

### tel2ip-routing

This command configures the Tel-to-IP Routing table, which lets you define Tel-to-IP routing rules.

---

### Syntax

```
(config-voip)# gateway routing tel2ip-routing <Index>
(tel2ip-routing-<Index>)#
```

| Command                 | Description  |
|-------------------------|--|
| Index                   | Defines the table row index.   |
| call-setup-rules-set-id | Assigns a Call Setup Rule Set ID to the routing rule.  |
| charge-code-name        | Assigns a Charge Code to the routing rule for generating metering pulses (Advice of Charge).                     |
| cost-group-id           | Assigns a Cost Group to the routing rule for determining the cost of the call (i.e., Least Cost Routing or LCR). |

| Command  | Description  |
|--|--|
| <code>dest-ip-group-name</code>                          | Assigns an IP Group to where you want to route the call.                               |
| <code>dest-sip-interface-name</code>                     | Assigns a SIP Interface to the routing rule.   |
| <code>dst-ip-address</code>                              | Defines the IP address (in dotted-decimal notation or FQDN) to where the call is sent. |
| <code>dst-phone-pattern</code>                           | Defines the prefix and/or suffix of the called (destination) telephone number.         |
| <code>dst-port</code>                                    | Defines the destination port to where you want to route the call.                      |
| <code>forking-group</code>                               | Defines a Forking Group number for the routing rule.                                   |
| <code>ip-profile-name</code>                             | Assigns an IP Profile to the routing rule in the outgoing direction.                   |
| <code>route-name</code>                                  | Defines a descriptive name, which is used when associating the row in other tables.    |
| <code>dst-phone-pattern</code>                           | Defines the prefix and/or suffix of the calling (source) telephone number.             |
| <code>src-trunk-group-id</code>                          | Defines the Trunk Group from where the call is received.                               |
| <code>transport-type {not-configured tcp tls udp}</code> | Defines the transport layer type used for routing the call.                            |

---

### Command Mode

Privileged User

---

### Example

This example configures a routing rule that routes calls from Trunk Group 1 to IP Group "ITSP":

```
(config-voip)# gateway routing tel2ip-routing 0
(tel2ip-routing-0)# name ITSP-to-PSTN
(tel2ip-routing-0)# src-trunk-group-id 1
```

```
(tel2ip-routing-0)# dest-ip-group-name ITSP
(tel2ip-routing-0)# activate
```

## trunk-group

This command configures the Trunk Group table, which lets you define Trunk Groups.

---

### Syntax

```
(config-voip)# gateway trunk-group <Index>
(trunk-group-<Index>)#
```

| Command            | Description  |
|--------------------|--|
| Index              | Defines the table row index.   |
| first-b-channel    | Defines the first channel/port (analog module) or Trunk B-channel (digital module).              |
| first-phone-number | Defines the telephone number(s) of the channels.   |
| first-trunk-id     | Defines the starting physical Trunk number in the Trunk Group.                                   |
| last-b-channel     | Defines the last channel/port (analog module) or Trunk B-channel (digital module).               |
| last-trunk-id      | Defines the ending physical Trunk number in the Trunk Group.                                     |
| module             | Defines the telephony interface module / FXS blade for which you want to define the Trunk Group. |
| tel-profile-name   | Assigns a Tel Profile to the Trunk Group.  |
| trunk-group-id     | Defines the Trunk Group ID for the specified channels.   |

---

### Command Mode

Privileged User

---

### Example

This example configures Trunk Group 1 for Trunk 1, channels 1-30:

```
(config-voip)# gateway trunk-group 0
(trunk-group-0)# first-b-channel 1
(trunk-group-0)# last-b-channel 30
(trunk-group-0)# first-trunk-id 1
(trunk-group-0)# trunk-group-id 1
(trunk-group-0)# activate
```

## trunk-group-setting

This command configures the Trunk Group Settings table, which lets you define various settings per Trunk Group.

### Syntax

```
(config-voip)# gateway trunk-group-setting <Index>
(trunk-group-setting-<Index>)#
```

| Command  | Description  |
|--|--|
| Index  | Defines the table row index.   |
| channel-select-mode {always-ascending always-descending channel-cyclic-ascending cyclic-descending dst-number-ascending dst-number-cyclic-ascending dst-phone-number not-configured ring-to-hunt-group select-trunk-by-supp-serv-table src-phone-number trunk-channel-cyclic-ascending trunk-cyclic-ascending} | Defines the method by which IP-to-Tel calls are assigned to the channels of the Trunk Group.   |
| contact-user   | Defines the user part for the SIP Contact URI in INVITE messages, and the From, To, and Contact headers in REGISTER requests.                        |
| dedicated-connection-mode {connection-per-endpoint reuse-connection}   | Enables the use of a dedicated TCP socket for SIP traffic (REGISTER, re-REGISTER, SUBSCRIBE, and INVITE messages) per FXS analog channel (endpoint). |

| Command   | Description   |
|---|---|
| gateway-name  | Defines the host name for the SIP From header in INVITE messages, and the From and To headers in REGISTER requests. |
| mwi-interrogation-type {none not-configured result-not-used use-activate-only use-result} | Defines message waiting indication (MWI) QSIG-to-IP interworking for interrogating MWI supplementary services.      |
| registration-mode {dont-register not-configured per-account per-endpoint per-gateway}     | Defines the registration method of the Trunk Group.   |
| serving-ip-group-name   | Assigns an IP Group to where the device sends INVITE messages for calls received from the Trunk Group.              |
| trunk-group-id  | Defines the Trunk Group ID that you want to configure.  |
| trunk-group-name  | Defines a descriptive name, which is used when associating the row in other tables.                                 |
| used-by-routing-server {not-used used}  | Enables the use of the Trunk Group by a routing server for routing decisions.                                       |

---

### Command Mode

Privileged User

---

### Example

This example configures channel select method to ascending for Trunk Group 1:

```
(config-voip)# gateway gateway trunk-group-setting 0
(trunk-group-setting-0)# trunk-group-name PSTN
(trunk-group-0)# trunk-group-id 1
(trunk-group-0)# channel-select-mode always-ascending
(trunk-group-0)# activate
```

## voice-mail-setting

This command configures the voice mail parameters.

**Syntax**

```
(config-voip)# gateway voice-mail-setting
(gw-voice-mail)#
```

| Command  | Description  |
|--|--|
| dig-to-ignore-dig-pattern  | A digit (0-9,A-D,* or #) that if received as Src (S) or Redirect (R), the digit is ignored and not added to that number. Used in DTMF VoiceMail. |
| disc-call-dig-ptrn   | Disconnect call if digit string is received from the Tel side during session.  |
| enable-smdi {SMDI_PROTOCOL_BELCORE SMDI_PROTOCOL_ERICSSON SMDI_PROTOCOL_NEC_ICCS SMDI_PROTOCOL_NONE} | Enables the Simplified Message Desk Interface (SMDI).  |
| ext-call-dig-ptrn  | Digit pattern to indicate external call (PBX to voice mail)  |
| fwd-busy-dig-ptrn-ext  | Digit pattern to indicate Call Forward on busy (PBX to voice mail)   |
| fwd-busy-dig-ptrn-int  | Digit pattern to indicate Call Forward on busy (PBX to voice mail)   |
| fwd-dnd-dig-ptrn-ext   | Digit pattern to indicate Call Forward on Do Not Disturb (PBX to voice mail)   |
| fwd-dnd-dig-ptrn-int   | Digit pattern to indicate Call Forward on Do Not Disturb (PBX to voice mail)   |
| fwd-no-ans-dig-ptrn-ext  | Digit pattern to indicate Call Forward on no answer (PBX to voice mail)  |
| fwd-no-ans-dig-ptrn-int  | Digit pattern to indicate Call Forward on no answer (PBX to  |



| Command   | Description  |
|---|--|
|   | voice mail)  |
| <code>fwd-no-rsn-dig-ptrn-ext</code>  | Digit pattern to indicate Call Forward with no reason (PBX to voice mail)                                    |
| <code>fwd-no-rsn-dig-ptrn-int</code>  | Digit pattern to indicate Call Forward with no reason (PBX to voice mail)                                    |
| <code>int-call-dig-ptrn</code>  | Digit pattern to indicate internal call (PBX to voice mail)  |
| <code>line-transfer-mode</code>   | Line transfer mode.  |
| <code>mwi-off-dig-ptrn</code>   | Digit pattern to notify PBX about no messages waiting for extension (added as prefix)                        |
| <code>mwi-on-dig-ptrn</code>  | Digit pattern to notify PBX about messages waiting for extension (added as prefix)                           |
| <code>mwi-source-number</code>  | Phone number sent as source number toward PSTN for MWI setup.  |
| <code>mwi-suffix-pattern</code>   | MWI suffix code to notify PBX about messages waiting for extension (added as suffix to the extension number) |
| <code>smdi-timeout</code>   | SMDI timeout.  |
| <code>vm-interface</code><br>{dtmf etsi ip2ip ni2 none qsig qsig-matra  qsig-siemens setup-only smdi} | Method of communication between PBX and the device that is used instead of legacy voicemail.                 |

---

**Command Mode**

Privileged User

---

**Example**

```
(config-voip)# gateway voice-mail-setting  
(gw-voice-mail)# vm-interface dtmf  
(gw-voice-mail)# activate
```

## 62 coders-and-profiles

This command configures coders and profiles.

### Syntax

```
(config-voip)# coders-and-profiles
```

| Command                     | Description   |
|-----------------------------|---|
| allowed-audio-coders-groups | See <a href="#">allowed-audio-coders-groups</a> below       |
| allowed-video-coders-groups | See <a href="#">allowed-video-coders-groups</a> on page 361 |
| audio-coders-groups         | See <a href="#">audio-coders-groups</a> on page 362         |
| ip-profile                  | See <a href="#">ip-profile</a> on page 364                  |
| tel-profile                 | See <a href="#">tel-profile</a> on page 372                 |

### allowed-audio-coders-groups

This command configures the Allowed Audio Coders Groups table, which lets you define Allowed Audio Coders Groups **for SBC calls**. The table is a "parent" of the Allowed Audio Coders table.

### Syntax

```
(config-voip)# coders-and-profiles allowed-audio-coders-groups <Index>
(allowed-audio-coders-groups-<Index>)#
```

| Command              | Description  |
|----------------------|--|
| Index                | Defines the table row index.   |
| allowed-audio-coders | Defines the Allowed Audio Coders table. For more information, see <a href="#">allowed-audio-coders</a> on the next page. |
| coders-group-name    | Defines a name for the Allowed Audio Coders Group.   |

### Command Mode

Privileged User

---

### Example

This example configures the name "ITSP" for the Allowed Audio Coders Group:

```
(config-voip)# coders-and-profiles allowed-audio-coders-groups 0
(allowed-audio-coders-groups-0)# coders-group-name ITSP
(allowed-audio-coders-groups-0)# activate
```

## allowed-audio-coders

This command configures the Allowed Audio Coders table, which lets you define Allowed Audio Coders **for SBC calls**. The table is a "child" of the Allowed Audio Coders Groups table.

---

### Syntax

```
(config-voip)# coders-and-profiles allowed-audio-coders-groups <Index>
(allowed-audio-coders-groups-<Index>)# allowed-audio-coders <Index>
(allowed-audio-coders-<Index>/<Index>)#
```

| Command            | Description                   |
|--------------------|-------------------------------|
| Index              | Defines the table row index.  |
| coder              | Defines a coder from a list.  |
| user-defined-coder | Defines a user-defined coder. |

---

### Command Mode

Privileged User

---

### Example

This example configures the Allowed Audio Coders table with G.711:

```
(config-voip)# coders-and-profiles allowed-audio-coders-groups 0
(allowed-audio-coders-groups-0)# allowed-audio-coders 1
(allowed-audio-coders-0/1)# coder g711-alaw
(allowed-audio-coders-0/1)# activate
```

## allowed-video-coders-groups

This command configures the Allowed Video Coders Groups table, which lets you define Allowed Video Coders Groups **for SBC calls**. The table is a "parent" of the Allowed Video Coders table.

---

### Syntax

```
(config-voip)# coders-and-profiles allowed-video-coders-groups <Index>
(allowed-video-coders-groups-<Index>)#
```

| Command              | Description  |
|----------------------|--|
| Index                | Defines the table row index.                       |
| allowed-video-coders |  |
| coders-group-name    | Defines a name for the Allowed Video Coders Group. |

---

### Command Mode

Privileged User

---

### Example

This example configures the name "ITSP" for the Allowed Video Coders Group:

```
(config-voip)# coders-and-profiles allowed-video-coders-groups 0
(allowed-video-coders-groups-0)# coders-group-name ITSP
(allowed-video-coders-groups-0)# activate
```

## allowed-video-coders

This command configures the Allowed Video Coders table, which lets you define Allowed video coders **for SBC calls**. The table is a "child" of the Allowed Video Coders Groups table.

---

### Syntax

```
(config-voip)# coders-and-profiles allowed-video-coders-groups <Index>
(allowed-video-coders-groups-<Index>)# allowed-video-coders <Index>
(allowed-video-coders-<Index>/<Index>)#
```

| Command                         | Description                         |
|---------------------------------|-------------------------------------|
| Index                           | Defines the table row index.        |
| <code>user-defined-coder</code> | Defines a user-defined video coder. |

---

### Command Mode

Privileged User

---

### Example

This example configures the Allowed Video Coders table with G.711:

```
(config-voip)# coders-and-profiles allowed-video-coders-groups 0
(allowed-video-coders-groups-0)# allowed-video-coders 1
(allowed-video-coders-0/1)# user-defined-coder mpeg2
(allowed-video-coders-0/1)# activate
```

## audio-coders-groups

This command configures the Audio Coders Groups table, which lets you define Audio Coders Groups. The table is a "parent" of the Coder Groups table.

---

### Syntax

```
(config-voip)# coders-and-profiles audio-coders-groups <Index>
(audio-coders-groups-<Index>)#
```

| Command                        | Description  |
|--------------------------------|--|
| Index                          | Defines the table row index.   |
| <code>audio-coders</code>      | Defines the Coder Groups table, which lets you define audio coders. For more information, see <a href="#">audio-coders</a> on the next page. |
| <code>coders-group-name</code> | Defines a name for the Coders Group.   |

---

### Command Mode

Privileged User

**Example**

This example configures the name "ITSP" for the Coders Group table:

```
(config-voip)# coders-and-profiles audio-coders-groups 0
(audio-coders-groups-0)# coders-group-name ITSP
(audio-coders-groups-0)# activate
```

**audio-coders**

This command configures the Coder Groups table, which lets you define audio coders. The table is a "child" of the Audio Coders Groups table.

**Syntax**

```
(config-voip)# coders-and-profiles audio-coders-groups <Index>
(audio-coders-groups-<Index>)# audio-coders <Index>
(audio-coders-<Index>/<Index>)#
```

| Command   | Description   |
|---|---|
| Index   | Defines the table row index.  |
| coder-specific  | Defines additional settings specific to the coder.  |
| name  | Defines the coder type.   |
| p-time  | Defines the packetization time (in msec) of the coder.  |
| payload-type  | Defines the payload type if the payload type (i.e., format of the RTP payload) of the coder is dynamic. |
| rate  | Defines the bit rate (in kbps) of the coder.  |
| silence-suppression<br>{disable enable enable-no-adaptation not-configured} | Enables silence suppression for the coder.  |

**Command Mode**

Privileged User

**Example**

This example configures the Audio Coders table with G.711:

```
(config-voip)# coders-and-profiles audio-coders-groups 0
(audio-coders-groups-0)# audio-coders 1
(audio-coders-0/1)# name g711-alaw
(audio-coders-0/1)# rate 64
(audio-coders-0/1)# p-time 20
(audio-coders-0/1)# silence-suppression enable
(audio-coders-0/1)# activate
```

**ip-profile**

This command configures the IP Profiles table, which lets you define IP Profiles.

**Syntax**

```
(config-voip)# coders-and-profiles ip-profile <Index>
(ip-profile-<Index>)#
```

| Command                            | Description   |
|------------------------------------|---|
| Index                              | Defines the table row index.  |
| add-ie-in-setup                    | Configures an additional information element to send in ISDN Setup message.   |
| allowed-audio-coders-group-name    | Defines the SBC Allowed Audio Coders Group Name (this references a table that contains a list of allowed audio coders). |
| allowed-video-coders-group-name    | Defines the SBC Allowed Video Coders Group Name (this references a table that contains a list of allowed video coders). |
| amd-max-greeting-time              | Defines the AMD Max Greeting Time.  |
| amd-max-post-silence-greeting-time | Defines the AMD Max Post Silence Greeting Time.   |
| amd-mode                           | Configures AMD (Answering Machine Detector) mode.   |
| amd-sensitivity-level              | Determines the AMD level of detection sensitivity.  |



| Command  | Description  |
|--|--|
| <code>amd-sensitivity-parameter-suite</code>   | Determines the serial number of the AMD sensitivity suite.   |
| <code>call-limit</code>  | Defines the maximum number of concurrent calls per IP Profile.   |
| <code>cng-mode</code>  | Defines the CNG Detector Mode.   |
| <code>coders-group</code>  | Defines the Coders Group Name.   |
| <code>copy-dst-to-redirect-number {after-manipulation before-manipulation disable}</code>      | Enables the device to copy the called number, received in the SIP INVITE message, to the redirect number in the outgoing Q.931 Setup message, for IP-to-Tel calls. |
| <code>data-diffserv</code>   | Defines the DiffServ value of MSRP traffic in the IP header's DSCP field.  |
| <code>disconnect-on-broken-connection</code>   | Defines the behavior when receiving an RTP broken notification.  |
| <code>early-answer-timeout</code>  | Defines the maximum time (in seconds) to wait from sending a setup message to the PSTN to receiving a connect message from the PSTN.                               |
| <code>early-media</code>   | Enables Early Media.   |
| <code>echo-canceller</code>  | Enables echo cancellation (i.e., echo from voice calls is removed).  |
| <code>enable-early-183</code>  | Enables Early 183.   |
| <code>enable-hold</code>   | Enables Call Hold service.   |
| <code>enable-qsig-tunneling</code>   | Enables QSIG Tunneling over SIP.   |
| <code>enable-symmetric-mki</code>  | Enables symmetric MKI negotiation.   |
| <code>fax-sig-method {no-fax t.38-relay g.711-transport fax-fallback g.711-reject-t.38}</code> | Defines the SIP signaling method for establishing and transmitting a fax session when the device detects a fax.  |
| <code>first-tx-dtmf-option</code>  | Defines the first priority DTMF methods, offered during the SIP negotiation.   |

| Command  | Description   |
|--|---|
| <code>generate-srtp-keys</code>                | Configures generating new SRTP keys on SRTP negotiation mode.                                   |
| <code>ice-mode</code>                          | Configures ICE Mode.  |
| <code>input-gain</code>                        | Defines the voice TDM Input Gain.   |
| <code>ip-preference</code>                     | Configures Profile Preference - the priority of the IP Profile.                                 |
| <code>is-dtmf-used</code>                      | Enables sending DTMFs on the Signaling path (not on the Media path).                            |
| <code>jitter-buffer-max-delay</code>           | Defines the maximum delay (in msec) for the Dynamic Jitter Buffer.                              |
| <code>jitter-buffer-minimum-delay</code>       | Defines the minimum delay (in msec) for the Dynamic Jitter Buffer.                              |
| <code>jitter-buffer-optimization-factor</code> | Defines the Dynamic Jitter Buffer frame error-delay optimization factor.                        |
| <code>local-held-tone-index</code>             | Defines the user-defined Held tone by index number as it appears in the PRT file.               |
| <code>local-ringback-tone-index</code>         | Defines the user-defined ringback tone by index number as it appears in the PRT file.           |
| <code>media-ip-version-preference</code>       | Defines the preference of the Media IP version.   |
| <code>media-security-behaviour</code>          | Defines the gateway behavior when receiving offer/response for media encryption.                |
| <code>mki-size</code>                          | Defines the size (in bytes) of the Master Key Identifier (MKI) in transmitted SRTP packets. The |
| <code>nse-mode</code>                          | Enables Cisco compatible fax and modem bypass mode.   |
| <code>play-held-tone</code>                    | Defines the SBC Play Held Tone.   |
| <code>play-rbt-to-ip</code>                    | Enables a ringback tone playing towards IP.   |
| <code>profile-name</code>                      | Configures a Profile Name (string).   |

| Command  | Description  |
|--|--|
| <code>prog-ind-to-ip</code>                                | Determines whether to send the Progress Indicator to IP.   |
| <code>reliable-heldtone-source</code>                      | Defines the SBC Reliable Held Tone Source.   |
| <code>remote-hold-Format</code>                            | Defines the SBC Remote Hold Format.  |
| <code>reset-srtp-upon-re-key</code>                        | Resets SRTP State Upon Re-key.   |
| <code>rtp-ip-diffserv</code>                               | Defines the RTP IP DiffServ.   |
| <code>rtp-redundancy-depth</code>                          | Defines the RTP Redundancy Depth - enables the device to generate RFC 2198 redundant packets.  |
| <code>rx-dtmf-option</code>                                | Defines the supported receive DTMF negotiation method.   |
| <code>sbc-2833dtmf-payload</code>                          | Defines the SBC RFC2833 DTMF Payload Type Value.   |
| <code>sbc-adapt-rfc2833-bw-voice-bw</code>                 | Adapts RFC 2833 BW to Voice coder BW.  |
| <code>sbc-allow-only-negotiated-pt {disable enable}</code> | Enables the device to allow only media (RTP) packets, from the UA associated with this IP Profile, using the single coder (payload type) that was negotiated during the SDP offer/answer exchange. |
| <code>sbc-allowed-coders-mode</code>                       | Defines the SBC Allowed Coders Mode.   |
| <code>sbc-allowed-media-types</code>                       | Defines the SBC allowed media types (comma separated string).  |
| <code>sbc-alternative-dtmf-method</code>                   | Defines the SBC Alternative DTMF Method. For legs where RFC 2833 is not negotiated successfully, the device uses this parameter to determine the Alternative DTMF Method.                          |
| <code>sbc-assert-identity</code>                           | Defines the device's privacy handling of the P-asserted-Identity header. This indicates how the outgoing SIP message asserts identity.   |
| <code>sbc-diversion-mode</code>                            | Defines the device's handling of the Diversion header.   |

| Command   | Description   |
|---|---|
| <code>sbc-dm-tag</code>   | Defines the tag to work without media anchoring.  |
| <code>sbc-enforce-mki-size</code>   | Defines SBC Enforce MKI Size.   |
| <code>sbc-enhanced-plc</code><br>{ <code>disable</code>   <code>enable</code> } | Enables PLC.  |
| <code>sbc-ext-coders-group-name</code>  | Defines the SBC Extension Coders Group Name.  |
| <code>sbc-fax-answer-mode</code>  | Defines the coders included in the outgoing SDP answer (sent to the calling fax).                         |
| <code>sbc-fax-behavior</code>   | Defines the offer negotiation method.   |
| <code>sbc-fax-coders-group-name</code>  | Defines the supported fax coders.   |
| <code>sbc-fax-offer-mode</code>   | Defines if the fax coders sent in the outgoing SDP offer.   |
| <code>sbc-fax-rerouting-mode</code>   | Enables the re-routing of incoming SBC calls that are identified as fax calls.                            |
| <code>sbc-generate-noop</code>  | Enables the device to send RTP or T.38 No-Op packets during RTP or T.38 silence periods (SBC calls only). |
| <code>sbc-generate-rtp</code>   | Generates silence RTP packets.  |
| <code>sbc-handle-xdetect</code>   | Defines the support of X-Detect handling.   |
| <code>sbc-history-info-mode</code>  | Defines the device's handling of the History-Info header.   |
| <code>sbc-isup-body-handling</code>   | Defines the ISUP Body Handling.   |
| <code>sbc-isup-variant</code>   | Defines the ISUP Variant.   |
| <code>sbc-jitter-compensation</code>  | Defines the SBC Jitter Compensation.  |
| <code>sbc-keep-routing-headers</code>   | Keeps the Record-Route and in-dialog Route headers from incoming request in the outgoing request.         |
| <code>sbc-keep-user-agent</code>  | Keeps the User-Agent header from the incoming request in the outgoing request.                            |

| Command  | Description   |
|--|---|
| <code>sbc-keep-via-headers</code>              | Keeps the VIA headers from incoming request in the outgoing request.  |
| <code>sbc-max-call-duration</code>             | Limits the call time duration (minutes).  |
| <code>sbc-max-opus-bandwidth</code>            | Defines the maximum bandwidth for OPUS [bps].   |
| <code>sbc-media-security-behaviour</code>      | Defines the transcoding method between SRTP and RTP.  |
| <code>sbc-media-security-method</code>         | Defines the SRTP method SDES/DTLS.  |
| <code>sbc-msrp-empty-message-format</code>     | On an active MSRP leg, enables the device to add the Content-Type header to the first empty (i.e., no body) MSRP message that is used to initiate the MSRP connection.              |
| <code>sbc-msrp-offer-setup-role</code>         | Defines the device's MSRP role in SDP offer-answer negotiations ('a=setup' line) for MSRP sessions.   |
| <code>sbc-msrp-re-invite-update-supp</code>    | Defines if the SIP UA (MSRP endpoint) associated with this IP Profile supports the receipt of re-INVITE and UPDATE SIP messages.  |
| <code>sbc-multi-answers</code>                 | Enables the SBC to respond with multiple answers within the same dialog (non-standard).   |
| <code>sbc-multi-early-diag</code>              | Enables the SBC to respond with multiple SIP dialogs (forking).   |
| <code>sbc-play-rbt-to-transferee</code>        | Plays Ring Back Tone to transferred side on call transfer.  |
| <code>sbc-prack-mode</code>                    | Defines the LEG's related PRACK behavior.   |
| <code>sbc-preferred-ptime</code>               | Defines the SBC Preferred Ptime.  |
| <code>sbc-receive-multiple-dtmf-methods</code> | Enables the device to receive DTMF digits out-of-band (not with audio stream) using both the SIP INFO and RFC 2833 methods.   |
| <code>sbc-renumber-mid</code>                  | Enables the device to change the value of the 'a=mid:n' attribute (where <i>n</i> is a unique value) to 0 (or next consecutive number), if it is present in the outgoing SDP offer. |

| Command  | Description  |
|--|--|
| <code>sbc-rfc2833-behavior</code>              | Affects the RFC 2833 SDP offer/answer negotiation.   |
| <code>sbc-rmt-3xx-behavior</code>              | Defines the SBC Remote 3xx Behavior.   |
| <code>sbc-rmt-can-play-ringback</code>         | Configures remote endpoint capability to play a local ringback tone.                           |
| <code>sbc-rmt-delayed-offer</code>             | Configures SBC remote delayed offer support.   |
| <code>sbc-rmt-early-media-resp</code>          | Defines the SBC remote early media response type.  |
| <code>sbc-rmt-early-media-rtsp</code>          | Defines the SBC remote early media RTP mode.   |
| <code>sbc-rmt-early-media-supp</code>          | Defines SBC remote early media support.  |
| <code>sbc-rmt-multiple-18x-supp</code>         | Defines SBC remote multiple 18x support.   |
| <code>sbc-msrp-re-invite-update-supp</code>    | Defines if the remote MSRP endpoint supports the receipt of re-INVITE and UPDATE SIP messages. |
| <code>sbc-rmt-re-invite-supp</code>            | Defines SBC remote re-INVITE support.  |
| <code>sbc-rmt-refer-behavior</code>            | Defines SBC remote refer behavior.   |
| <code>sbc-rmt-renegotiate-on-fax-detect</code> | Defines if remote renegotiate when fax is detected.  |
| <code>sbc-rmt-replaces-behavior</code>         | Defines how the SBC manages REFER/INVITE with Replaces.  |
| <code>sbc-rmt-rfc3960-supp</code>              | Defines the SBC remote RFC 3960 gateway model support.   |
| <code>sbc-rmt-rpresentation</code>             | Defines how to represent the SBC's contact information to the remote side.                     |
| <code>sbc-rmt-update-supp</code>               | Defines SBC remote UPDATE support.   |
| <code>sbc-rtcp-feedback</code>                 | Defines RTCP feedback support.   |
| <code>sbc-rtcp-mode</code>                     | Defines the SBC RTCP mode.   |

| Command                                     | Description  |
|---|--|
| <code>sbc-rtcp-mux</code>                   | Defines support of RTP-RTCP multiplexing.  |
| <code>sbc-rtp-red-behav</code>              | Defines SBC RTP redundancy behavior.   |
| <code>sbc-sdp-handle-rtcp</code>            | Defines SBC SDP Handle RTCP.   |
| <code>sbc-sdp-ptime-ans</code>              | Defines SBC SDP Ptime answer.  |
| <code>sbc-sdp-remove-crypto-lifetime</code> | Defines SBC SDP Remove Crypto Lifetime.  |
| <code>sbc-send-multiple-dtmf-methods</code> | Enables the device to send DTMF digits out-of-band (not with audio stream) using both the SIP INFO and RFC 2833 methods for the same call on the leg to which this IP Profile is associated. |
| <code>sbc-session-expires-mode</code>       | Defines SBC behavior with 'Session-Expires' header.  |
| <code>sbc-use-silence-supp</code>           | Defines SBC to use Silence Suppression.  |
| <code>sbc-usr-reg-time</code>               | Defines the duration (in seconds) of the periodic registrations between the user and the device (the device responds with this value to the user).   |
| <code>sbc-usr-tcp-nat-reg-time</code>       | Defines the duration (in seconds) of the periodic registrations between the user and the device when the user registers over TCP and is behind NAT.  |
| <code>sbc-usr-udp-nat-reg-time</code>       | Defines the duration (in seconds) of the periodic registrations between the user and the device when the user registers over UDP and is behind NAT.  |
| <code>sbc-voice-quality-enhancement</code>  | Activates Voice Quality Enhancement.   |
| <code>second-tx-dtmf-option</code>          | Defines the second priority DTMF methods, offered during the SIP negotiation.  |
| <code>signaling-diffserv</code>             | Defines the SIP Signaling DiffServ.  |
| <code>transcoding-mode</code>               | Defines the voice transcoding mode between the two SBC legs for the SBC application.   |
| <code>voice-volume</code>                   | Defines the voice TDM output gain.   |

| Command            | Description                           |
|--------------------|---------------------------------------|
| vxx-transport-type | Defines the Vxx modem transport type. |

---

### Command Mode

Privileged User

---

### Example

This example shows how to configure an IP Profile:

```
(config-voip)# coders-and-profiles ip-profile 0
(ip-profile-0)# group-name ITSP
(ip-profile-0)# activate
```

## tel-profile

This command configures the Tel Profiles table, which lets you define Tel Profiles.

---

### Syntax

```
(config-voip)# coders-and-profiles tel-profile <Index>
(tel-profile-<Index>)#
```

| Command                 | Description  |
|-------------------------|--|
| Index                   | Defines the table row index.   |
| call-priority-mode      | Defines the call priority mode.  |
| coders-group            | Defines the coders group name.   |
| current-disconnect      | Enables current disconnect.  |
| dial-plan-index         | Defines the dial plan index.   |
| digit-delivery          | Enables automatic digit delivery to the Tel side after the line is off-hooked or seized. |
| digital-cut-through     | Enables a call connection without the On-Hook/Off-Hook process 'Cut-Through'.            |
| disconnect-on-busy-tone | Releases the call if the gateway receives a busy or                                      |



| Command  | Description   |
|--|---|
|  | fast busy tone before the call is answered.   |
| <code>dtmf-volume</code>   | Defines the DTMF generation volume.   |
| <code>early-media</code>   | Enables early media.  |
| <code>echo-canceller</code>  | Enables echo cancellation (i.e., echo from voice calls is removed).   |
| <code>echo-canceller-nlp-mode</code>   | Configures EC NLP mode.   |
| <code>enable-911-psap</code>   | Enables 911 PSAP.   |
| <code>enable-agc</code>  | Activates AGC (Automatic Gain Control).   |
| <code>enable-did-wink</code>   | Enables support for DID lines using Wink.   |
| <code>enable-voice-mail-delay</code>   | Enables voice mail delay.   |
| <code>fax-sig-method {no-fax t.38-relay g.711-transport fax-fallback g.711-reject-t.38}</code> | Defines the SIP signaling method for establishing and transmitting a fax session when the device detects a fax. |
| <code>flash-hook-period</code>   | Defines the flashhook detection and generation period (in msec).  |
| <code>fxo-double-answer</code>   | Enables FXO double answer. All incoming TEL2IP call are refused.  |
| <code>fxo-ring-timeout</code>  | Defines the delay (in 100 msec) for generating an INVITE after RING_START is detected.                          |
| <code>input-gain</code>  | Defines the TDM input gain.   |
| <code>ip2tel-cutthrough_call_behavior</code>   | Enables a call connection without an On-Hook/Off-Hook process.  |
| <code>is-two-stage-dial</code>   | Configures Dialing Mode - One-Stage (PBX Pass-thru) or Two-Stage.   |
| <code>jitter-buffer-maximum-delay</code>   | Defines the maximum delay (in msec) for the Dynamic Jitter Buffer.  |
| <code>jitter-buffer-minimum-</code>  | Defines the minimum delay (in msec) for the   |

| Command  | Description   |
|--|---|
| <code>delay</code>                             | Dynamic Jitter Buffer.  |
| <code>jitter-buffer-optimization-factor</code> | Defines the Dynamic Jitter Buffer frame error-delay optimization factor.  |
| <code>mwi-analog-lamp</code>                   | Enables MWI support using an analog lamp (110 Volt).  |
| <code>mwi-display</code>                       | Enables MWI support using Caller ID interface.  |
| <code>mwi-ntf-timeout</code>                   | Defines the maximum duration (timeout) that a message waiting indication (MWI) is displayed on endpoint equipment (phones' LED, screen notification or voice tone). |
| <code>play-bsy-tone-2tel</code>                | Configures Don't play, Play Busy or Reorder tone when disconnecting ISDN call and Send PI=8, Play before disconnect.  |
| <code>polarity-rvrs1</code>                    | Enables Polarity Reversal.  |
| <code>profile-name</code>                      | Defines the Profile Name (string).  |
| <code>prog-ind-to-ip</code>                    | Determines whether to send the Progress Indicator to IP.  |
| <code>rtp-ip-diffserv</code>                   | Defines the RTP IP DiffServ.  |
| <code>signaling-diffserv</code>                | Defines the SIP Signaling DiffServ.   |
| <code>swap-teltoip-phone-numbers</code>        | Swaps Tel to IP phone numbers.  |
| <code>tel-preference</code>                    | Defines the Profile Preference - the priority of the Tel Profile.   |
| <code>time-for-reorder-tone</code>             | Defines the duration of the reorder tone that plays before the FXO releases the line [seconds].   |
| <code>voice-volume</code>                      | Defines the voice TDM output gain.  |

---

**Command Mode**

Privileged User

---

**Example**

This example configures a Tel Profile:

```
(config-voip)# coders-and-profiles tel-profile 0  
(tel-profile-0)# profile-name PSTN  
(tel-profile-0)# activate
```

## 63 ids

This command configures the Intrusion Detection System (IDS) feature, which detects malicious attacks on the device and reacts accordingly.

---

### Syntax

```
(config-voip)# ids
```

| Command                        | Description                                 |
|--------------------------------|---|
| <code>global-parameters</code> | See <a href="#">global-parameters</a> below |
| <code>match</code>             | See <a href="#">match</a> on the next page  |
| <code>policy</code>            | See <a href="#">policy</a> on page 378      |

---

### Command Mode

Privileged User

## global-parameters

This command configures various IDS parameters.

---

### Syntax

```
(config-voip)# ids global-parameters
(sip-security-ids-settings)#
```

| Command                             | Description   |
|-------------------------------------|---|
| <code>alarm-clear-period</code>     | Defines the interval (in seconds) after which an IDS alarm is cleared from the Active Alarms table if no thresholds are crossed during this time. |
| <code>enable-ids</code><br>{off on} | Enables the IDS feature.  |
| <code>excluded-responses</code>     | Defines the SIP response codes that are excluded from the IDS count for SIP dialog establishment failures.  |

---

### Command Mode

Privileged User

---

### Example

This example enables IDS:

```
(config-voip)# ids global-parameters
(sip-security-ids-settings)# enable-ids on
```

## match

This command configures the IDS Matches table, which lets you implement your configured IDS Policies.

---

### Syntax

```
(config-voip)# ids match <Index>
(match-<Index>)#
```

| Command       | Description   |
|---------------|---|
| Index         | Defines the table row index.                            |
| policy        | Assigns an IDS Policy.                                  |
| proxy-set     | Assigns a Proxy Set(s) to the IDS Policy.               |
| sip-interface | Assigns a SIP Interface(s) to the IDS Policy.           |
| subnet        | Defines the subnet to which the IDS Policy is assigned. |

---

### Command Mode

Privileged User

---

### Example

This example configures an IDS Match that applies IDS Policy "DOS" to SIP Interfaces 1 through 2:

```
(config-voip)# ids match 0
(match-0)# policy DOS
(match-0)# sip-interface 1-2
(match-0)# activate
```

## policy

This command configures the IDS Policies table, which lets you define IDS Policies. The table is a parent of the IDS Rule table.

---

### Syntax

```
(config-voip)# ids policy <Index>
(policy-<Index>)#
```

| Command     | Description   |
|-------------|---|
| Index       | Defines the table row index.  |
| description | Defines a brief description for the IDS Policy.   |
| name        | Defines a descriptive name, which is used when associating the row in other tables.   |
| rule        | Defines the IDS Rule table, which lets you define IDS rules per IDS Policy. The table is a child of the IDS Policies table. For more information, see <a href="#">rule</a> below. |

---

### Command Mode

Privileged User

---

### Example

This example configures Trunk Group 1 for Trunk 1, channels 1-30:

```
(config-voip)# ids policy 0
(policy-0)# name DOS
(policy-0)# activate
```

## rule

This command configures the IDS Rule table, which lets you define IDS rules. The table is a child of the IDS Policies table.

---

### Syntax

```
(config-voip)# ids policy <Index>
(policy-<Index>)# ids rule <Index>
(rule-<Index>/<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| critical-alm-thr  | Defines the threshold that if crossed a critical severity alarm is sent.   |
| deny-period   | Defines the duration (in sec) to keep the attacker on the blacklist, if configured using deny-thr.                         |
| deny-thr  | Defines the threshold that if crossed, the device blocks (blacklists) the remote host (attacker).                          |
| major-alm-thr   | Defines the threshold that if crossed a major severity alarm is sent.  |
| minor-alm-thr   | Defines the threshold that if crossed a minor severity alarm is sent.  |
| reason {abnormal-flow any auth-failure connection-abuse establish-fail malformed-msg} | Defines the type of intrusion attack.  |
| threshold-scope {global ip ip-port}   | Defines the source of the attacker to consider in the device's detection count.  |
| threshold-window  | Defines the threshold interval (in seconds) during which the device counts the attacks to check if a threshold is crossed. |

---

### Command Mode

Privileged User

---

### Example

This example configures this IDS policy rule: If 15 malformed SIP messages are received within a period of 30 seconds, a minor alarm is sent. Every 30 seconds, the rule's counters are cleared. If

more than 25 malformed SIP messages are received within this period, the device blacklists for 60 seconds the remote IP host from where the messages were received:

```
(config-voip)# ids policy 0
(policy-0)# ids rule 1
(rule-0/1)# reason malformed-msg
(rule-0/1)# threshold-scope ip
(rule-0/1)# threshold-window 30
(rule-0/1)# deny-thr 25
(rule-0/1)# deny-period 60
(rule-0/1)# minor-alm-thr 15
(rule-0/1)# major-alm-thr 20
(rule-0/1)# critical-alm-thr 25
(rule-0/1)# activate
```



## 64 interface

This command configures the PSTN interfaces.

---

### Syntax

```
(config-voip)# interface
```

| Command | Description                             |
|---------|---|
| bri     | See <a href="#">bri</a> below           |
| e1-t1   | See <a href="#">e1-t1</a> on page 384   |
| fxs-fxo | See <a href="#">fxs-fxo</a> on page 387 |

---

### Command Mode

Privileged User

### bri

This command configures BRI interfaces.

---

### Syntax

```
(config-voip)# interface bri <Slot (Module)/Port>
(bri <Slot/Port>)#
```

| Command               | Description                                      |
|-----------------------|--|
| b-ch-negotiation      | ISDN B-Channel negotiation mode.                 |
| call-re-rte-mode      | Call Rerouting Mode for Trunk.                   |
| clock-priority        | Sets the trunk priority for auto-clock fallback. |
| dig-oos-behavior      | Setting Digital OOS Behavior                     |
| isdn-bits-cc-behavior | Sets the ISDN Call Control                       |

| Command  | Description  |
|--|--|
|  | Layer (Layer 4) behavior options.  |
| <code>isdn-bits-incoming-calls-behavior</code> | Sets the ISDN incoming calls behavior options.   |
| <code>isdn-bits-ns-behavior</code>             | Sets the ISDN Network Layer (Layer 3) behavior options.                                  |
| <code>isdn-bits-ns-extension-behavior</code>   | Sets additional ISDN Network Layer (Layer 3) behavior options.                           |
| <code>isdn-bits-outgoing-calls-behavior</code> | Sets the ISDN outgoing calls behavior options.   |
| <code>isdn-layer2-mode</code>                  | Sets the ISDN layer2 mode.   |
| <code>isdn-termination-side</code>             | Sets the ISDN termination side.  |
| <code>isdn-xfer-cab</code>                     | Send transfer capability to ISDN side on setup message.                                  |
| <code>local-isdn-rbt-src</code>                | If the ringback tone source is not IP, who should supply the Ringback tone.              |
| <code>ovrlp-rcving-type</code>                 | Select reception type of overlap dialing from ISDN side                                  |
| <code>pi-in-rx-disc-msg</code>                 | Configure PIForDisconnectMsg to overwrite PI value received in ISDN Disconnect message   |
| <code>pi-to-isdn</code>                        | Override the value of progress indicator to ISDN side in ALERT, PROGRESS, and PROCEEDING |

| Command  | Description   |
|--|---|
|  | messages  |
| play-rbt-to-trk  | Enable ringback tone playing towards trunk side.  |
| protocol   | Sets the PSTN protocol to be used for this trunk.   |
| pstn-alrt-timeout  | Max time (in seconds) to wait for connect from PSTN   |
| rmv-calling-name   | Remove Calling Name For Trunk.  |
| tei-assign-trigger   | Bit-field defines when TEI assignment procedure is invoked  |
| tei-config-p2mp  | TEI value for P2MP BRI trunk.   |
| tei-config-p2p   | TEI value for P2P BRI trunk.  |
| tei-remove-trigger   | Bit-field defines when TEI should be removed.   |
| trace-level {full-isdn  full-isdn-with-duplications  layer3  layer3-no-duplications  no-trace  q921-raw-data  q931  q931-q921-raw-data  q931-raw-data} | <p>Defines the BRI trunk trace level.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>■ To configure and start a PSTN trace per trunk, use the following command: <code>configure troubleshoot &gt; logging logging-filters</code>.</li> <li>■ To start a PSTN trace for all trunks that have been configured with the <b>trace-level</b> command option, use</li> </ul> |

| Command            | Description  |
|--------------------|--|
|                    | <p>the following command: debug debug-recording &lt;IP Address&gt; pstn-trace.</p> <ul style="list-style-type: none"> <li>■ To send PSTN traces to a Syslog server (instead of Wireshark), use the following command: configure troubleshoot &gt; pstn-debug.</li> </ul> |
| trk-xfer-mode-type | Type of transfer the PSTN/PBX supports.  |

---

### Command Mode

Privileged User

---

### Example

This example configures BRI to NI2 ISDN protocol type (51):

```
(config-voip)# interface bri 2/1
(bri 2/1)# protocol 51
(bri 2/1)# activate
```

## e1-t1

This command configures E1/T1 interfaces.

---

### Syntax

```
(config-voip)# interface e1-t1 <Slot (Module)/Port>
(e1-t1 <Slot/Port>)#
```

| Command             | Description                                |
|---------------------|--|
| b-ch-negotiation    | ISDN B-Channel negotiation mode            |
| b-channel-nego-for- | ISDN B-Channel negotiation mode for trunk. |

| Command                           | Description  |
|-----------------------------------|--|
| trunk                             |  |
| call-re-rte-mode                  | Call Rerouting Mode for Trunk.   |
| cas-channel-index                 | Defines the CAS Protocol Table index per channel.  |
| cas-delimiters-types              | Defines the digits string delimiter padding usage for the specific trunk.  |
| cas-dial-plan-name                | Defines the Dial Plan name that will be used on the specific trunk.  |
| cas-table-index                   | Indicates the CAS Protocol file to be used on the specific Trunk.  |
| clock-master                      | Defines the trunk clock source.  |
| clock-priority                    | Defines the trunk priority for auto-clock fallback.  |
| dig-oos-behavior                  | Defines Digital OOS Behavior   |
| framing                           | Defines the physical framing method to be used for this trunk.   |
| isdn-bits-cc-behavior             | Defines the ISDN Call Control Layer (Layer 4) behavior options.  |
| isdn-bits-incoming-calls-behavior | Defines the ISDN incoming calls behavior options.  |
| isdn-bits-ns-behavior             | Defines the ISDN Network Layer (Layer 3) behavior options.   |
| isdn-bits-ns-extension-behavior   | Sets additional ISDN Network Layer (Layer 3) behavior options.   |
| isdn-bits-outgoing-calls-behavior | Sets the ISDN outgoing calls behavior options.   |
| isdn-japan-ntt-timer-t305         | Defines a timeout (in seconds) that the device waits before sending an ISDN Release message after it has sent a Disconnect message, if no SIP message (e.g., 4xx response) is received within the timeout. |
| isdn-nfas-dchannel-type           | Defines the ISDN NFAS D-channel type.  |

| Command                               | Description  |
|---------------------------------------|--|
| <code>isdn-nfas-group-number</code>   | Defines the group number of the ISDN NFAS group.   |
| <code>isdn-nfas-interface-id</code>   | Defines the ISDN NFAS Interface ID. Applicable only if the NS_EXPLICIT_INTERFACE_ID behavior bit is set. |
| <code>isdn-termination-side</code>    | Defines the ISDN termination side.   |
| <code>isdn-xfer-cab</code>            | Send transfer capability to ISDN side on setup message.  |
| <code>line-build-out-loss</code>      | Defines the line build out loss to be used for this trunk.   |
| <code>line-build-out-overwrite</code> | Overwrites the Framer's XPM register values which control the line pulse shape.                          |
| <code>line-build-out-xpm0</code>      | Controls the Framer's XPM0 register value (line pulse shape control).                                    |
| <code>line-build-out-xpm1</code>      | Defines the Framer's XPM1 register value (line pulse shape control).                                     |
| <code>line-build-out-xpm2</code>      | Defines the Framer's XPM2 register value (line pulse shape control).                                     |
| <code>line-code</code>                | Defines the line code type to be used for this trunk.  |
| <code>local-isdn-rbt-src</code>       | If the ringback tone source is not IP, who should supply the Ringback tone.                              |
| <code>ovrlp-rcving-type</code>        | Defines reception type of overlap dialing from ISDN side   |
| <code>pi-in-rx-disc-msg</code>        | Configure PIForDisconnectMsg in order to overwrite PI value received in ISDN Disconnect message          |
| <code>pi-to-isdn</code>               | Override the value of progress indicator to ISDN side in ALERT, PROGRESS, and PROCEEDING messages        |
| <code>play-rbt-to-trk</code>          | Enable ringback tone playing towards trunk side. Refer to User's Manual for details                      |
| <code>protocol</code>                 | Defines the PSTN protocol to be used for this trunk.   |
| <code>pstn-alrt-timeout</code>        | Defines max. time (in seconds) to wait for connect from PSTN   |
| <code>rmv-calling-name</code>         | Removes Calling Name For Trunk.  |

| Command  | Description   |
|--|---|
| <pre>trace-level {full- isdn  full-isdn-with- duplications  layer3  layer3-no- duplications  no- trace  q921-raw-data  q931  q931-q921-raw- data  q931-raw-data}</pre> | <p>Defines the PSTN trace level.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>■ To configure and start a PSTN trace per trunk, use the following command: <code>configure troubleshoot &gt; logging logging-filters</code>.</li> <li>■ To start a PSTN trace for all trunks that have been configured with the <b>trace-level</b> command option, use the following command: <code>debug debug-recording &lt;IP Address&gt; pstn-trace</code>.</li> <li>■ To send PSTN traces to a Syslog server (instead of Wireshark), use the following command: <code>configure troubleshoot &gt; pstn-debug</code>.</li> </ul> |
| <pre>trk-xfer-mode-type</pre>  | <p>Defines the type of transfer the PSTN/PBX supports</p>   |

---

### Command Mode

Privileged User

---

### Example

This example configures E1/T1 to E1 EURO ISDN protocol type (1):

```
(config-voip)# interface e1-t1 1/1
(e1-t1 1/1)# protocol 1
(e1-t1 1/1)# activate
```

## fxs-fxo

This command configures FXS and FXO interfaces.

---

### Syntax

```
(config-voip)# interface fxs-fxo
(fxs-fxo)#
```

| Command                       | Description                     |
|-------------------------------|---------------------------------|
| <pre>analog-port-enable</pre> | <p>Enables the analog port.</p> |

| Command                                 | Description   |
|---|---|
| bellcore-callerid-type-one-sub-standard | Selects the sub-standard of the Bellcore Caller ID type.  |
| bellcore-vmwi-type-one-standard         | Defines the Bellcore VMWI standard.   |
| caller-id-timing-mode                   | Defines the Analog Caller ID Timing Mode.   |
| caller-id-type                          | Defines the Caller ID standard.   |
| current-disconnect-duration             | Defines the current-disconnect duration (in msec).  |
| default-linepolarity-state              | Sets the default line polarity state.   |
| disable-analog-auto-calibration         | Determines whether to enable the analog Autocalibration in the DAA.                             |
| enable-analog-dc-remover                | Determines whether to enable the analog DC remover in the DAA.                                  |
| enable-fxo-current-limit                | Enables loop current limit to a maximum of 60mA (TBR21) or disables the FXO line current limit. |
| etsi-callerid-type-one-sub-standard     | Selects the number denoting the ETSI CallerID Type 1 sub-standard.                              |
| etsi-vmwi-type-one-standard             | Selects the number denoting the ETSI VMWI Type 1 Standard.                                      |
| far-end-disconnect-type                 | Sets the source for the acEV_FAR_END_DISCONNECTED event.  |
| flash-hook-period                       | Defines the flashhook detection and generation period (in msec).                                |
| fxo-country-coefficients                | Line characteristic (AC and DC) according to country.   |
| fxo-dc-termination                      | Defines the FXO line DC termination.  |
| fxs-country-coefficients                | Defines the line characteristic (AC and DC) according to country.                               |
| fxs-line-testing                        | Performs an FXS line test for a specified FXS port and  |



| Command                            | Description   |
|------------------------------------|---|
| <Module/Port> {66 70}              | coefficient type (66 for TBR21 and 70 for USA).   |
| fxs-rx-gain-control                | Defines gain\attenuation of the FXS Rx path between -17db and 18db.                                     |
| fxs-tx-gain-control                | Defines gain\attenuation of the FXS Tx path between -22db and 10db.                                     |
| metering-on-time                   | Defines the metering signal duration to be detected   |
| metering-type                      | Defines the metering method for charging pulses.  |
| min-flash-hook-time                | Defines the minimal time (in msec) for detection of a flash hook event (for FXS only).                  |
| mwi-indication-type                | Defines the type of (MWI) Message Waiting Indicator (for FXS only).                                     |
| polarity-reversal-type             | Defines type of polarity reversal signal used for network far-end answer and disconnect indications.    |
| rx-gain-control                    | Defines gain attenuation of the FXO Rx path between -15db and 12db.                                     |
| time-to-sample-analog-line-voltage | Defines the time to sample the analog line voltage after offhook, for the current disconnect threshold. |
| tx-gain-control                    | Defines gain attenuation of the FXO Tx path between -15db and 12db.                                     |
| wink-time                          | Defines time elapsed between two consecutive polarity reversals.  |

---

### Command Mode

Privileged User

---

### Example

This example enables FXS port 1 in Module 2:

```
(config-voip)# interface fxs-fxo
(fxs-fxo)# analog-port-enable 1/2
(fxs-fxo)# activate
```

## 65 ip-group

This command configures the IP Groups table, which lets you define IP Groups.

### Syntax

```
(config-voip)# ip-group <Index>
(ip-group-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| always-use-route-table<br>{disable enable}                           | Defines the Request-URI host name in outgoing INVITE messages.  |
| always-use-source-addr<br>{disable enable}                           | Enables the device to always send SIP requests and responses, within a SIP dialog, to the source IP address received in the previous SIP message packet.  |
| authentication-method-list   | Defines SIP methods received from the IP Group that must be challenged by the device when the device acts as an Authentication server.                    |
| authentication-mode {sbc-as-client sbc-as-server user-authenticates} | Defines the authentication mode.  |
| bandwidth-profile  | Assigns a Bandwidth Profile rule.   |
| cac-profile  | Assigns a Call Admission Control Profile.   |
| call-setup-rules-set-id  | Assigns a Call Setup Rule Set ID.   |
| classify-by-proxy-set<br>{disable enable}                            | Enables classification of incoming SIP dialogs (INVITEs) to Server-type IP Groups based on Proxy Set (assigned using the IPGroup_ProxySetName parameter). |
| contact-user   | Defines the user part of the From, To,  |

| Command                       | Description  |
|-------------------------------|--|
|                               | and Contact headers of SIP REGISTER messages, and the user part of the Contact header of INVITE messages received from this IP Group and forwarded by the device to another IP Group.  |
| dst-uri-input                 | Defines the SIP header in the incoming INVITE to use as a call matching characteristic based on destination URIs.  |
| dtls-context                  | Assigns a TLS Context (certificate) to the IP Group, which is used for DTLS sessions (handshakes) with the IP Group.   |
| inbound-mesg-manipulation-set | Assigns a Message Manipulation Set (rule) to the IP Group for SIP message manipulation on the inbound leg.   |
| internal-media-realm-name     | Assigns an "internal" Media Realm to the IP Group. This is applicable when the device is deployed in a Microsoft Teams environment. The device selects this Media Realm (instead of the Media Realm assigned by the <code>media-realm-name</code> command) if the value of the X-MS-UserLocation header in the incoming SIP message is "Internal" and the <code>teams-local-media-optimization-handling</code> command is configured to any value other than none. |
| ip-profile-name               | Assigns an IP Profile to the IP Group.   |
| local-host-name               | Defines the host name (string) that the device uses in the SIP message's Via and Contact headers.  |
| max-num-of-reg-users          | Defines the maximum number of users in this IP Group that can register with the device.  |

| Command   | Description  |
|---|--|
| <code>media-realm-name</code>                             | Assigns a Media Realm to the IP Group.   |
| <code>msg-man-user-defined-string1</code>                 | Defines a value for the SIP user part that can be used in Message Manipulation rules configured in the Message Manipulations table.        |
| <code>msg-man-user-defined-string2</code>                 | Defines a value for the SIP user part that can be used in Message Manipulation rules configured in the Message Manipulations table.        |
| <code>name</code>   | Defines a descriptive name, which is used when associating the row in other tables.  |
| <code>oauth-http-service</code>                           | Assigns a Remote Web Service to the IP Group for OAuth-based authentication of incoming SIP requests.                                      |
| <code>outbound-mesg-manipulation-set</code>               | Assigns a Message Manipulation Set (rule) to the IP Group for SIP message manipulation on the outbound leg.                                |
| <code>password</code>                                     | Defines the shared password for authenticating the IP Group, when the device acts as an Authentication server.                             |
| <code>proxy-keepalive-use-ipg<br/>{disable enable}</code> | Enables the device to apply certain IP Group settings to keep-alive SIP OPTIONS messages that are sent by the device to the proxy server.  |
| <code>proxy-set-name</code>                               | Assigns a Proxy Set to the IP Group. All INVITE messages destined to the IP Group are sent to the IP address configured for the Proxy Set. |
| <code>qoe-profile</code>                                  | Assigns a Quality of Experience Profile rule.  |
| <code>re-routing-mode {not-</code>                        | Defines the routing mode after a call  |

| Command  | Description   |
|--|---|
| <code>configured proxy routing-table standard}</code>  | redirection (i.e., a 3xx SIP response is received) or transfer (i.e., a SIP REFER request is received).   |
| <code>registration-mode {no-registrations sbs-initiates user-initiates}</code>   | Defines the registration mode for the IP Group.   |
| <code>sbc-alt-route-reasons-set</code>   | Assigns an Alternative Reasons Set to the IP Group.   |
| <code>sbc-client-forking-mode {parallel sequential sequential-available-only}</code>   | Defines call forking of INVITE messages to up to five separate SIP outgoing legs for User-type IP Groups.   |
| <code>sbc-dial-plan-name</code>  | Assigns a Dial Plan to the IP Group.  |
| <code>sbc-keep-call-id</code>  | Enables the device to use the same call identification (SIP Call-ID header value) received in incoming messages for the call identification in outgoing messages. |
| <code>sbc-operation-mode {b2bua call-stateful-proxy microsoft-server not-configured}</code>                                      | Defines the device's operational mode for the IP Group.   |
| <code>sbc-psap-mode {disable enable}</code>  | Enables E9-1-1 emergency call routing in a Microsoft Skype for Business environment.  |
| <code>sbc-server-auth-type {according-to-global-parameter arm locally remotely-according-draft-sterman remotely-by-oauth}</code> | Defines the authentication method when the device, as an Authentication server, authenticates SIP requests from the IP Group.                                     |
| <code>sbc-user-stickiness {disable enable}</code>  | Enables SBC user registration "stickiness" to a registrar.  |
| <code>sip-connect</code>   | Defines the IP Group as a registered server that represents multiple users.   |
| <code>sip-group-name</code>  | Defines the SIP Request-URI host name in INVITE and REGISTER  |

| Command   | Description  |
|---|--|
|   | messages sent to the IP Group, or the host name in the From header of INVITE messages received from the IP Group.  |
| <code>sip-source-host-name</code>   | Defines the hostname of the URI in certain SIP headers, overwriting the original host part of the URI.   |
| <code>src-uri-input</code>  | Defines the SIP header in the incoming INVITE that is used for call matching characteristics based on source URIs.   |
| <code>srd-name</code>   | Assigns an SRD to the IP Group.  |
| <code>tags</code>   | Assigns Dial Plan tags for routing and manipulation.   |
| <code>teams-direct-routing-mode</code>  | Enables the device to include Microsoft's proprietary X-MS-SBC header in outgoing SIP INVITE and OPTIONS messages in a Microsoft Teams Direct Routing environment.   |
| <code>teams-local-media-optimization-handling {none  sbc-decides  teams-decides}</code> | Enables and defines media optimization handling when the device is deployed in a Microsoft Teams environment. The handling is based on Microsoft proprietary SIP headers, X-MS-UserLocation and X-MS-MediaPath.      |
| <code>teams-local-mo-initial-behavior {direct-media  external  internal}</code>         | Defines how the central SBC device (proxy SBC scenario) initially sends the received INVITE message with the SDP Offer to Teams when the device is deployed in a Microsoft Teams environment for Media Optimization. |
| <code>topology-location {down up}</code>  | Defines the display location of the IP Group in the Topology view of the Web interface.  |

| Command   | Description   |
|---|---|
| <code>type {gateway server user}</code>             | Defines the type of IP Group  |
| <code>use-require-port {disable enable}</code>      | Enables the device to use the port indicated in the Request-URI of the incoming message as the destination port when routing the message to the IP Group. |
| <code>used-by-routing-server {not-used used}</code> | Enables the IP Group to be used by a third-party routing server for call routing decisions.   |
| <code>username</code>                               | Defines the shared username for authenticating the IP Group, when the device acts as an Authentication server.  |
| <code>uui-format {disable enable}</code>            | Enables the generation of the Avaya UCID value, adding it to the outgoing INVITE sent to this IP Group.   |

---

### Command Mode

Privileged User

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### Example

This example configures a Server-type IP Group called "ITSP":

```
(config-voip)# ip-group 0
(ip-group-0)# name ITSP
(ip-group-0)# type server
(ip-group-0)# media-realm-name ITSP
(ip-group-0)# activate
```

## 66 media

This command configures media.

### Syntax

```
(config-voip)# media
```

| Command   | Description                              |
|-----------|--|
| fax-modem | See <a href="#">fax-modem</a> below      |
| ipmedia   | See <a href="#">ipmedia</a> on page 398  |
| rtp-rtcp  | See <a href="#">rtp-rtcp</a> on page 400 |
| security  | See <a href="#">security</a> on page 402 |
| settings  | See <a href="#">settings</a> on page 404 |
| tdm       | See <a href="#">tdm</a> on page 406      |
| voice     | See <a href="#">voice</a> on page 407    |

### Command Mode

Privileged User

### fax-modem

This command configures fax parameters.

### Syntax

```
(config-voip)# media fax-modem
(media-fax-modem)#
```

| Command            | Description  |
|--------------------|--|
| FaxRelayTimeoutSec | A channel during fax relay session cannot relatch on another RTP/RTCP/T38 stream until no T38 packets arrived from or sent to current stream during the timeout (sec). |



| Command   | Description   |
|---|---|
| V1501AllocationProfile  | Defines the V.150.1 profile.  |
| caller-id-transport-type                                      | Defines the Caller ID Transport type.   |
| ced-transfer-mode   | Defines the CED transfer mode.  |
| cng-detector-mode   | Defines the fax CNG tone detector mode.   |
| coder   | Defines the Fax/Modem bypass coder.   |
| ecm-mode  | Enables ECM (Error Correction Mode) during T.38 Fax Relay.  |
| enhanced-redundancy-depth                                     | Defines the number of repetitions to be applied to control packets when using T.38 standard.  |
| fax-cng-mode  | 0-Does not send a SIP re-INVITE, 1-Sends T.38 re-INVITE upon detection of fax CNG tone, 2-Sends T.38 re-INVITE upon detection of fax CNG tone or v8-cn signal |
| fax-transport-mode<br>{bypass disable events-only t.38-relay} | Defines the Fax over IP transport method.   |
| max-rate  | Limits the maximum transfer rate of the fax during T.38 Fax Relay session.  |
| modem-bypass-output-gain                                      | Defines the modem bypass output gain [dB].  |
| packing-factor  | Defines the number of 20 msec payloads to be generated in a single RTP fax/modem bypass packet.   |
| redundancy-depth  | Determines the depth of redundancy for non-V.21 T.38 fax packets.   |
| sprt-transport-channel0-max-payload-size                      | Defines the V.150.1 SPRT transport channel 0 max payload size.  |
| sprt-transport-channel2-max-payload-size                      | Defines the V.150.1 SPRT transport channel 2 max payload size.  |
| sprt-transport-channel2-max-window-size                       | Defines the V.150.1 SPRT transport channel 2 max window size.   |

| Command   | Description  |
|---|--|
| <code>sprt-transport-channel3-max-payload-size</code> | Defines the V.150.1 SPRT transport channel 3 max payload size. |
| <code>sse-redundancy-depth</code>                     | Defines the V.150.1 SSE redundancy depth.                      |
| <code>v1501-sse-payload-type-rx</code>                | Defines the received V.1501.1 SSE RTP payload type.            |
| <code>v21-modem-transport-type</code>                 | Sets the V.21 modem transport method.                          |
| <code>v22-modem-transport-type</code>                 | Defines the V.22 modem transport method.                       |
| <code>v23-modem-transport-type</code>                 | Defines the V.23 modem transport method.                       |
| <code>v32-modem-transport-type</code>                 | Defines the V.32 modem transport method.                       |
| <code>v34-modem-transport-type</code>                 | Defines the V.34 modem transport method.                       |
| <code>version</code>                                  | Defines the T.38 fax relay version.                            |

---

### Command Mode

Privileged User

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### Example

This example configures the fax transport type to T.38:

```
(config-voip)# media fax-modem
(media-fax-modem)# fax-transport-mode t.38-relay
(media-fax-modem)# activate
```

## ipmedia

This command configures various IP-media parameters.

---

### Syntax

```
(config-voip)# media ipmedia
(media-ipmedia)#
```

| Command                                  | Description  |
|--|--|
| <code>agc-disable-fast-adaptation</code> | Disables the AGC (Automatic Gain Control) Fast Adaptation mode.  |
| <code>agc-enable</code>                  | Activates the AGC (Automatic Gain Control).  |
| <code>agc-gain-slope</code>              | Defines the AGC convergence rate.  |
| <code>agc-max-gain</code>                | Defines the maximum signal gain of the AGC [dB].   |
| <code>agc-min-gain</code>                | Defines the minimum signal gain of the AGC [dB].   |
| <code>agc-redirect</code>                | Redirects the AGC output towards the TDM instead of towards the network.   |
| <code>agc-target-energy</code>           | Defines the target signal energy level of the AGC [-dBm]   |
| <code>energy-detector-enable</code>      | Activates the Energy Detector.   |
| <code>energy-detector-redirect</code>    | Redirect the Energy Detector towards the network instead of TDM.   |
| <code>energy-detector-sensitivity</code> | Defines the Energy Detector's sensitivity.   |
| <code>energy-detector-threshold</code>   | Defines the ED's (Energy Detector's) threshold according to the formula: $-44 + (\text{EDThreshold} * 6)$ [- dBm]. |
| <code>ipm-detectors-enable</code>        | Enables DSP IP Media Detectors.  |

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### Command Mode

Privileged User

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### Example

This example enables AD:

```
(config-voip)# media ipmedia
(media-ipmedia)# answer-detector-enable on
(media-ipmedia)# activate
```

## rtp-rtcp

This command configures various RTP-RTCP parameters.

### Syntax

```
(config-voip)# media rtp-rtcp
(media-rtp-rtcp)#
```

| Command                      | Description  |
|------------------------------|--|
| AnalogSignalTransportType    | Defines the analog signal transport type.  |
| EnableStandardSIDPayloadType | Defines the Silence Indicator (SID) packets that are sent and received are according to RFC 3389.        |
| L1L1ComplexTxUDPPort         | Defines the Source UDP port for the outgoing UDP Multiplexed RTP packets, for Complex-Multiplex RTP mode |
| RTPFWInvalidPacketHandling   | Defines the way an invalid packet should be handled.   |
| RTPPackagingFactor           | Defines the number of DSP payloads for generating one RTP packet.  |
| RtpFWNonConfiguredPTHandling | Defines the the way a packet with non-configured payload type should be handled.                         |
| VQMONBURSTHR                 | Defines the voice quality monitoring - excessive burst alert threshold                                   |
| VQMONDELAYTHR                | Defines the voice quality monitoring - excessive delay alert threshold                                   |
| VQMONEOCRVALTHR              | Defines the voice quality monitoring - end of call low quality alert threshold                           |
| VQMONGMIN                    | Defines the voice quality monitoring - minimum gap size (number of frames)                               |
| base-udp-port                | Defines the lower boundary of UDP ports to be used by the board.   |
| com-noise-gen-nego           | CN payload type is used and being  |

| Command                           | Description   |
|-----------------------------------|---|
|                                   | negotiate   |
| disable-rtcp-randomization        | Defines the RTCP report intervals.  |
| fax-bypass-payload-type           | Defines the Fax Bypass (VBD) Mode payload type.   |
| jitter-buffer-minimum-delay       | Defines the Dynamic Jitter Buffer Minimum Delay [msec]  |
| jitter-buffer-optimization-factor | Defines the Dynamic Jitter Buffer attack/decay performance.   |
| modem-bypass-payload-type         | Defines the Modem Bypass (VBD) Payload type.  |
| publication-ip-group-id           | Defines the IP Group to where the device sends RTCP XR reports.   |
| remote-rtp-b-udp-prt              | Defines the Remote Base UDP Port For Aggregation  |
| rtcp-interval                     | Defines the time interval between the adjacent RTCP report (in msec).   |
| rtcp-xr-coll-srvr                 | Defines the RTCP-XR server IP address   |
| rtcp-xr-rep-mode                  | 0:rtcpxr is not sent over SIP at all<br>{@}1:rtcpxr is sent over sip when call ended<br>{@}2:rtcpxr is sent over sip when on periodic interval and when call ended<br>{@}3:rtcpxr is sent over sip when media segment ended and when call ended |
| rtcpxr-collect-serv-transport     | Defines the RtcpXrEsc transport type  |
| rtp-redundancy-depth              | Defines the redundancy depth of RTP redundancy packets.   |
| rtp-redundancy-payload-type       | Defines the RTP Redundancy packet's Payload Type field.   |
| sbc-rtcpxr-report-mode            | 0:rtcpxr is not sent over SIP at all,1:rtcpxr is sent over sip when call ended  |
| telephony-events-payload-         | Defines the Tx RFC 2833 DTMF relay  |

| Command                                       | Description   |
|---|---|
| <code>type-tx</code>                          | dynamic payload type for outbound calls.                                    |
| <code>telephony-events-payload-type-rx</code> | Defines the Rx RFC 2833 DTMF relay dynamic payload type for outbound calls. |
| <code>udp-port-spacing {10 4 5}</code>        | Defines the UDP port spacing.   |
| <code>voice-quality-monitoring-enable</code>  | Defines the voice quality monitoring (RTCP-XR) mode.                        |

---

### Command Mode

Privileged User

---

### Example

This example configures UDP port spacing:

```
(config-voip)# media rtp-rtcp
(media-rtp-rtcp)# udp-port-spacing 5
(media-rtp-rtcp)# activate
```

## security

This command configures various security parameters.

---

### Syntax

```
(config-voip)# media security
(media-security)#
```

| Command   | Description   |
|---|---|
| <code>aria-protocol-support {off on}</code>                                   | Enables ARIA media encryption algorithm.  |
| <code>media-sec-bhviior {mandatory preferable preferable-single-media}</code> | Defines the device behavior when receiving offer/response for media encryption. |

| Command   | Description  |
|---|--|
| <code>media-security-enable {off on}</code>   | Enables the media security protocol (SRTP).                                      |
| <code>offer-srtp-cipher {aes-256-cm-hmac-sha1-32 aes-256-cm-hmac-sha1-80 aes-cm-128-hmac-sha1-32 aes-cm-128-hmac-sha1-80 all aria-cm-128-hmac-sha1-80 aria-cm-192-hmac-sha1-80 not-configured}</code> | Defines the offered SRTP cipher suite.   |
| <code>rtcp-encryption-disable-tx {disable enable}</code>  | On a secured RTP session, disables encryption on transmitted RTCP packets.       |
| <code>rtp-authentication-disable-tx {disable enable}</code>   | On a secured RTP session, disables authentication on transmitted RTP packets.    |
| <code>rtp-encryption-disable-tx {disable enable}</code>   | On a secured RTP session, disables encryption on transmitted RTP packets.        |
| <code>srtp-tnl-vld-rtcp-auth {off on}</code>  | Validates SRTP Tunneling Authentication for RTCP.                                |
| <code>srtp-tnl-vld-rtp-auth {srtp-tnl-vld-rtcp-auth srtp-tnl-vld-rtp-auth}</code>   | Validates SRTP Tunneling Authentication for RTP.                                 |
| <code>srtp-tx-packet-mKi-size</code>  | Defines the size of the Master Key Identifier (MKI) in transmitted SRTP packets. |

| Command                     | Description                        |
|-----------------------------|------------------------------------|
| <code>rsymmetric-mki</code> | Enables symmetric MKI negotiation. |

---

### Command Mode

Privileged User

---

### Example

This example enables SRTP:

```
(config-voip)# media security
(media-security)# media-security-enable on
(media-security)# activate
```

## settings

This command configures various media settings.

---

### Syntax

```
(config-voip)# media settings
(media-settings)#
```

| Command                            | Description   |
|------------------------------------|---|
| <code>AmrOctetAlignedEnable</code> | Defines the AMR payload format.   |
| <code>G729EVLocalMBS</code>        | Defines the maximum generation bitrate of the G729EV coder for a specific channel.                |
| <code>G729EVMaxBitRate</code>      | Defines the maximum generation bitrate for all participants in a session using G729EV coder.      |
| <code>G729EVReceiveMBS</code>      | Defines the maximum generation bitrate of the G729EV coder to be requested from the other party.  |
| <code>NewRtcpStreamPackets</code>  | Defines the minimal number of continuous RTCP packets, allowing latching an incoming RTCP stream. |



| Command   | Description   |
|---|---|
| <code>NewRtpStreamPackets</code>                  | Defines the minimal number of continuous RTP packets, allowing latching an incoming RTP stream.   |
| <code>NewSRTPStreamPackets</code>                 | Defines the minimal number of continuous RTP packets, allowing latching an incoming RTP stream during SRTP session.   |
| <code>NewSRtcpStreamPackets</code>                | Defines the minimal number of continuous RTCP packets, allowing latching an incoming RTCP stream during SRTP session.   |
| <code>TimeoutToRelatchRTCPmsec</code>             | If a channel latched on an incoming RTCP stream, it cannot relatch onto another one until no packets of the old stream arrive during the timeout (msec).                |
| <code>TimeoutToRelatchRTPmsec</code>              | A channel during RTP session cannot relatch onto another RTP/RTCP/T38 stream until no RTP packets arrived from current stream during the timeout (msec).                |
| <code>TimeoutToRelatchSRTPmsec</code>             | A channel during SRTP session cannot relatch on another RTP/RTCP/T38 stream until no RTP packets arrived from current stream during the timeout (msec).                 |
| <code>TimeoutToRelatchSilenceMsec</code>          | A channel in silence mode during RTP/SRTP session cannot relatch on another RTP/RTCP/T38 stream until no packets arrived from current stream during the timeout (msec). |
| <code>cot-detector-enable</code>                  | Enables COT (Continuity Tones) detection and generation.  |
| <code>disable-nat-traversal</code><br>{0 1 2 3 4} | Defines the NAT mode.   |
| <code>inbound-media-latch-mode</code>             | Defines the handling of incoming media packets from non-expected address/port.  |
| <code>silk-max-average-bitrate</code>             | Defines the SILK coder maximal average bit rate.  |

| Command                         | Description                                      |
|---------------------------------|--|
| <code>silk-tx-inband-fec</code> | Enables the SILK FEC (Forward Error Correction). |

---

### Command Mode

Privileged User

---

### Example

This example defines the NAT mode so that NAT traversal is performed only if the UA is located behind NAT:

```
(config-voip)# media settings
(media-settings)# disable-nat-traversal 0
(media-settings)# activate
```

## tdm

This command configures various TDM clock synchronization and bus.

---

### Syntax

```
(config-voip)# media tdm
(media-tdm)#
```

| Command   | Description   |
|---|---|
| <code>TDMBusClockSource</code><br>{internal network}  | Defines the clock source on which the device synchronizes.  |
| <code>idle-abcd-pattern</code>                        | Defines ABCD (CAS) pattern applied on signaling bus before it is changed.   |
| <code>idle-pcm-pattern</code>                         | Defines the PCM pattern applied to the E1/T1 timeslot (B-channel) when the channel is closed and during silence periods when Silence Compression is used. |
| <code>pcm-law-select</code><br>{alaw automatic mulaw} | Defines the type of PCM companding law in the input/output TDM bus.   |

| Command  | Description  |
|--|--|
| <code>pstn-bus-auto-clock {off on}</code>              | Enables the PSTN Trunk Auto-Fallback feature.                            |
| <code>pstn-bus-auto-clock-reverting {off on}</code>    | Enables the PSTN Trunk Auto-Fallback Reverting feature.                  |
| <code>tdm-bus-auto-fallback {holdover internal}</code> | Defines the fallback clock (when auto clock on).                         |
| <code>tdm-bus-local-reference &lt;Trunk ID&gt;</code>  | Defines the Trunk ID for the clock synchronization source of the device. |

---

### Command Mode

Privileged User

---

### Example

This example defines the clock source as internal and uses Trunk Group ID 1:

```
(config-voip)# media tdm
(media-tdm)# TDMBusClockSource internal
(media-tdm)# tdm-bus-local-reference 1
(media-tdm)# activate
```

## voice

This command configures various voice settings.

---

### Syntax

```
(config-voip)# media voice
(media-voice)#
```

| Command   | Description  |
|---|--|
| <code>acoustic-echo-suppressor-attenuation-intensity</code> | Defines acoustic echo suppressor signals identified as echo attenuation intensity. |
| <code>acoustic-echo-suppressor-enable {off </code>          | Enables network acoustic echo suppressor.  |

| Command                                      | Description  |
|--|--|
| on}  |  |
| acoustic-echo-suppressor-max-erl             | Defines acoustic echo suppressor max ratio between signal level and returned echo from phone [dB]. |
| acoustic-echo-suppressor-max-reference-delay | Defines acoustic echo suppressor max reference delay [10 ms].                                      |
| acoustic-echo-suppressor-min-reference-delay | Defines acoustic echo suppressor min reference delay [10 ms].                                      |
| caller-id-transport-type                     | Defines the Caller ID Transport type.  |
| default-dtmf-signal-duration                 | Defines the time to play DTMF (in msec).   |
| dtmf-detector-enable                         | Enables the detection of DTMF signaling.   |
| dtmf-generation-twist                        | Defines a delta between the high and low frequency components in the DTMF signal [db].             |
| dtmf-transport-type                          | Defines the transport method of DTMFs over the network.  |
| dtmf-volume                                  | Defines the DTMF generation volume [-dbm].   |
| echo-canceller-enable                        | Enables the Echo Canceller.  |
| echo-canceller-type                          | Defines the Echo Canceller type.   |
| input-gain                                   | Defines the TDM input gain [dB].   |
| inter-digit-interval                         | Defines the time between DTMFs played (in msec).   |
| mf-transport-type                            | Defines the method for transport MFs over the network.   |
| mfr1-detector-enable                         | Enables the detection of MF-R1 signaling.  |
| voice-volume                                 | Defines the voice TDM output gain [dB]   |

---

**Command Mode**

Privileged User

---

**Example**

This example enables the Acoustic Echo Suppressor:

```
(config-voip)# media voice
(media-voice)# acoustic-echo-suppressor-enable on
(media-voice)# activate
```

## 67 message

This command configures SIP message manipulation tables.

---

### Syntax

```
(config-voip)# message
```

| Command                | Description  |
|------------------------|--|
| call-setup-rules       | See <a href="#">call-setup-rules</a> below             |
| message-manipulations  | See <a href="#">message-manipulations</a> on page 412  |
| message-policy         | See <a href="#">message-policy</a> on page 413         |
| pre-parsing-manip-sets | See <a href="#">pre-parsing-manip-sets</a> on page 415 |
| settings               | See <a href="#">settings</a> on page 416               |

---

### Command Mode

Privileged User

### call-setup-rules

This command configures the Call Setup Rules table, which lets you define Call Setup rules. Call Setup rules define various sequences that are run upon the receipt of an incoming call (dialog) at call setup, before the device routes the call to its destination.

---

### Syntax

```
(config-voip)# message call-setup-rules <Index>
(call-setup-rules-<Index>)#
```

| Command        | Description   |
|----------------|---|
| Index          | Defines the table row index.  |
| action-subject | Defines the element (e.g., SIP header, SIP parameter, SIP body, or Dial Plan tag) upon which you want to perform the action if the condition, |

| Command  | Description   |
|--|---|
|  | configured in the 'Condition' parameter (see above) is met.   |
| <code>action-type {add add-prefix add-suffix exit modify none remove remove-prefix remove-suffix run-rules-set}</code> | Defines the type of action to perform.  |
| <code>action-value</code>  | Defines a value that you want to use in the action.   |
| <code>attr-to-get</code>   | Defines the Attributes of the queried LDAP record that the device must handle (e.g., retrieve value). |
| <code>request-key</code>   | Defines the key to query.   |
| <code>condition</code>   | Defines the condition that must exist for the device to perform the action.                           |
| <code>request-target</code>  | Defines the request target.   |
| <code>request-type {dial-plan enum http-get http-post-notify  http-post-query ldap none}</code>                        | Defines the type of request.  |
| <code>row-role {use-current-condition use-previous-condition}</code>   | Determines which condition must be met for this rule to be performed.                                 |
| <code>rules-set-id</code>  | Defines a Set ID for the rule.  |
| <code>rules-set-name</code>  | Defines an arbitrary name to easily identify the row.   |

---

### Command Mode

Privileged User

---

### Example

This example replaces (manipulates) the incoming call's source number with a number retrieved from the AD by an LDAP query. The device queries the AD server for the attribute

record, "telephoneNumber" whose value is the same as the received source number (e.g., "telephoneNumber=4064"). If such an Attribute exists, the device retrieves the number of the Attribute record, "alternateNumber" and uses this number as the source number:

```
(config-voip)# message call-setup-rules 0
(call-setup-rules-0)# query-type ldap
(call-setup-rules-0)# query-target LDAP-DC-CORP
(call-setup-rules-0)# attr-to-query 'telephoneNumber=' + param.call.src.user
(call-setup-rules-0)# attr-to-get alternateNumber
(call-setup-rules-0)# row-role use-current-condition
(call-setup-rules-0)# condition ldap.attr. alternateNumber exists
(call-setup-rules-0)# action-subject param.call.src.user
(call-setup-rules-0)# action-type modify
(call-setup-rules-0)# action-value ldap.attr. alternateNumber
(call-setup-rules-0)# activate
```

## message-manipulations

This command configures the Message Manipulations table, which lets you define SIP Message Manipulation rules.

### Syntax

```
(config-voip)# message message-manipulations <Index>
(message-manipulations-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.                                     |
| action-subject  | Defines the SIP header upon which the manipulation is performed. |
| action-type {add add-prefix add-suffix modify normalize remove remove-prefix remove-suffix} | Defines the type of manipulation.                                |
| action-value  | Defines a value that you want to use in the manipulation.        |
| condition   | Defines the condition that must exist for the rule to be         |



| Command             | Description  |
|---------------------|--|
|                     | applied.   |
| manipulation-name   | Defines a descriptive name, which is used when associating the row in other tables.                            |
| manipulation-set-id | Defines a Manipulation Set ID for the rule.  |
| message-type        | Defines the SIP message type that you want to manipulate.  |
| row-role            | Determines which message manipulation condition (configured by the 'Condition' parameter) to use for the rule. |

---

### Command Mode

Privileged User

---

### Example

This example adds ";urgent=1" to the To header if the URL of the Request-URI in the INVITE message equals "120":

```
(config-voip)# message message-manipulations 0
(message-manipulations-0)# message-type invite.request
(message-manipulations-0)# condition header.request.uri.url=='120'
(message-manipulations-0)# action-subject header.to
(message-manipulations-0)# action-type modify
(message-manipulations-0)# action-value header.to +';urgent=1'
(message-manipulations-0)# activate
```

## message-policy

This command configures the Message Policies table, which lets you define SIP Message Policy rules.

---

### Syntax

```
(config-voip)# message message-policy <Index>
(message-policy-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| body-list  | Defines the SIP body type (i.e., value of the Content-Type header) to blacklist or whitelist.                     |
| body-list-type {policy-blacklist policy-whitelist}   | Defines the policy (blacklist or whitelist) for the SIP body specified in the 'Body List' parameter (above).      |
| max-body-length                                      | Defines the maximum SIP message body length.  |
| max-header-length                                    | Defines the maximum SIP header length.  |
| max-message-length                                   | Defines the maximum SIP message length.   |
| max-num-bodies                                       | Defines the maximum number of bodies (e.g., SDP) in the SIP message.  |
| max-num-headers                                      | Defines the maximum number of SIP headers.  |
| method-list  | Defines SIP methods (e.g., INVITE\BYE) to blacklist or whitelist.   |
| method-list-type {policy-blacklist policy-whitelist} | Defines the policy (blacklist or whitelist) for the SIP methods specified in the 'Method List' parameter (above). |
| name   | Defines a descriptive name, which is used when associating the row in other tables.                               |
| send-rejection {policy-drop policy-reject}           | Defines whether the device sends a SIP response if it rejects a message request due to the Message Policy.        |
| signature-db-enable {disabled enabled}               | Enables the use of the Malicious Signature database (signature-based detection).                                  |

---

### Command Mode

Privileged User

---

**Example**

This example configures the maximum number of bodies in SIP messages to two:

```
(config-voip)# message message-policy 0
(message-policy-0)# name ITSP-Message
(message-policy-0)# max-num-bodies 2
(message-policy-0)# activate
```

## pre-parsing-manip-sets

This command configures the Pre-Parsing Manipulation Set table, which lets you define Pre-Parsing Manipulation Sets. The table is a parent of the Pre-Parsing Manipulation Rules table.

---

**Syntax**

```
(config-voip)# message pre-parsing-manip-sets <Index>
(pre-parsing-manip-sets-<Index>)#
```

| Command                 | Description   |
|-------------------------|---|
| Index                   | Defines the table row index.  |
| name                    | Defines a descriptive name, which is used when associating the row in other tables.   |
| pre-parsing-manip-rules | Defines the Pre-Parsing Manipulation Rules table, which lets you define Pre-Parsing Manipulation rules. The table is a child of the Pre-Parsing Manipulation Set table. For more information, see <a href="#">pre-parsing-manip-rules</a> on the next page. |

---

**Command Mode**

Privileged User

---

**Example**

This example configures the maximum number of bodies in SIP messages to two:

```
(config-voip)# message pre-parsing-manip-sets 0
(pre-parsing-manip-sets-0)# name ITSP-PreManip
(pre-parsing-manip-sets-0)# activate
```

## pre-parsing-manip-rules

This command configures the Pre-Parsing Manipulation Rules table, which lets you define Pre-Parsing Manipulation rules. The table is a child of the Pre-Parsing Manipulation Set table.

### Syntax

```
(config-voip)# message pre-parsing-manip-sets <Index>
(pre-parsing-manip-sets-<Index>)# pre-parsing-manip-rules <Index>
(pre-parsing-manip-rules-<Index>/<Index>)#
```

| Command      | Description   |
|--------------|---|
| Index        | Defines the table row index.  |
| message-type | Defines the SIP message type to which you want to apply the rule.                 |
| pattern      | Defines a pattern, based on regex, to search for (match) in the incoming message. |
| replace-with | Defines a pattern, based on regex, to replace the matched pattern.                |

### Command Mode

Privileged User

### Example

This example replaces the user part (if exists) in the From header URL with "1000", for INVITE messages:

```
(config-voip)# message pre-parsing-manip-sets 0
(pre-parsing-manip-sets-0)# pre-parsing-manip-rules 1
(pre-parsing-manip-rules-0/1)# message-type invite.request
(pre-parsing-manip-rules-0/1)# pattern From: *<sip:([^\s@]+)(@\S*)
(pre-parsing-manip-rules-0/1)# replace-with 'From: <sip:' + '1000' + $2
(pre-parsing-manip-rules-0/1)# activate
```

## settings

This command configures various manipulation options.

---

**Syntax**

```
(config-voip)# message settings  
(sip-message-settings)#
```

| Command          | Description  |
|------------------|--|
| inbound-map-set  | Assigns a Manipulation Set ID for manipulating for manipulating all inbound INVITE messages (Gateway only) or incoming responses of requests that the device initiates.  |
| outbound-map-set | Assigns a Manipulation Set ID for manipulating for manipulating all outbound INVITE messages (Gateway only) or outgoing responses of requests that the device initiates. |

---

**Command Mode**

Privileged User

---

**Example**

This example assigns Manipulation Set ID 2 for manipulating incoming responses of requests that the device initiates:

```
(config-voip)# message settings  
(sip-message-settings)# inbound-map-set 2
```

## 68 proxy-set

This command configures the Proxy Sets table, which lets you define Proxy Sets. The table is a parent of the Proxy Address table.

### Syntax

```
(config-voip)# proxy-set <Index>
(proxy-set-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| accept-dhcp-proxy-list<br>{disable enable}                        | Enables the device to obtain the Proxy Set's address(es) from a DHCP server using DHCP Option 120.   |
| classification-input<br>{ip-only ip-port-transport}               | Defines how the device classifies incoming IP calls to the Proxy Set.  |
| dns-resolve-method<br>{a-record ms-lync naptr not-configured srv} | Defines the DNS query record type for resolving the proxy server's host name (FQDN) into an IP address.  |
| fail-detect-rtx   | Defines the maximum number of UDP retransmissions that the device sends to an offline proxy, before the device considers the proxy as being offline. |
| gwipv4-sip-int-name   | Assigns an IPv4-based SIP Interface for Gateway calls to the Proxy Set.  |
| gwipv6-sip-int-name   | Assigns an IPv6-based SIP Interface for Gateway calls to the Proxy Set.  |
| is-proxy-hot-swap<br>{disable enable}                             | Enables the Proxy Hot-Swap feature, whereby the device switches to a redundant proxy upon a failure in the primary proxy (no response is received).  |
| keepalive-fail-resp   | Defines SIP response codes that if any is received in response to a keep-alive message using SIP OPTIONS, the device considers the proxy as down.    |

| Command  | Description  |
|--|--|
| priority <0-65535>   | Defines the priority of the proxy server.  |
| min-active-serv-lb   | Defines the minimum number of proxies in the Proxy Set that must be online for the device to consider the Proxy Set as online, when proxy load balancing is used.                              |
| proxy-enable-keep-alive<br>{disable using-fake-register using-options using-options-on-active-server using-register} | Enables the device's Proxy Keep-Alive feature, which checks communication with the proxy server.   |
| proxy-ip   | Defines the Proxy Address table, which defines addresses for the Proxy Set. The table is a child of the Proxy Sets table. For more information, see <a href="#">proxy-ip</a> on the next page. |
| proxy-keep-alive-time  | Defines the interval (in seconds) between keep-alive messages sent by the device when the Proxy Keep-Alive feature is enabled (see the 'Proxy Keep-Alive' parameter in this table).            |
| proxy-load-balancing-method<br>{disable random-weights round-robin}  | Enables load balancing between proxy servers of the Proxy Set.   |
| proxy-name   | Defines a descriptive name, which is used when associating the row in other tables.  |
| proxy-redundancy-mode {homing not-configured parking}  | Determines whether the device switches from a redundant proxy to the primary proxy when the primary proxy becomes available again.   |
| sbcipv4-sip-int-name   | Assigns an IPv4-based SIP Interface for SBC calls to the Proxy Set.  |
| sbcipv6-sip-int-name   | Assigns an IPv6-based SIP Interface for SBC calls to the Proxy Set.  |
| srd-name   | Assigns an SRD to the Proxy Set.   |

| Command                             | Description  |
|-------------------------------------|--|
| <code>success-detect-int</code>     | Defines the interval (in seconds) between each keep-alive retries (as configured by the 'Success Detection Retries' parameter) that the device performs for offline proxies. |
| <code>success-detect-retries</code> | Defines the minimum number of consecutive, successful keep-alive messages that the device sends to an offline proxy, before the device considers the proxy as being online.  |
| <code>tls-context-name</code>       | Assigns a TLS Context (SSL/TLS certificate) to the Proxy Set.  |
| <code>weight &lt;0-65535&gt;</code> | Defines the weight of the proxy server.  |

---

### Command Mode

Privileged User

---

### Example

This example configures proxy keep-alive and redundancy:

```
(config-voip)# proxy-set 0
(proxy-set-0)# proxy-enable-keep-alive using-options
(proxy-set-0)# is-proxy-hot-swap enable
(proxy-set-0)# proxy-redundancy-mode homing
(proxy-set-0)# activate
```

## proxy-ip

This command configures the Proxy Address table, which defines addresses for the Proxy Set. The table is a child of the Proxy Sets table.

---

### Syntax

```
(config-voip)# proxy-set <Index>
(proxy-set-<Index>)# proxy-ip <Index>
(proxy-ip-<Index>/<Index>)#
```



| Command                                     | Description  |
|---|--|
| Index                                       | Defines the table row index.                                 |
| proxy-address                               | Defines the address of the proxy.                            |
| transport-type {not-configured tcp tls udp} | Defines the transport type for communicating with the proxy. |

---

**Command Mode**

Privileged User

---

**Example**

This example configures address 201.10.5.1 for the Proxy Set:

```
(config-voip)# proxy-set 0
(proxy-set-0)# proxy-ip 1
(proxy-ip-0/1)# proxy-address 201.10.5.1
(proxy-ip-0/1)# transport-type udp
(proxy-ip-0/1)# activate
```

## 69 qoe

This command configures Quality of Experience (QoE).

---

### Syntax

```
(config-voip)# qoe
```

| Command                  | Description  |
|--------------------------|--|
| additional-parameters    | See <a href="#">additional-parameters call-flow-report</a> on page 424 |
| bw-profile               | See <a href="#">bw-profile</a> below                                   |
| qoe-profile              | See <a href="#">qoe-profile</a> on page 424                            |
| qoe-settings             | See <a href="#">qoe-settings</a> on page 428                           |
| quality-of-service-rules | See <a href="#">quality-of-service-rules</a> on page 427               |

---

### Command Mode

Privileged User

## bw-profile

This command configures the Bandwidth Profile table, which lets you define Bandwidth Profiles.

---

### Syntax

```
(config-voip)# qoe bw-profile <Index>
(bw-profile-<Index>)#
```

| Command                | Description   |
|------------------------|---|
| Index                  | Defines the table row index.  |
| egress-audio-bandwidth | Defines the major (total) threshold for outgoing audio traffic (in Kbps). |
| egress-video-bandwidth | Defines the major (total) threshold for outgoing video traffic (in Kbps). |

| Command   | Description  |
|---|--|
| <code>generate-alarms<br/>{disable enable}</code> | Enables the device to send an SNMP alarm if a bandwidth threshold is crossed.  |
| <code>hysteresis</code>                           | Defines the amount of fluctuation (hysteresis) from the configured bandwidth threshold in order for the threshold to be considered as crossed (i.e., avoids false reports of threshold crossings). |
| <code>ingress-audio-<br/>bandwidth</code>         | Defines the major (total) threshold for incoming audio traffic (in Kbps).  |
| <code>ingress-video-<br/>bandwidth</code>         | Defines the major (total) threshold for incoming video traffic (in Kbps).  |
| <code>minor-threshold</code>                      | Defines the Minor threshold value, which is the lower threshold located between the Yellow and Green states.   |
| <code>name</code>                                 | Defines a descriptive name, which is used when associating the row in other tables.  |
| <code>total-egress-<br/>bandwidth</code>          | Defines the major (total) threshold for video and audio outgoing bandwidth (in Kbps).  |
| <code>total-ingress-<br/>bandwidth</code>         | Defines the major (total) threshold for video and audio incoming bandwidth (in Kbps).  |

---

### Command Mode

Privileged User

---

### Example

This example configures a Bandwidth profile where the Major (total) bandwidth threshold is configured to 64,000 Kbps, the Minor threshold to 50% (of the total) and the hysteresis to 10% (of the total):

```
(config-voip)# qoe bw-profile 0
(bw-profile-0)# egress-audio-bandwidth 64000
(bw-profile-0)# minor-threshold 50
(bw-profile-0)# hysteresis 10
(bw-profile-0)# activate
```

## additional-parameters call-flow-report

This command enables the device to send SIP messages (in XML format) to OVOC for displaying SIP call dialog sessions as call flow diagrams.

---

### Syntax

```
(config-voip)# qoe additional-parameters
(qoe)# call-flow-report {off|on}
```

---

### Command Mode

Privileged User

---

### Default

```
off
```

---

### Example

This example enables the sending of SIP messages to OVOC for call flow diagrams:

```
(config-voip)# qoe additional-parameters
(qoe)# call-flow-report on
```

## qoe-profile

This command configures the Quality of Experience Profile table, which defines a name for the Quality of Experience Profile. The table is a parent of the Quality of Experience Color Rules table.

---

### Syntax

```
(config-voip)# qoe qoe-profile <Index>
(qoe-profile-<Index>)#
```

| Command | Description                                    |
|---------|--|
| Index   | Defines the table row index.                   |
| name    | Defines a descriptive name, which is used when |

| Command  | Description  |
|--|--|
|  | associating the row in other tables.   |
| <code>qoe-color-rules</code>   | Defines the Quality of Experience Color Rules table, which defines a name for the Quality of Experience Profile. The table is a child of the Quality of Experience Profile table. For more information, see <a href="#">qoe-color-rules</a> below. |
| <code>sensitivity-level<br/>{high low medium user-<br/>defined}</code> | Defines the pre-configured threshold profile to use.   |

---

### Command Mode

Privileged User

---

### Example

This example configures a Quality of Experience Profile named "QOE-ITSP" and with a pre-defined high sensitivity level:

```
(config-voip)# qoe qoe-profile 0
(qoe-profile-0)# name QOE-ITSP
(qoe-profile-0)# sensitivity-level high
(qoe-profile-0)# activate
```

### qoe-color-rules

This command configures the Quality of Experience Color Rules table, which defines a name for the Quality of Experience Profile. The table is a child of the Quality of Experience Profile table.

---

### Syntax

```
(config-voip)# qoe qoe-profile <Index>
(qoe-profile-<Index>)# qoe-color-rules <Index>
(qoe-color-rules-<Index>/<Index>)#
```

| Command                         | Description                       |
|---------------------------------|-----------------------------------|
| <code>Index</code>              | Defines the table row index.      |
| <code>direction {device-</code> | Defines the monitoring direction. |

| Command   | Description  |
|---|--|
| <code>side remote-side}</code>  |  |
| <code>major-hysteresis-red</code>   | Defines the amount of fluctuation (hysteresis) from the Major threshold, configured by the 'Major Threshold (Red)' parameter for the threshold to be considered as crossed.    |
| <code>major-threshold-red</code>  | Defines the Major threshold value, which is the upper threshold located between the Yellow and Red states. To consider a threshold crossing:                                   |
| <code>minor-hysteresis-yellow</code>  | Defines the amount of fluctuation (hysteresis) from the Minor threshold, configured by the 'Minor Threshold (Yellow)' parameter for the threshold to be considered as crossed. |
| <code>minor-threshold-yellow</code>   | Defines the Minor threshold value, which is the lower threshold located between the Yellow and Green states.   |
| <code>monitored-parameter<br/>{delay jitter mos packet-<br/>loss rerl}</code>                                 | Defines the parameter to monitor and report.   |
| <code>sensitivity-level {high-<br/>sensitivity low-<br/>sensitivity med-<br/>sensitivity user-defined}</code> | Defines the sensitivity level of the thresholds.   |

---

### Command Mode

Privileged User

---

### Example

This example configures a Quality of Experience Color Rule for MOS, where a Major alarm is considered if MOS is less than 2:

```
(config-voip)# qoe qoe-profile 0
(qoe-profile-0)# qoe-color-rules 1
(qoe-color-rules-0/1)# monitored-parameter mos
(qoe-color-rules-0/1)# major-threshold-red 20
```

```
(qoe-color-rules-0/1)# major-hysteresis-red 0.1
(qoe-color-rules-0/1)# activate
```

## quality-of-service-rules

This command configures the Quality of Service Rules table, which lets you define Quality of Service rules.

---

### Syntax

```
(config-voip)# qoe quality-of-service-rules <Index>
(quality-of-service-rules-<Index>)#
```

| Command  | Description   |
|--|---|
| Index  | Defines the table row index.  |
| alt-ip-profile-name  | Assigns a different IP Profile to the IP Group or call (depending on the 'Rule Metric' parameter) if the rule is matched. |
| calls-reject-duration  | Defines the duration (in minutes) for which the device rejects calls to the IP Group if the rule is matched.              |
| ip-group-name  | Assigns an IP Group.  |
| rule-action {alternative-ip-profile reject-calls}                      | Defines the action to be done if the rule is matched.   |
| rule-metric {acd asr bandwidth ner poor-invoice-quality voice-quality} | Defines the performance monitoring call metric to which the rule applies if the metric's threshold is crossed.            |
| severity {major minor}   | Defines the alarm severity level.   |

---

### Command Mode

Privileged User

---

### Example

This example configures a Quality of Service rule that rejects calls to IP Group "ITSP" if bandwidth severity is Major:

```
(config-voip)# qoe quality-of-service-rules 0
(quality-of-service-rules-0)# ip-group-name ITSP
(quality-of-service-rules-0)# rule-action reject-calls
(quality-of-service-rules-0)# rule-metric bandwidth
(quality-of-service-rules-0)# severity major
(quality-of-service-rules-0)# activate
```

## qoe-settings

This command configures the OVOC server to where the device sends QoE data.

### Syntax

```
(config-voip)# qoe qoe-settings 0
(qoe-settings-0)#
```

| Command                                  | Description  |
|--|--|
| interface                                | Defines the IP network interface on which the quality experience reports are sent.                                       |
| keep-alive-time <0-64>                   | Defines the interval (in seconds) between every consecutive keep-alive message that the device sends to the OVOC server. |
| report-mode {during-call end-call}       | Defines at what stage of the call the device sends the QoE data of the call to the OVOC server.                          |
| tls{off on}                              | Enables a TLS connection with the OVOC server.   |
| server-name                              | Defines the IP address or FQDN (hostname) of the OVOC server to where the quality experience reports are sent.           |
| tls-context-name                         | Assigns a TLS Context or certificate (configured in the TLS Contexts table) for the TLS connection with the OVOC server. |
| verify-certificate {off on}              | Enables TLS verification of the certificate provided by OVOC.  |
| verify-certificate-subject-name {off on} | Enables subject name (CN/SAN) verification of the certificate provided by OVOC.  |



---

**Command Mode**

Privileged User

---

**Note**

Only one table row (index) can be configured.

---

**Example**

This example configures the IP address of OVOC as 10.15.7.89 and uses IP network interface OAMP for communication:

```
(config-voip)# qoe qoe-settings 0
(qoe-settings-0)# server-name 10.15.7.89
(qoe-settings-0qoe)# interface OAMP
(qoe-settings-0qoe)# activate
```

## 70 realm

This command configures the Media Realms table, which lets you define a pool of SIP media interfaces, termed Media Realms.

### Syntax

```
(config-voip)# realm <Index>
(real-<Index>#
```

| Command                     | Description  |
|-----------------------------|--|
| Index                       | Defines the table row index.   |
| bw-profile                  | Assigns a Bandwidth Profile to the Media Realm.  |
| ipv4if                      | Assigns an IPv4 interface to the Media Realm.  |
| ipv6if                      | Assigns an IPv6 interface to the Media Realm.  |
| is-default {disable enable} | Defines the Media Realm as the default Media Realm.  |
| name                        | Defines a descriptive name, which is used when associating the row in other tables.  |
| port-range-start            | Defines the starting port for the range of media interface UDP ports.  |
| qoe-profile                 | Assigns a QoE Profile to the Media Realm.  |
| realm-extension             | Defines the Media Realm Extension table, which lets you define Media Realm Extensions per Media Realm. The table is a child of the Media Realm table. For more information, see <a href="#">realm-extension</a> on page 432. |
| remote-ipv4if               | Assigns an IPv4 interface for media of a Media Component(s) operating under this Cluster Manager (Signaling Component) to the Media Realm.<br><b>Note:</b> This command is applicable only to Mediant CE SBC.                |

| Command  | Description   |
|--|---|
| <code>remote-ipv6if</code>                           | Assigns an IPv6 interface for media of a Media Component(s) operating under this Cluster Manager (Signaling Component) to the Media Realm.<br><b>Note:</b> This command is applicable only to Mediant CE SBC.   |
| <code>remote-media-subnet</code>                     | Defines the Remote Media Subnets table, which lets you define destination subnets for media (RTP/SRTP) traffic on a specific Media Realm. The table is a child of the Media Realm table. For more information, see <a href="#">remote-media-subnet</a> on page 433. |
| <code>session-leg</code>                             | Defines the number of media sessions for the configured port range.   |
| <code>tcp-port-range-end</code>                      | Defines the ending port of the range of media interface TCP ports for media (RTP, RTCP and T.38) and MSRP traffic.  |
| <code>tcp-port-range-start</code>                    | Defines the starting port of the range of media interface TCP ports for media (RTP, RTCP and T.38) and MSRP traffic.  |
| <code>topology-location {down up}</code>             | Defines the display location of the Media Realm in the Topology view of the Web interface.  |
| <code>used-by-routing-server {not-used  used}</code> | Enables the Media Realm to be used by a third-party routing server or ARM for call routing decisions.   |

---

### Command Mode

Privileged User

---

### Example

This example configures a Media Realm for IPv4 network interface "Voice", with port start from 5061 and with 10 sessions:

```
(config-voip)# realm 0
(real-0)# name ITSP
(real-0)# ipv4if Voice
(real-0)# port-range-start 5061
(real-0)# session-leg 10
(real-0)# activate
```

## realm-extension

This command configures the Media Realm Extension table, which lets you define Media Realm Extensions. A Media Realm Extension defines a port range with the number of sessions for a specific Media-type network interface (configured in the IP Interfaces table). The table is a child of the Media Realm table.

### Syntax

```
(config-voip)# realm <Index>
(real-<Index># realm-extension <Index>
(real-extension-<Index>/<Index>)#
```

| Command          | Description   |
|------------------|---|
| Index            | Defines the table row index.  |
| ipv4if           | Assigns an IPv4 network interface (configured in the IP Interfaces table) to the Media Realm Extension. |
| ipv6if           | Assigns an IPv6 network interface (configured in the IP Interfaces table) to the Media Realm Extension. |
| port-range-start | Defines the first (lower) port in the range of media UDP ports for the Media Realm Extension.           |
| session-leg      | Defines the number of media sessions for the port range.  |

### Command Mode

Privileged User

### Example

This example configures a Media Realm Extension where two sessions are for interface "Voice":

```
(config-voip)# realm 0
(realms-0)# realm-extension 1
(realms-extension-0/1)# ipv4if Voice
(realms-extension-0/1)# session-leg 2
(realms-extension-0/1)# activate
```

## remote-media-subnet

This command configures the Remote Media Subnets table, which lets you define destination subnets for media (RTP/SRTP) traffic on a specific Media Realm. The table is a child of the Media Realm table.

---

### Syntax

```
(config-voip)# realm <Index>
(realms-<Index># remote-media-subnet <Index>
(remote-media-subnet-<Index>/<Index>)#
```

| Command                       | Description   |
|-------------------------------|---|
| Index                         | Defines the table row index.  |
| address-family<br>{ipv4 ipv6} | Defines the IP address protocol.  |
| bw-profile                    | Assigns a Bandwidth Profile to the Remote Media Subnet.                             |
| dst-ip-address                | Defines the IP address of the destination.  |
| name                          | Defines a descriptive name, which is used when associating the row in other tables. |
| prefix-length                 | Defines the subnet mask in Classless Inter-Domain Routing (CIDR) notation.          |
| qoe-profile                   | Assigns a Quality of Experience Profile to the Remote Media Subnet.                 |

---

### Command Mode

Privileged User

---

### Example

This example configures a Remote Media Subnet for international calls to 201.10.5.1 assigned Bandwidth Profile "INT":

```
(config-voip)# realm 0
(real-0)# remote-media-subnet 1
(remote-media-subnet-0/1)# name INT-Calls
(remote-media-subnet-0/1)# dst-ip-address 201.10.5.1
(remote-media-subnet-0/1)# bw-profile INT
(remote-media-subnet-0/1)# activate
```

## 70 remote-interface

This command configures the Remote Media Interface table, which lets you define media IP interfaces of the Media Components operating under the Cluster Manager (Signaling Component).

---

### Syntax

```
(config-voip)# remote-interface <Index>  
(remote-interface-<Index>)#
```

| Command   | Description   |
|-----------|---|
| Index     | Defines the table row index.  |
| name      | Defines the name of the IP Interface for media that is configured on the Media Component(s) in the IP Interfaces table. |
| no-of-mcs | Displays the number of Media Components that have the same media IP Interface name.                                     |

---

### Command Mode

Privileged User

---

### Note

- This table is configured automatically by the Stack Manager and therefore, it should be used only for viewing.
- This command is applicable only to Mediant CE SBC.

## 71 sbc

This command configures SBC tables.

---

### Syntax

```
(config-voip)# sbc
```

| Command                      | Description  |
|------------------------------|--|
| classification               | See <a href="#">classification</a> below                     |
| dial-plan                    | See <a href="#">dial-plan &lt;Index&gt;</a> on page 439      |
| external-media-source        | See <a href="#">external-media-source</a> on page 442        |
| malicious-signature-database | See <a href="#">malicious-signature-database</a> on page 443 |
| manipulation                 | See <a href="#">manipulation</a> on page 444                 |
| routing                      | See <a href="#">routing</a> on page 449                      |
| cac-profile                  | See <a href="#">cac-profile</a> on page 459                  |
| settings                     | See <a href="#">settings</a> on page 461                     |

---

### Command Mode

Privileged User

## classification

This command configures the Classification table, which lets you define Classification rules.

---

### Syntax

```
(config-voip)# sbc classification <Index>
(classification-<Index>)#
```

| Command | Description                  |
|---------|------------------------------|
| Index   | Defines the table row index. |



| Command   | Description   |
|---|---|
| <code>action-type</code><br>{allow deny }                         | Defines a whitelist or blacklist for the matched incoming SIP dialog.   |
| <code>classification-name</code>                                  | Defines a descriptive name, which is used when associating the row in other tables.                                   |
| <code>dest-routing-policy</code>                                  | Assigns a Routing Policy to the matched incoming SIP dialog.  |
| <code>dst-host</code>   | Defines the prefix of the destination Request-URI host name as a matching characteristic for the incoming SIP dialog. |
| <code>dst-user-name-pattern</code>                                | Defines the prefix of the destination Request-URI user part as a matching characteristic for the incoming SIP dialog. |
| <code>ip-group-selection</code><br>{src-ip-group tagged-ip-group} | Defines how the incoming SIP dialog is classified to an IP Group.   |
| <code>ip-group-tag-name</code>                                    | Defines the source tag of the incoming SIP dialog.  |
| <code>ip-profile-id</code>  | Assigns an IP Profile to the matched incoming SIP dialog.   |
| <code>message-condition-name</code>                               | Assigns a Message Condition rule to the Classification rule as a matching characteristic for the incoming SIP dialog. |
| <code>src-host</code>   | Defines the prefix of the source URI host name as a matching characteristic for the incoming SIP dialog.              |
| <code>src-ip-address</code>                                       | Defines a source IP address as a matching characteristic for the incoming SIP dialog.                                 |
| <code>src-ip-group-name</code>                                    | Assigns an IP Group to the matched incoming SIP dialog.   |
| <code>src-port</code>   | Defines the source port number as a matching characteristic for the incoming SIP dialog.                              |
| <code>src-sip-interface-name</code>                               | Assigns a SIP Interface to the rule as a matching characteristic for the incoming SIP dialog.                         |
| <code>src-transport-type</code>                                   | Defines the source transport type as a matching   |

| Command               | Description  |
|-----------------------|--|
| {any tcp tls udp}     | characteristic for the incoming SIP dialog.  |
| src-user-name-pattern | Defines the prefix of the source URI user part as a matching characteristic for the incoming SIP dialog. |
| srd-name              | Assigns an SRD to the rule as a matching characteristic for the incoming SIP dialog.                     |

---

### Command Mode

Privileged User

---

### Example

This example configures a Classification rule whereby calls received from IP address 201.2.2.10 are classified as received from IP Group "ITSP":

```
(config-voip)# sbc classification 0
(classification-0)# classification-name ITSP
(classification-0)# src-ip-group-name ITSP
(classification-0)# src-ip-address 201.2.2.10
(classification-0)# activate
```

## dial-plan

This command configures Dial Plans.

---

### Syntax

```
(config-voip)# sbc dial-plan
```

| Command             | Description  |
|---------------------|--|
| <Index>             | Defines the Dial Plan table row index (see <a href="#">dial-plan &lt;Index&gt;</a> on the next page).  |
| dial-plan-rule      | Defines the Dial Plan Rule table, which defines the dial plans (rules) per Dial Plan. The table is a child of the Dial Plan table. For more information, see <a href="#">dial-plan-rule &lt;Index&gt;</a> on page 440. |
| export-csv-to <URL> | Exports all Dial Plans (without their Dial Plan Rules) as a .csv file from the device to a remote server.  |

| Command                                       | Description  |
|---|--|
| <code>import-csv-<br/>from &lt;URL&gt;</code> | Imports Dial Plans (without their Dial Plan Rules) to the device from a .csv file on a remote server. It deletes all existing Dial Plan Rules. |

---

#### Command Mode

Privileged User

---

#### Example

This example exports all Dial Plans to a remote server:

```
(config-voip)# sbc dial-plan export-csv-to tftp://172.17.137.52/11.csv
```

### dial-plan <Index>

This command configures the Dial Plan table, which defines the name of the Dial Plan. The table is a parent of the Dial Plan Rule table.

---

#### Syntax

```
(config-voip)# sbc dial-plan <Index>  
(dial-plan-<Index>)#
```

| Command | Description                            |
|---------|--|
| <Index> | Defines the Dial Plan table row index. |
| name    | Defines a name for the Dial Plan.      |

---

#### Command Mode

Privileged User

---

#### Example

This example configures a Dial Plan with the name "ITSP":

```
(config-voip)# sbc dial-plan 0  
(dial-plan-0)# name ITSP  
(dial-plan-0)# activate
```

## dial-plan-rule

This command provides various commands for Dial Plan Rules.

---

### Syntax

```
(config-voip)# sbc dial-plan <Dial Plan Index>
(dial-plan-<Dial Plan Index>)# dial-plan-rule {<Dial Plan Rule Index>|export-csv-
to|import-csv-from}
```

| Command                 | Description   |
|-------------------------|---|
| <Dial Plans Rule Index> | Defines the Dial Plan Rules table (see <a href="#">dial-plan-rule &lt;Index&gt;</a> below) for the specified Dial Plan.   |
| export-csv-to <URL>     | Exports all the Dial Plan Rules of the Dial Plan as a .csv file to a remote server.   |
| import-csv-from <URL>   | Imports all the Dial Plan Rules into the Dial Plan from a .csv file on a remote server. All the previously configured Dial Plan Rules of the Dial Plan are deleted. |

---

### Command Mode

Privileged User

---

### Example

This example exports the Dial Plan Rules of Dial Plan #0 to a remote TFTP server:

```
(config-voip)# sbc dial-plan 0
(dial-plan-0)# dial-plan-rule export-csv-to tftp://172.17.137.52/My-Dial-Plan.csv
```

## dial-plan-rule <Index>

This command configures the Dial Plan Rule table, which defines the dial plans (rules) per Dial Plan. The table is a child of the Dial Plan table.

---

### Syntax

```
(config-voip)# sbc dial-plan <Dial Plan Index>
(dial-plan-<Dial Plan Index>)# dial-plan-rule <Dial Plan Rule Index>
(dial-plan-rule-<Index>/<Index>)#
```

| Command                | Description   |
|------------------------|---|
| <Dial Plan Rule Index> | Defines the Dial Plan Rule table row index.   |
| name                   | Defines a descriptive name, which is used when associating the row in other tables. |
| prefix                 | Defines the prefix number of the source or destination number.                      |
| tag                    | Defines a tag.  |

---

### Command Mode

Privileged User

---

### Example

This example configures a Dial Plan rule for Dial Plan #0, for calls received with prefix "1" with the name "ITSP":

```
(config-voip)# sbc dial-plan 0
(dial-plan-0)# name dial-plan-rule 1
(dial-plan-rule-0/1)# name INT
(dial-plan-rule-0/1)# prefix 1
(dial-plan-rule-0/1)# activate
```

## dial-plan dial-plan-rule

This command exports and imports Dial Plan Rules of a specified Dial Plan.

---

### Syntax

```
(config-voip)# sbc dial-plan dial-plan-rule
```

| Command                                  | Description  |
|--|--|
| export-csv-to<br><Dial Plan Index> <URL> | Exports all the Dial Plan Rules of the specified Dial Plan as a .csv file to a remote server.  |
| import-csv-from <Dial Plan Index>        | Imports all the Dial Plan Rules into the specified Dial Plan, from a .csv file on a remote server. All the previously configured Dial Plan Rules of the specified Dial Plan are deleted. |

| Command | Description |
|---------|-------------|
| <URL>   |             |

---

### Command Mode

Privileged User

---

### Example

This example exports the Dial Plan Rules of Dial Plan #0 to a remote TFTP server:

```
(config-voip)# sbc dial-plan dial-plan-rule export-csv-to 0 tftp://172.17.137.52/My-Dial-Plan.csv
```

## external-media-source

This command configures the External Media Source table, which defines an external media source for playing Music on Hold (MoH) to call parties that have been placed on-hold.

---

### Syntax

```
(config-voip)# sbc external-media-source <Index>
(external-media-source-<Index>)#
```

| Command       | Description  |
|---------------|--|
| Index         | Defines the table row index. Only Index 0 is supported.  |
| dst-uri       | Defines the destination URI (user@host) of the SIP To header contained in the INVITE message that the device sends to the external media source. |
| ip-group-name | Assigns an IP Group from the IP Groups table.  |
| src-uri       | Defines the source URI (user@host) of the SIP From header contained in the INVITE message that the device sends to the external media source.    |

---

### Command Mode

Privileged User

---

**Example**

This example configures an external media source for MoH:

```
(config-voip)# sbc sbc external-media-source 0
(external-media-source-0)# ip-group-name MoH-Player
(external-media-source-0)# activate
```

## malicious-signature-database

This command configures the Malicious Signature table, which lets you define Malicious Signature patterns.

---

**Syntax**

```
(config-voip)# sbc malicious-signature-database <Index>
(malicious-signature-database-<Index>)#
```

| Command | Description   |
|---------|---|
| Index   | Defines the table row index.  |
| name    | Defines a descriptive name, which is used when associating the row in other tables. |
| pattern | Defines the signature pattern.  |

---

**Command Mode**

Privileged User

---

**Example**

This example configures a Malicious Signature for the SIP scan attack:

```
(config-voip)# sbc malicious-signature-database 0
(malicious-signature-database-0)# name SCAN
(malicious-signature-database-0)# pattern header.user-agent.content prefix 'sip-
scan'
(malicious-signature-database-0)# activate
```

## manipulation

This command configures SBC manipulation tables.

### Syntax

```
(config-voip)# sbc manipulation
```

| Command                               | Description  |
|---------------------------------------|--|
| <code>ip-inbound-manipulation</code>  | See <a href="#">ip-inbound-manipulation</a> below        |
| <code>ip-outbound-manipulation</code> | See <a href="#">ip-outbound-manipulation</a> on page 446 |

### Command Mode

Privileged User

## ip-inbound-manipulation

This command configures the Inbound Manipulations table, which lets you define IP-to-IP Inbound Manipulation rules. An Inbound Manipulation rule defines a manipulation sequence for the source or destination SIP URI user part of inbound SIP dialog requests.

### Syntax

```
(config-voip)# sbc manipulation ip-inbound-manipulation <Index>
(ip-inbound-manipulation-<Index>)#
```

| Command                                 | Description   |
|---|---|
| Index                                   | Defines the table row index.  |
| <code>dst-host</code>                   | Defines the destination SIP URI host name - full name, typically located in the Request URI and To headers.   |
| <code>dst-user-name-pattern</code>      | Defines the prefix of the destination SIP URI user name, typically located in the Request-URI and To headers. |
| <code>is-additional-manipulation</code> | Determines whether additional   |



| Command  | Description   |
|--|---|
| <code>{disable enable}</code>  | SIP URI user part manipulation is done for the table entry rule listed directly above it. |
| <code>leave-from-right</code>  | Defines the number of characters that you want retained from the right of the user name.  |
| <code>manipulated-uri {destination source}</code>  | Determines whether the source or destination SIP URI user part is manipulated.            |
| <code>manipulation-name</code>   | Defines an arbitrary name to easily identify the manipulation rule.                       |
| <code>prefix-to-add</code>   | Defines the number or string that you want added to the front of the user name.           |
| <code>purpose {normal routing-input-only shared-line}</code>                                       | Defines the purpose of the manipulation:  |
| <code>remove-from-left</code>  | Defines the number of digits to remove from the left of the user name prefix.             |
| <code>remove-from-right</code>   | Defines the number of digits to remove from the right of the user name prefix.            |
| <code>request-type {all invite invite-and-register invite-and-subscribe register subscribe}</code> | Defines the SIP request type to which the manipulation rule is applied.                   |
| <code>routing-policy-name</code>   | Assigns a Routing Policy to the rule.   |
| <code>src-host</code>  | Defines the source SIP URI host name - full name (usually in the From header).            |
| <code>src-ip-group-name</code>   | Defines the IP Group from where the incoming INVITE is received.                          |

| Command                            | Description  |
|------------------------------------|--|
| <code>src-user-name-pattern</code> | Defines the prefix of the source SIP URI user name (usually in the From header). |
| <code>suffix-to-add</code>         | Defines the number or string that you want added to the end of the user name.    |

---

### Command Mode

Privileged User

---

### Example

This example configures an Inbound Manipulation rule that adds prefix "40" to the URI if the destination hostname is "abc.com":

```
(config-voip)# sbc manipulation ip-inbound-manipulation 0
(ip-inbound-manipulation-0)# manipulation-name ITSP-MAN
(ip-inbound-manipulation-0)# dst-host abc.com
(ip-inbound-manipulation-0)# prefix-to-add 40
(ip-inbound-manipulation-0)# manipulated-uri destination
(ip-inbound-manipulation-0)# activate
```

## ip-outbound-manipulation

This command configures the Outbound Manipulations table, which lets you define IP-to-IP Outbound Manipulation rules. An Outbound Manipulation rule defines a manipulation action for the SIP Request-URI user part (source or destination) or calling name of outbound SIP dialog requests.

---

### Syntax

```
(config-voip)# sbc manipulation ip-outbound-manipulation <Index>
(ip-outbound-manipulation-<Index>)#
```

| Command                           | Description  |
|-----------------------------------|--|
| Index                             | Defines the table row index.   |
| <code>calling-name-pattern</code> | Defines the prefix of the calling name (caller ID). The calling name |

| Command   | Description   |
|---|---|
|   | appears in the SIP From header.   |
| <code>dest-tags</code>  | Assigns a prefix tag to denote destination URI user names corresponding to the tag configured in the associated Dial Plan.  |
| <code>dst-host</code>   | Defines the destination SIP URI host name - full name, typically located in the Request-URI and To headers.                 |
| <code>dst-ip-group-name</code>  | Defines the IP Group to where the INVITE is to be sent.   |
| <code>dst-user-name-pattern</code>  | Defines the prefix of the destination SIP URI user name, typically located in the Request-URI and To headers.               |
| <code>is-additional-manipulation</code><br>{disable yes}  | Determines whether additional manipulation is done for the table entry rule listed directly above it.                       |
| <code>leave-from-right</code>   | Defines the number of digits to keep from the right of the manipulated item.  |
| <code>manipulated-uri</code><br>{destination source}  | Defines the element in the SIP message that you want manipulated.   |
| <code>manipulation-name</code>  | Defines a descriptive name, which is used when associating the row in other tables.   |
| <code>message-condition-name</code>   | Assigns a Message Condition rule as a matching characteristic. Message Condition rules define required SIP message formats. |
| <code>prefix-to-add</code>  | Defines the number or string to add in the front of the manipulated item.   |
| <code>privacy-restriction-mode</code> {dont-change-privacy remove-restriction restrict transparent} | Defines user privacy handling (i.e., restricting source user identity in outgoing SIP dialogs).                             |

| Command  | Description   |
|--|---|
| <code>re-route-ip-group-name</code>  | Defines the IP Group that initiated (sent) the SIP redirect response (e.g., 3xx) or REFER message.                    |
| <code>remove-from-left</code>  | Defines the number of digits to remove from the left of the manipulated item prefix.                                  |
| <code>remove-from-right</code>   | Defines the number of digits to remove from the right of the manipulated item prefix.                                 |
| <code>request-type {all invite invite-and-register invite-and-subscribe register subscribe}</code> | Defines the SIP request type to which the manipulation rule is applied.   |
| <code>routing-policy-name</code>   | Assigns a Routing Policy to the rule.   |
| <code>src-host</code>  | Defines the source SIP URI host name - full name, typically in the From header.                                       |
| <code>src-ip-group-name</code>   | Defines the IP Group from where the INVITE is received.   |
| <code>src-tags</code>  | Assigns a prefix tag to denote source URI user names corresponding to the tag configured in the associated Dial Plan. |
| <code>src-user-name-pattern</code>   | Defines the prefix of the source SIP URI user name, typically used in the SIP From header.                            |
| <code>suffix-to-add</code>   | Defines the number or string to add at the end of the manipulated item.   |
| <code>trigger {3xx 3xx-or-refer any initial-only refer}</code>                                     | Defines the reason (i.e., trigger) for the re-routing of the SIP request.   |

---

**Command Mode**

Privileged User

---

**Example**

This example configures an Outbound Manipulation rule that removes two digits from the right of the destination URI if the calling name prefix is "WEI":

```
(config-voip)# sbc manipulation ip-outbound-manipulation 0
(ip-outbound-manipulation-0)# manipulation-name ITSP-OOUTMAN
(ip-outbound-manipulation-0)# calling-name-pattern WEI
(ip-outbound-manipulation-0)# manipulated-uri destination
(ip-outbound-manipulation-0)# remove-from-right 2
(ip-outbound-manipulation-0)# activate
```

## routing

This command configures SBC routing.

---

### Syntax

```
(config-voip)# sbc routing
```

| Command                 | Description   |
|-------------------------|---|
| condition-table         | See <a href="#">condition-table</a> below           |
| ip-group-set            | See <a href="#">ip-group-set</a> on the next page   |
| ip2ip-routing           | See <a href="#">ip2ip-routing</a> on page 452       |
| sbc-alt-routing-reasons | See <a href="#">alt-routing-reasons</a> on page 455 |
| sbc-routing-policy      | See <a href="#">sbc-routing-policy</a> on page 458  |

---

### Command Mode

Privileged User

## condition-table

This command configures the Message Conditions table, which lets you define Message Condition rules. A Message Condition defines special conditions (requisites) for incoming SIP messages.

---

### Syntax

```
(config-voip)# sbc routing condition-table <Index>
(condition-table-<Index>)#
```

| Command   | Description   |
|-----------|---|
| Index     | Defines the table row index.  |
| condition | Defines the condition of the SIP message.   |
| name      | Defines a descriptive name, which is used when associating the row in other tables. |

---

### Command Mode

Privileged User

---

### Example

This example configures a Message Condition rule whose condition is that a SIP Via header exists in the message:

```
(config-voip)# sbc routing condition-table 0
(condition-table-0)# name ITSP
(condition-table-0)# condition header.via.exists
(condition-table-0)# activate
```

## ip-group-set

This command configures the IP Group Set table, which lets you define IP Group Sets. An IP Group Set is a group of IP Groups used for load balancing of calls, belonging to the same source, to a call destination (i.e., IP Group). The table is a parent of the IP Group Set Member table.

---

### Syntax

```
(config-voip)# sbc routing ip-group-set <Index>
(ip-group-set-<Index>)#
```

| Command             | Description  |
|---------------------|--|
| Index               | Defines the table row index.   |
| ip-group-set-member | conf Defines igures the IP Group Set Member table, which lets you assign IP Groups to IP Group Sets. The table is a child of the IP Group Set table. For more information, see <a href="#">ip-group-set-member</a> on the next page. |
| name                | Defines a descriptive name, which is used when associating the   |

| Command  | Description                        |
|--|------------------------------------|
|  | row in other tables.               |
| policy<br>{homing random-<br>weight round-<br>robin} | Defines the load-balancing policy. |
| tags   | Defines tags.                      |

---

### Command Mode

Privileged User

---

### Example

This example configures an IP Group Set where the IP Group load-balancing is of homing type:

```
(config-voip)# sbc routing ip-group-set 0
(ip-group-set-0)# name ITSP
(ip-group-set-0)# policy homing
(ip-group-set-0)# activate
```

### ip-group-set-member

This command configures the IP Group Set Member Table, which lets you assign IP Groups to IP Group Sets. The table is a child of the IP Group Set table.

---

### Syntax

```
(config-voip)# sbc routing ip-group-set <Index>
(ip-group-set-<Index>)# ip-group-set-member <Index>
(ip-group-set-member-<Index>/<Index>)#
```

| Command       | Description                              |
|---------------|--|
| Index         | Defines the table row index.             |
| ip-group-name | Assigns an IP Group to the IP Group Set. |
| weight {1-9}  | Defines the weight of the IP Group.      |

---

### Command Mode

Privileged User

---

### Example

This example configures an IP Group Set Member with IP Group "SIP-Trunk":

```
(config-voip)# sbc routing ip-group-set 0
(ip-group-set-0)# ip-group-set-member 1
(ip-group-set-member-0/1)# ip-group-name SIP-Trunk
(ip-group-set-member-0/1)# weight 9
(ip-group-set-member-0/1)# activate
```

### ip2ip-routing

This command configures the IP-to-IP Routing table, which lets you define SBC IP-to-IP routing rules.

---

### Syntax

```
(config-voip)# sbc routing ip2ip-routing <Index>
(ip2ip-routing-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| alt-route-options {alt-route-consider-inputs alt-route-ignore-inputs group-member-consider-inputs group-member-ignore-inputs route-row} | Determines whether this routing rule is the main routing rule or an alternative routing rule (to the rule defined directly above it in the table). |
| call-setup-rules-set-id   | Assigns a Call Setup Rule Set ID to the routing rule.  |
| cost-group  | Assigns a Cost Group to the routing rule for determining the cost of the call.   |
| dest-sip-interface-name   | Defines the destination SIP Interface to where the call is sent.   |
| dest-tags   | Assigns a prefix tag to denote   |



| Command   | Description   |
|---|---|
|   | destination URI user names corresponding to the tag configured in the associated Dial Plan.   |
| dst-address   | Defines the destination address to where the call is sent.  |
| dst-host  | Defines the host part of the incoming SIP dialog's destination URI (usually the Request-URI).   |
| dst-ip-group-name   | Defines the IP Group to where you want to route the call.   |
| dst-port  | Defines the destination port to where the call is sent.   |
| dst-transport-type {tcp tls udp}  | Defines the transport layer type for sending the call.  |
| dst-type {all-users destination-tag dial-plan dst-address enum gateway hunt-group internal ip-group ip-group-set ldap request-uri routing-server} | Determines the destination type to which the outgoing SIP dialog is sent.   |
| dst-user-name-pattern   | Defines the prefix of the incoming SIP dialog's destination URI (usually the Request URI) user part. You can use special notations for denoting the prefix. T |
| group-policy {forking sequential}   | Defines whether the routing rule includes call forking.   |
| internal-action   | Defines a SIP response code (e.g., 200 OK) or a redirection response (with an optional Contact field indicating to where the sender must re-                  |

| Command   | Description  |
|---|--|
|   | send the message) that the device sends to the sender of the incoming SIP dialog (instead of sending the call to another destination). The parameter is applicable only when the 'Destination Type' parameter in this table is configured to Internal. |
| ipgroupset-name   | Assigns an IP Group Set to the routing rule.   |
| message-condition-name  | Assigns a SIP Message Condition rule to the IP-to-IP Routing rule.   |
| modified-dest-user-name   | Defines the user part of the Request-URI in the outgoing SIP dialog message.   |
| re-route-ip-group-name  | Defines the IP Group that initiated (sent) the SIP redirect response (e.g., 3xx) or REFER message.   |
| request-type {all invite invite-and-register invite-and-subscribe options register subscribe} | Defines the SIP dialog request type (SIP Method) of the incoming SIP dialog.   |
| route-name  | Defines a descriptive name, which is used when associating the row in other tables.  |
| routing-tag-name  | Defines a routing tag name.  |
| sbc-routing-policy-name   | Assigns a Routing Policy to the rule.  |
| src-host  | Defines the host part of the incoming SIP dialog's source URI (usually the From URI).  |
| src-ip-group-name   | Defines the IP Group from  |

| Command  | Description  |
|--|--|
|  | where the IP call is received (i.e., the IP Group that sent the SIP dialog).                                   |
| <code>src-tags</code>  | Assigns a tag to denote source URI user names corresponding to the tag configured in the associated Dial Plan. |
| <code>src-user-name-pattern</code>   | Defines the prefix of the user part of the incoming SIP dialog's source URI (usually the From URI).            |
| <code>trigger {3xx 3xx-or-refer any broken-connection fax-rerouting initial-only refer}</code> | Defines the reason (i.e., trigger) for re-routing (i.e., alternative routing) the SIP request.                 |

---

#### Command Mode

Privileged User

---

#### Example

This example configures a routing rule for calls from IP Group "IPBX" to IP Group "ITSP":

```
(config-voip)# sbc routing ip2ip-routing 0
(ip2ip-routing-0)# route-name IPPBX-TO-SIPTRUNK
(ip2ip-routing-0)# src-ip-group-name IPBX
(ip2ip-routing-0)# dst-type ip-group
(ip2ip-routing-0)# dst-ip-group-name ITSP
(ip2ip-routing-0)# activate
```

### alt-routing-reasons

This command configures the Alternative Reasons Set table, which lets you define a name for a group of SIP response codes for call release (termination) reasons that initiate alternative routing. The table is a parent of the Alternative Reasons Rules table, which defines the response codes.

---

#### Syntax

```
(config-voip)# sbc routing alt-route-reasons-set <Index>
(alt-route-reasons-set-<Index>)#
```

| Command                 | Description  |
|-------------------------|--|
| Index                   | Defines the table row index.   |
| alt-route-reasons-rules | Defines the Alternative Reasons Rules table, which defines SIP response codes for the Alternative Reasons Set. The table is a child of the Alternative Reasons Set table. For more information, see <a href="#">alt-route-reasons-rules</a> below. |
| description             | Defines a description for the Alternative Reasons Set.   |
| name                    | Defines a name for the Alternative Reasons Set, which is used when associating the row in other tables.  |

---

### Command Mode

Privileged User

---

### Example

This example configures an Alternative Reasons Set called "MyCodes":

```
(config-voip)# sbc routing alt-route-reasons-set 0
(alt-route-reasons-set-0)# name MyCodes
(alt-route-reasons-set-0)# activate
```

### alt-route-reasons-rules

This command configures the Alternative Reasons Rules table, which lets you define SIP response codes per Alternative Reasons Set. The table is a child of the Alternative Reasons Set table.

---

### Syntax

```
(config-voip)# sbc routing alt-route-reasons-set <Index>
(alt-route-reasons-set-<Index>)# alt-route-reasons-rules <Index>
(alt-route-reasons-rules-<Index/Index>)
```

| Command  | Description  |
|--|--|
| Index  | Defines the table row index.   |
| rel-cause-code {400-bad-req 402-payment-req 403-forbidden 404-not-found 405-method-not-allowed 406-not-acceptable 408-req-timeout 409-conflict 410-gone 413-req-too-large 414-req-uri-too-long 415-unsupported-media 420-bad-ext 421-ext-req 423-session-interval-too-small 480-unavail 481-transaction-not-exist 482-loop-detected 483-too-many-hops 484-address-incomplete 485-ambiguous 486-busy 487-req-terminated 488-not-acceptable-here 491-req-pending 493-undecipherable 4xx 500-internal-err 501-not-implemented 502-bad-gateway 503-service-unavail 504-server-timeout 505-version-not-supported 513-message-too-large 5xx 600-busy-everywhere 603-decline 604-does-not-exist-anywhere 606-not-acceptable 6xx 805-admission-failure 806-media-limits-exceeded 850-signalling-limits-exceeded} | Defines a SIP response code for triggering the device's alternative routing mechanism. |

---

### Command Mode

Privileged User

---

### Example

This example configures alternative routing when SIP response code 606 (Not Acceptable) is received:

```
(config-voip)# sbc routing alt-route-reasons-set 0
(alt-route-reasons-set-0)# alt-route-reasons-rules 0
(alt-route-reasons-rules-0/0)# rel-cause-code 606-not-acceptable
(alt-route-reasons-rules-0/0)# activate
```

## sbc-routing-policy

This command configures the Routing Policies table, which lets you define Routing Policy rules.

### Syntax

```
(config-voip)# sbc routing sbc-routing-policy <Index>
(sbc-routing-policy-<Index>)#
```

| Command                                     | Description  |
|---|--|
| Index                                       | Defines the table row index.   |
| lcr-call-length                             | Defines the average call duration (in minutes) and is used to calculate the variable portion of the call cost.   |
| lcr-default-cost {highest-cost lowest-cost} | Defines whether routing rules in the IP-to-IP Routing table that are not assigned a Cost Group are considered a higher cost or lower cost route compared to other matched routing rules that are assigned Cost Groups. |
| lcr-enable {disabled enabled}               | Enables the Least Cost Routing (LCR) feature for the Routing Policy.   |
| ldap-srv-group-name                         | Assigns an LDAP Server Group to the Routing Policy.  |
| name  | Defines a  |

| Command | Description   |
|---------|---|
|         | descriptive name, which is used when associating the row in other tables. |

---

### Command Mode

Privileged User

---

### Example

This example configures a Routing Policy for "ITSP" that is assigned LDAP Server Group "AD":

```
(config-voip)# sbc routing sbc-routing-policy 0
(sbc-routing-policy-0)# name ITSP
(sbc-routing-policy-0)# ldap-srv-group-name AD
(sbc-routing-policy-0)# activate
```

## cac-profile

This command configures the Call Admission Control Profile table, which lets you define CAC profiles for call admission control (CAC) rules.

---

### Syntax

```
(config-voip)# sbc cac-profile <Index>
(cac-profile-<Index>)#
```

| Command  | Description   |
|----------|---|
| Index    | Defines the table row index.  |
| cac-rule | Defines the Call Admission Control Rule table, which lets you define CAC rules per Call Admission Control Profile. The table is a child of the Call Admission Control Profile table. For more information, see <a href="#">cac-rule</a> on the next page. |
| name     | Defines a descriptive name, which is used when associating the row in other tables.   |

---

### Command Mode

Privileged User

---

### Example

This example configures a Call Admission Control Profile called "ITSP-CAC":

```
(config-voip)# sbc cac-profile 0
(cac-profile-0)# name ITSP-CAC
(cac-profile-0)# activate
```

### cac-rule

This command configures the Call Admission Control Rule table, which lets you define Call Admission Control (CAC) rules per Call Admission Control Profile.

---

### Syntax

```
(config-voip)# sbc cac-profile <Index>
(cac-profile-<Index>)# cac-rule <Index>
(cac-rule-<Index>/<Index>)#
```

| Command            | Description   |
|--------------------|---|
| Index              | Defines the table row index.  |
| limit              | Defines the maximum number of concurrent SIP dialogs.                                   |
| limit-per-user     | Defines the maximum number of concurrent SIP dialogs per user.                          |
| max-burst          | Defines the maximum number of tokens (SIP dialogs) that the "bucket" can hold.          |
| max-burst-per-user | Defines the maximum number of tokens (SIP dialogs) that the "bucket" can hold per user. |
| rate               | Defines the maximum number of SIP dialogs per second for the token bucket.              |
| rate-per-user      | Defines the maximum number of SIP dialogs per second per user for the token bucket.     |
| request-direction  | Defines the call direction of the SIP request   |



| Command                                      | Description   |
|--|---|
| {both inbound outbound}                      | to which the rule applies.  |
| request-type<br>{all invite other subscribe} | Defines the SIP dialog-initiating request type to which you want to apply the rule (not the subsequent requests that can be of different type and direction). |
| reservation                                  | Defines the guaranteed (minimum) call capacity.   |

---

### Command Mode

Privileged User

---

### Example

This example configures an Admission Rule that limits concurrent dialogs to 50:

```
(config-voip)# sbc cac-profile 0
(cac-profile-0)# cac-rule 1
(cac-rule-0/1)# limit 50
(cac-rule-0/1)# activate
```

## settings

This command configures various SBC settings.

---

### Syntax

```
(config-voip)# sbc settings
(sbc-settings)#
```

| Command                     | Description  |
|-----------------------------|--|
| abort-retries-on-icmp-error | When using UDP as the transport protocol, the retries failed transmissions to a proxy server according to the [ProxySet_FailureDetectionRetransmissions] parameter. However, when the failed attempt receives an ICMP error (which indicates Host Unreachable or Network Unreachable) as opposed to a timeout, it may be desirable to abandon additional retries in favor of |

| Command                               | Description  |
|---------------------------------------|--|
|                                       | trying the next IP address (proxy server) in the Proxy Set.  |
| auth-chlng-mthd                       | Set to 0 to use a www-authenticate header or 1 to send a proxy-authenticate header in the message  |
| auth-qop                              | Set to 0 to offer auth, 1 to offer auth-int or 2 to offer auth, auth-int, or 3 to not offer any QOP.                                       |
| dtls-time-between-transmissions       | Defines the minimum interval (in msec) that the device waits between transmission of DTLS packets in the same DTLS handshake.              |
| early-media-broken-connection-timeout | Defines the timeout for RTP broken connection on early media (msec).   |
| enable-gruu                           | Obtain and use GRUU (Global Routable UserAgentURIs).   |
| end-point-call-priority               | Defines the ports call priority.   |
| enforce-media-order                   | Arrange media lines according to the previous offer-answer (required by RFC 3264).   |
| enforce-media-order                   | Enforces media order according to RFC 3264.  |
| gw-direct-route-prefix                | Defines the prefix for call redirection from SBC to Gateway.   |
| keep-contact-user-in-reg              | Keeps original Contact User in REGISTER requests.  |
| lifetime-of-nonce                     | Defines the lifetime of the nonce in seconds.  |
| media-channels                        | Defines the number of channels associated with media services (announcements, conferencing).   |
| min-session-expires                   | Defines the minimum amount of time that can occur between session refresh requests in a dialog before the session is considered timed out. |
| no-rtp-detection-timeout              | Defines the timeout for RTP detection after call connect (msec).   |

| Command                               | Description   |
|---------------------------------------|---|
| num-of-subscribes                     | Defines the active SUBSCRIBE sessions limit.  |
| p-assert-id                           | 0 - As Is, 1- Add P-Asserted-Identity Header, 2 - Remove P-Asserted-Identity Header   |
| play-tone-on-connect-failure-behavior | Defines if the device connects or disconnects the call if it can't play the specified tone to the call party.   |
| pns-register-timeout                  | Defines the maximum time (in seconds) that the device waits for a SIP REGISTER refresh message from the user, before it forwards an incoming SIP dialog-initiating request (e.g., INVITE) to the user.  |
| pns-reminder-period                   | Defines the time (in seconds) before the user's registration with the device expires, at which the device sends an HTTP message to the Push Notification Server to trigger it into sending a push notification to the user to remind the user to send a REGISTER refresh message to the device. |
| reserve-dsp-on-sdp-offer {off on}     | Enables the device to reserve (guarantee) DSP resources for a call on the SDP Offer.  |
| sas-notice                            | If enabled - when SBC needs to terminate a REGISTER request, it adds a body (survivability notice) to the 200OK response.   |
| sbc-100trying-upon-reinvite           | Defines if the device sends a SIP 100 Trying response upon receipt of a re-INVITE request.  |
| sbc-3xx-bhvt                          | Defines how the device passes Contact in 3xx responses.   |
| sbc-broadworks-survivability          | Indicates how the registration database is provisioned.   |
| sbc-bye-auth                          | Allows the media to remain active upon receipt of a 401/407 response by sending a releaseNackEvent, rather than releaseEvent.   |
| sbc-db-route-mode                     | Defines the database binding mode for routing search.   |
| sbc-dialog-info-interwork             | Changes the WAN call identifiers in the dialog-info body of NOTIFY messages to LAN call identifiers.  |

| Command                      | Description  |
|------------------------------|--|
| sbc-dialog-subsc-route-mode  | Determines where in-dialog refresh subscribes are sent.  |
| sbc-direct-media<br>{off on} | Enables direct media.  |
| sbc-diversion-uri-type       | Defines which URI to use for Diversion header.   |
| sbc-dtls-mtu                 | Defines the DTLS max transmission unit.  |
| sbc-emerg-condition          | Defines the Emergency Message Condition.   |
| sbc-emerg-rtp-diffserv       | Defines the RTP DiffServ value for Emergency calls.  |
| sbc-emerg-sig-diffserv       | Defines the Signaling DiffServ value for Emergency calls.  |
| sbc-fax-detection-timeout    | Defines the maximum time for fax detection (seconds).  |
| sbc-forking-handling-mode    | Defines the handling method for 18X response to forking.   |
| sbc-gruu-mode                | Defines the GRUU behavior.   |
| sbc-keep-call-id             | Keeps original call Id for outgoing messages.  |
| sbc-max-fwd-limit            | Defines the limit of the Max-Forwards header.  |
| sbc-media-sync               | Enables media sync process.  |
| sbc-mx-call-duration         | Defines the call duration limit.   |
| sbc-no-alert-timeout         | Defines the maximum time to wait for connect (seconds).  |
| sbc-preemption-mode          | Defines the SBC Preemption mode.   |
| sbc-preferences              | Defines the coders combination in the outgoing message.  |
| sbc-prxy-rgstr-time          | Defines the duration (in seconds) in which the user is registered in the proxy DB, after the REGISTER was forwarded by the device. |
| sbc-rand-expire              | Defines the upper limit for the number of seconds the SBC detracts from the Expires value in Register and                          |

| Command                                     | Description  |
|---|--|
|   | Subscribe responses.   |
| <code>sbc-refer-bhvr</code>                 | Defines handling of Refer-To in REFER requests.  |
| <code>sbc-remove-sips-non-sec-transp</code> | Defines the SIP headers for which the device replaces "sips:" with "sip:" in the outgoing SIP-initiating dialog request (e.g., INVITE) when the destination transport type is unsecured (e.g., UDP).   |
| <code>sbc-rgstr-time</code>                 | Defines the Expires value.   |
| <code>sbc-routing-timeout</code>            | Defines the maximum duration (in seconds) that the device is prepared to wait for a response from external servers when a routing rule is configured to query an external server (e.g., LDAP server) on whose response the device uses to determine the routing destination. |
| <code>sbc-rtcp-mode</code>                  | Defines the RTCP mode.   |
| <code>sbc-server-auth-mode</code>           | Defines the authentication mode.   |
| <code>sbc-sess-exp-time</code>              | Defines the session refresh timer for requests in a dialog.  |
| <code>sbc-session-refresh-policy</code>     | Defines whether Remote or SBC should be refresher when SBC terminates the Session Expire refreshing.   |
| <code>sbc-shareline-reg-mode</code>         | Defines the registration handling mode in case of shared line manipulation.  |
| <code>sbc-subs-try</code>                   | If enabled, 100 Trying response will be sent for SUBSCRIBE and NOTIFY.   |
| <code>sbc-surv-rgstr-time</code>            | Defines the duration of the periodic registrations between the user and the SBC, when the SBC is in survivability state.   |
| <code>sbc-terminate-options</code>          | Defines the handling of in-dialog SIP OPTIONS messages.  |
| <code>sbc-usr-reg-grace-time</code>         | Defines the additional grace time (in seconds) added to the user's timer in the database.  |
| <code>sbc-usr-rgstr-time</code>             | Defines the Expires value SBC responds to user with.   |
| <code>sbc-xfer-prefix</code>                | Defines the prefix for routing and manipulations when  |

| Command                                     | Description   |
|---|---|
|   | URL database is used.   |
| <code>send-invite-to-all</code>             | Disable - SBC sends INVITE according to the Request-URI. Enabled-if the Request-URI is of specific contact, SBC sends the INVITE to all contacts under the parent AOR.  |
| <code>short-call-seconds</code>             | Defines the duration (in seconds) of an SBC call for it to be considered a short call and thus, included in the count of the performance monitoring SNMP MIBs for short calls.  |
| <code>sip-topology-hiding-mode</code>       | Enables the device to overwrite the host part in SIP headers concerned with the source of the message with the IP address of the device's IP Interface, and SIP headers concerned with the destination of the message with the destination IP address, unless the relevant host name parameters of the IP Group ('SIP Group Name' and 'SIP Source Host Name') are configured. |
| <code>transcoding-mode</code>               | Defines the transcoding mode.   |
| <code>unclassified-calls</code>             | Allows unclassified incoming calls.   |
| <code>uri-comparison-excluded-params</code> | Defines which URI parameters are excluded when the device compares the URIs of two incoming dialog-initiating SIP requests (e.g., INVITEs) to determine if they were sent from a user that is registered in the device's registration database (registered AOR and corresponding Contact URI), during Classification.   |
| <code>xfer-success-time-out</code>          | Defines the maximum time (in msec) to wait for release an original call on transfer.  |

---

### Command Mode

Privileged User

---

### Example

This example enables Direct Media:

```
(config-voip)# sbc settings
(sbc-settings)# sbc-direct-media on
(sbc-settings)# activate
```

## 72 sip-definition

This command configures various SIP settings.

### Syntax

```
(config-voip)# sip-definition
```

| Command                       | Description   |
|-------------------------------|---|
| account                       | See <a href="#">account</a> below                             |
| least-cost-routing cost-group | See <a href="#">least-cost-routing cost-group</a> on page 470 |
| proxy-and-registration        | See <a href="#">proxy-and-registration</a> on page 472        |
| settings                      | See <a href="#">settings</a> on page 478                      |
| sip-recording                 | See <a href="#">sip-recording</a> on page 490                 |

### Command Mode

Privileged User

### account

This command configures the Accounts table, which lets you define user registration accounts.

### Syntax

```
(config-voip)# sip-definition account <Index>
(account-<Index>)#
```

| Command                      | Description   |
|------------------------------|---|
| Index                        | Defines the table row index.                          |
| account-name                 | Defines an arbitrary name to easily identify the row. |
| application-type<br>{gw sbc} | Defines the application type.                         |



| Command   | Description   |
|---|---|
| contact-user  | Defines the AOR username.   |
| host-name   | Defines the Address of Record (AOR) host name.  |
| password  | Defines the digest MD5 Authentication password.<br><b>Note:</b> If the password contains a question mark (?) and you're configuring the parameter through CLI, you must enclose the entire password in double quotation marks (e.g., "43LSyk+?"). |
| re-register-on-invite-failure   | Enables the device to re-register an Account upon the receipt of specific SIP response codes (e.g., 403, 408, and 480) for a failed INVITE message which the device routed from the Account to a remote user agent (UA).                          |
| reg-by-served-ipg-status<br>{reg-always  reg-if-online}                   | Defines the device's handling of Account registration based on the connectivity status of the Served IP Group.  |
| reg-event-package-subscription<br>{disable enable}                        | Enables the device to subscribe to Reg Event Package service with the registrar, which provides notifications of registration state changes, for the Registrar Stickiness feature.  |
| register<br>{disable gin reg}   | Enables registration.   |
| registrar-search-mode<br>{by-ims-spec current-server}                     | Defines the method for choosing an IP address (registrar) in the Proxy Set (associated with the Serving IP Group) to which the Account initially registers and performs registration refreshes, when the Register Stickiness feature is enabled.  |
| registrar-stickiness<br>{disable enable enable-for-non-register-requests} | Enables the "Registrar Stickiness" feature, whereby the device always routes SIP requests of a registered Account to the same registrar server to where the last successful REGISTER request was routed.  |
| served-ip-group-name  | Defines the IP Group (e.g., IP-PBX) that you want to register and/or authenticate upon its behalf.  |
| served-trunk-group  | Defines the Trunk Group that you want to register and/or authenticate.  |

| Command                                 | Description   |
|---|---|
| serving-ip-group-name                   | Defines the IP Group (Serving IP Group) to where the device sends the SIP REGISTER requests (if enabled) for registration and authentication (of the Served IP Group).  |
| udp-port-assignment<br>{disable enable} | Enables the device to dynamically allocate local SIP UDP ports to Accounts using the same Serving IP Group, where each Account is assigned a unique port on the device's leg interfacing with the Accounts' Serving IP Group. |
| user-name                               | Defines the digest MD5 Authentication username.   |

---

### Command Mode

Privileged User

---

### Example

This example configures an Account with a username and password that registers IP Group "IPBX" with IP Group "ITSP":

```
(config-voip)# sip-definition account 0
(account-0)# user-name JoeD
(account-0)# password 1234
(account-0)# register reg
(account-0)# served-ip-group-name IPPBX
(account-0)# serving-ip-group-name ITSP
(account-0)# activate
```

## least-cost-routing cost-group

This command configures Least Cost Routing (LCR). This command configures the Cost Groups table, which lets you define Cost Groups. A Cost Group defines a fixed call connection cost and a call rate (charge per minute).

---

### Syntax

```
(config-voip)# sip-definition least-cost-routing cost-group <Index>
(cost-group-<Index>)#
```

| Command                 | Description   |
|-------------------------|---|
| Index                   | Defines the table row index.  |
| cost-group-name         | Defines a descriptive name, which is used when associating the row in other tables.   |
| cost-group-time-bands   | Defines the Time Band table, which lets you define Time Bands per Cost Group. The table is a child of the Cost Groups table. For more information, see <a href="#">cost-group-time-bands</a> below. |
| default-connection-cost | Defines the call connection cost (added as a fixed charge to the call) for a call outside the time bands.   |
| default-minute-cost     | Defines the call charge per minute for a call outside the time bands.   |

---

### Command Mode

Privileged User

---

### Example

This example configures LCR "INT" with default connection cost of 10 and minute cost of 1:

```
(config-voip)# sip-definition least-cost-routing cost-group 0
(cost-group-0)# cost-group-name INT
(cost-group-0)# default-connection-cost 10
(cost-group-0)# default-minute-cost 1
(cost-group-0)# activate
```

### cost-group-time-bands

This command configures the Time Band table, which lets you define Time Bands per Cost Group. A Time Band defines a day and time range (e.g., from Saturday 05:00 to Sunday 24:00) and a fixed call connection charge and call rate per minute for this interval. The table is a "child" of the Cost Groups table.

---

### Syntax

```
(config-voip)# sip-definition least-cost-routing cost-group <Index>
(cost-group-<Index>)# cost-group-time-bands <Index>
(cost-group-time-bands-<Index>/<Index>)#
```

| Command         | Description  |
|-----------------|--|
| Index           | Defines the table row index.   |
| connection-cost | Defines the call connection cost during the time band.                   |
| end-time        | Defines the day and time of day until when this time band is applicable. |
| minute-cost     | Defines the call cost per minute charge during the time band.            |
| start-time      | Defines the day and time of day from when this time band is applicable.  |

---

### Command Mode

Privileged User

---

### Example

This example configures an LCR time band between Saturday 1 am to Sunday midnight with connection cost of 1 and minute cost of 0.5:

```
(config-voip)# sip-definition least-cost-routing cost-group 0
(cost-group-0)# cost-group-time-bands 1
(cost-group-time-bands-0/1)# start-time SAT:01:00
(cost-group-time-bands-0/1)# end-time SUN:23:59
(cost-group-time-bands-0/1)# connection-cost 1
(cost-group-time-bands-0/1)# minute-cost 0.5
(cost-group-time-bands-0/1)# activate
```

## proxy-and-registration

This command configures various SIP proxy and registration settings.

---

### Syntax

```
(config-voip)# sip-definition proxy-and-registration
(sip-def-proxy-and-reg)#
```

| Command          | Description   |
|------------------|---|
| add-init-rte-hdr | Defines if the initial Route header is added to REGISTER request. |

| Command                                    | Description   |
|--|---|
| <code>always-use-proxy</code>              | Sends all messages to proxy servers   |
| <code>authentication-mode</code>           | Defines the Authentication mode.  |
| <code>challenge-caching</code>             | SIP Challenge caching mode  |
| <code>cnonce-4-auth</code>                 | Defines the Cnonce parameter used for authentication.   |
| <code>dns-query</code>                     | Defines the DNS query type.   |
| <code>enable-proxy</code>                  | Defines if SIP proxy is used.   |
| <code>enable-registration</code>           | Enables Proxy registration.   |
| <code>expl-un-reg</code>                   | Enables if explicit unregister needed.  |
| <code>fallback-to-routing</code>           | Enables fallback to internal Tel-to-IP Routing table if Proxy is not responding.                            |
| <code>gen-reg-int</code>                   | Defines the time interval in seconds for generating registers.  |
| <code>gw-name</code>                       | Defines the Gateway name.   |
| <code>gw-registration-name</code>          | Defines the Gateway registration name.  |
| <code>ignore-auth-stale</code>             | Enables the device to retry registering even if the last SIP 401\407 response included "stale=false".       |
| <code>ip-addr-rgrstr</code>                | Defines the SIP Registrar IP address.   |
| <code>max-gen-reg-rate</code>              | Defines the max. generated Register requests per interval.  |
| <code>max-registration-backoff-time</code> | Defines the Backoff mechanism that is applied between failed registration attempts initiated by the device. |
| <code>mutual-authentication</code>         | Defines the Mutual Authentication mode.   |
| <code>nb-of-rtx-b4-hot-swap</code>         | Defines the number of retransmissions before Hotswap is done.   |

| Command                       | Description   |
|-------------------------------|---|
| options-user-part             | Defines the OPTIONS user part string for all gateways.  |
| auth-password                 | Defines the password for authentication.  |
| ping-pong-keep-alive [off on] | Enables Ping-Pong for Keep-Alive to proxy via reliable connection.                                |
| ping-pong-keep-alive-time     | Defines the Ping Keep-Alive, which is sent (using CRLF) each time this timer expires (seconds).   |
| prefer-routing-table          | Enables preference of Routing table.  |
| proxy-dns-query               | Defines the DNS proxy query type.   |
| proxy-ip-lst-rfrsh-time       | Defines the interval between refresh of proxies list (seconds).                                   |
| proxy-name                    | Defines the SIP proxy name.   |
| re-registration-timing        | Defines the percentage of RegistrationTime when new REGISTER requests are sent.                   |
| redirect-in-facility          | Enables search for Redirect number in Facility IE.  |
| redundancy-mode               | Defines the Redundancy mode.  |
| redundant-routing-m           | Defines the mode of redundant routing.  |
| reg-on-conn-failure           | Enables re-registration on TCP/TLS connection failure.  |
| reg-on-invite-fail            | Enable re-register upon INVITE transaction failure.   |
| registrar-name                | Defines the SIP Registrar name.   |
| registrar-transport           | Defines the Registrar transport type.   |
| registration-retry-time       | Defines the time in which the device tries to register after last registration failure (seconds). |

| Command                 | Description   |
|-------------------------|---|
| registration-time       | Defines the time in which registration to Gatekeeper/Proxy is valid.                |
| registration-time-thres | Defines the registration time threshold.  |
| rte-tbl-4-host-names    | Enables always use routing table even though proxy is available.                    |
| set-oos-on-reg-failure  | Defines whether to deactivate endpoint service on registration failure.             |
| should-register         | Defines the Register/UnRegister entities.   |
| sip-rerouting-mode      | Defines the routing mode after receiving 3xx response or transfer.                  |
| subscription-mode       | Defines the Subscription mode.  |
| trusted-proxy           | Defines whether the proxy is a trusted node.  |
| use-gw-name-for-opt     | Enables use of Gateway name (instead of IP address) in Keep-Alive OPTIONS messages. |
| use-proxy-ip-as-host    | Enables use of the Proxy IP as Host in From and To headers.                         |
| user-info               | Defines the User Info tables (see <a href="#">user-info</a> on the next page).      |
| user-name-4-auth        | Defines the username for authentication.  |

---

### Command Mode

Privileged User

---

### Example

This example enables ping-pong keep-alive:

```
(config-voip)# sip-definition proxy-and-registration
(sip-def-proxy-and-reg)# ping-pong-keep-alive on
(sip-def-proxy-and-reg)# activate
```

## user-info

This command configures the User Info tables.

### Syntax

```
(config-voip)# sip-definition proxy-and-registration
(sip-def-proxy-and-reg)# user-info
```

| Command  | Description  |
|--|--|
| find   | Searches an entry in the User Info table.  |
| gw-user-info {0-499 export-csv-to <URL> find-by <Column and Value> import-csv-from URL new}    | Defines and performs various actions on the Gateway User Info table: <ul style="list-style-type: none"> <li>■ Accesses a specific table row index.</li> <li>■ Exports the User Info table as a .csv file to a URL</li> <li>■ Searches a row entry by column {display-name global-phone-num password pbx-ext username}</li> <li>■ Imports a User Info file (.csv) from a URL</li> <li>■ Defines a new entry in the table</li> </ul> |
| sbc-user-info {0-499 export-csv-to <URL> find-by <Column and Value> import-csv-from <URL> new} | Defines and performs various actions on the SBC User Info table: <ul style="list-style-type: none"> <li>■ Accesses a specific table row index.</li> <li>■ Exports the User Info table as a .csv file to a URL</li> <li>■ Searches a row entry by column {ip-group-name local-user password username}</li> <li>■ Imports a User Info file (.csv) from a URL</li> <li>■ Defines a new entry in the table</li> </ul>                  |

### Command Mode

Privileged User

### Example

This example searches for the user "Joe":



```
(config-voip)# sip-definition proxy-and-registration
(sip-def-proxy-and-reg)# user-info sbc-user-info find-by local-user Joe
sbc-user-info 2
  local-user "Joe"
  username ""
  password ""
  ip-group-name "MoH Users"
```

## push-notification-servers

This command configures the Push Notification Servers table, which defines Push Notification Services.

---

### Syntax

```
(config-voip)# sip-definition push-notification-servers <Index>
(push-notification-servers-<Index>)#
```

| Command                                | Description  |
|--|--|
| <code>protocol {ac-proprietary}</code> | Defines the protocol for exchanging information between the device and the Push Notification Server.                                   |
| <code>provider</code>                  | Defines the name of the Push Notification Service.   |
| <code>remote-http-service</code>       | Assigns a Remote Web Service, which defines the URL address (and other related parameters) of the HTTP-based Push Notification Server. |

---

### Command Mode

Privileged User

---

### Example

This example configures a Push Notification Service provided by Android's Firebase Cloud Messaging (FCM) at Index #0:

```
(config-voip)# sip-definition push-notification-servers 0
(push-notification-servers-0)# provider fcm
(push-notification-servers-0)# protocol ac-proprietary
(push-notification-servers-0)# remote-http-service PNS-Android
```

## settings

This command configures various SIP settings.

### Syntax

```
(config-voip)# sip-definition settings
(sip-def-settings)#
```

| Command                       | Description  |
|-------------------------------|--|
| 100-to-18x-timeout            | Defines the time between 100 response and 18x response.                            |
| 183-msg-behavior              | Sends ALERT to ISDN upon 183 receive.  |
| 1st-call-rbt-id               | Defines the index of the first call ringback tone in the Call-Progress Tones file. |
| 3xx-use-alt-route             | Enables use of Alternative Route Reasons Table for 3xx.                            |
| FarEndDisconnectSilenceMethod | Defines the far disconnect silence detection method.                               |
| FarEndDisconnectSilencePeriod | Defines the silence period detection time.   |
| aaa-indications               | Defines the Authentication, Authorization and Accounting indications to use.       |
| accounting-port               | Defines the RADIUS accounting port.  |
| accounting-server-ip          | Defines the RADIUS accounting server IP.   |
| add-empty-author-hdr          | Enables empty Authorization header to be added to Register request.                |
| amd-beep-detection            | Defines the AMD beep detection mode.   |
| amd-mode                      | Defines the AMD mode.  |
| anonymous-mode                | Defines the "anonymous" mode.  |
| app-sip-transport-type        | Defines the SIP transport type.  |
| application-profile           | Defines the Application Profile.   |

| Command   | Description  |
|---|--|
| authenticated-message-handling<br>{no-changes-permitted <br>register-changes-permitted} | Defines if a Message Manipulation Set is run again on incoming authenticated SIP messages received after the device sends a SIP 401 response for challenging initial incoming SIP REGISTER requests. |
| broken-connection-event-<br>timeout   | Defines the duration the RTP connection should be broken before the Broken Connection event is issued [100ms].   |
| busy-out  | Enables trunks to be taken out of service in case of LAN down.   |
| call-num-plybck-id  | Defines the Calling Number Play Back ID.   |
| call-pickup-key   | Defines the key sequence for call pickup.  |
| call-transfer-using-reinvites   | Enables Call Transfer using re-INVITES.  |
| calls-cut-through   | Enables call connection without on-hook/off-hook process 'Cut-Through'.  |
| cdr-report-level  | Defines the CDR report timing.   |
| cdr-srvr-ip-adrr  | Defines the Syslog server IP address for sending CDRs.   |
| coder-priority-nego   | Defines the coder priority in SDP negotiation.   |
| crypto-life-time-in-sdp   | Disables Crypto life time in SDP.  |
| current-disc  | Enables disconnect call upon detection of current disconnect signal.   |
| default-record-uri  | Defines the default record location URI used by Media Ctrl.  |
| delay-after-reset   | Defines the Gateway delay time after reset (seconds).  |
| delay-b4-did-wink   | Defines the delay between off-hook detection and Wink generation (FXS).  |
| delayed-offer   | Enables sending INVITE message with/without SDP offer.   |

| Command                               | Description  |
|---------------------------------------|--|
| <code>dflt-release-cse</code>         | Defines the release cause sent to IP or Tel when device initiates release.                           |
| <code>dfrnt-port-after-hold</code>    | Enables use of different RTP port after hold.  |
| <code>did-wink-enbl</code>            | Enables DID lines using Wink.  |
| <code>digit-delivery-2ip</code>       | Enables automatic digit delivery to IP after call is connected.                                      |
| <code>digit-delivery-2tel</code>      | Enables automatic digit delivery to Tel after line is off-hooked or seized.                          |
| <code>digit-pttrn-on-conn</code>      | Enables Play Code string to Tel when connect message received from IP.                               |
| <code>disc-broken-conn</code>         | Defines the behavior when receiving RTP broken notification.   |
| <code>disc-on-silence-det</code>      | Enables disconnect calls on a configured silence timeout.  |
| <code>disp-name-as-src-nb</code>      | Enables display name to be used as source number.  |
| <code>display-default-sip-port</code> | Enables default port 5060 shown in the headers.  |
| <code>e911-callback-timeout</code>    | Defines the maximum time for an E911 ELIN callback to be valid (minutes).                            |
| <code>e911-gateway</code>             | Enables E911 to NG911 gateway and ELIN handling.   |
| <code>emerg-calls-regrt-t-out</code>  | Defines the regret time for Emergency calls.   |
| <code>emerg-nbs</code>                | Defines emergency numbers.   |
| <code>emrg-spcl-rel-cse</code>        | set configuration  |
| <code>enable</code>                   | Enables RADIUS.  |
| <code>enable-did</code>               | Enables DID for all FXS ports (that are not specifically enabled - see <a href="#">enable-did</a> on |

| Command   | Description   |
|---|---|
|   | page 299).  |
| <code>enable-ptime</code>   | Enables requirement of ptime parameter in SDP.  |
| <code>enable-sips</code>  | Enables SIP secured URI usage.  |
| <code>enbl-non-inv-408</code>   | Enables sending 408 responses for non-INVITE transactions.  |
| <code>enum-service-domain</code>  | Defines the ENUM domain for ENUM resolution.  |
| <code>fake-tcp-alias</code>   | Enables enforcement reuse of TCP/TLS connection.  |
| <code>fax-re-routing</code>   | Enables rerouting of fax calls to fax destination.  |
| <code>fax-sig-method {no-fax t.38-relay g.711-transport  fax-fallback g.711-reject-t.38}</code> | Defines fax signaling method.   |
| <code>filter-calls-to-ip</code>   | Enables filtering of calls to IP.   |
| <code>force-generate-to-tag {disable enable}</code>   | Enables the device to generate the 'tag' parameter's value in the SIP To header for SBC calls.                                      |
| <code>force-rport</code>  | Enables responses sent to the UDP port from where the Request was sent, even if RPORT parameter was not received in the Via header. |
| <code>forking-delay-time-invite</code>  | Defines the forking delay time (in seconds) to wait before sending INVITE of second forking call.                                   |
| <code>graceful-busy-out-t-out</code>  | Defines the Graceful Busy Out timeout in seconds.   |
| <code>gw-mx-call-duration</code>  | Limits the device call time duration (minutes).   |
| <code>handle-reason-header</code>   |   |

| Command               | Description   |
|-----------------------|---|
| hist-info-hdr         | Enables History-Info header support.  |
| ignore-remote-sdp-mki | Ignores MKI if present in the remote SDP  |
| immediate-trying      | Enables immediate trying sent upon INVITE receive.  |
| ip-security           | Defines the mode to handle calls based on ip-addr defined in ip2tel-rte-tbl.  |
| ldap-display-nm-attr  | Defines the name of the attribute which represents the user display name in the Microsoft AD database.                |
| ldap-mobile-nm-attr   | Defines the name of the attribute which represents the user Mobile number in the Microsoft AD database.               |
| ldap-ocs-nm-attr      | Defines the name of the attribute which represents the user OCS number in the Microsoft AD database.                  |
| ldap-pbx-nm-attr      | Defines the name of the attribute which represents the user PBX number in the Microsoft AD database.                  |
| ldap-primary-key      | Defines the name of the query primary key in the Microsoft AD database.   |
| ldap-private-nm-attr  | Defines the name of the attribute which represents the user Private number in the Microsoft AD database.              |
| ldap-secondary-key    | Defines the name of the query secondary key in the Microsoft AD database.   |
| max-491-timer         | Defines the maximum timer for next request transmission after 491 response.   |
| max-nb-of-act-calls   | Defines the limit of number of concurrent calls.  |
| max-sdp-sess-ver-id   | Defines the maximum number of characters allowed in the SDP body's "o=" (originator and session identifier) field for |

| Command                             | Description  |
|-------------------------------------|--|
|                                     | the session ID and session version values.   |
| media-cdr-rprt-level                | Defines the Media CDR reports,   |
| message-policy-reject-response-type | Defines the response type returned when a message is rejected according to the Message Policy.   |
| microsoft-ext                       | Enables Microsoft proprietary Extension to modify called-nb.   |
| min-session-expires                 | Defines the time (in seconds) in the SIP Min-SE header, which is the minimum time that the user agent refreshes the session for Gateway calls. |
| mn-call-duration                    | Defines the minimum call duration.   |
| ms-mx-rcrd-dur                      | Defines the maximum record duration supported by Microsoft.  |
| mult-ptime-format                   | Defines the format of multiple ptime (ptime per coder) in outgoing SDP.  |
| mx-call-duration                    | Defines the call time duration limit (minutes).  |
| mx-pr-dur-ivr-dia                   | Defines the maximum duration for an IVR dialog.  |
| net-node-id                         | Defines the Network Node ID.   |
| network-isdn-xfer                   | Rejects ISDN transfer requests.  |
| no-audio-payload-type               | Defines the NoAudio payload type.  |
| non-call-cdr-rprt                   | Enables CDR message for all non-call dialogs.  |
| number-of-active-dialogs            | Defines the number of concurrent non-responded dialogs.  |
| oos-behavior                        | Defines the Out-Of-Service Behavior for FXS.   |
| opus-max-avg-bitrate                | Defines the Opus Max Average Bitrate   |

| Command                                   | Description  |
|---|--|
|   | (bps).   |
| overload-sensitivity-level                | Defines when to enter overload state.  |
| p-assrtd-usr-name                         | Defines the user part of the user url in the P-Asserted-Identity header.   |
| p-preferred-id-list                       | Defines the number of P-Preferred-Identity SIP headers included in the outgoing SIP message when the header contains multiple values.  |
| play-busy-tone-2tel                       | Enables play Busy Tone to Tel.   |
| play-rbt2ip                               | Enables ringback tone playing towards IP.  |
| play-rbt2tel                              | Enables ringback tone playing towards Tel side.  |
| polarity-rvrsl                            | Enables FXO Connect/Disconnect call upon detection of polarity reversal signal. FXS: generates the signal.   |
| prack-mode                                | Defines the PRACK mode for 1XX reliable responses.   |
| preserve-multipart-content-type {off  on} | When the SBC sends out a SIP message that has multiple bodies, it enables the device to preserve the value of the Content-Type header (type and boundary) in the outgoing message. |
| prog-ind-2ip                              | Defines the whether to send the Progress Indicator to IP.  |
| pstn-alert-timeout                        | Defines the max time (in seconds) to wait for connect from PSTN.   |
| q850-cause-for-sit-ic                     | Defines the release cause for SIT IC.  |
| q850-cause-for-sit-ro                     | Defines the release cause for SIT RO.  |
| q850-cause-for-sit-vc                     | Defines the release cause for SIT VC.  |
| qos-effective-period                      | Defines the QoS period - if during this period [in seconds], no updated QOS info   |



| Command                       | Description  |
|-------------------------------|--|
|                               | received, the old QOS info is discarded. if QOS poor, and no calls allowed, after this period, calls will be allowed again |
| qos-samples-to-average        | Defines the number of samples to average.  |
| qos-statistics-in-release-msg | Defines whether to add statistics to call release.   |
| radius-accounting             | Defines the when RADIUS Accounting messages are sent.  |
| rai-high-threshold            | Defines the percentage of active calls to send 'Almost out of resources' RAI.  |
| rai-loop-time                 | Defines the time period to check call resources (seconds).   |
| rai-low-threshold             | Defines the percentage of active calls to send 'Resources OK' RAI.   |
| reanswer-time                 | Defines the time to wait between phone hang up and call termination.   |
| reason-header                 | Enables Reason header in outgoing messages.  |
| record-uri-type               | Defines the type of default record URI used by Media Ctrl.   |
| rej-cancel-after-conn         | Defines whether or not reject Cancel request after connect.  |
| reject-on-ovrld               | If set to false (0), a 503 response will not be sent on overload.  |
| rel-cause-map-fmt             | Defines the release cause mapping format.  |
| release-cause-for-sit-nc      | Defines the release cause for SIT NC.  |
| reliable-conn-persistent      | If set to 1 - AllTCP/TLS connections are set as persistent and will not be released.                                       |

| Command                       | Description   |
|-------------------------------|---|
| remote-party-id               | Enables the Remote-Party-ID header.   |
| remove-to-tag-in-fail-resp    | Removes to-tag in final reject response for setup INVITE transaction.   |
| rep-calling-w-redir           | Replaces Calling Number with Redirect Number ISDN to IP.  |
| replace-nb-sign-w-esc         | Replaces the number sign (#) with the escape character %23 in outgoing SIP messages.  |
| reset-srtp-upon-re-key        | Resets SRTP State Upon Re-key.  |
| resource-prio-req             | Indicates whether or not Require header is able to contain the resource-priority tag.   |
| retry-aftr-time               | Retry After time for the proxy to be in state Unavailable.  |
| rfc4117-trnsc-enbl            | Enables transcoding call.   |
| rport-support                 | Enables Rport option in Via header.   |
| rtcp-attribute                | Enables RCTP attribute in the SDP.  |
| rtcp-xr-coll-srvr             | Defines the RTCP-XR server IP address.  |
| rtcp-xr-rep-mode              | 0:rtcpxr is not sent over SIP at all<br>{@}1:rtcpxr is sent over sip when call ended<br>{@}2:rtcpxr is sent over sip when on periodic interval and when call ended<br>{@}3:rtcpxr is sent over sip when media segment ended and when call ended   |
| rtcpxr-collect-serv-transport | Defines the RtcpXrEsc transport type.   |
| rtp-only-mode                 | On RTP only mode there is no signaling protocol (for media parameters negotiation with the remote side). The channel is open immediately. 0 - regular call establishment. 1 - The RTP channel open for Rx & Tx. 2- The RTP channel open only for Tx 3 -The RTP channel open only for Rx |

| Command   | Description   |
|---|---|
| <code>rtp-rdcy-nego-enbl</code>   | Enables RTP Redundancy negotiation.   |
| <code>sbc-rtcpxr-report-mode</code>   | 0:rtcpxr is not sent over SIP at all,1:rtcpxr is sent over sip when call ended  |
| <code>sdp-ecan-frmt</code>  | Defines echo canceller format for outgoing SDP.   |
| <code>sdp-session-owner</code>  | Defines the SDP owner string.   |
| <code>sdp-ver-nego</code>   | Handle SDP offer/answer if SDP version was increased, otherwise takes SDP offer/answer parameters from last agreement (derived from previous SDP negotiations). |
| <code>sec-call-src</code>   | Defines from where the second calling number is taken from (in an incoming INVITE request).   |
| <code>self-check-audit</code>   | Defines if resources self-check audit is used.  |
| <code>send-180-for-call-waiting</code>  | Sends 180 for call waiting.   |
| <code>session-expires-time</code>   | Defines the SIP session - refreshed (using INVITE) each time this timer expires (seconds).  |
| <code>sess-exp-disc-time</code>   | Defines the minimum time factor before the session expires.   |
| <code>session-exp-method {re-<br/>invite update acc-remote-<br/>allow}</code> | Defines the Method to refresh the SIP session.  |
| <code>sig-cpu-usage-threshold</code>  | Defines the signaling cpu usage threshold alarm (percentage)  |
| <code>silk-max-avg-bitrate</code>   | Defines the Silk max average bitrate (bps).   |
| <code>single-dsp-transcoding</code>   | Enables single DSP for G.711 to LBR coder.  |
| <code>sip-dst-port</code>   | Defines the default SIP destination port (usually 5060).  |

| Command                                   | Description  |
|---|--|
| <code>sip-hold-behavior</code>            | if set to 1, handle re-INVITE with a=recvnly as a=inactive   |
| <code>sip-max-rtx</code>                  | Defines the maximum number of retransmissions.   |
| <code>sip-nat-detect</code>               | If not set, the incoming request will be always processed as user NOT behind NAT   |
| <code>sip-remote-reset</code>             | Enables remote management of device by receiving NOTIFY request with specific event type.  |
| <code>sip-t38-ver</code>                  | Defines the SIP T.38 Version.  |
| <code>sip-uri-for-diversion-header</code> | Use Tel uri or Sip uri for Diversion header.   |
| <code>sit-q850-cause</code>               | Defines the release cause for SIT.   |
| <code>skype-cap-hdr-enable</code>         | 0 (default): Disable, 1:Add special header with capabilities for Skype   |
| <code>src-hdr-4-called-nb</code>          | Select source header for called number (IP->TEL), either from the user part of To header or the P-Called-Party-ID header.  |
| <code>src-nb-as-disp-name</code>          | if set to 1 Use source number as display name if empty.if set to 2 always use source number as display name .{@}if set to 3 use the source number before manipulation, if empty. |
| <code>src-nb-preference</code>            | Defines from where the source number is taken (in an incoming INVITE request).   |
| <code>sync-ims-accounts</code>            | Enables synchronization of multiple Accounts per the IMS specification.  |
| <code>t1-re-tx-time</code>                | Defines the SIP T1 timeout for retransmission.   |
| <code>t2-re-tx-time</code>                | Defines the SIP T2 timeout for retransmission.   |
| <code>t38-fax-mx-buff</code>              | Defines the fax max buffer size in T.38 SDP negotiation.   |

| Command                                  | Description   |
|--|---|
| <code>t38-mx-datagram-sz</code>          | Defines the T.38 coder max datagram size.   |
| <code>t38-sess-imm-strt</code>           | T.38 Fax Session Immediate Start (Fax behind NAT)   |
| <code>t38-use-rtp-port</code>            | Defines the T.38 packets received on RTP port.  |
| <code>tcp-keepalive-interval</code>      | Defines the interval between subsequent keep-alive probes, regardless of what the connection has exchanged in the meantime.     |
| <code>tcp-keepalive-retry</code>         | Defines the number of unacknowledged probes to send before considering the connection down and notifying the application layer. |
| <code>tcp-keepalive-time</code>          | Defines the interval between the last data packet sent (simple ACKs are not considered data) and the first keepalive probe.     |
| <code>tcp-timeout</code>                 | Defines the SIP TCP time out.   |
| <code>tel-to-ip-call-forking-mode</code> | Defines the Tel-to-IP call forking mode.  |
| <code>time-between-did-winks</code>      | Defines the time between first and second Wink generation (FXS).  |
| <code>tr104-voice-profile-name</code>    | Defines the TR-104 Voice Profile Name.  |
| <code>trans-coder-present</code>         | Defines the Transparent code presentation.  |
| <code>uri-for-assert-id</code>           | Enables use of Tel uri or Sip uri for P-Asserted or P-Preferred headers.  |
| <code>use-aor-in-refer-to-header</code>  | If enabled, we will use URI from To/From headers in Refer-To header. If disabled, we will take the URI from Contact             |
| <code>use-dst-as-connected-num</code>    | Enables use of destination as connected number.   |

| Command             | Description  |
|---------------------|--|
| use-dtg             | Enables use of DTG parameter.  |
| use-tgrp-inf        | Enables use of Tgrp information.   |
| user-agent-info     | Defines the string that is displayed in the SIP Header 'User-Agent' or 'Server'. |
| user-inf-usage      | Enables User-Information usage.  |
| user-phone-in-from  | Adds 'User=Phone' to From header.  |
| user-phone-in-url   | Adds User=Phone parameter to SIP URL.  |
| usr-def-subject     | Defines the SIP subject.   |
| verify-rcvd-requri  | Defines whether to verify Request URI Header in requests.                        |
| verify-rcvd-via     | Defines whether to verify Source IP with IP in top-most Via.                     |
| websocket-keepalive | Defines the period at which web socket PING messages are sent.                   |
| x-channel-header    | Enables X-Channel header.  |
| zero-sdp-behavior   | Zero connection information in SDP behavior                                      |

---

### Command Mode

Privileged User

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### Example

This example configures unlimited call duration:

```
(config-voip)# sip-definition settings
(sip-def-settings)# mx-call-duration 0
(sip-def-settings)# activate
```

## sip-recording

This command configures SIPRec.

**Syntax**

```
(config-voip)# sip-definition sip-recording
```

| Command         | Description  |
|-----------------|--|
| settings        | See <a href="#">settings</a> below                   |
| sip-rec-routing | See <a href="#">sip-rec-routing</a> on the next page |

**Command Mode**

Privileged User

**settings**

This command configures various SIPRec settings.

**Syntax**

```
(config-voip)# sip-definition sip-recording settings
(sip-rec-settings)#
```

| Command                                    | Description   |
|--|---|
| siprec-metadata-format<br>{legacy rfc7865} | Defines the format of the recording metadata that is included in SIP messages sent to the SRS.  |
| siprec-server-dest-username                | Defines the username of the SIPRec server (SRS).  |
| siprec-time-stamp<br>{local-time utc}      | Defines the device's time format (local or UTC) in SIP messages that are sent to the SRS.   |
| video-rec-sync-timeout                     | Defines the video synchronization timeout (in msec), which is applicable when the device also records the video stream of audio-video calls for SIPRec. |

**Command Mode**

Privileged User

**Example**

This example configures the metadata format so that it's according to RFC 7865:

```
(config-voip)# sip-definition sip-recording settings
(sip-rec-settings)# siprec-metadata-format RFC7865
(sip-rec-settings)# activate
```

## sip-rec-routing

This command configures the SIP Recording Rules table, which lets you define SIP-based media recording rules. A SIP Recording rule defines call routes that you want to record.

### Syntax

```
(config-voip)# sip-definition sip-recording sip-rec-routing <Index>
(sip-rec-routing-<Index>)#
```

| Command                                 | Description   |
|---|---|
| Index                                   | Defines the table row index.  |
| caller {both peer-party recorded-party} | Defines which calls to record according to which party is the caller.   |
| condition-name                          | Assigns a Message Condition rule to the SIP Recording rule.   |
| peer-ip-group-name                      | Defines the peer IP Group that is participating in the call.  |
| peer-trunk-group-id                     | Defines the peer Trunk Group that is participating in the call (applicable only to Gateway calls).                  |
| recorded-dst-pattern                    | Defines calls to record based on destination number or URI.   |
| recorded-ip-group-name                  | Defines the IP Group participating in the call and the recording is done on the leg interfacing with this IP Group. |
| recorded-src-pattern                    | Defines calls to record based on source number or URI.  |
| srs-ip-group-name                       | Defines the IP Group of the recording server (SRS).   |
| srs-red-ip-group-name                   | Defines the IP Group of the redundant SRS in the active-standby pair for SRS redundancy.                            |



---

**Command Mode**

Privileged User

---

**Example**

This example records calls between IP Groups "ITSP" and "IPBX", sending them to IP Group "SIPREC" (SRS):

```
(config-voip)# sip-definition sip-recording sip-rec-routing 0
(sip-rec-routing-0)# recorded-ip-group-name ITSP
(sip-rec-routing-0)# peer-ip-group-name IPBX
(sip-rec-routing-0)# srs-ip-group-name SIREC
(sip-rec-routing-0)# caller both
(sip-rec-routing-0)# activate
```

## 73 sip-interface

This command configures the SIP Interfaces table, which lets you define SIP Interfaces. A SIP Interface represents a Layer-3 network in your deployment environment, by defining a local, listening port number and type (e.g., UDP), and assigning an IP network interface for SIP signaling traffic.

### Syntax

```
(config-voip)# sip-interface <Index>
(sip-interface-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| additional-udp-ports  | Defines a port range for the device's local, listening and source ports for SIP signaling traffic over UDP and is used to assign a specific local port to each SIP entity (e.g., PBX) communicating with a common SIP entity (e.g., proxy server). |
| additional-udp-ports-mode [always-open open-when-used]                        | Defines the mode of operation for the Additional UDP Port feature.   |
| application-type {gw sbc}   | Defines the application for which the SIP Interface is used.   |
| block-un-reg-users {acpt-all acpt-reg-users acpt-reg-users-same-src not-conf} | Defines the blocking (reject) policy for incoming SIP dialog-initiating requests (e.g., INVITE messages) from registered and unregistered users belonging to the SIP Interface.  |
| cac-profile   | Assigns a Call Admission Control Profile.  |
| call-setup-rules-set-id   | Assigns a Call Setup Rule Set ID.  |
| classification_fail_response_type   | Defines the SIP response code that the device sends if a received SIP request (OPTIONS, REGISTER, or INVITE) fails the SBC Classification process.   |
| enable-un-auth-registrs {disable enable not-                                  | Enables the device to accept REGISTER requests and register them in its registration database from   |

| Command  | Description  |
|--|--|
| conf}  | new users that have not been authenticated by a proxy/registrar server (due to proxy down) and thus, re-routed to a User-type IP Group.  |
| encapsulating-protocol<br>{none websocket}               | Defines the type of incoming traffic (SIP messages) expected on the SIP Interface.   |
| interface-name   | Defines a descriptive name, which is used when associating the row in other tables.  |
| max-reg-users  | Defines the maximum number of users belonging to the SIP Interface that can register with the device.  |
| media-realm-name   | Assigns a Media Realm to the SIP Interface.  |
| message-policy-name                                      | Assigns a SIP message policy to the SIP interface.   |
| network-interface  | Assigns a Control-type IP network interface to the SIP Interface.  |
| pre-classification-<br>manset                            | Assigns a Message Manipulation Set ID to the SIP Interface.  |
| pre-parsing-man-set                                      | Assigns a Pre-Parsing Manipulation Set to the SIP Interface. T   |
| sbc-direct-media<br>{disable enable enable-<br>same-nat} | Enables direct media (RTP/SRTP) flow (i.e., no Media Anchoring) between endpoints associated with the SIP Interface.   |
| sctp-port  | Defines the local SCTP port on which the device listens for inbound SCTP connections (i.e., SIP signaling over SCTP).<br><b>Note:</b> The parameter is applicable only to Mediant 90xx and Mediant Software.   |
| sctp-second-network-<br>interface                        | Assigns an additional IP network interface (Control-type) to the SIP Interface, which serves as the secondary (alternative) local IP address for SCTP multi-homing.<br><b>Note:</b> The parameter is applicable only to Mediant 90xx and Mediant Software. |

| Command   | Description  |
|---|--|
| <code>srd-name</code>   | Assigns an SRD to the SIP Interface.   |
| <code>tcp-keepalive-enable</code><br>{disable enable}           | Enables the TCP Keep-Alive mechanism with the IP entity on this SIP Interface.                   |
| <code>tcp-port</code>   | Defines the device's listening port for SIP signaling traffic over TCP.                          |
| <code>tls-context-name</code>                                   | Assigns a TLS Context (SSL/TLS certificate) to the SIP Interface.                                |
| <code>tls-mutual-auth</code><br>{disable enable not-configured} | Enables TLS mutual authentication for the SIP Interface (when the device acts as a server).      |
| <code>tls-port</code>   | Defines the device's listening port for SIP signaling traffic over TLS.                          |
| <code>topology-location</code><br>{down up}                     | Defines the display location of the SIP Interface in the Topology view.                          |
| <code>udp-port</code>   | Defines the device's listening and source port for SIP signaling traffic over UDP.               |
| <code>used-by-routing-server</code><br>{not-used used}          | Enables the SIP Interface to be used by a third-party routing server for call routing decisions. |

---

### Command Mode

Privileged User

---

### Example

This example configures SBC SIP Interface "ITSP" that uses IP network interface "Voice" and Media Realm "ITSP":

```
(config-voip)# sip-interface 0
(sip-interface-0)# interface-name ITSP
(sip-interface-0)# network-interface Voice
(sip-interface-0)# application-type sbc
(sip-interface-0)# udp-port 5080
(sip-interface-0)# media-realm-name ITSP
(sip-interface-0)# activate
```

## 74 srd

This command configures the SRDs table, which lets you define signaling routing domains (SRD). The SRD is a logical representation of an entire SIP-based VoIP network (Layer 5) consisting of groups of SIP users and servers.

### Syntax

```
(config-voip)# srd <Index>
(srd-<Index>)#
```

| Command   | Description  |
|---|--|
| Index   | Defines the table row index.   |
| block-un-reg-users<br>{acpt-all acpt-reg-users acpt-reg-users-same-src} | Defines the blocking (reject) policy for incoming SIP dialog-initiating requests (e.g., INVITE messages) from registered and unregistered users belonging to the SRD.  |
| cac-profile   | Assigns a Call Admission Control Profile.  |
| enable-un-auth-registrs<br>{disable enable}                             | Enables the device to accept REGISTER requests and register them in its registration database from new users that have not been authenticated by a proxy/registrar server (due to proxy down) and thus, re-routed to a User-type IP Group. |
| max-reg-users   | Defines the maximum number of users belonging to the SRD that can register with the device.  |
| name  | Defines a descriptive name, which is used when associating the row in other tables.  |
| sbc-dial-plan-name  | Assigns a Dial Plan.   |
| sbc-operation-mode<br>{b2bua call-stateful-proxy microsoft-server}      | Defines the device's operational mode for the SRD.   |
| sbc-routing-policy-name   | Assigns a Routing Policy to the SRD.   |

| Command                                | Description   |
|--|---|
| type<br>{isolated shared}              | Defines the sharing policy of the SRD, which determines whether the SRD shares its SIP resources (SIP Interfaces, Proxy Sets, and IP Groups) with all other SRDs (Shared and Isolated). |
| used-by-routing-server {not-used used} | Enables the SRD to be used by a third-party routing server for call routing decisions.  |

---

### Command Mode

Privileged User

---

### Example

This example configures SRD "ITSP" with max. registered users at 20:

```
(config-voip)# srd 0
(srd-0)# name ITSP
(srd-0)# max-reg-users 20
(srd-0)# activate
```

## pdn-policy

This command defines the priority of each LTE provider when you have configured the device to automatically select the provider (profile) based on priority policies (instead of manually selecting the provider).

---

### Syntax

```
(conf-cellular-0/0)# pdn-policy
(cell-pdn-policy)#
```

| Command         | Description  |
|-----------------|--|
| evaluation-time | Defines the duration (in seconds) that a carrier's (profile's) signal strength is below the defined threshold (see <code>rule reception</code> ), for triggering the device to disconnect from the |

| Command   | Description  |
|---|--|
|   | cellular provider and connect to the provider with the next highest priority.  |
| <code>mode priority</code>                              | Enables the policy prioritization mode (by default, enabled).  |
| <code>priority &lt;1-16&gt; &lt;Profile Name&gt;</code> | Defines the priority of the profile (cellular provider), where 1 is the highest and 16 the lowest. The device always tries to connect to the profile with the highest priority.  |
| <code>rule reception {gsm rssi lte rsrp}</code>         | <p>Defines the GSM or LTE signal strength (reception) threshold (in dBm). If the signal strength of the cellular provider is less than this threshold for a duration defined by <code>evaluation-time</code>, the device disconnects from the provider and connects to the provider with the next highest priority profile (see <code>priority</code>).</p> <ul style="list-style-type: none"> <li>■ GSM: <code>rule reception gsm rssi &lt;RSSI in -dBm&gt;</code></li> <li>■ LTE: <code>rule reception lte rsrp &lt;RSRP in -dBm&gt;</code></li> </ul> |

---

#### Related Commands

- `pdn-policy`
- `profile`

---

#### Note

- This command is applicable only to Mediant 500Li and Mediant 800Ci.
- This command is applicable only to the integrated cellular modem (LTE).

---

#### Command Mode

Privileged User

---

### Example

This example defines "Provider1" with highest priority and a policy that if the RSRP threshold is below -100 dBm for at least 120 seconds, the device connects to the provider with the next highest priority ("Provider2"):

```
(config-data)# interface cellular 0/0
(conf-cellular-0/0)# pdn-policy
(cell-pdn-policy)# rule reception lte rsrp -100
(cell-pdn-policy)# evaluation-time 120
(cell-pdn-policy)# priority 1 Provider1
(cell-pdn-policy)# priority 2 Provider2
(cell-pdn-policy)# exit
```

### layer-2-only

This command allows the device's underlying interfaces (e.g., Gigabit Ethernet) using PPPoE to start the establishment of the PPPoE connection after Layer 2 of the underlying interface (e.g., when the cable is connected). This is instead of waiting for the PPPoE process to start after Layer 3 of the underlying interface has established.

---

### Syntax

```
layer-2-only
```

---

### Default

By default, this is disabled.

---

### Command Mode

Privileged User

---

### Example

This example enables this feature on the Gigabit Ethernet interface 0/0 using PPPoE:

```
# configure data
(config-data)# interface pppoe 0
(conf-pppoe-0)# underlying gigabitethernet 0/0
((conf-pppoe-0)# layer-2-only
```



## lldp set-lan-as-client

This command enables LLDP client on its LAN ports.

---

### Syntax

```
lldp set-lan-as-client
```

---

### Default

NA

---

### Command Mode

Privileged User

---

### Example

This example enables LLDP client on its LAN ports:

```
(config-data)# lldp set-lan-as-client
```

## IPv6 Prefix Delegation

### ipv6 nd pd

This command sets the IPv6 Prefix Delegation (PD). Use the no form of this command to remove the prefix from database.

---

### Syntax

```
# ipv6 nd pd <interface> <no-import-to-ra>
```

```
# no ipv6 pd
```

| Command           | Description  |
|-------------------|--|
| <interface>       | Configures the WAN interface from which the PD is received.  |
| <no-import-to-ra> | Prefix from PD is added to DHCP server only (and not to RA). |

---

**Note**

- This command is applicable only to data-router functionality.
- The IPv6 prefix must be /64.
- Prefix from PD added to DHCP server only:

```
ipv6 nd pd GigabitEthernet 0/0 ::2:0:0:0/64 no-import-to-ra
```

- Prefix from PD added to RA and DHCP server:

```
ipv6 nd pd GigabitEthernet 0/0 ::2:0:0:0/64
```

---

**Command Mode**

Privileged User

---

**Example**

This example sets the IPv6 PD.

```
(config-data)# interface VLAN 99
(conf-if-VLAN 99)# ipv nd pd gig 0/0 1::1/64 no-import-to-ra
```

**ip dhcp-client authentication key-id**

This command configures authentication of DHCPv4 messages between the client and server. This command configures the authentication key (for up to two key IDs) that the device (as a DHCP client) sends in DHCP Option 90 (Management) to a DHCP server for authentication.

---

**Syntax**

```
ip dhcp-client authentication key-id <ID> key-string|obscured-key-string <Key Name>
```

| Command             | Description  |
|---------------------|--|
| key-id              | Pre-configured unique identifier shared with server.           |
| key-string          | The actual key itself used to validate and sign DHCP messages. |
| obscured-key-string | The actual key itself used to validate and sign DHCP           |

| Command | Description  |
|---------|--|
|         | messages, but obscured (not displayed) for security. |

---

### Command Mode

Privileged User

---

### Example

This example configures authentication for DHCPv4 messages on VLAN 3.

```
(config-data)# interface vlan 3
(conf-if-VLAN 3)# ipv6 dhcp-client authentication key-id 3 obscured-key-string
8JKQkJybmw==
(conf-if-VLAN 3)# no shutdown
(conf-if-VLAN 3)# exit
```

## ipv6 dhcp-client authentication

This command configures authentication of DHCPv6 messages between the client and server.

---

### Syntax

```
ipv6 dhcp-client authentication realm <Realm Name> key-id <ID> key-
string|obscured-key-string <Key Name>
```

| Command    | Description  |
|------------|--|
| realm      | DHCP realm name. Enables re-use of the same key-id for different operators.                |
| key-id     | A number used by both client and server to identify the key used in signature calculation. |
| key-string | Defines the key used to sign the messages.   |

---

### Command Mode

Privileged User

---

### Example

This example configures authentication for DHCPv6 messages on VLAN 3.

```
(config-data)# interface vlan 3
(conf-if-VLAN 3)# ipv6 dhcp-client authentication realm real_new key-id 3
obscured-key-string 8JKQkJybmw==
(conf-if-VLAN 3)# no shutdown
(conf-if-VLAN 3)# exit
```

## ipv6 dhcp-client force-dns

This command enforces the receipt of DNS information over DHCPv6.

As the DHCPv6 Solicit/Request includes Option 23 (DNS), the device retries the solicit if the DHCPv6 Advertise/Reply does not include a response for Option 23.

---

### Syntax

```
ipv6 dhcp-client force-dns
```

---

### Command Mode

Privileged User

---

### Example

This example enforces the receipt of DNS information over DHCPv6.

```
(config-data)# interface vlan 3
(conf-if-VLAN 3)# ipv6 dhcp-client force-dns
(conf-if-VLAN 3)# no shutdown
(conf-if-VLAN 3)# exit
```

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### **International Headquarters**

1 Hayarden Street,

Airport City

Lod 7019900, Israel

Tel: +972-3-976-4000

Fax: +972-3-976-4040

### **AudioCodes Inc.**

80 Kingsbridge Rd

Piscataway, NJ 08854, USA

Tel: +1-732-469-0880

Fax: +1-732-469-2298

**Contact us:** <https://www.audiocodes.com/corporate/offices-worldwide>

**Website:** <https://www.audiocodes.com/>

**Documentation Feedback:** <https://online.audiocodes.com/documentation-feedback>

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