Troubleshooting and Maintaining Avaya Session Border Controller for Enterprise

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Contents

Chapter 1: Introduction

Purpose

This document describes how to use troubleshooting tools and utilities. The document also describes the procedures to contact Avaya Support and contains typical error messages and resolution tasks.

This document is intended for people who perform troubleshooting tasks.

Change history

Issue	Date	Summary of changes
1	June 2017	Release 7.2 document.
2	November 2017	Updated the document for Release 7.2.1 with a new topic of Logs collection.
3	June 2018	Added a new topic of Connecting Avaya SBCE with an external WebLM server.
4	July 2018	Updated the Traps and Incidences topic.
5	September 2018	Added a new topic of Replacing EMS
6	February 2019	Added a new topic of Avaya SBCE cannot obtain licenses from WebLM server.
7	March 2019	• Added the “Resetting the root or ipcs password” section. • Updated the “Swapping Avaya SBCE devices in HA pair deployment” section.

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Chapter 2: Troubleshooting fundamentals

Network configuration

Network configuration checklist

Use this checklist while troubleshooting network configurations.

No.	Task	Description	✔
1	Create a site network map.	Identifies where each device is physically located on your site. Use the map to systematically search each part of your network for problems.	
2	Identify logical connections.		
3	Document device configurations.	Maintain online and paper copies of device configuration information.	
4	Store passwords in a safe place.	Keep records of your previous passwords if you must restore a device to a previous software version and need to use the old password that was valid for that version.	
5	Create a device inventory checklist.	List all devices and relevant information for the network including device type, MAC addresses, ports, and attached devices.	
6	Create an IP address and port number list.	List the IP addresses and port numbers of all devices.	
7	Maintain a change control system.		
8	Create a support contact list.	Store details for support contracts, support numbers, engineering details, telephone and fax numbers.	

Verifying integration configuration

You can verify the operational status of the EMS by either attempting to access the EMS server using the web interface or by establishing a CLI session via a secure shell session (SSH) and manually checking the status of various internal processes.

Logging on to the EMS web interface

Procedure

1. Open a new browser tab or window by using any of the following web browsers:
   - Microsoft Internet Explorer (5) 9.0+
   - Microsoft Edge 13.0+
   - Mozilla Firefox 38+ / 38.0 ESR+
   - Google Chrome 47.0+
   - Apple Safari (4) 7.0+
2. Type the following URL:

   `https://<Avaya EMS IP address>`
3. Press **Enter**.

   The system displays a message indicating that the security certificate is not trusted.
4. Accept the system message and continue to the next screen.

   If the Welcome screen is displayed, the EMS is operating normally and available for use. You can log in to EMS and perform normal administrative and operational tasks. See *Administering Avaya Session Border Controller for Enterprise*.
5. Type the username and password as `ucsec`.

   On first login, system prompts you to change the password.
6. Enter a new password and login with the new password.

Logging in to EMS through console

To log in to EMS through a console, you can use a serial connection.

Note:

You can use a VGA connection only if you earlier manually reinstalled the software on the EMS by using a VGA connection.

Logging in to EMS through a serial console

Before you begin

Change the BIOS settings and enable serial redirection.

About this task

Connect the laptop to the serial port on the Avaya SBCE server by using the cable that Avaya provided or a DB9 null modem cable.

Note:

From Avaya SBCE Release 7.0, the default output can be a serial console or VGA depending on the installation.

Procedure

1. Configure the serial connection parameters of the terminal program to the settings in the following table.

Parameter	Value
Baud rate	19200
Parity	None
Data bits	8
Stop bits	1
Connection Setting	Direct to Com1 **Note:** Because the com port number is not fixed, use Device Manager to find out the correct port number.

2. Press **Enter** to establish a serial connection.

   The system displays a prompt asking for the User Name and Password.

3. Provide the required information and press **Enter**.

Logging in to EMS through VGA connection

Before you begin

Connect the monitor to EMS through a VGA cable. Connect a keyboard to EMS.

Procedure

1. Press `Enter` to establish a communications connection.

   The system prompts you to enter the username and password.

2. Enter your username and password, and press `Enter`.

Logging in to EMS through SSH connection

Before you begin

Ensure that Avaya SBCE is installed and available on the network.

Procedure

1. Open an SSH client, such as PuTTy.

2. Type the IP address for Avaya SBCE.
3. Specify the port as **222**.
4. Select the connection type as SSH and press `Enter`.
5. Enter the user name and password to log in.

Note:

You cannot gain access to shell with user account `ucsec`.

User account `ipcs` or user accounts that have shell access can be used for logging in to Avaya SBCE.

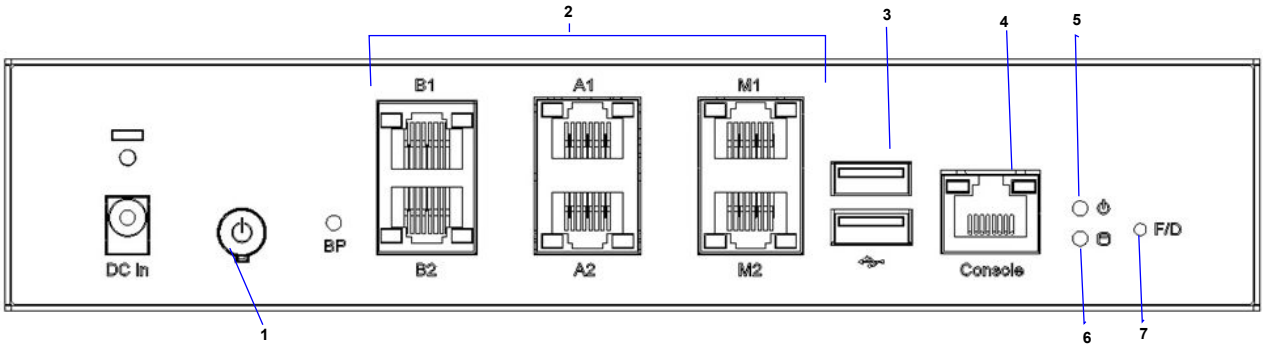
Ethernet port labels

Portwell CAD 0208 server

The Portwell CAD 0208 server is used only for single server (EMS plus Avaya SBCE) deployments.

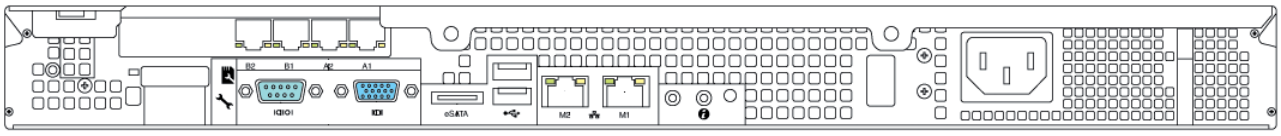
Ethernet port labels	Number of ports
M1, A1, A2, and B1	4

Portwell CAD 0230



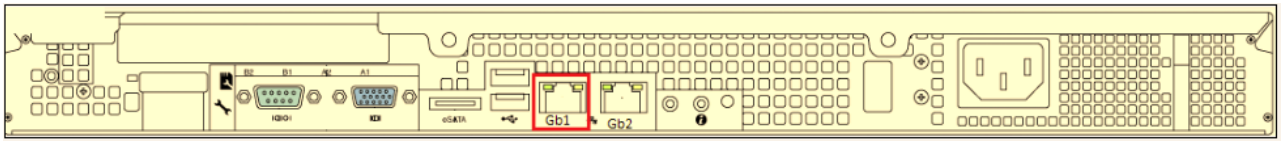
Ethernet port labels	Number of ports
M1, M2, A1, A2, B1, B2	6

Dell R210-II



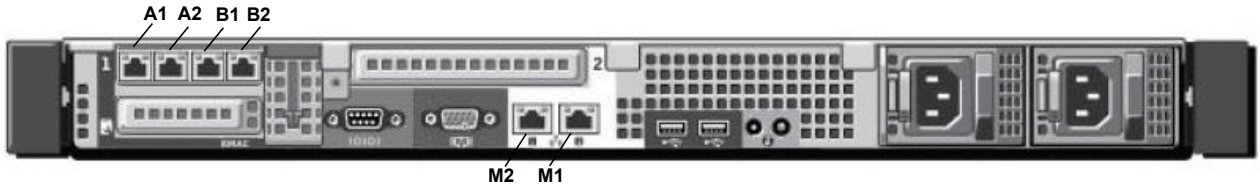
Ethernet port labels	Number of ports
M1, M2, A1, A2, B1, and B2	6

Dell EMS



Ethernet port labels	Number of ports
Gb1	2 (1 unused - the right port is unused)

Dell R320



Ethernet port labels	Number of ports
M2, M1, A1, A2, B1, and B2	6

Dell R330

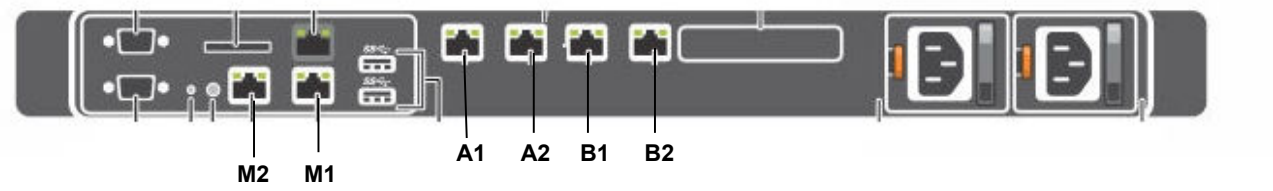


Table 1: Type -1

Ethernet port labels	Number of ports
M2, M1, A1, A2, B1, B2	6

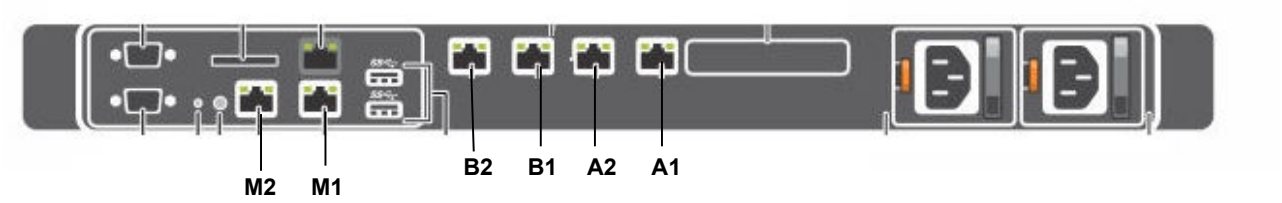
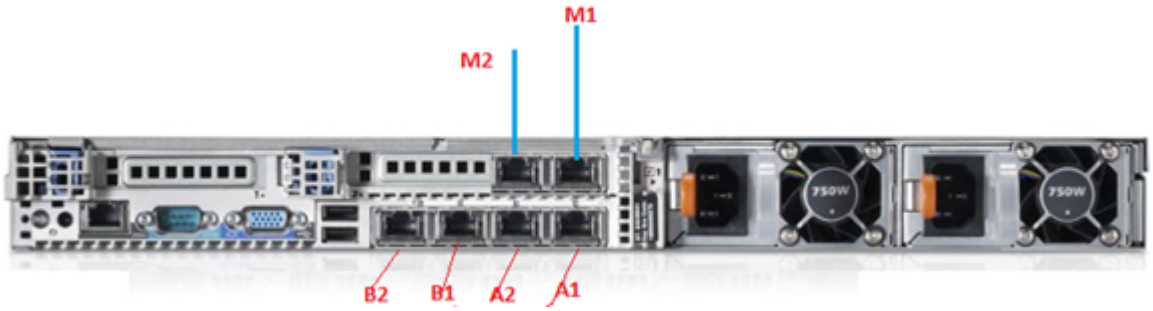


Table 2: Type -2

Ethernet port labels	Number of ports
M2, M1, B2, B1, A2, A1	6

Dell R620

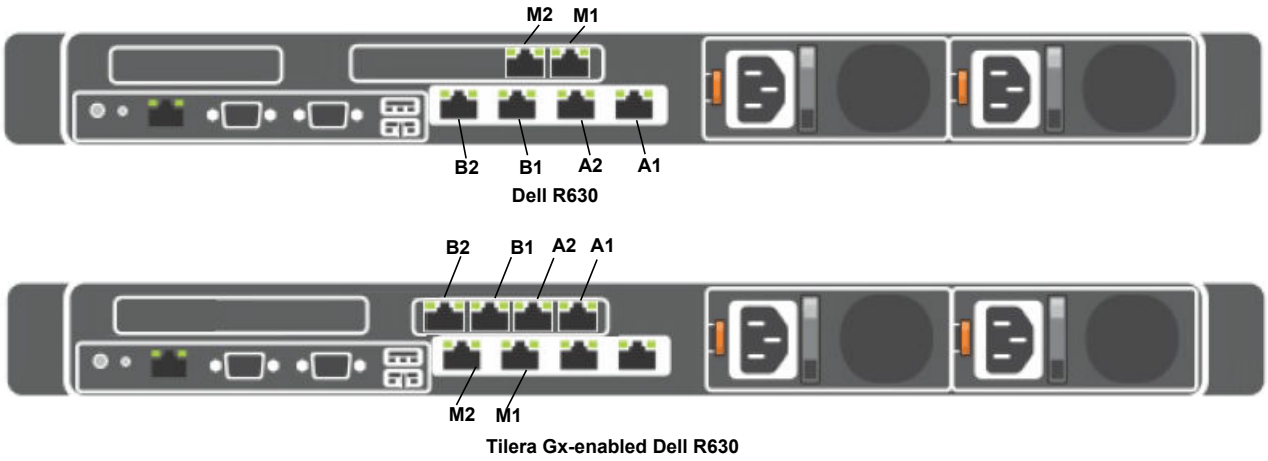


Ethernet port labels	Number of ports
M1, M2, B2, B1, A2 and A1	6

Note:

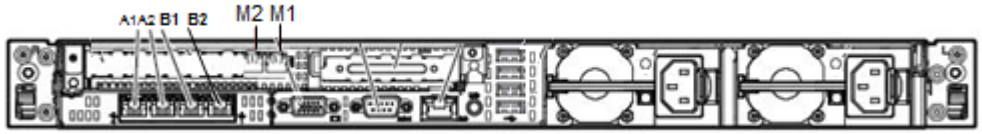
When you configure the server as EMS, A1, A2, B1, B2, and M2 are not to be used. For more information about hardware specifications, see *Deploying Avaya Session Border Controller for Enterprise*.

Dell R630



Ethernet port labels	Number of ports
M2, M1, B2, B1, A2, and A1	6

HP DL360 G8

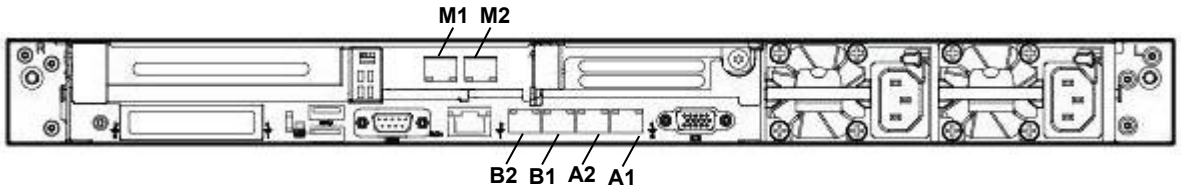


Ethernet port labels	Number of ports
M1, M2, B2, B1, A2, and A1	6

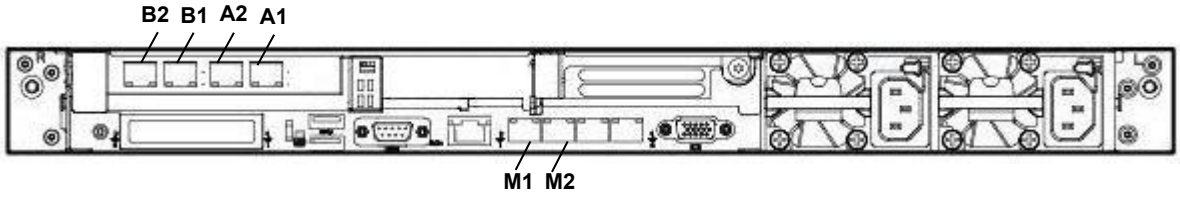
Note:

When you configure the server as EMS, A1, A2, B1, B2, and M2 are not used. For more information about server specifications, see *Deploying Avaya Session Border Controller for Enterprise*.

HP DL360 G9



HP DL360 G9



Tilera Gx-enabled HP DL360 G9

Ethernet port labels	Number of ports
M1, M2, B2, B1, A2, and A1	6

Loss of audio and active call drops during HA failover

During high availability failover, you might notice loss of audio or active call drops. This issue can occur if the internal IP of Avaya SBCE and the internal Avaya Aura® core are on the same subnet. To resolve this issue, move the internal IP of Avaya SBCE to a different subnet. For more information, see the Configuring High Availability section in *Administering Avaya Session Border Controller for Enterprise*.

System Monitoring

Dashboard

The Dashboard screen displays system information, installed devices, alarms, and incidents. The screen displays additional separate summary windows, such as Alarms, Incidents, Statistics, Logs, Diagnostics, and Users. The summary windows contain active, up-to-the-minute alarms, incident, statistical, log, diagnostic, and user information, and review and exchange textual messages with other administrative user accounts.

The Content area of the Dashboard screen contains various summary areas that display top-level, systemwide information, such as:

- Which alarms and incidents are currently active.
- Links to available Quick Links.
- List of installed Avaya SBCE security devices.
- Avaya SBCE deployment information.
- Area for viewing and exchanging text messages with other administrators.

Dashboard content descriptions

Name	Description
System Time	The current system time.
Version	The system software version.
Build Date	The system software build date.
License State	The license state.
Aggregate Licensing Overages	The aggregate license information.
Peak Licensing Overage Count	The peak licensing count.
Last Logged in at	The date and time when the user last logged in.
Failed Login Attempts	The number of failed login attempts.
Installed Devices	A list of all Avaya SBCE security devices currently deployed throughout the network.
Incidents (past 24 hours)	A list of current incidents reported by Avaya SBCE security devices to the EMS web interface.
Alarms (past 24 hours)	A list of current alarms reported by Avaya SBCE security devices to the EMS web interface.
Add	A user-editable text message exchange area.
Notes	The text message created by using the **Add** function.

Manage system alarms

Current system alarms are reported to the EMS web interface. The alarms are displayed as a red indicator on the Alarm viewer page and on the dashboard for the respective device.

The notifications provide the information necessary to clear the condition causing the alarm notification.

Viewing current system alarms

About this task

The Alarms screen displays a summary of all currently active system alarms. If no alarms are active, the system displays a blank screen. The Alarms screen is accessed only if the **Alarm**

Status Indicator on the toolbar indicates an alarm status, flashed red. Use the following procedure to view current system alarms.

Procedure

1. Log on to the EMS web interface.
2. On the toolbar, click **Alarms** or click on the specific alarm you want to view from the **Alarms (past 24 hours)** section of the Dashboard screen.

   The system displays the Alarms Viewer screen.
3. Select the Avaya SBCE device for which you want to view the alarms.

   The Alarms section displays all the currently active alarms for the selected Avaya SBCE security device.

   For the field description of each security reporting component of the Alarms screen, see Alarm Viewer field descriptions.

Alarm Viewer field descriptions

Name	Description
ID	Sequential, numerical identifier of the alarm being reported.
Details	The specific or descriptive name of the active alarm.
State	Current state of the alarm: ON The **State** field for any displayed alarm is always: ON
Time	Date and time when the alarm was generated.
Device	The Avaya SBCE device that generated the alarm.

Clearing system alarms

About this task

You can either delete a selected alarm or all alarms. Most of the alarms are cleared automatically when the condition to create these alarms no longer exist. However, there are some alarms that need to be cleared manually.

Procedure

1. To clear the selected alarm or all alarms, on the Alarms screen, click **Clear Selected** or **Clear All**.

   The system displays a confirmation pop-up window.
2. Click **OK**.

Viewing system incidents

About this task

You can view a complete descriptive list of all system incidents that have occurred since the last viewing period by using the Incident screen. The screen displays the last five incidents at any point of time. With this feature, you can view system-wide incidents according to category, such as DoS, Policy, and Scrubbing. When the Incident screen is open, the latest incident information is available, and the operator can scroll through the incidents list. The screen can display up to 15 incidents at one time. Use the following procedure to view current system incidents.

Note:

Incidents can only be viewed. They cannot be edited or deleted.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. On the toolbar, click **Incidents**.

   The system displays the Incidents Viewer page.

   You can view the incidents by clicking the specific incident on the **Incidents (past 24 hours)** section of the Dashboard screen.
3. Using the **Device** and **Category** fields, choose a search filter to find and display the particular incidents that you want to view.

   The Incident screen display changes to reflect the search criteria when a selection is made.

   The options for Incidents category selections include:

   - All
   - Authentication
   - Black White List
   - CES Proxy
   - DNS
   - DoS
   - High Availability
   - Licensing
   - Media Anomaly Detection
   - Policy
   - Protocol Discrepancy
   - RSA Authentication

- Scrubbing
- Spam
- TLS Certificate
- TURN/STUN

4. To ensure that the system displays all required incidents, periodically click **Refresh** to refresh the display.
5. Click **Clear Filters**.

   The system clears the filtering criteria of the **Device** and **Category** fields and sets the value of the fields to All.
6. Click **Generate Report** and select the start and end date to generate the report.

Viewing system SIP statistics

About this task

The Statistics screen provides a snapshot display of certain cumulative, system-wide generic and SIP-specific operational information.

Note:

You can only view the statistics information. You cannot edit or delete the statistics information. However, you can reset the counters for the SIP statistics.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. On the **Status** toolbar, click **SIP Statistics**.

   Warning:

   Do not click **SIP Statistics** repeatedly. If you repeatedly click and trigger frequent loading of the Statistics page, the Statistics Viewer page shows a communication error.

   The system displays the Statistics Viewer screen.
3. To view the statistics, click one of the following tabs:
   - **SIP Summary**
   - **CES Summary**
   - **Subscriber Flow**
   - **Server Flow**
   - **Policy**
   - **From URI**
   - **To URI**

- **Transcoding Summary**
- **License Summary**

On the **SIP Summary** tab, you can view information such as the number of:

- Active calls
- User registrations
- Calls through the Avaya SBCE after the last restart

Related links

Statistics Viewer field descriptions on page 22

Statistics Viewer field descriptions

SIP Summary tab

Name	Description
Active TCP Registrations	The number of active SIP registrations with TCP transport.
Active UDP Registrations	The number of active SIP registrations with UDP transport.
Active TLS Registrations	The number of active SIP registrations with TLS transport.
Concurrent Sessions (Active Calls)	The number of active SIP calls.
Active SRTP Calls	The number of active calls using media as SRTP.
Total Registrations	The number of SIP registration requests received.
Total Registrations Rejected	The number of rejected registrations.
Total TCP Registrations	The number of SIP registrations received with TCP transport.
Total UDP Registrations	The number of SIP registrations received with UDP transport.
Total TLS Registrations	The number of SIP registrations received with TLS transport.
Total Calls	The number of SIP calls received.
Total Calls Rejected due to Policy Violations(s)	The number of SIP calls rejected by Avaya SBCE because of policy violation.
Total Calls Failed	The number of failed SIP calls.
Total Calls Rejected due to Concurrent Session Limit	The number of SIP sessions dropped by Avaya SBCE because the maximum number of concurrent sessions was exceeded.

CES Summary tab

Name	Description
1XM User Logins Failed	The number of failed Avaya one-X® Mobile user logins.
1XM User Logins Succeeded	The number of successful Avaya one-X® Mobile user logins.

Subscriber Flow tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Subscriber Flow	Selects the subscriber flow for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

Server Flow tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Server Flow	Selects the server flow for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

Policy tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Policy Group	Selects the policy group for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

From URI tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
URI Group	Selects the source URI group for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

To URI tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Policy Group	Selects the destination URI group for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

Transcoding Summary

Name	Description
Streaming	Specifies whether live statistics are displayed.
Total Active Transcoding Sessions	The number of active transcoding sessions.
Total Transcoding Sessions	The number of transcoding sessions.
Total Transcoding Sessions Failed	The number of failed transcoding sessions.
Total Transcoding Sessions Modifications	The number of transcoding sessions that resulted in a change in codecs.
Total Transcoding Sessions Modifications Failed	The number of transcoding sessions that resulted in a failure while changing codecs.

License Summary

Name	Description
Streaming	Specifies whether live statistics are displayed.
Standard Sessions Reserved	The number of standard session licenses that are reserved.
Standard Sessions In-Use	The number of standard session licenses that are currently in use.
Advanced Sessions Reserved	The number of advanced session licenses that are reserved.
Advanced Sessions In-Use	The number of advanced session licenses that are currently in use.
Scopia Video Sessions Reserved	The number of Avaya Scopia® video session licenses that are reserved.
Scopia Video Sessions In-Use	The number of Avaya Scopia® video session licenses that are currently in use.
CES Sessions Reserved	The number of CES session licenses that are reserved.
CES Sessions In-Use	The number of CES session licenses that are currently in use.
Transcoding Sessions Reserved	The number of transcoding session licenses that are reserved.

Table continues…

Name	Description
Transcoding Sessions In-Use	The number of transcoding session licenses that are currently in use.

Related links

Viewing system SIP statistics on page 21

Viewing periodic statistics

Before you begin

Enable periodic statistics in **Device Specific Settings** > **Advanced Options**, and specify a collection interval.

Procedure

1. Log on to the EMS web interface with administrator credentials
2. On the **Status** toolbar, click **Periodic Statistics**.
3. To view the statistics, click one of the following tabs:
   - **SIP Summary**
   - **Subscriber Flow**
   - **Server Flow**
   - **Policy Group**
   - **From URI**
   - **To URI**

Related links

Periodic statistics field descriptions on page 25

Periodic statistics field descriptions

Summary tab

Name	Description
Active TCP Registrations	The number of active SIP registrations with TCP transport.
Active UDP Registrations	The number of active SIP registrations with UDP transport.
Active TLS Registrations	The number of active SIP registrations with TLS transport.
Concurrent Sessions (Active Calls)	The number of active SIP calls.
Active SRTP Calls	The number of active calls using media as SRTP.
Total Registrations	The number of SIP registration requests received.

Table continues…

Name	Description
Total Registrations Rejected	The number of rejected registrations.
Total TCP Registrations	The number of SIP registrations received with TCP transport.
Total UDP Registrations	The number of SIP registrations received with UDP transport.
Total TLS Registrations	The number of SIP registrations received with TLS transport.
Total Calls	The number of SIP calls received.
Total Calls Rejected due to Policy Violations(s)	The number of SIP calls rejected by Avaya SBCE because of policy violation.
Total Calls Failed	The number of failed SIP calls.
Total Calls Rejected due to Concurrent Session Limit	The number of SIP sessions dropped by Avaya SBCE because the maximum number of concurrent sessions was exceeded.

Subscriber Flow tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Subscriber Flow	Selects the subscriber flow for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

Server Flow tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Server Flow	Selects the server flow for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

Policy Group tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Policy Group	Selects the policy group for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

From URI tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
URI Group	Selects the source URI group for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

To URI tab

Name	Description
Streaming	Specifies whether live statistics are displayed.
Policy Group	Selects the destination URI group for which statistics are displayed.
Name	Specifies the name of the statistic. This column lists the same statistics that the system displays in the **SIP Summary** tab.
Value	Specifies the value of the statistic.

Related links

Viewing periodic statistics on page 25

Real Time SIP Server Status

Avaya SBCE Release 6.3 onwards, you can view the current status of the configured SIP servers. The system displays the connectivity status for trunk servers and enterprise call servers. You can use the **Server Status** option of the **Status** toolbar to view the status of the connection. The Server Status screen displays the list of servers based on the settings on the Server Configuration screen.

For the servers to show up in the Status window, you must configure server heartbeat in Server Configuration.

Viewing the status of the SIP servers

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. On the **Status** toolbar, click **Server Status**.

   The system displays the Status screen.

   The system displays server information, such as Server Profile, FQDN, IP address, Transport, Port, Heartbeat Status (UP/DOWN/UNKNOWN), Registration Status

(REGISTERED/NOT REGISTERED/UNKNOWN) and Time when the status field was last updated.

User registration

From Avaya SBCE Release 6.3, you can view the list of users that are registered through Avaya SBCE in the **Registrations State** column on the User Registrations page. You can also enter custom search criteria for the fields that are displayed on the system.

Viewing the list of registered users

Procedure

1. Log on to the EMS web interface.
2. On the **Status** toolbar, click **User Registrations**.

   The system displays the list of registered users.
3. For complete details of a registered user, click the user details.

   The system displays the following information:

   - User information:
     - Address of record of the user.
     - User Agent information related to the type of endpoint and SIP instance information.
     - Firmware type and the controller mode.
   - Servers:
     - The Avaya SBCE device through which the user is registered to Avaya Aura®.
     - The subscriber flow and server flow that were used for registration.
     - Session Manager address, port, and transport used for registration.
     - Endpoint private IP, natted IP, and transport.
     - Endpoint registration state and last reported time.

User Registrations field description

The User Registrations screen displays the list of endpoints registered through Avaya SBCE with the following details for each registration.

Name	Description
AOR	The SIP URI used by the endpoint to register to Session Manager.
SIP Instance	The MAC address of the endpoint.
Last Reported Time of Registration	The time when the user registration status was last updated.

When the endpoint tries to register to Avaya SBCE, each call server uses the following information:

Name	Description
SBC device	The Avaya SBCE device that receives the REGISTER message.
Session Manager address	The address of the call server with the primary or secondary status.
Registration state	The registration status of the endpoint.

Viewing system logs

About this task

SysLog Viewer displays the syslog file according to certain user-definable filtering criteria, such as log type, time period, and severity. Use the following procedure to define and view syslog reports.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. Select the **Logs** option from the toolbar, and click the **System Logs** menu.

   The system displays the Syslog Viewer screen. On this screen, you can specify criteria in the **Query Options** section to filter the results displayed.
3. In the **Start Date** and **End Date** fields, filter the results displayed in a search report to fall within starting and ending dates and times. In previous Avaya SBCE Syslog Viewer windows, there were four separate fields: **Start Date**, **Start Time**, **End Date**, and **End Time**.

   Note:

   The date and time entries are combined in a single field, mm/dd/yyyy [hh:mm], with the time entry, [hh:mm], being optional. An **End Date** or **End Time** entry is not required when you enter a **Start Date** or **Start Time**.

   You can also select additional search criteria in the **Query Options** section.
4. In the **Keyword** field, type one or more words to define the limits of the log report, and click **Search**.

   The system runs the report and displays the output.

   Note:

   Keyword searches are case-insensitive and tokenized. Each keyword term entered in the **Keyword** field is searched. However, for a log line to be included in a report, all keyword terms that are entered in the **Keyword** field must be found in that log line.

Syslog Viewer field descriptions

Query Options section

The Query Options section on the Syslog Viewer screen contains options for filtering the Syslog logs.

Name	Description
Keyword	Search keywords for viewing logs.
Start Date	Date and time from which you want to view logs. You can enter values in the format mm/dd/yyyy [hh:mm]. Entering time is optional.
End Date	Date and time up to which you want to view logs You can enter values in the format mm/dd/yyyy [hh:mm]. Entering time is optional.
Show	Number of entries to be displayed on a page.
Class	Class of the logs to be displayed. The following options are available: • All • Platform • Trace • Security • Protocol • Incidents • Registration • Audit • GUI • Unknown
Severity	Severity of the logs to be displayed. The following options are available: • Unknown • Info • Notice • Warning • Error • Critical • Alert • Emergency

Results section

Name	Description
Timestamp	Timestamp of the log message.

Table continues…

Name	Description
Host	Device for which the log is generated.
Severity	Severity of the message.
Class	Class of the message.
Summary	Summary of the message.

Viewing audit logs

About this task

Audit Log Viewer displays the contents of the audit log. The audit log contains a record of security related events, such as logins, session starts, session ends, new user additions, and password attempts/retries/changes. Use the following procedure to view the Audit Log Viewer information.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. On the toolbar, click **Logs** > **Audit Logs**.

   The system displays the Audit Log Viewer page.
3. In the **Start Date** and **End Date** fields, you can filter the results that are displayed in a search report to fall within starting and ending dates and times.
4. In the **Keyword** field, type one or more words to define the limits of the log report, and click **Search**.

   In the Results section, the system displays the report output.
5. To see additional details about a particular log line in a report, select the log line.

   The system displays the Audit Log Details page.
6. On the **Device Specific Settings** > **Syslog Management** page, you can set the log level rules for the Audit Log and other logs.

   Audit Logging is enabled in the Log Level row for the Audit class and Audit Facility as LOG_LOCAL6.

   The Log Level Facility name, LOG_LOCAL6, is reserved for Audit Logging and cannot be changed. The LOG_LOCAL6 file path destination cannot be changed either. The file path is `/archive/syslog/ipcs/audit.log`.

Viewing diagnostics results

About this task

The Diagnostics screen provides a variety of tools to aid in troubleshooting Avaya SBCE operation. Available tools include a full diagnostic test suite, and individual tabs to monitor certain functional aspects of Avaya SBCE, such as TCP and TLS activity.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. On the toolbar, click **Diagnostics**.

   The system displays the Diagnostics page.
3. Click **Full Diagnostics**.
4. Click **Start Diagnostic**.

   The tests listed in the **Task Description** column of the display are sequentially run, with the results of the test displayed in the **Status** column. If an error is encountered while running a test, the test continues until all tests are run. The system displays the reason for the error in the **Status** column.
5. Click **Ping Test**.

   The ping test can be used to verify basic IP connectivity to elements beyond the gateways. For example, ASM or the trunk server.

Viewing administrative users

About this task

The Active Users page provides a summary of all active system administrative accounts currently logged on to the EMS web interface.

Note:

You can only view the users account information. You cannot modify the information.

Use the following procedure to view the system administrative accounts that are currently logged on to the interface.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. On the toolbar, click **Users**.

   The system displays the Active Users page.

Managing Avaya SBCE logging level

Procedure

1. Log in to Avaya SBCE EMS web interface with administrator credentials.
2. In the left navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Debugging**.

   The system displays the **Subsystem Logs** tab.
3. In the **Devices** section, select the Avaya SBCE device for which you want to manage log files.
4. Check or clear the field corresponding to the type of execution log that you want to enable or disable.
5. Click **Save**.

   The system displays a message at the top of the screen: `Configuration update successful`.

Roll back to an earlier release

For information about upgrading to Avaya SBCE Release 7.2 and rolling back to an earlier release, see *Upgrading Avaya Session Border Controller for Enterprise*.

Enhanced Access Security Gateway

The Enhanced Access Security Gateway (EASG) system is a key element in protecting passwords and preventing unauthorized use of maintenance and administration login. EASG provides a secure method for Avaya support personnel to access Avaya SBCE remotely. Access is under the control of the customer. EASG is a 128–bit AES encrypted challenge-response mechanism for authentication. With this mechanism, Avaya SBCE can maintain secure access for services, administration, and maintenance. On Avaya Enterprise Communications System (ECS) products, Avaya services personnel use the EASG challenge and corresponding response for a single access attempt only. After each login, a new response must be used.

Related links

Checking EASG status on page 34
Enabling and disabling EASG from EMS on page 34
Enabling and disabling EASG on page 34
EASGManage on page 35
Loading and managing site certificate on page 36

Checking EASG status

Before you begin

Log in to the application with the customer account.

Procedure

1. On the command line interface, type `EASGStatus`.
2. Press `Enter`.

   The system displays one of the following:

   - **`EASG is enabled`** — if EASG is enabled.
   - **`EASG is disabled`** — if EASG is disabled.

Related links

Enhanced Access Security Gateway on page 33

Enabling and disabling EASG from EMS

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the navigation pane, click **Administration**.
3. Click the **EASG Configuration** tab.
4. In the EASG Authentication Status section, do one of the following:
   - To enable EASG, click **Enable**.
   - To disable EASG, click **Disable**.

Related links

Enhanced Access Security Gateway on page 33

Enabling and disabling EASG

About this task

Avaya recommends enabling EASG. By enabling Avaya Logins you are granting Avaya access to your system. This is necessary to maximize the performance and value of your Avaya support entitlements, allowing Avaya to resolve product issues in a timely manner. In addition to enabling the Avaya Logins, this product should be registered with Avaya and technically onboarded for remote connectivity and alarming. See the Avaya support site for additional information for registering products and establishing remote access and alarming.

By disabling Avaya Logins you are preventing Avaya access to your system. This is not recommended, as it impacts Avaya's ability to provide support for the product. Unless the

customer is well versed in managing the product themselves, Avaya Logins should not be disabled.

Before you begin

Log in to the application with the customer account.

Procedure

1. On the command line interface, do one of the following:
   - To enable EASG, type `EASGManage --enableEASG`.
   - To disable EASG, type `EASGManage --disableEASG`.

   The system displays the message **`Do you want to continue [yes/no] ?`**
2. Type `yes` or `no`.
3. Press `Enter`.

Related links

Enhanced Access Security Gateway on page 33

EASGManage

Use **`EASGManage`** to enable or disable the EASG authentication, check the status of EASG feature for the specified users, and display information about the available EASG users.

Syntax

```
EASGManage [--enableEASG] [--disableEASG] [--enable user] [--disable user] [--
userStatus user] [--listUsers] [--printDisableWarning] [--printEnableWarning]
```

--enableEASG	Enables Enhanced Access Security Gateway (EASG) authentication.
--disableEASG	Disables EASG authentication.
--enable	Enables EASG authentication only for the Avaya Services logins specified in the *user* variable. If the main EASG enable/disable switch is disabled, no Avaya Services logins will have access, no matter what this setting reflects for an individual Avaya Services Login. EASG supports only Avaya services logins, such as init, inads, and craft.
--disable	Disables EASG authentication only for the Avaya Services logins specified in the *user* variable.
--userStatus	Displays the EASG status of the user specified in the *user* variable.
--listUsers	Lists the available EASG users.
--f	Forces the enable or disable action to run without prompts.

--printDisableWarning Displays the warning message for disabling EASG on the system.

--printEnableWarning Displays the warning message for enabling EASG on the system.

Related links

Enhanced Access Security Gateway on page 33

Loading and managing site certificate

About this task

A customer can load a site certificate using `EASGSiteCertManage --add <pkcs7_file_path>` and will need to specify a Site Authentication Factor (SAF). The SAF will need to be provided to the technician and is also used by EASG Site Manager to generate a response to the EASG challenge.

Before you begin

Procedure

1. Log in to a Linux® shell by using the customer account.

   The customer account is created during the deployment procedure.

2. At the command line type:

```
[cust@host ~]$  EASGSiteCertManage --add johndoe.p7b
You are about to install this site certificate into your trusted repository:
Technician Name: johndoe
Expiration Date: Nov 10 17:02:15 2016 GMT
Do you want to continue [yes/no]? yes
Please enter a site authentication factor (SAF) for the technician to use when
getting access to your machine. The SAF is alphanumeric with at least 10
characters and no more than 20 characters.
  Please enter your SAF:  Site Authentication Factor
  Please confirm your SAF: Site Authentication Factor
Site Certificate installed successfully.
[cust@host  ~]$
```

   Save the Site Authentication Factor to share with the technician once on site.

3. You can view information about a particular certificate by using `EASGSiteCertManage --show <pkcs7_file_path>` and the certificate name is obtained from certificate list output.

```
[cust@host ~]$ EASGSiteCertManage --show johndoe.p7b
Subject:        CN=Avaya Technician johndoe, OU=EASG, O=Avaya Inc.
User Name:      johndoe
Expiration:     Nov 10 17:02:15 2016 GMT
Trust Chain:
    1. O=Avaya, OU=IT, CN=AvayaITrootCA2
    2. DC=com, DC=avaya, DC=global, CN=AvayaITserverCA2
    3. O=Avaya Inc, OU=EASG, CN=EASG Intermediate CA
    4. CN=Site EASG Intermediate CA, OU=EASG, O=Avaya Inc.
    5. CN=Avaya Technician johndoe, OU=EASG, O=Avaya Inc.
```

4. The customer can delete the site certificate using `EASGSiteCertManage --delete <pkcs7_file_path>` and the certificate name is obtained from the certificate list output.

```
[cust@host ~]$ EASGSiteCertManage --delete johndoe.p7b
Successfully removed Site Cert: johndoe.p7b
[cust@host ~]$
```

Related links

Enhanced Access Security Gateway on page 33

Support contact checklist

Use this checklist to collect the critical information that you must gather before you contact Avaya Technical Support.

Try to resolve the issue by using this document before you contact Avaya. Contacting Avaya is the final step only after you are unable to resolve the issue.

Gather the following information before you contact Avaya Technical Support:

No.	Task	Description	Notes	✔
1	Your full name, organization, and telephone number where an Avaya representative can contact you about the problem.			
2	The Sold To number.	Also known as the Functional Location (FL) number.		
3	Detailed description of the problem.			
4	The type of service contract your organization has with Avaya.			
5	Your product release information.	Include the software versions, hardware deployment type, operating system, third-party software and database versions.		
6	Description of any Avaya Professional Services contracts.			
7	Description of remote access availability.			

Table continues…

No.	Task	Description	Notes	✔
8	Date and time when the problem started.	Refer to log files if applicable.	If the problem is intermittent, determine when the problem started and stopped.	
9	Frequency of the problem.			
10	What InSite Knowledge Base solutions have you tried?	Use the Advanced Search option to narrow your search to specific categories and document types.		
11	Detailed information about recent system upgrades, network changes, or custom applications.	Include the date and the time when the changes were made. Also include information about who made the changes.		
12	Appropriate logs and packet captures of the issue.	Take packet captures when the issue occurs and save appropriate logs to facilitate investigation.		

Chapter 3: Monitoring and analysis

Tools and utilities

traceSBC tool

The tcpdump tool is the main troubleshooting tool of Avaya SBCE, which can capture network traffic. Using tcpdump is a reliable way to analyze the information arriving to and sent from Avaya SBCE. However, tcpdump has its own limitations, which can make troubleshooting difficult and time consuming. This traditional tool is not useful in handling encrypted traffic and real-time troubleshooting.

SIP and PPM traffic is encrypted especially in Remote Worker configurations. Checking encrypted traffic with a network capture is difficult and time consuming. The delay occurs because the unencrypted private key of the Avaya SBCE is needed to decrypt the TLS and HTTPS traffic.

The traceSBC tool offers solutions for both issues. traceSBC is a perl script that parses Avaya SBCE log files and displays SIP and PPM messages in a ladder diagram. Because the logs contain the decrypted messages, you can use the tool easily even in case of TLS and HTTPS. traceSBC can parse the log files downloaded from Avaya SBCE. traceSBC can also process log files real time on Avaya SBCE, so that you can check SIP and PPM traffic during live calls. The tool can also work in the noninteractive mode, which is useful for automation.

Log files

Avaya SBCE can log SIP messages as processed by different subsystems and also log PPM messages. The traceSBC utility can process the log files real-time by opening the latest log files in the given directories. traceSBC also checks regularly if a new file is generated, in which case the old one is closed and processing continues with the new one. A new log file is generated every time the relevant processes restart, or when the size reaches the limit of ~10 M.

Log locations:

SIP messages are found at `/archive/log/tracesbc/tracesbc_sip/` and PPM messages can be found at `/archive/log/tracesbc/tracesbc_ppm/`.

Active files are of the following format:

```
-rw-rw---- 1 root root 112445 Aug 21 10:12 tracesbc_sip_1408631651
```

Inactive or closed files are of the following format:

-rw-rw---- 1 root root 175236 Aug 21 06:33 tracesbc_sip_1408617250_1408620820_1 or

-rw-rw---- 1 root root 31706 Jul 10 13:34 tracesbc_sip_1436549674_1436553270_1.gz

SIP and PPM logging administration

Starting from Release 6.3, SIP logging is always enabled by default. You can enable PPM, STUN, TLS, and AMS logging, if required.

Advantages

Memory

After 10000 captured messages, traceSBC stops processing the log files to prevent exhausting the memory. This check is done during the capture when the tool is parsing the log files. The tool counts the number of SIP and PPM messages in the logs. This number is not the number of messages sent or received on the interfaces. This counter is a summary of messages from all logs, not for each log. Note that this safeguard is present only for real-time mode. When the tool is used in nonreal-time mode, this counter does not stop processing the logs specified in the command line. The counter continues processing the logs specified in the command line to be able to process more files or messages in off-line mode.

Processor

A built-in mechanism is available to prevent high CPU usage. Throttling is not tied to CPU level. In the current implementation, throttling is done by releasing the CPU for a short period after each line of the file is processed. The result is that CPU occupancy is low on an idle system when the tool actively processes large log files. You can disable throttling by the –dt command line parameter which can be useful when processing large log files offline. However, in this case CPU occupancy might go up to 100%, and so you must not use this option on a live system.

Operation modes

Non real-time mode

The tool starts with at least one file in the command line parameters. The tool automatically detects the type of files, processes the files, and finally displays messages from the different files in one diagram ordered by the timestamp. If filters are set, only the messages that match the filters are displayed in the diagram. In this mode, enabling live capture is not an option.

Examples:

```
# traceSBC tracesbc_sip_1408635251
```

```
# traceSBC /archive/log/tracesbc/tracesbc_sip/tracesbc_sip_1408635251 archive/log/
tracesbc/tracesbc_ppm/tracesbc_ppm_1408633429
```

Real-time mode

In this mode, traceSBC must be on active Avaya SBCE. traceSBC is started without specifying a file in the command line parameters. The tool automatically starts processing the log files. The live capture can be started and stopped anytime without affecting service.

Example:

```
 # traceSBC
```

Automatic mode

In this mode, traceSBC must be on the Avaya SBCE and the command is called with -a and -w parameters at a minimum.

Example:

```
# traceSBC -a "sip|ppm" -w /tmp/trace.log
```

Use this mode for test automation. You can also use this mode to stop capture when a certain condition is met, and then save filtered messages automatically. Multiple stop triggers are present, such as number of packets, time, regular expression, and a combination of these. When a stop trigger fires, or when you press `CTRL+C`, the tool automatically saves the filtered messages and stops the captures.

User interface

Window header

The window header shows the hostname, the name of the script, the number of captured messages, and the number of displayed messages that matched the filters. The header also displays warning messages such as MAX NUM PACKETS 10000 EXCEEDED.

Ladder diagram

The ladder diagram displays the filtered messages. The arrow shows the direction of the message between the SBC and the host from where the message arrived or was sent to. The IP of the host is at the top of the column. If the host is an Avaya phone, traceSBC attempts to extract the user information from the message, and replaces the IP with the user handle. To navigate between the messages, use the UP/DOWN arrow keys. The message is highlighted. To see the details of the message, press `Enter`. The header of the message detail form shows the source and destination IP or port and the transport protocol.

Status bar

The bottom line has two areas, and its content depends on which mode the tool is in. The left side of the status bar shows the filename in nonreal-time mode, or shows Multiple files when the tool was called with more than one file. In real-time mode, this area shows which trace is active. Red means disabled, and green means enabled.

The rest of the status bar lists the available commands:

`s=Start / s=Stop` : Starts or stops live capture, which means the tool enables or disables the appropriate logging. Capture can be enabled for SIP and PPM individually. Stop disables all logging at the same time and stops processing the log files. This command shows only if the tool was started in real-time mode.

Note:

Depending on the traffic and the capture modes at the time of stopping the trace, the log files might contain more messages than the messages already captured by the tool.

`q=Quit`: Quit from the tool. If capture is running, the tool shows a pop-up to confirm the exit without stopping the logging.

`f=Filters`: Set new filter options. The filter options set in the dialog window override the command line filter settings. If no New Filter is entered, the Current Filter will remain active. To clear all filters, type **e** or **erase** in the **New Filter** field.

w=Write: Export filtered messages to a file. The dialog prompts you for a filename. The system saves SIP messages in the specified file to the current directory. The system saves PPM messages in a separate file with .ppm extension. The system also exports SIP messages in pcapng format to a file with .pcapng extension. SIP messages can be exported if text2pcap and tshark utilities are available on the machine where traceSBC is run.

i=IP / i=Name: Toggle between IP and user name presentation of the hosts in the header of the ladder diagram.

r=RTP: Turn RTP simulation on or off. When a session is established early or confirmed, the tool inserts a line in the diagram. This line represents the RTP stream between the two hosts described by the SDP. The diagram also shows the negotiated codec type.

Note:

The RTP stream is created based on the negotiated information in SDP. However, there is no guarantee that these RTP streams come to the system.

u=Full Screen: Use the full screen for the message detail box without having the left and right side of the frame. This option is useful not only to see more about the message, but to easily copy or paste the content.

d=Calls: Shows the summary of all calls.

Trace

With the Trace function, you can trace an individual packet or group of packets comprising a call through Avaya SBCE. The information shows how the call traversed the Avaya SBCE-secured network.

Configuring Packet Capture

About this task

Use the following procedure to set the filtering options and to capture packets or message flow.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Trace**.
3. In the **Devices** section, click the Avaya SBCE device for which you want to configure packet capture.
4. Click **Packet Capture**.

   The system displays the Packet Capture page.
5. On the Packet Capture page, do the following:
   a. In the **Interface** field, click `Any` or the required interface. The default value is Any.
   b. In the **Local Address** field, click `All` or the required local address. You can type the port number for the required local address. The default value is All.

c. In the **Remote Address** field, type the remote IP address and port.

   The default value is *.

d. In the **Protocol** field, click the protocol.

   The options are: All, TCP, and UDP.

e. In the **Maximum Number of Packets to Capture** field, type the number of packets to capture the data. You can enter values between 1 to 10,000.

   Note:

   Do not capture more than 10,000 packets. The system displays a warning message.

f. In the **Capture Filename** field, type the name of the file to capture the data.

g. Click **Start Capture**.

   The system displays a message that `A packet capture is currently in progress. This page will automatically refresh until the capture completes.`

h. Click **Stop Capture**.

   The system stops capturing the data and saves the packet capture file in the pcap format on the Captures page.

6. On the Captures page, click **Refresh**.

   The system displays the file with the file size information in bytes and the date when the file is last modified.

7. On the Captures page, click the file name.

   The system displays the File Download window.

8. On the File Download window, click **Save** or open the file directly.

   The system displays the Save As window.

9. Navigate to a directory for saving the Packet Capture (pcap) file and click **Save** to save the file to the new directory.

10. Use Wireshark or a similar application to open up the Packet Capture (pcap) file. If Wireshark is already installed, you can double-click the file to open it with Wireshark. Otherwise, start Wireshark first and then either open the file from within the Wireshark application or double-click the Packet Capture file.

    Note:

    You can view the file using Wireshark (originally named Ethereal), a free and open-source packet analyzer application used for network troubleshooting, analysis, and software protocol development. You can download and install Wireshark, or a similar network analyzer program, to view the Packet Capture (pcap) file.

tcpdump

You can use tcpdump to capture packets from the CLI if you need to capture more than 10000 packets. After the captures are taken, ensure you stop the command.

For packet capture started through GUI, the output files are stored in `/archive/pcapfiles/IPCS2`.

Running tcpdump in CLI

Procedure

1. Log on to the EMS server through SSH with ipcs user credentials.
2. At the command prompt, type `cd /archive/pcapfiles/IPCS2`.
3. Type `tcpdump -ni any -s 0 -w '`*`filename`*`.pcap'`, where *filename* is the name of the packet capture file.
4. To run packet captures on a specific interface, type `tcpdump -i any -s 0 -w '`*`filename`*`.pcap'`

   To run packet captures on a specific interface, use **`tcpdump -I`** *data_interface*. For Tilera Gx card, you cannot use the *any* interface option. Packet capturing on Avaya SBCE negatively impacts packet latency.
5. Wait for the capture to end, and press `Ctrl+C`.
6. Type `chown ipcs:ipcs `*`filename`*`.pcap`.

   The system displays the packet capture file in the **Captures** tab in the EMS web interface.

---

showflow

A flow is a connection between an endpoint and Avaya SBCE. Types of flows are:

- Static: A static flow is configured on the Avaya SBCE only one time. Static flows do not change until the administrator changes the flows. Static flows are used, for example, for connections between endpoints and an Avaya SBCE signaling address.
- Dynamic: A dynamic flow is a transient connection between an endpoint and Avaya SBCE. Software creates, modifies, and deletes dynamic flows to support the transfer of media packets through Avaya SBCE.

Many flows can exist on Avaya SBCE simultaneously. To troubleshoot issues with Avaya SBCE, you can use the **`showflow`** command to display flows with varying levels of detail.

Syntax

```
showflow 310 flow-type detail-levelfilter-ip
```

flow-type The flow type can be:

- static: Shows all static flows.

- dynamic: Shows all dynamic flows.
- turn_client_side: Shows all TURN flows on the listen interface of Avaya SBCE.
- turn_far_side: Shows all TURN flows on the relay interface of Avaya SBCE.
- blacklist: Shows all IP addresses that are currently blacklisted. Packets from blacklisted addresses do not match any flows.
- whitelist: Shows only those static flows that require whitelisting of the endpoint IP address.

detail-level You can specify the detail level for dynamic flows. The detail level for all other flows is fixed. When levels exceed the default detail level 0, you can see the default flow information and also additional information for the flow. The detail levels for dynamic flows can be:

- 0: Shows the default level of information. If a detail level is not specified in the command, the system uses 0 detail level.
- 1: Adds more decrypt information to every flow.
- 2: Adds more encrypt information to every flow.
- 3: Adds the physical port number for the output of the flow. Packets matching this flow are sent out of this physical port.
- 4: Adds relay information. Packets matching this flow are changed according to this relay before they are forwarded.
- 5: Adds VLAN identifiers and flow statistics.
- 6: Adds SIPREC information. This option does not change non-SIPREC flows.
- 7: Adds encrypt information for a SIPREC flow. This option does not change non-SIPREC flows.
- 8: Adds decrypt information for a SIPREC flow. This option does not change non-SIPREC flows.

filter-ip If you specify a filter IP address, the **`showflow`** command displays dynamic flows that use the IP address that you specified as:

- An input or a packet source
- An output or a packet destination

When you specify a filter IP address, the **`showflow`** command displays dynamic flows pertaining to an endpoint with that IP address. If you do not provide a filter IP address, the system displays all dynamic flows.

Description

`Showflow` is a root-level console command to display the flows that are currently active on Avaya SBCE.

Example

The following example displays full details of all dynamic flows with 10.20.30.40 as a source or destination:

```
showflow 310 dynamic 8 10.20.30.40
```

The following example displays all static flows:

```
showflow 310 static
```

Debugging logs

Enabling application debug logs

About this task

The debugging logs are located at `/archive/log/ipcs/ss/logfiles/elog/`. You can collect the logs from the console.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Debugging**.
3. Click the **Subsystem Logs** tab.
4. Select the device on which you want to toggle the log settings.
5. Do one of the following:
   - To turn on all debug information on the device, select the **Debug**, **Info**, and **Warning** log level check boxes at the top of the table.
   - To select a specific log level for all subsystems, select the **Debug**, **Info**, or **Warning** log level check box at the top of the table.
   - To select log levels for a specific subsystem, select the **Debug**, **Info**, or **Warning** log level check box next to the subsystem.
6. Click **Save**.

Disabling application debug logs

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Debugging**.

3. Click the **Subsystem Logs** tab.
4. Deselect all the **Debug/Info/Warning** log level check boxes. If you want to deselect a specific log level check box for all devices, click the check box on the top of the table.
5. Click **Save**.

Enabling GUI debug logs

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Debugging**.
3. In the Application pane, click the EMS device.
4. In the Content area, click **GUI** Logs.
5. Select the required log levels.
6. Click **Save**.

Debugging field descriptions

Subsystem Logs

Name	Description
Process	Specifies the process for which you want to enable logs. This field displays processes such as: • LogServer • OAMPSERVER • SYSMON • SSYNDI • TURNCONTROLLER
Subsystem	Specifies the subsystem for which you want to enable logs.
Debug	Specifies that debug logs are enabled for a subsystem. If you select the **Debug** check box in the table header, the system selects debug logs for all processes.
Info	Specifies that informational logs are enabled for a subsystem. If you select the **Info** check box in the table header, the system selects informational logs for all processes.
Warning	Specifies that warning logs are enabled for a subsystem. If you select the **Warning** check box in the table header, the system selects warning logs for all processes.

GUI logs

Name	Description
GUI	Controls master log levels for all GUI logs. The options are: • Info • Warn • Error
IH	Creates detailed logs generated by a GUI IH client. IH handles statistics retrieval from the application.
SOAP	Creates detailed logs generated by a GUI SOAP client. SOAP handles communication with EMS and Avaya SBCE Communication Manager servers, for example, restart application, reboot device, and uninstall device.
EMS-CM Relay	Creates detailed logs generated by SOAP relay module. This module handles communication relay between EMS Communication Manager and Avaya SBCE Communication Manager. For example, for device registration and configuration retrieval.
Shell Commands	Creates detailed logs when you start any external process.
File Uploads	Creates detailed logs for user file uploads, for example, upgrade packages, scrubber packages, and certificates.
Licensing	Creates detailed logs generated by a GUI WebLM client.
Third Party Components	Controls a master log level for third-party logs. This log level covers any logs from third-party libraries that the GUI uses. The options are: • Debug • Info • Warn • Error
SSH	Controls log levels for a third-party SSH library used for backup or restore and remote actions. The options are: • Inherit • Debug • Info • Warn • Error

Third-Party Logs

Name	Description
Nginx	Controls log levels for nginx. The options are: • Info • Notice • Warn • Error • Crit • Alert • Emerg
Transcoding	Controls log levels for transcoding. The options are: • None • All

Disabling GUI Logs

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Debugging**.
3. In the Application pane, click the EMS device.
4. In the Content area, click **GUI Logs**.
5. Click **Reload From File**.
6. Click **Save**.

Debug logs location

The debug logs can be collected from the console.

The elog files for processes running on Avaya SBCE are available at `/archive/log/ipcs/ss/logfiles/elog/`. The elog files for processes running on EMS are available at `/archive/log/ipcs/sems/logfiles/elog/`.

PCF logs for the Tilera Gx adapter are available in the host kernel log file at `/archive/syslog/ipcs/kern.log`.

Table 3: Elog locations for processes

Process	elog Path	Purpose
EMS		
SYSMON	`/archive/log/ipcs/sems/logfiles/elog/SYSMON`	To debug connectivity issues between Avaya SBCE and EMS, process restart due to ping failure, and HA issues
OAMPSERVER	`/archive/log/ipcs/sems/logfiles/elog/OAMPSERVER`	To manage SNMP configuration of EMS
LOGSERVER	`/archive/log/ipcs/sems/logfiles/elog/LogServer`	To debug issues related to logging for other processes
Avaya SBCE		
SBC SYSMON	`/archive/log/ipcs/ss/logfiles/elog/SYSMON`	To debug connectivity issues between Avaya SBCE and EMS, process restart due to ping failure, and HA issues
SSYNDI	`/archive/log/ipcs/ss/logfiles/elog/SSYNDI`	To debug SIP application and media issues
OAMPSERVER	`/archive/log/ipcs/ss/logfiles/elog/OAMPSERVER`	To debug SNMP and statistics
TURNCONTROLLER	`/archive/log/ipcs/ss/logfiles/elog/TURNCONTROLLER`	To debug issues with TURN/STUN

TraceSBC logs for SIP are available at `/archive/log/tracesbc/tracesbc_sip`. TraceSBC logs for PPM are available at `/archive/log/tracesbc/tracesbc_ppm`

Core dumps are generated at `/archive/crash`. Smdumps for each process is available at `/usr/local/ipcs/smdump/`.

Traps

To see Avaya SBCE alarms on System Manager, you must upload the Avaya SBCE common alarms definition file (cadf) to System Manager. For more information, see *Administering Avaya Session Border Controller for Enterprise*.

Trap	Component of Avaya SBCE from which the Trap is generating	Cause
ipcsCPUUsageNotification	EMS SBCE	CPU utilisation exceeds a set threshold

Table continues…

Trap	Component of Avaya SBCE from which the Trap is generating	Cause
ipcsMemoryUsageNotification	EMS SBCE	Memory utilisation exceeds a set threshold
ipcsDiskUsageNotification	EMS SBCE	Disk space utilization exceeds a set threshold
ipcsDiskFailureNotification	EMS SBCE	Hard Disk fails
ipcsNetworkFailureNotification	EMS SBCE	Network fails
ipcsHAFailureNotification	SBCE: For HA deployment mode	HA failure When Avaya SBCE generates this trap, the primary SBCE goes down and secondary SBCE switches to primary state.
ipcsHAHeartBeatFailureNotification	SBCE: For HA deployment mode	Connection between SM and Avaya SBCE breaks OR SM stops sending responses
ipcsScpFailureNotification	EMS SBCE	SCP of Log Archive fails
ipcsCopyFailureNotification	EMS SBCE	Copy of Log Archive fails
ipcsProcessFailNotification	EMS SBCE	A process starts after the process fails
ipcsDatabaseFailNotification	EMS SBCE	Either the database is down or connectivity to the database has been lost

Incidents

The following sections describe the incidents that can occur in Avaya SBCE.

Denial of Service (DoS) incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsSingleSourceDoS	SBCE	Avaya SBCE detects a single source DoS
ipcsSingleSourceCallWalkDoS	SBCE	Avaya SBCE detects a call walk DoS
ipcsPhoneDoS	SBCE	Avaya SBCE detects a phone DoS
ipcsPhoneStealthDoS	SBCE	Avaya SBCE detects a phone stealth DoS
ipcsServerDoS	SBCE	Avaya SBCE detects a server DoS or blocks a server DoS The incident occurs due to any of the following reasons: • Initiated Threshold Crossed - Action Whitelist • Pending Threshold Crossed- Action Whitelist • Failed Threshold Crossed- Action Whitelist • attack from Server side - Initiated Threshold Crossed- Action SIV • attack from Server side - Pending Threshold Crossed- Action SIV • attack from Server side - Failed Threshold Crossed- Action SIV • Initiated Threshold Crossed- Action Limit • Pending Threshold Crossed- Action Limit • Failed Threshold Crossed- Action Limit
ipcsPhoneStealthDDoS	SBCE	Avaya SBCE detects a phone stealth DDoS
ipcsDomainDoS	SBCE	Avaya SBCE detects a domain DoS

Blacklist/Whitelist incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsBlackipcsListCallBlocked	SBCE	Avaya SBCE comes across a blacklisted caller

Scrubbing related incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsDroppedScrubMsg	SBCE	Avaya SBCE comes across a SDP parser error or scrubber anomaly
ipcsRejectedScrubMsg	SBCE	Avaya SBCE comes across a scrubber anomaly
ipcsDetectedScrubMsg	SBCE	Avaya SBCE comes across a scrubber anomaly

Protocol discrepancy incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsACKMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue ACK message
ipcsBYEMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue BYE message
ipcsCANCELMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue CANCEL message
ipcsNOTIFYMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue NOTIFY message
ipcsPRACKMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue PRACK message
ipcsREINVITEMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue REINVITE message
ipcsREFERMsgOutofDialogue	SBCE	Avaya SBCE gets an out of dialogue REFER message
ipcs1XXMsgOutofTransaction	SBCE	Avaya SBCE gets an out of dialogue 1xx class response
ipcs2XXMsgOutofTransaction	SBCE	Avaya SBCE gets an out of dialogue 2xx class response
ipcs3XXMsgOutofTransaction	SBCE	Avaya SBCE gets an out of dialogue 3xx class response
ipcs4XXMsgOutofTransaction	SBCE	Avaya SBCE gets an out of dialogue 4xx class response
ipcs5XXMsgOutofTransaction	SBCE	Avaya SBCE gets an out of dialogue 5xx class response
ipcs6XXMsgOutofTransaction	SBCE	Avaya SBCE gets an out of dialogue 6xx class response
ipcsAuthRealmMismatch	SBCE	Avaya SBCE comes across a realm mismatch

Policy related incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsCallDenied	SBCE	Calls to the Avaya SBCE are denied due to any of the following reasons: • Video is disabled or disallowed • Audio is disabled or disallowed • Maximum number of video sessions is exceeded • Maximum number of audio sessions is exceeded • Maximum number of audio sessions per endpoint is exceeded • Maximum number of video sessions per endpoint is exceeded • No Server Flow is matched for incoming message • No Server Flow is matched for outgoing message • No Subscriber Flow is matched • Prop method disallowed out of dialog message • Standard method disallowed out of dialog message • No Routing Rule is matched • Codec is disallowed • Method is disallowed

Table continues…

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsRegistrationDenied	SBCE	Avaya SBCE denies registration because of any of the following reasons: • No Server Flow is matched for incoming message • No Server Flow is matched for outgoing message • No Subscriber Flow is matched • Prop method disallowed out of dialog message • Standard method disallowed out of dialog message • No Routing Rule is matched • Method is disallowed
ipcsSubscriptionDenied	SBCE	Avaya SBCE denies subscription because of any of the following reasons: • No Server Flow is matched for incoming message • No Server Flow is matched for outgoing message • No Subscriber Flow is matched • Prop method disallowed in dialog message • Standard method disallowed in out of dialog message • No Routing Rule is matched • Method is disallowed

Table continues…

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsRedirectionDenied	SBCE	Avaya SBCE denies redirection because of any of the following reasons: • No Server Flow is matched for incoming message • No Server Flow is matched for outgoing message • No Subscriber Flow is matched • Prop method disallowed in dialog message • Standard method disallowed in dialog message • Prop method disallowed in out of dialog message • Standard method disallowed in out of dialog message • No Routing Rule is matched • Method is disallowed

Table continues…

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsMessageDropped	SBCE	Avaya SBCE drops a message because of any of the following reasons: • No Server Flow is matched for incoming message • No Server Flow is matched for outgoing message • No Subscriber Flow is matched • Response prop header is disallowed • Response standard header is disallowed • Response prop header is mandatory • Response standard header is mandatory • Response prop header is disallowed • Response standard header is disallowed • Request prop header is mandatory • Request standard header is mandatory • Prop method disallowed in dialog message • Standard method disallowed in dialog message • Method is disallowed • Prop method disallowed in out of dialog message • Standard method disallowed in out of dialog message

Route incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsPrimaryRadiusServer Unreachable	EMS	Primary Radius server is unreachable
ipcsSecondaryRadiusSer verUnreachable	EMS	Secondary Radius server is unreachable

TLS certificate failure incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsTlsCertificate	SBCE	Avaya SBCE comes across a TLS certificate error because of any of the following causes: • Could not create TLS context - for default client mode • No cipher list is provided • Could not create TLS context for either server or client mode • Could not read Certificate • Could not read private key • Private key does not correspond to the loaded certificate • Unable to load Root Certificate or CA list • Unable to load CRL list • Unable to cipher list provided • No cipher list provided

Media anomaly detection incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsPacketSizeViolation	SBCE	Avaya SBCE comes across a packet size violation
ipcsSSRCViolation	SBCE	Avaya SBCE comes across a synchronization source
ipcsSeqNoViolation	SBCE	Avaya SBCE comes across a sequence number violation
ipcsTimestampViolation	SBCE	Avaya SBCE comes across a timestamp violation
ipcsMediaInActivityFromBothSides	SBCE	Avaya SBCE comes across a media inactivity from both sides of the call
ipcsUnsupportedMedia	SBCE	Avaya SBCE comes across unsupported media
ipcsRTPDoSAttack	SBCE	Avaya SBCE comes across an RTP denial of service attack
ipcsMediaPortUnavailable	SBCE	No free media ports are available
ipcsRTPInjectionAttack	SBCE	Avaya SBCE comes across an RTP injection attack

HA link failover incident

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
ipcsHAGracefulFailover	SBCE	The primary server has gone down voluntarily
ipcsHAKaFail	SBCE	High Availability keep alive messages fail
ipcsHATakeoverDone	SBCE	HA takeover is completed
ipcsHASecondaryDown	SBCE	HA secondary server is down and HA will not be available until the secondary server is up

License incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
sbcLicenseExceeded	SBCE	Avaya SBCE gets requests after the maximum number of licensed sessions is exceeded

TURN/STUN incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
sbcTurnStunMediaRelayCreationFailed	SBCE	Media relay flow creation failed
sbcTurnStunMediaRelayDeletionFailed	SBCE	Media relay flow deletion failed
sbcTurnStunServerError	SBCE	Avaya SBCE detects a TURN/STUN error because of any of the following reasons: • Invalid User Name is configured • Invalid Realm is configured • Invalid Password is configured • Invalid Realm is configured • Relay Port is unavailable • TCP/TLS Listener has failed • Invalid User Account is configured • Invalid User Name is configured

CES Proxy incidents

Incident Name	Component of Avaya SBCE from which the incident is generating	Cause
sbcCesProxy1xMUserLoginFailed	SBCE	Login attempts from an Avaya one-X® Mobile user to the CES proxy fails because of any of the following reasons: • Protocol Type validation failed • CesProxy data is not present • Avaya SBCE received an invalid response other than login response • Object Type validation failed • Login request data type validation failed • Login request key id validation failed • API object type validation failed • API data type and key Id validation failed • API data type validation failed • API key id validation failed • Object type validation failed • Avaya one-X® Mobile user login failed

Logs collection

In Release 7.2.1 and later, you can:

- Collect and download logs from a web interface for investigating and troubleshooting an issue.
- Sort the collected logs by **File Name**, **File Size**, and **Last Modified**.
- Sort the collected logs in ascending and descending order.
- Delete the logs that you do not require.

Collecting and downloading logs

About this task

Use this procedure to collect and download logs from a web interface for investigating and troubleshooting an issue.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the navigation pane, click **Device Specific Settings** > **Troubleshooting** > **Logs Collection**.
3. In the Application pane, click the type of device for which you want to collect logs.
4. In the Content area, click the **Collect Logs** tab and do the following:
   a. Select the type of logs that you want to collect.
   b. Click **Collect Logs** to collect the selected logs.

   The system saves the collected logs in **Log Archive**.
5. In the Content area, do the following:
   a. Click **Log Archive**.
   b. Select the log file that you want to download.

      The system saves the log file on your computer.

Collect logs field descriptions

Name	Description
All Logs	Specifies database and application logs that show the status of the system and configuration information. Crash dumps logs are not included in the **All logs** option because of the large size. Crash dumps logs can be collected separately. **Note:** The remaining options are clear when you select the **All Logs** check box .
Database logs	Specifies the database dump logs.
Application logs	Specifies SSYNDI logs.
GUI logs	Specifies the web interface and jsp logs. **Note:** The **GUI logs** option is available for EMS only.
Upgrade Logs	Specifies upgrade related logs.
Crash Dumps	Specifies heap dumps.
From Date & Time	Specifies the **From Date & Time** after which any log file modified or generated will be collected.

Table continues…

Name	Description
To Date & Time	Specifies the **To Date & Time** before which any log file modified or generated will be collected. **Note:** Logs generated and modified between **From Date & Time** and **To Date & Time** time range will be collected.

Collect Archive field descriptions

Name	Description
File Name	The file name of the collected logs.
File Size	The size of the collected logs in bytes.
Last Modified	The date and time when the collected logs were last modified.

Button	Description
Delete	Deletes the selected log.

SNMP MIB

Management Information Base (MIB) are defined in RFC-1213. Avaya SBCE supports rfc1213.mib.

MIB-II support

Avaya SBCEsupports MIB-II (RFC1213) for Avaya SBCE data interfaces.

SBCE OID Descriptions

This section describes the key Object Identifiers (OIDs).

Private Enterprise OIDs support

Avaya SBCE supports the following private enterprise OIDs.

ipcs stats sip calls: . 1.3.6.1.4.1.6889.2.77.1.3.1	.iso.org.dod.internet.private.enterprises.Avaya.ipcsstatisticsinfo.ipcsstatssip.ipcsstatssipcalls
ipcs stats sip protocol: . 1.3.6.1.4.1.6889.2.77.1.3.3	.iso.org.dod.internet.private.enterprises.Avaya.ipcsstatisticsinfo.ipcsstatssip.ipcsstatssipprotocol
Ipcsincidencesinfo: . 1.3.6.1.4.1.6889.2.77.4	.iso.org.dod.internet.private.enterprises.Avaya.ipcsincidencesinfo
Ipcsalarmsinfo: . 1.3.6.1.4.1.6889.2.77.2	.iso.org.dod.internet.private.enterprises.Avaya.ipcsalarmsinfo

Key OIDs

Ipcsstatssipcalls

ipcssipcTotalRegistrationRequests	Number of Registration Requests received at node. This number does not include the registration triggered by node for keeping the pinhole open.
ipcssipcTotalRegistrationsChallenged	Number of Registrations Challenged by node and also includes the number of challenges from the Call Server. The number of registrations challenged by IPCS node includes the SIP 401/407 based Radius Authentication Responses (AAA feature) and SIP 407 based SIV Authentication Responses (DOS feature).
ipcssipcTotalRegistrationsRejected	Number of Registrations Rejected by the node and also includes the failed registration responses observed from the call server at the node. Failed registration responses include the SIP 4xx-6xx class responses excluding SIP 400, SIP 401/407 Responses. The registrations are rejected by the node due to failed registration challenges, failed registration processing, and registrations blocked due to security features.
ipcssipcTotalCallsReceived	Total Number of SIP Calls received at the node. This number equals Calls Blocked + Calls Allowed.
ipcssipcTotalCallsBlocked	Number of SIP calls Blocked by the node due to SIP Parse errors, failed AAA challenges, and calls blocked due to security features.
ipcssipcTotalCallsAllowed	Number of SIP calls classified by the node as Legitimate.

Classification of Requests/Responses matching a particular Domain Policy Group at the node

ipcsTotalINVITES	Number of SIP INVITE messages
ipcsTotalINVITERetransmits	Number of SIP INVITE Retransmits
ipcsTotalINVITE100Responses	Number of SIP INVITE 100 Responses

Table continues…

ipcsTotalINVITE1XXResponses	Number of SIP INVITE 1XX class Responses excluding SIP 100 Response.
ipcsTotalINVITE200Responses	Number of SIP INVITE 200 Responses
ipcsTotalINVITE200ResponseRetransmits	Number of SIP INVITE 200 Response Retransmits
ipcsTotalINVITE4XX6XXResponses	Number of SIP INVITE 4XX 6XX Responses
ipcsTotalINVITE4XX6XXResponseRetransmits	Number of SIP INVITE 4XX 6XX Response Retransmits
ipcsTotalBYESent	Number of SIP BYE requests
ipcsTotalBYERetransmits	Number of SIP BYE Retransmits
ipcsTotalBYE200Responses	Number of SIP BYE 200 Responses
ipcsTotalCANCELSent	Number of SIP CANCEL requests
ipcsTotalCANCEL200Responses	Number of SIP CANCEL 200 Responses
ipcsTotalACK200Responses	Number of SIP ACK requests for INVITE 200 OK Response
ipcsTotalACK4XX6XXResponses	Number of SIP ACK requests for INVITE 4xx-6xx class Responses
ipcsTotalACKTimeOuts	Number of SIP ACK timeouts ie. Number of ACK requests missing for the INVITE 200 OK/4xx-6xx class responses
ipcsTotalNonInviteRequests	Number of NonInvite Requests
ipcsTotalNonInvite1xxResponses	Number of NonInvite 1xx Responses
ipcsTotalNonInvite2xxResponses	Number of NonInvite 2xx Responses. Also includes the 200 OK responses for BYE and CANCEL requests

Out of Dialog Requests dropped

ipcsTotalOutOfDialogReferMesFromNW	Number of Out of Dialog REFER requests dropped at the node
IpcsTotalAckMessageOutOfDialogue	Number of Out of Dialog ACK requests dropped at the node
IpcsTotalByeMessageOutOfDialogue	Number of Out of Dialog BYE requests dropped at the node
IpcsTotalCancelMessageOutOfDialogue	Number of Out of Dialog CANCEL requests dropped at the node
IpcsTotalNotifyMessageOutOfDialogue	Number of Out of Dialog NOTIFY requests dropped at the node
ipcsTotalReinviteMessageOutOfDialogue	Number of Out of Dialog RE-INVITE requests dropped at the node

Out of Dialog Responses dropped

ipcsTotal1XXMessageOutOfDialogue	Number of Out of Dialog 1XX class responses dropped by the node
ipcsTotal2XXMessageOutOfDialogue	Number of Out of Dialog 2XX class responses dropped by the node
ipcsTotal3XXMessageOutOfDialogue	Number of Out of Dialog 3XX class responses dropped by the node
ipcsTotal4XXMessageOutOfDialogue	Number of Out of Dialog 4XX class responses dropped by the node
ipcsTotal5XXMessageOutOfDialogue	Number of Out of Dialog 5XX class responses dropped by the node
ipcsTotal6XXMessageOutOfDialogue	Number of Out of Dialog 6XX class responses dropped by the node

Out of Transaction Responses dropped

ipcsTotal1XXMessageOutOfTransaction	Number of 1XX Messages received out of transaction dropped by the node
ipcsTotal2XXMessageOutOfTransaction	Number of 2XX Messages received out of transaction dropped by the node
ipcsTotal3XXMessageOutOfTransaction	Number of 3XX Messages received out of transaction dropped by the node
ipcsTotal4XXMessageOutOfTransaction	Number of 4XX Messages received out of transaction dropped by the node
ipcsTotal5XXMessageOutOfTransaction	Number of 5XX Messages received out of transaction dropped by the node
ipcsTotal6XXMessageOutOfTransaction	Number of 6XX Messages received out of transaction dropped by the node
ipcsTotalCancelMessageOutOfTransaction	Number of CANCEL requests received out of transaction dropped by the node

WebRTC statistics

OID	Description
ipcswebrtcStunBindingSuccess	Number of successful STUN bindings
ipcswebrtcStunBindingFailure	Number of failed STUN bindings
ipcswebrtcAllocateSuccess	Number of successful TURN allocations
ipcswebrtcAllocateFailure	Number of failed TURN allocations
ipcswebrtcRefreshSuccess	Number of successful TURN allocation refreshes
ipcswebrtcRefreshFailure	Number of failed TURN allocation refreshes
ipcswebrtcChannelBindSuccess	Number of successful channel bindings
ipcswebrtcChannelBindFailure	Number of failed channel bindings

Other OIDs

OID	Description
ipcssipcTotalActiveRegistrations	The number of active SIP registrations.
ipcssipcTotalActiveCalls	The number of active SIP calls.
ipcssipcTotalActiveTCPRegistrations	The number of active SIP registrations with TCP transport.
ipcssipcTotalActiveUDPRegistrations	The number of active SIP registrations with UDP transport.
ipcssipcTotalActiveTLSRegistrations	The number of active SIP registrations with TLS transport.
ipcssipcTotalActiveSRTPCalls	The number of active calls using media as SRTP.
ipcssipcTotalRegistrations	The number of SIP registration requests received.
ipcssipcTotalTCPRegistrations	The number of SIP registrations received with TCP transport.
ipcssipcTotalUDPRegistrations	The number of SIP registrations received with UDP transport.
ipcssipcTotalTLSRegistrations	The number of SIP registrations received with TLS transport.
ipcssipcTotalCalls	The number of SIP calls received.
ipcssipcTotalCallsFailed	The number of failed SIP calls.
ipcssipTtlCallsDeniedDueToPolicy	The number of SIP calls rejected by Avaya SBCE because of policy violation.
ipcssipcTotalRegistrationsDroppedByMissingPolicy	The number of SIP registrations dropped by Avaya SBCE because of missing policy.
ipcssipcTotalInvitesDroppedByMissingPolicy	The number of SIP invites dropped because of missing policy.
ipcssipTtlSessDroppedDueToMaxNumofConcSessExc	The number of SIP sessions dropped by Avaya SBCE because the maximum number of concurrent sessions was exceeded.
ipcsTotalCANCELSent	The number of SIP CANCEL requests.
ipcsTotalCANCEL200Responses	The number of SIP CANCEL 200 responses.
ipcsTotalCANCELRetransmits	The number of SIP CANCEL retransmits.
ipcsTotalFromAndToHeaderMatchFailure	The number of From and To header match failures.
ipcsTotalRegMesWithMoreContacts	The number of registration messages with more contacts.
ipcsTotalMesWithAddrIncomplete	The number of messages with incomplete addresses.
ipcsTotalAuthHeaderMatchFailure	The number of Auth header match failures.
ipcsTotalContactSrcAddrMatchFailure	The number of Contact Source Address match failures.
ipcsTotalViaMatchFailure	The number of Via match failures.
ipcsTotal3XXMesFromNW	The number of 3XX messages from network.

Table continues…

OID	Description
ipcsTotalRegistrationMatchFailure	The number of Registration Match failures.
ipcsTotalContactSDPConnMatchFailure	The number of Contact SDP Match failures.
ipcsTotalSpoofedSipBye	The number of spoofed SIP Bye requests.
ipcsTotalSpoofedReinvite	The number of spoofed Reinvite requests.
ipcsTotalSpoofedCancel	The number of spoofed Cancel requests.
ipcsTotalSpoofedCancelToRemote	The number of spoofed Cancel To Remote requests.
ipcsTotalSpoofed200	The number of spoofed 200 responses.
ipcsTotalSpoofedErrorResp	The number of spoofed error responses.
ipcsTotalRegistrationFailed	The number of failed registrations.
sbcTotal1xMCesUserLoginFailed	The number of failed Avaya one-X® Mobile user logins.
sbcTotal1xMCesUserLoginSucceeded	The number of successful Avaya one-X® Mobile user logins.
ipcsTestAlarmNotification	The test alarm notification.
ipcsCPUUsageNotification	The notification sent when CPU usage exceeds 80%.
ipcsMemoryUsageNotification	The notification sent when memory usage exceeds 80%.
ipcsDiskUsageNotification	The notification for disk usage exceeding a set threshold.
ipcsDiskFailureNotification	The notification for disk failure.
ipcsNetworkFailureNotification	The notification for network failure.
ipcsHAFailureNotification	The notification for HA failure.
ipcsHAHeartBeatFailureNotification	The notification for failure to receive heartbeat from both HA servers.
ipcsScpFailureNotification	The notification for SCP failure.
ipcsCopyFailureNotification	The notification for copy failure.
ipcsProcessFailNotification	The notification for process failure.
ipcsDatabaseFailNotification	The notification for database failure.
ipcsRSAFailureNotification	The notification for RSA failure.
ipcsIncidenceNotification	The notification about incidents.
ipcsStdSessionLicenseUsageExceed	The notification sent when Session License usage threshold is exceeded.
ipcsAdvSessionLicenseUsageExceed	The notification sent when advanced Session License usage threshold is exceeded.
ipcsCesProxySessionLicenseUsageExceed	The notification sent when CES proxy Session License usage threshold is exceeded.
ipcsTranscodeSessionLicenseUsageExceed	The notification sent when transcoding Session License usage threshold is exceeded.
ipcsVideoSessionLicenseUsageExceed	The notification sent when video Session License usage threshold is exceeded.

Table continues…

OID	Description
ipcsMaxStdConcurrentSessionLimitExceed	The notification sent when the maximum standard concurrent Session License limit is exceeded.
ipcsMaxAdvConcurrentSessionLimitExceed	The notification sent when the maximum advanced concurrent Session License limit is exceeded.
ipcsMaxCESProxyConcurrentSessionLimitExceed	The notification sent when the maximum CES proxy concurrent Session License limit is exceeded.
ipcsMaxTransConcurrentSessionLimitExceed	The notification sent when the maximum transcoding concurrent Session License limit is exceeded.
ipcsMaxVIDConcurrentSessionLimitExceed	The notification sent when the maximum video concurrent Session License limit is exceeded.

Statistics details with examples

Call between two remote workers through Avaya SBCE

In the following scenario, a call is made from A to B.

- Number of Registrations in Statistics: Counter increases by 2

  One registration per phone, so in total 2 registrations from both A and B

  In a multi-Session Manager deployment, if the phone is configured with the IPs for two different Session Managers as external IP1 and external IP2, the registration counter increases by 2 for one phone. Therefore, if both phones A and B are configured for multi-Session Manager deployment, the counter increases by 4.
- Number of Invites in Statistics: Counter increases by 2

  The counter increases whenever Avaya SBCE receives an INVITE
  First INVITE from phone A towards Avaya SBCE, which is sent to the call server
  Second INVITE from Call Server towards Avaya SBCE, which is sent to phone B
- Number of Invites 200 Responses in Statistics: Counter increases by 2

  The counter increases whenever Avaya SBCE receives a 200 OK for INVITE sent
  First 200 ok response from phone B towards Avaya SBCE which is sent to the call server
  Second 200 ok response from Call Server towards Avaya SBCE which is sent to phone A
- Number of Bye in Statistics: Counter increases by 2

  The counter increases whenever Avaya SBCE receives a Bye
  First Bye from phone A towards Avaya SBCE which is sent to the call server
  Second Bye from Call Server towards Avaya SBCE which is sent to phone B

Call between a remote worker and an internal phone through Avaya SBCE

In the following scenario, a call is made from A to C and the call is disconnected at A.

- Number of Registrations in Statistics: Counter increases by 1

  One registration per phone, so in total 1 registration

  Phone C registration will not be seen by Avaya SBCE as this phone is an internal phone

In a multi-Session Manager deployment, if the phone is configured with the IPs for two different Session Managers as external IP1 and external IP2, the registration counter increases by 2 for one phone. Therefore, if phone A is configured for multi-Session Manager deployment, the counter increases by 2.

- Number of Invites in Statistics: Counter increases by 1

  The counter increases whenever Avaya SBCE receives an INVITE
  INVITE from phone A towards Avaya SBCE, which is sent to the call server

- Number of Invites 200 Responses in Statistics: Counter increases by 1

  The counter increases whenever Avaya SBCE receives a 200 Ok for INVITE sent
  200 ok response from phone C towards Avaya SBCE, which is sent to phone A

- Number of Bye in Statistics: Counter increases by 1

  The counter increases whenever Avaya SBCE receives a Bye
  Bye from phone A towards Avaya SBCE, which is sent to the call server

Avaya SBCE MIB

The latest Avaya SBCE MIB file is available in the downloads section on the support website at http://support.avaya.com/downloads/.

System alarms

System alarms list

This section covers the description of the following alarms.

Some system alarms require manual intervention, while some get cleared automatically. For information about clearing these alarms, see the Clearing event and Manual intervention columns.

CPU alarms

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
CPU	CPU utilization is over 80%	CPU utilization is between 80%-89%.	No	Alarm	Minor	CPU utilization is between 80%-89%.	CPU utilization goes below 80% or above 89%.	No
CPU	CPU utilization is over 90%	CPU utilization is between 90%-99%.	No	Alarm	Major	CPU utilization is between 90%-99%.	CPU utilization goes below 90% or becomes 100%.	No
CPU	CPU utilization is 100%	CPU utilization is 100%.	Yes	Alarm	Critical	CPU utilization is 100%.	CPU utilization becomes 100%.	No

Memory alarms (including Swap Space)

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Memory	Memory utilization is over 80%	Memory utilization is between 80%-89%.	No	Alarm	Minor	Memory utilization is between 80%-89%.	Memory utilization goes below 80% or above 89%.	No
Memory	Memory utilization is over 90%	Memory utilization is between 90%-99%.	Yes	Alarm	Major	Memory utilization is between 90%-99%.	Memory utilization goes below 90% or becomes 100%.	No
Memory	Memory utilization is 100%	Memory utilization is 100%.	Yes	Alarm	Critical	Memory utilization is 100%.	Memory utilization becomes 100%.	No

Disk partition space alarms

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Disk partition space	Disk partition <partition_name> utilization is over 80%	Disk partition utilization is between 80%-89%.	No	Alarm	Minor	Disk partition utilization is between 80%-89%.	Disk partition utilization goes below 80% or above 89%.	No
Disk partition space	Disk partition <partition_name> utilization is over 90%	Disk partition utilization is between 90%-99%.	Yes	Alarm	Major	Disk partition utilization is between 90%-99%.	Disk partition utilization goes below 90% or becomes 100%.	No
Disk partition space	Disk partition <partition_name> utilization is 100%	Disk partition utilization is 100%.	Yes	Alarm	Critical	Disk partition utilization is 100%.	Disk partition utilization becomes 100%.	No

Hard disk failure alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Hard disk failure	Hard disk <disk_id> failure	Hard disk failure	Yes	Alarm	Critical	The hard disk drive has failed and cannot be used.	The alarm is cleared only when the kernel detects no failures when testing the hard disk drive. This will only happen when the hard disk drive is replaced.	Yes. Hard disk drive must be replaced.

Link failure alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Link failure	Network link failure <interface>	Network link goes down on the given interface.	Yes. No traffic can be sent or received on the failed link.	Alarm	Critical	A link on a particular interface in down and cannot be used.	Network connection is restored and alarm manually cleared by user.	Yes. User needs to manually restore the link.

Process failure alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Process failure	Application failure	One or more system processes failed to send a heartbeat ping.	Yes. Port By-pass is automatically enabled.	Alarm	Critical	One or more system processes is malfunctioning	Malfunctioning process is restarted either automatically by the system or manually by the Security Administrator and the alarm cleared.	Yes. Required if automatic self-start is not successful.

Database failure alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Database failure	Database failure	Connectivity to the database has been lost.	Yes. Port By-pass is automatically enabled after multiple failed restarts.	Alarm	Critical	Either the database is down or connectivity to the database has been lost.	The database failure being cleared either automatically by the system or manually by the Security Administrator.	Yes. Required if automatic self-start is not successful.

Component failure alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Component failure	Component failure	One or more elements (signaling, media, intelligence, or EMS) in a multi-component configuration has failed to send a heartbeat ping.	Yes	Alarm	Critical	One or more SBCE server elements (signaling, media, intelligence, or EMS) is malfunctioning.	The malfunctioning elements could be restarted manually and the alarm cleared manually.	Required if self restart in not successful.

GUI and console alarm list

New user-added alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
New User Added	New User Added: <username>	A new GUI/ System user was added.	No	Alarm	Informational	A new user was added to the system.	Alarm either cleared by the administrator or it times-out.	No

New Administrator-added alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
New Admin-added	Admin User Added: <username>	A new GUI/ System admin user was added.	No	Alarm	Informational	A new admin user was added to the system.	Alarm either cleared by the administrator or it times-out.	No

User privilege change alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
User Privilege Change	User Privilege Changed: <username>	A user's access privilege was changed (either from admin to normal or from normal to admin).	No	Alarm	Informational	A user's access privilege was changed (either from admin to normal or from normal to admin).	Alarm either cleared by the administrator or it times-out.	No

User deleted alarms

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
User Deleted	User deleted: <username>	A new GUI/ System admin user was deleted.	No	Alarm	Informational	A user was deleted from the system.	Alarm either cleared by the administrator or it times-out.	No

Login failure alarm

Alarm	Message	Condition	Service affecting	Type	Severity	Description	Clearing event	Manual intervention
Login failure	User login failure: <username>	A user had multiple consecutive login failures.	No	Alarm	Warning	A user had more than a certain number of consecutive login failures.	Alarm either cleared by the administrator or it times-out.	No

Chapter 4: Maintenance procedures

Backup / Restore system information

The Backup/Restore feature provides the ability to backup or create a snapshot of the EMS security configuration to a user-definable location or to a local EMS server. The location must be secure and physically separate from the Avaya SBCE equipment chassis for later retrieval or restoration. You can download the snapshot using the download link provided in the **Snapshot** tab.

Note:

A configuration backup can be taken manually and restored as needed, or automatic snapshots can be configured.

Designating a Snapshot Server

About this task

A snapshot contains information such as certificates and keys, which can be misused to gain unauthorized access to the Avaya SBCE server. The administrator must ensure that the storage directory on remote server is accessible only to authorized users.

The directory with the snapshot must not have read/write/execute permission for unauthorized users.

To back up to a remote server, before using the Backup/Restore feature, you can designate a server as a snapshot server to hold the backup files or save the files to the local EMS server.

Caution:

A snapshot can only be restored to the same Avaya SBCE product version on an EMS of the same hardware group. When restoring the snapshot, it is recommended that the EMS server must be configured with the same original management IP used when the snapshot was created or the system may need to be manually rebooted. If the EMS server hardware group or the Avaya SBCE product version do not match, the restore operation will fail and the system settings will revert to the earlier state.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Backup/Restore**.

The system displays the Backup/Restore page.

3. Click the **Snapshot Servers** tab.

   The system displays the available snapshot server profiles in the content area.

4. On the Snapshot Servers page, click **Add**.

   The system displays the Add Snapshot Servers page.

5. Add the requested information in the fields.
6. Click **Finish**.

Next steps

Making a System Snapshot on page 78

Add Snapshot Server field descriptions

Name	Description
Profile Name	A descriptive name to refer to the snapshot server being configured.
Server Address (ip:port)	The IP address and port number of the snapshot server to which backup files or snapshots are transferred by using secure FTP (SFTP).
User Name	The user name of the administrative account that is authorized to make system backups.
Password	The password assigned to authenticate the administrative account.
Confirm Password	The password that you reenter for confirmation.
Repository Location	The path (directory) on the snapshot server where the backup files will be stored and retrieved from.
Host Key	The key used to authenticate the login of the host.

Making system snapshots

Before you begin

Designate a snapshot server.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. Select **Backup/Restore** from the Task Pane.

   The system displays the Backup/Restore screen in the content area.

3. Click **Create Snapshot**.

   The system displays the Create Snapshot window.

In a deployment with multiple Avaya SBCEs, if any of the Avaya SBCEs is out of service, you cannot create a snapshot.

4. Enter a name to designate this snapshot (backup) file, and click **Create**.

   A snapshot (backup) of the EMS security configuration is made and sent to all the configured snapshot servers. A banner is displayed on the Create Snapshot pop-up window informing you that the snapshot has been successfully created. When the process is complete, the newly created snapshot is displayed in the content area of the snapshots screen.

Related links

Designating a Snapshot Server on page 77

Configuring automatic snapshots

About this task

Use this procedure to take automatic backups on a designated server or on the local EMS server.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Backup/Restore**.

   The system displays the Backup/Restore page.
3. Click the **Automatic Snapshot Configuration** tab.

   The system displays the Automatic Snapshot Configuration page. The **Summary** section displays the configuration for a previously saved backup, if one existed. Otherwise, the default setting of **Never** is displayed.
4. In the **Configuration** section, do the following:
   a. Select the snapshot frequency.

      The options are Never, Daily, Weekly, and Monthly.
   b. When the Weekly or Monthly option is selected, the system displays a group of Day(s) checkboxes. For example, Su, Mo, Tu, We, Th, Fr, and Sa.
   c. When the Monthly option is selected, the system displays an additional row of checkboxes for occurrence. For example, 1st, 2nd, 3rd, 4th, and Last.
5. In the **Time** field, select the time.

   When you type in the **Time** field, the system displays a Select Time pop-up.
6. Click **Save**.

Restoration of a system snapshot

You can restore a snapshot to the EMS server using the manual or the automatic method.

Manual

The manual method is a two-step process. The snapshot is first retrieved from the snapshot server and then uploaded to the EMS for restoration. To restore EMS to a previous snapshot configuration, you must:

- Retrieve a snapshot. See Retrieving a snapshot file on page 80
- Restore a snapshot. See Restoring a snapshot file manually on page 81

Automatic

The automatic method is a single-step process that restores EMS to the previous configuration without further intervention. See “Restoring a snapshot file”.

Caution:

During both methods, EMS goes into the offline mode when the files are being transferred and the device is being reconfigured.

Avaya SBCE detection or mitigation features are unavailable for the entire duration of the restore procedure, making the EMS and Avaya SBCE single server deployment vulnerable to intrusions and attacks.

Restoration procedures must be completed only during times of relative EMS server inactivity or during scheduled periods of maintenance.

You can restore snapshots to an EMS system of the same hardware category, manufacturer, and model of EMS. The following table lists the hardware categories:

Hardware model	No. of NICs	Hardware category
CAD 0230	6	110
Dell R320	6	310
Dell R630	6	310
HP DL360 G8	6	311
HP DL360 G9	6	311
VMWare SBCE	6	110

Retrieving a snapshot file

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. From the Task Pane, click **Backup/Restore**.

   The system displays the Backup/Restore screen in the content area.
3. Click the **Snapshot** tab.
4. In the drop-down box, click the snapshot server or the local server on which you have created the snapshot.
5. Click the checkbox corresponding to the snapshot file that you want to retrieve and then click **Download**.

   The system saves the snapshot file on default download directory.

Next steps

Restoring a Snapshot File

Restoring a snapshot file manually

Before you begin

Retrieve a snapshot file.

About this task

After you retrieve the snapshot file from the snapshot server, save the file on the local workstation. You can upload the file to the EMS server where the file is uncompressed and used to reconfigure the EMS to a previous state.

Use the following procedure to upload the snapshot from your local workstation to the EMS server and reconfigure the EMS.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the Task pane, click **Backup/Restore**.

   The Content area displays the Backup/Restore screen.
3. Select the corresponding **Restore by File** option.

   The system displays the Restore by File pop-up window.
4. Click **Browse**.

   The system displays a dialog pop-up window.
5. Select the desired snapshot file, and click **Open**.

   The system enters the selected snapshot file in the **Restore Point File** field of the Restore by File window.
6. Click **Finish**.

   The system displays a warning window for confirmation to proceed with the restoration procedure.
7. Click **OK**.

   The EMS server goes offline and the snapshot file transferred to the EMS server, where the file is uncompressed and used to reconfigure the EMS software to a previous configuration.

   Note:

   After the system successfully restores a snapshot, in an HA configuration both Avaya SBCE devices reboot. In a standalone configuration, the EMS+SBCE single box reboots. The system takes 2 to 3 minutes to reboot after backup configuration.

Related links

Retrieving a snapshot file on page 80

Restoring a snapshot file automatically

Before you begin

Create a system snapshot.

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the Task pane, click **Backup/Restore**.

   The Content area displays the Backup/Restore screen.
3. Using the drop-down menu in the Content Area, select the snapshot server that contains the snapshot file that you want to retrieve.

   The system displays all snapshot files on the selected snapshot server in the content area.
4. Select the snapshot file that you want to restore to the EMS by clicking the corresponding **Restore** option.

   The system displays a warning pop-up window, asking for confirmation to proceed with the automatic restoration procedure.
5. Click **OK**.

   The EMS goes offline and reconfigures the snapshot file.

   Note:

   After the system successfully restores a snapshot, in an HA configuration both Avaya SBCE devices reboot. In a standalone configuration, the EMS+SBCE single box reboots. The system takes 2 to 3 minutes to reboot after backup configuration.

Deleting a system snapshot

Procedure

1. Log on to the EMS web interface with administrator credentials.
2. In the left navigation pane, click **Backup/Restore**.

   The system displays the Backup/Restore screen.
3. Select the local server or the designated snapshot server from where you want to delete the file.
4. Select the file and click the corresponding **Delete** option.

   The system displays a warning message, asking for a confirmation to delete.
5. Click **OK**.

   The system deletes the snapshot file.

Handling duplicate hostnames in a multiserver deployment

About this task

The host name of Avaya SBCE servers in multi-server deployments must be unique. If the Avaya SBCE servers have identical host names, you cannot change the state of the servers to the Commissioned state.

Note:

This procedure is service affecting. If the current version is Release 6.2.x, then update the hostnames before upgrading to Release 7.0.

Before you begin

1. Log in to each Avaya SBCE server, and run the hostname command to determine if the hostnames are duplicated.
2. Note down the management IP address of the Avaya SBCE servers.
3. Ensure that all Avaya SBCE servers are in the Commissioned mode.

Procedure

1. Take a snapshot of the system and save the snapshot offline. For information about creating snapshots, see *Making a system snapshot*.
2. Determine the server for which the hostname needs to be changed.
   a. Using PuTTY, establish an SSH session with the EMS server with ipcs user credentials.
   b. Using PuTTY, establish an SSH session with Avaya SBCE server with ipcs user credentials by using the following command: **`ssh -p 222 a.b.c.d`**.
   c. Note the server for which a password is required. If you have two Avaya SBCE servers with the same hostname, then establishing SSH connection to one of them requires a password.
3. Change the hostname and Avaya SBCE properties.
   a. Using PuTTY, establish an SSH session with Avaya SBCE server for which the password was required
   b. Type **`sudo su`**.
   c. To back up `/etc/hostname` use the following command: **`cp /etc/hostname /etc/hostname.bak`**.
   d. Edit `/etc/hostname` by using vi, and change the hostname to a unique hostname.
   e. Take a backup of `/usr/local/ipcs/etc/sysinfo` by typing `cp /usr/local/ipcs/etc/sysinfo /usr/local/ipcs/etc/sysinfo.bak`.

f. Using vi, edit the `sysinfo file`.

- Change the **ApplianceName** property to the new hostname.
- Change the **STATE** property to INSTALLED.

4. Verify whether the EMS server can connect to the Avaya SBCE server.
5. Restart the Avaya SBCE server.
6. Using PuTTY, establish an SSH session and ensure that the session from the EMS server to all Avaya SBCE servers does not require password.
7. Check the EMS web interface and confirm that the Avaya SBCE servers are in the Commissioned mode.

Acquiring WebLM license on Avaya SBCE

About this task

If Avaya SBCE fails to acquire licenses from System Manager, you must enable license acquisition for Avaya SBCE from WebLM on System Manager.

Before you begin

Download the System Manager pem file from the System Manager security page.

Procedure

1. Copy the System Manager pem file to `/home/ipcs` on EMS.
2. Type "`keytool -import -trustcacerts -alias tomcat -file /home/ipcs/<your_CA_file> -keystore /usr/local/weblm/etc/trusted_weblm_certs.jks`"
3. Type the keystore password.
4. Type "`/etc/init.d/ipcs-ems stop`".
5. Type "`/etc/init.d/ipcs-ems start`".
6. Refresh the license.

Avaya SBCE cannot obtain licenses from WebLM server

Condition

Avaya SBCE cannot obtain licenses from standalone WebLM server, IP office or System Manager WebLM. The EMS server dashboard may display one of the following license errors or notification:

- `Problem Connecting to WebLM Server`

- `License or grace period expired. System Configuration is restricted`
- `Grace Period State Initial Evaluation Period`
- `Your system does not have a valid license and is currently in the initial grace period. Please make sure you have configured a WebLM server and that the WebLM server has a current, unexpired Session Border Controller for Enterprise license installed.
Your system will no longer accept configuration changes once the initial grace period has expired until a valid license is installed. If you have already installed or updated your SBCE license, click here to refresh the licensing information from the configured WebLM server.`

Cause

- No trusted certificate available.
- The WebLM client of Avaya SBCE does not trust the WebLM server CA certificate.

Solution

1. Obtain the WebLM server CA certificate and upload the certificate to the `EMS/home/ipcs directory`.
2. Rename the CA certificate to `weblm.pem`.
3. Run the following command to import the `/home/ipcs/weblm.pem` file to the EMS WebLM client keystore:

   ```
   keytool -import -keystore /usr/local/weblm/etc/trusted_weblm_certs.jks -alias weblm -file /home/ipcs/weblm.pem
   ```

4. Run the following command to check the current password:

   ```
   grep trustStorePassword /usr/local/weblm/etc/trustedcert.properties
   ```

5. Run the following command to verify if the new root CA certificate of WebLM is included in the Avaya SBCE WebLM client keystore:

   ```
   #echo "password" | keytool -list -v -keystore /usr/local/weblm/etc/
   trusted_weblm_certs.jks|grep --color -E "Alias|Owner|Issuer|Serial|Valid
   ```

Connecting Avaya SBCE with an external WebLM server

About this task

Use the following procedure to connect Avaya SBCE with an external WebLM server when external WebLM server's Root CA certificate is not included in the Avaya SBCE `trusted_WebLM_certs.jks` keystore.

Procedure

1. Export the external WebLM server Root CA certificate.
2. Import the external WebLM server Root CA certificate into the Avaya SBCE trusted_WebLM_certs.jks keystore.

Swapping Avaya SBCE devices

About this task

Use this procedure to swap an Avaya SBCE device in an HA pair deployment.

Before you begin

Ensure that one of the Avaya SBCE devices in the HA pair is non-functional.

Procedure

1. Log on to the EMS web interface with the administrator credentials.
2. Install a new Avaya SBCE with different IP address. For more information, see *Deploying Avaya Session Border Controller for Enterprise*.
3. In the **Devices** section, do the following:
   a. Click **Add the Device.**.
   b. In the **Hostname** and **Management IP** fields, provide the relevant information.
   c. Clear the HA check box.
4. When the state of the newly added Avaya SBCE changes to Registered from Commissioned, click **Swap Device**.
5. Select the IP address of the new device added in the **Device to Replace** field.
6. Click **Finish.**

   System does not display the old Avaya SBCE device in the **Devices** tab.

Avaya SBCE reconfiguration script options

Table 4: SBCEConfigurator.py command options

#	Command	Description	Usage
1	`change-ip-gw-mask`	Changes the management IP address, gateway, and subnet mask.	`SBCEConfigurator.py change-ip-gw-mask` *<MGMT_IP> <GW_IP> <NW_MASK>*

Table continues…

#	Command	Description	Usage
2	**change-ems-ip**	1. Changes the primary or active EMS IP address on the secondary or standby EMS. 2. Changes the secondary or standby EMS IP address on the primary or active EMS and all the Avaya SBCE servers connected to EMS. 3. Changes the primary or active EMS IP address on the connected Avaya SBCE servers, which were not reachable while changing the primary or active EMS IP address.	**SBCEConfigurator.py change-ems-ip** *old EMS IP address new EMS IP address*
3	**change-hostname**	Changes host name.	**SBCEConfigurator.py change-hostname** *HOSTNAME*
4	**change-ntp-ip**	Changes NTP IP address.	**SBCEConfigurator.py change-ntp-ip** *NTP IP*
5	**change-dns-ip-fqdn**	Changes DNS IP address.	**SBCEConfigurator.py change-dns-ip-fqdn** *DNS IP*
6	**change-nw-passphrase**	Changes network passphrase.	**SBCEConfigurator.py change-nw-passphrase** *passphrase*
7	**change-ssl-certs**	Generates self-signed certificate for EMS and single servers.	**SBCEConfigurator.py change-ssl-certs** *first, last name Org.unit Org.Name City State 2-digit-country_code*
8	**change-sbce-ip**	Changes the Avaya SBCE IP address on the EMS database. Sequence to execute this command: 1. Change Management IP address, gateway, mask on theAvaya SBCE server by using the command **change-ip-gw-mask** 2. Run the **change-sbce-ip** command on EMS CLI to notify the EMS about the Avaya SBCE IP change.	**SBCEConfigurator.py change-sbce-ip** *sbce-old-ip sbce-new-ip*

Table continues…

#	Command	Description	Usage
9	**factory-reset** (For SBC only)	Use the following procedure to reset Avaya SBCE to the factory default state: 1. To uninstall the Avaya SBCE device in a multiple server deployment from GUI, click **System management** > **Devices** and click **Uninstall**. This operation clears the device-specific configuration and is not required on EMS and a single server deployment. 2. Run `SBCEConfigurator.py factory-reset`. This operation clears the device-specific configuration on EMS or a single server deployment. 3. Run this command from either a serial console or VGA session. Do not run this command from an SSH putty session since network connectivity will be lost during this operation.	**SBCEConfigurator.py factory-reset**

Table continues…

#	Command	Description	Usage
10	**factory-reset** (For secondary EMS only)	Use the following procedure to reset secondary EMS to the factory default state for Release 7.2.2 and later: 1. To uninstall secondary EMS from primary EMS using GUI, click **System management** > **Devices** and click **Delete** next to the secondary EMS configured in the system. 2. On secondary EMS, run **SBCEConfigurator.py factory-reset** command. 3. Run this command from either a serial console or VGA session. Do not run this command from an SSH putty session since network connectivity will be lost during this operation. Use the following procedure to reset secondary EMS to the factory default state for Release 7.2 and Release 7.2.1: **Note:** Contact Avaya support at http://support.avaya.com for the **# ./deleteResetSecEMS.py** script to perform the following procedure to reset secondary EMS to the factory default state. 1. To delete secondary EMS from primary EMS, complete the following steps: • Login to primary EMS with root credentials. • On the command prompt, create a temp directory using **# mkdir -p /usr/local/ipcs/temp** command. • On the command prompt, change the path of the temp directory using **# cd /usr/local/ipcs/temp/** command. • On the command prompt, copy the script to the temp directory using **#cp <source-path> <destination-path>** command. • On the command prompt, execute the script **# ./**	**# ./deleteResetSecEMS.py**

Table continues…

#	Command	Description	Usage
		deleteResetSecEMS.py to delete secondary EMS from primary EMS. 2. To factory reset secondary EMS, complete the following steps: • Login to secondary EMS with root credentials. • On the command prompt, create a temp directory using **# mkdir -p /usr/local/ipcs/temp** command. • On the command prompt, change the path of the temp directory using **# cd /usr/local/ipcs/temp/** command. • On the command prompt, copy the script to the temp directory using **#cp <source-path> <destination-path>** command. • On the command prompt, execute the script **# ./ deleteResetSecEMS.py** to factory reset secondary EMS. 3. To delete all secondary EMS IPs from all connected Avaya SBCE devices, complete the following steps: • Login to Avaya SBCE with root credentials. • On the command prompt, open sysinfo file with vi editor using **vi /usr/local/ipcs/etc/sysinfo** command. • Make the values of EMS_SECONDARY_IP and EMS_SECONDARY_IP_V6 parameters blank. • Save the changes and exit the command prompt.	

Changing the management IP from the EMS web interface

Procedure

1. Log on to the EMS web interface with administrator credentials.

2. In the left navigation pane, click **System Management**.
3. Find the device whose IP address you want to change, and click **Edit**.

   For an Avaya SBCE, the system displays the following warning:

   ```
   Any changes to the management network on this device will reboot
   the device.
   ```

   For an EMS, the system displays the following warning:

   ```
   Any changes to the management network on this device will reboot
   the device, drop any active calls, and require each connected SBC
   to be manually restarted using Application Restart in System
   Management.
   ```

4. In the **Management IP** field, type the new management IP, and click **Finish**.

   Ensure that you include appropriate netmask and gateway details for the new IP. When you change any information in the **Network Settings** section, the device restarts to complete the change. If you change the management IP of the EMS, the EMS web interface displays a new URL. After the system restarts, you must use the new URL to go to the EMS.

   Note:

   From Release 6.3, you can change the management IP through the CLI. For more information about changing the management IP through the CLI, see the Changing Management IP section in the Avaya SBCE CLI commands chapter.

5. **(Optional)** Find the Avaya SBCE device on the System Management page, and click **Restart Application**.

   Note:

   If you change the management IP address of the EMS, restart each Avaya SBCE connected to the EMS.

Changing management IP, gateway and network mask details for a single server deployment

Procedure

1. Log in to the server as a super user.
2. Type `SBCEConfigurator.py change-ip-gw-mask <Management IP> <Gateway IP> <Network Mask>`.

   The server restarts indicating that the management IP has been changed successfully.

Changing management IP for an HA deployment

IP, gateway, and network mask change

Use the following command to change management IP, gateway, and network mask details on the primary EMS server.

```
SBCEConfigurator.py change-ip-gw-mask <MGMT_IP> <GW_IP> <NW_MASK>
```

The script does the following:

1. Checks if the database is functional.
2. If the database is functional, proceeds with stopping application processes.
3. Checks if all the Avaya SBCE servers connected to EMS are reachable. If any Avaya SBCE server is unreachable, exits or proceeds with changing the EMS IP address on the reachable Avaya SBCE servers. Later, when the devices are reachable from EMS, users can regenerate or change the EMS IP addresses on the devices.
4. Prints out the log messages, which shows the current status on screen.
5. The EMS server then reboots. The user needs to ssh using the new EMS IP address.
6. EMS generates certificates automatically and sends it to all Avaya SBCEs.

Change in management IP requires a change in the NTP address configuration on all Avaya SBCE servers connected to EMS.

Note:

All Avaya SBCE servers must have the changed EMS IP address.

Changing primary EMS IP on unreachable Avaya SBCE

About this task

Use this procedure only when Avaya SBCE is unreachable while changing the primary EMS IP address.

Procedure

1. Log on the EMS device as a super user.
2. Type **SBCEConfigurator.py change-ems-ip** <*EMS_OLD_IP*> <*EMS_NEW_IP*> and press `Enter`.

Changing NTP address on Avaya SBCE devices

About this task

Changing management IP of EMS requires a change in the NTP address configuration on all the Avaya SBCE servers connected to EMS. For the proper functionality of OpenVPN, ensure that the date and time on the Avaya SBCE servers match the date and time on the EMS server. The recommended procedure is to configure the EMS IP as the NTP IP address of the Avaya SBCE devices.

Procedure

1. Log on to the Avaya SBCE device as a super user.
2. Type `SBCEConfigurator.py change-ntp-ip` *`NTP-IP`*, where *NTP-IP* is the new NTP IP address.

Changing IP address of the primary EMS server on the secondary EMS server

Procedure

1. Log on to the EMS device as a super user.
2. Type `SBCEConfigurator.py change-ems-ip` *EMS_old_IP EMS_new_IP* and press `Enter`.

Changing management IP, gateway IP, and network mask details on secondary EMS

Procedure

1. Log on to the Avaya SBCE server as a super user.
2. Type `SBCEConfigurator.py change-ip-gw-mask <Management IP> <Gateway IP> <Network Mask>`.

   The Avaya SBCE restarts indicating a successful completion of the management IP change. After changing the management IP, the primary EMS and Avaya SBCE devices must be notified about the new Avaya SBCE IP address of the secondary EMS.
3. Log on to the primary EMS and Avaya SBCE devices as a super user.
4. Type `SBCEConfigurator.py change—ems-ip` *Old_EMS_IP New_EMS_IP*.

   The system changes the IP address of the secondary EMS.

   Note:

   Ensure that you change the IP address of the secondary EMS in the primary EMS and each Avaya SBCE device.

Changing management IP, gateway IP, and network mask details on Avaya SBCE

Procedure

1. Log on to the Avaya SBCE server as a super user.
2. Type `SBCEConfigurator.py change-ip-gw-mask <Management IP> <Gateway IP> <Network Mask>`.

   The Avaya SBCE restarts indicating successful completion of the management IP change. After changing the management IP, the EMS must be notified about the new Avaya SBCE IP address.
3. Log on to the EMS server as a super user.

4. Type `SBCEConfigurator.py change–sbce-ip` *Old_SBCE_IP New_SBCE_IP*.

   The system changes the IP address of the Avaya SBCE in the EMS database.

Changing hostname

Procedure

1. Log on to the Avaya SBCE server as a super user.
2. Type `SBCEConfigurator.py change-hostname` *Hostname*.
3. Restart the system.

   For the hostname change to take effect, you must perform a soft reboot of the Avaya SBCE.

Changing network passphrase

About this task

Network passphrase is important for EMS-Avaya SBCE authentication. If you change the network password for an Avaya SBCE, ensure that you change the passphrase on all systems connected to the Avaya SBCE.

Procedure

1. Log on to the Avaya SBCE server as a super user.
2. Type `SBCEConfigurator.py change-nw–passphrase` *New Passphrase*.

   The system restarts for enabling the new passphrase.

Regenerating self-signed certificates

Procedure

1. Log on to the EMS web interface as a super user.
2. Run the following command: **`SBCEConfigurator.py change-ssl-certs`**.

Changing DNS IP and FQDN

Procedure

1. Log on to the Avaya SBCE server as a super user.
2. Type `SBCEConfigurator.py change-dns–ip–fqdn` *DNS IP FQDN*.

   The system changes the DNS IP and FQDN.

ipcs-options commands

Option Name	EMS only	EMS and SBC(Singlebox)	SBC Only
Custom routes	✔	✔	✔
Configure TimeZone	✔	✔	✔
View TimeZone	✔	✔	✔
Secondary EMS IP	✔	—	✔
Self-signed Certificate	✔	✔	—
Regenerate SSH Keys	—	✔	✔
Enable RSS	—	✔	✔
Disable RSS	—	✔	✔

- **Custom Routes**: Deprecated. This option is no longer supported.
- **Configure TimeZone**: Used to select a new time zone.
- **View Timezone**: Used to view the currently selected time zone.
- **Secondary EMS IP**: Used to set the IP address of the secondary EMS.
- **Self-Signed Certificate**: Used to create a new self-signed certificate to be used for the EMS web administration.
- **Regenerate SSH Keys**: This option regenerates the SSH keys and reboots the server.
- **Enable RSS**: This option enables Receive Side Scaling (RSS) to tune network performance.
- **Disable RSS**: This option disables Receive Side Scaling (RSS) to tune network performance.

Note:

Receive-Side Scaling (RSS) option allows inbound network traffic to be processed by multiple CPUs. Use RSS to clear interruption during inbound traffic processing caused by overloading a single CPU and to reduce network latency. By default, this option is enabled. Do not use this option unless advised by the Avaya Support team.

Determining whether Avaya SBCE is running on a TILEncore Gx36 Intelligent Application adapter

About this task

Avaya SBCE 7.2 supports the TILEncore Gx36 Intelligent Application adapter in HP DL360 G9 and Dell R630 servers.

Use this procedure to know whether Avaya SBCE is running on the Tilera Gx card.

Before you begin

Determine whether the server is Gx-enabled by running the **`lspci –v | grep –i tilera`** command. If the system displays anything after running the command, the server is Tilera Gx-enabled.

To know whether the tilera equipped status is set to **yes** during installation, go to `/usr/local/ipcs/etc/sysinfo` and check the **TILERA_EQUIPPED_STATUS**.

If the host server is restarted, the system takes two to three minutes to establish communication with the host. Therefore, you must wait at least three minutes after restarting the host before logging in to the Tilera card.

Procedure

1. Log in to the host with root credentials.
2. Go to `/usr/local/ipcs/tilera/mde/bin/tile-console`.
3. Type `ps –ef | grep pcf`.

   If Avaya SBCE is running on a Tilera card, the system shows that tile-pcf is running.
4. Type `ip link ls`.

   The system displays the Avaya SBCE interfaces A1, A2, B1, B2, and the tilep2p1 interface.
5. Type `exit` to logoff from the Tile console.

   If you logged in through the tile-console command, type `ctrl-\`, then press `q` to exit.

Related links

Listing static and dynamic flows through the Tilera Application Shell on page 97
Checking counters for the Tilera Gx card on page 97
Checking network synchronization between the host and the TILEncore Gx Intelligent adapter on page 98

Listing static and dynamic flows through the Tilera Application Shell

About this task

The Tilera Application Shell provides an interface for applications running on the Tilera Gx adapter.

Before you begin

Log in to the host as root.

Procedure

1. Go to `/usr/local/ipcs/tilera/mde/bin/tile-console`.
2. Type `/build/bin/tash`.

   The system displays the pcf prompt.
3. To view static flows, do the following:
   a. At the pcf prompt, type `static-flows`.
   b. Type `show`.

      The system lists all static flows
4. To view dynamic flows, do the following:
   a. At the pcf prompt, type `dynamic-flows`.
   b. Type `show` *`info_level`*, where *info_level* is a number from 1 to 10 that specifies varying amount of information about each flow.

      Do not use this command when a lot of calls are in progress. During high traffic conditions, this command takes time to complete and impacts calls in progress.

Related links

Determining whether Avaya SBCE is running on a TILEncore Gx36 Intelligent Application adapter on page 96

Checking counters for the Tilera Gx card

Before you begin

Log in to the host as root.

Procedure

1. Go to `/usr/local/ipcs/tilera/mde/bin/tile-console`.
2. Type `/build/bin/tash`.

   The system displays the pcf prompt.

3. At the pcf prompt, type `counters`.
4. Type the name of the counter category to see values for all counters of a type.

   Type `status` to see the current values for all PCF status counters.

Related links

Determining whether Avaya SBCE is running on a TILEncore Gx36 Intelligent Application adapter on page 96

Checking network synchronization between the host and the TILEncore Gx Intelligent adapter

Before you begin

Log in to the host as root.

Procedure

1. Go to `/usr/local/ipcs/tilera/mde/bin/tile-console`.
2. Type `/build/bin/tash`.

   The system displays the pcf prompt.
3. Type `netsync`.

   This command is used to send the neighbour entries and routing tables to the Tilera Gx card from the host.
4. Type `neigh`.

   The system displays neighbour entries for network synchronization.

Related links

Determining whether Avaya SBCE is running on a TILEncore Gx36 Intelligent Application adapter on page 96

Determining whether Avaya SBCE is installed on VMware or KVM

Determining whether Avaya SBCE is installed on KVM

Procedure

1. Log in to the KVM host with root permissions.

2. At the console, type `virt-manager`.

   The system displays the Virtual Machine Manager GUI.

3. Type `2` for CLI mode.
4. Shutdown the VM by using the **`virsh shutdown KVM-SBCE-7.2`** command.

   The system shuts down the KVM-SBCE-7.2 instance.

5. To view all the KVM guests installed on the KVM host server use the **`virsh list- —all`** command.

   This command displays the Id, Name and State of all the KVM guests running on the KVM server.

Determining whether Avaya SBCE is installed on VMware

Procedure

1. Log in as a root user to get root privileges.
2. Type `dmidecode | grep 'VMware'.`

   If Avaya SBCE is installed on VMware, the system displays `Product Name: VMware`.

   If Avaya SBCE is installed on any other server, the system does not display any data.

Resetting the root or ipcs password

Procedure

1. At the boot menu, press `e` to edit the first boot entry.
2. If server prompts to enter the user name and password for grub menu, enter the user name as `root` and password as `@V@Y@_123`.
3. From the grub options, navigate to the end of the line that starts with **linux16** and enter: `rd.break`
4. Press `Ctrl+x`.

   This option will boot to the initramfs prompt with a root shell.

   The root file system is mounted in read-only mode to /sysroot and must be remounted with read/write permissions to make changes.

5. To remount the root file system with read/write permissions, run the following command: `mount -o remount,rw /sysroot`
6. Once the file system has been remounted, run the command: `chroot /sysroot`

7. To reset the password, do one of the following:
   - To reset the root password, run the following command: `echo "root:SIPera_123" | chpasswd`
   - To reset the root password, run the following command: `echo "ipcs:SIPera_123" | chpasswd`

   You can enter any password in place of `SIPera_123`.
8. Enter the `exit` command twice.

   Once the reboot has completed, you can use the root or ipcs account with the newly set password.

Chapter 5: Resources

Documentation

The following table lists the documents related to this product. Download the documents from the Avaya Support website at http://support.avaya.com

Title	Description	Audience
Design		
Avaya Session Border Controller for Enterprise Overview and Specification	High-level functional and technical description of characteristics and capabilities of the Avaya SBCE.	Sales Engineers, Solution Architects and Implementation Engineers
Implementation		
Deploying Avaya Session Border Controller for Enterprise	Hardware installation and preliminary configuration procedures for installing Avaya SBCE into a SIP enterprise VoIP network.	Implementation Engineers
Deploying Avaya Session Border Controller for Enterprise in Virtualized Environment	Virtual installation and preliminary configuration procedures for installing Avaya SBCE into a SIP enterprise VoIP network.	Implementation Engineers
Upgrading Avaya Session Border Controller for Enterprise	Procedures for upgrading to Avaya SBCE 7.2	Implementation Engineers
Maintenance and Troubleshooting		
Administering Avaya Session Border Controller for Enterprise	Configuration and administration procedures.	Implementation Engineers, Administrators

Finding documents on the Avaya Support website

Procedure

1. Navigate to http://support.avaya.com/.
2. At the top of the screen, type your username and password and click **Login**.
3. Click **Support by Product** > **Documents**.

4. In **Enter your Product Here**, type the product name and then select the product from the list.
5. In **Choose Release**, select an appropriate release number.
6. In the **Content Type** filter, click a document type, or click **Select All** to see a list of all available documents.

   For example, for user guides, click **User Guides** in the **Content Type** filter. The list displays the documents only from the selected category.
7. Click **Enter**.

Training

The following courses are available on the Avaya Learning website at www.avaya-learning.com. After logging into the website, enter the course code or the course title in the **Search** field and click **Go** to search for the course.

Note:

Avaya training courses or Avaya learning courses do not provide training on any third-party products.

Course code	Course title
5U00090E	Knowledge Access: Avaya Session Border Controller
5U00160E	Knowledge Collection Access: Avaya Unified Communications Core Support

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

Procedure

- To find videos on the Avaya Support website, go to http://support.avaya.com and perform one of the following actions:
  - In **Search**, type `Avaya Mentor Videos` to see a list of the available videos.
  - In **Search**, type the product name. On the Search Results page, select **Video** in the **Content Type** column on the left.

- To find the Avaya Mentor videos on YouTube, go to www.youtube.com/AvayaMentor and perform one of the following actions:
  - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
  - Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the website.

  Note:

  Videos are not available for all products.

Support

Go to the Avaya Support website at http://support.avaya.com for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

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