

SBCs and Media Gateways

Long Term Support (LTS) Versions

Version 7.40A.500



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Notice

Information contained in this document is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, AudioCodes cannot guarantee accuracy of printed material after the Date Published nor can it accept responsibility for errors or omissions. Updates to this document can be downloaded from <https://www.audiocodes.com/library/technical-documents>.

This document is subject to change without notice.

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Customer Support

Customer technical support and services are provided by AudioCodes or by an authorized AudioCodes Service Partner. For more information on how to buy technical support for AudioCodes products and for contact information, please visit our website at <https://www.audiocodes.com/services-support/maintenance-and-support>.

Stay in the Loop with AudioCodes



Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used.

Throughout this manual, unless otherwise specified, the term *device* refers to the AudioCodes products.

Related Documentation

Document Name
Mediant 500L Gateway and E-SBC Hardware Installation Manual
Mediant 500L Gateway and E-SBC User's Manual
Mediant 500 E-SBC Hardware Installation Manual
Mediant 500 E-SBC User's Manual
Mediant 800 Gateway and E-SBC Hardware Installation Manual
Mediant 800 Gateway and E-SBC User's Manual
Mediant 1000B Gateway and E-SBC Hardware Installation Manual
Mediant 1000B Gateway and E-SBC User's Manual
MP-1288 High-Density Analog Media Gateway Hardware Installation Manual
MP-1288 High-Density Analog Media Gateway User's Manual
Mediant 3100 Gateway & E-SBC User's Manual
Mediant 3100 Gateway & E-SBC Hardware Installation Manual

Document Name
Mediant 2600 E-SBC Hardware Installation Manual
Mediant 2600 E-SBC User's Manual
Mediant 4000 SBC Hardware Installation Manual
Mediant 4000 SBC User's Manual
Mediant 9000 SBC User's Manual
Mediant 9000 SBC Hardware Installation Manual
Mediant Software SBC User's Manual
SBC-Gateway CLI Reference Guide
SBC-Gateway Performance Monitoring Reference Guide
SBC-Gateway SNMP Alarms Reference Guide

Document Revision Record

LTRT	Description
27722	Mediant VE Hyper-V 4 vCPU and GCP n2-standard-2 registered users capacity updated; Mediant 800C non-hybrid SBC capacity updated
27717	SRTP capacity update for Mediant 800C
27714	Ver. 7.40A.500.786
27712	New LTS stream - baseline 7.4.0A.500.781 (from LR); TLS capacity updated for Mediant 2600/Mediant 4000; Azure capacity updated for Mediant CE; MSRP capacity added
27707	Ver. 7.40A.500.781
27705	Ver. 7.40A.500.775; SRTP capacity updated for GCP n2-standard-4 (Mediant VE)
27691	Ver. 7.40A.500.357; 7.20A.259.* added for 7.2-to-7.4 upgrade; Mediant VE capacity updated for Azure (D2ds_v5, D4ds_v5, and D8ds_v5); Mediant VE note for 5,000 sessions
27686	Ver. 7.40A.500.019
27676	Mediant 3100 gateway capacity updated
27673	Typo - 8-GB RAM for GCP Media Components (Mediant CE)
27670	Ver. 7.40A.500.017
27666	Ver. 7.40A.500.010
27665	Version 7.40A.400.067 and 7.40A.260.313
27661	Typo (GCP capacity)
27659	Ver. 7.40A.400.063
27652	Ver. 7.40A.400.042; 7.2-to-7.4 upgrade note updated (7.20A.258.919 removed); feature added to Ver. 7.40A.400.023 for Mediant VE/CE DdsV5 support; Mediant VE on Azure capacity (D2ds_v5 / D4ds_v5 / D8ds_v5)
27647	Ver. 7.40A.300.021
27644	Ver. 7.40A.400.023; know constraint SBC-42301 added to Ver. 7.40A.260.007

LTRT	Description
27641	WebRTC capacity note updated.
27637	Ver. 7.40A.260.152.
27635	Ver. 7.40A.300.013.
27627	Ver. 7.40A.300.012; GCP capacity; Access List table and Proxy Sets capacity; trademarks and USA address.
27621	Capacity updated for Forward On Busy Trunk Destination.
27620	Initial document release for Version 7.4.

Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our website at <https://online.audiocodes.com/documentation-feedback>.

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1 Introduction

This document describes the Latest Release (LR) versions for Release 7.4 of AudioCodes' Session Border Controllers (SBC) and Media Gateways.



Note:

- Some of the features mentioned in this document are available only if the relevant software License Key has been purchased from AudioCodes and is installed on the device. For a list of available License Keys that can be purchased, please contact your AudioCodes sales representative.
- Open-source software may have been added and/or amended. For further information, contact your AudioCodes sales representative.
- Updates to this document may be made due to significant information discovered after the release or too late in the release cycle to be otherwise included in this release documentation. Click [here](#) to check for an updated document version on AudioCodes website.

1.1 Software Revision Record

The following table lists the LTS versions for Release 7.4.



Note: The latest software versions can be downloaded from [AudioCodes' Services Portal](#) (registered Customers only).

Table 1-1: Software Revision Record of LTS Versions

LTS Version	Released Date
7.40A.500.786 (7.4.500-2.02)	March 26, 2024
7.40A.500.781 (7.4.500-2.01) Note: This is the initial LTS version.	January 31, 2024
Previous LR Versions	
7.40A.500.775 (7.4.500-2)	January 14, 2024
7.40A.500.357 (7.4.500-1)	October 10, 2023
7.40A.500.019 (7.4.500-02)	August 29, 2023
7.40A.500.017 (7.4.500-01)	June 5, 2023
7.40A.500.010 (7.4.500)	May 18, 2023
7.40A.400.067 (7.4.400-04)	May 15, 2023
7.40A.260.313 (7.4.260-03)	May 1, 2023
7.40A.400.063 (7.4.400-03)	April 13, 2023
7.40A.400.042 (7.4.400-02)	March 6, 2023
7.40A.300.021 (7.4.300-04)	February 14, 2023

LTS Version	Released Date
7.40A.400.023 (7.4.400-01)	January 19, 2023
7.40A.260.152 (7.4.260-1)	November 3, 2022
7.40A.300.013 (7.4.300-02)	October 26, 2022
7.40A.300.012 (7.4.300-01)	September 5, 2022
7.40A.260.007	May 3, 2022

1.2 Supported Products

The following table lists the SBC and Media Gateway products supported in this release.



Note:

- Product support and hardware configurations may change without notice. Currently available hardware configurations are listed in AudioCodes Price Book. For further enquiries, please contact your AudioCodes sales representative.
- Figures shown in the tables in this section are maximum values per interface. For available hardware configurations including combinations of supported interfaces, contact your AudioCodes sales representative.

Table 1-2: SBC and Media Gateway Products Supported in Release 7.4

Product	Telephony Interfaces			Ethernet Interfaces	USB	OSN
	FXS/FXO	BRI	E1/T1			
Hybrid SBC and Gateway Series						
Mediant 500 Gateway & E-SBC	-	-	1/1	4 GE	2	-
Mediant 500L Gateway & E-SBC	4/4	4	-	4 GE	1	-
Mediant 800B Gateway & E-SBC	12/12	8	2	4 GE / 8 FE	2	√
Mediant 800C Gateway & E-SBC	12/12	8	4	4 GE / 8 FE	2	√
Mediant 1000B Gateway & E-SBC	24/24	20	6/8	7 GE	-	√
MP-1288 Gateway & E-SBC	288/0	-	-	2 GE	1	-
Mediant 3100 Gateway & E-SBC	-	-	64	8 GE	1	-
SBC Series						
Mediant 2600 E-SBC	-	-	-	8 GE	-	-
Mediant 4000 SBC	-	-	-	8 GE	-	-
Mediant 4000B SBC	-	-	-	8 GE	-	√
Mediant 9030 SBC	-	-	-	12 GE	-	-
Mediant 9080 SBC	-	-	-	12 GE	-	-
Mediant SE SBC	-	-	-	12 GE	-	-
Mediant VE SBC	-	-	-	12 GE	-	-
Mediant CE SBC	-	-	-	12 GE	-	-

1.3 Terms Representing Product Groups

Throughout this document, the following terms are used to refer to groups of AudioCodes products for feature applicability. Where applicability is specific to a product, the name of the product is used.

Table 1-3: Terms Representing Product Groups

Term	Product
<i>Analog</i>	Products with analog interfaces (FXS or FXO): <ul style="list-style-type: none"> ▪ MP-1288 ▪ Mediant 500L Gateway & E-SBC ▪ Mediant 800 Gateway & E-SBC (Rev. B and C) ▪ Mediant 1000B Gateway & E-SBC
<i>Device</i>	All products
<i>Digital</i>	Products with digital PSTN interfaces (ISDN BRI or PRI): <ul style="list-style-type: none"> ▪ Mediant 500 Gateway & E-SBC ▪ Mediant 500L Gateway & E-SBC ▪ Mediant 800 Gateway & E-SBC (Rev. ▪ Mediant 1000B Gateway & E-SBC B and C) ▪ Mediant 3100 Gateway & E-SBC
<i>Mediant 90xx</i>	<ul style="list-style-type: none"> ▪ Mediant 9000 ▪ Mediant 9000 Rev. B ▪ Mediant 9030 ▪ Mediant 9080
<i>Mediant Software</i>	Software-based products: <ul style="list-style-type: none"> ▪ Mediant SE SBC ▪ Mediant VE SBC ▪ Mediant CE SBC

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2 Long Term Support (LTS) Versions

This chapter describes the LTS versions of Release 7.4.

2.1 Version 7.40A.500.786

This version includes resolved constraints only.



Version 7.40A.500.781 is the baseline version for the Long Term Support (LTS) 7.4 releases.



IMPORTANT NOTICE for MEDIATE 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:

- ✓ 7.20A.260.*
- ✓ 7.20A.259.*
- ✓ 7.20A.258.*
- ✓ 7.20A.256.*
- ✓ 7.20A.204.878
- ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**
 Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.
 When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 3.2.4 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.1.1 Resolved Constraints

This section lists resolved constraints.

Table 2-1: Resolved Constraints in Version 7.40A.500.786

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-51484	The device doesn't send a SIP re-INVITE request to the SIPREC SRS server when the call is on hold and the device plays music on hold (MoH).	SRS error	High	All	n/a
SBC-51850 SBC-51882	The device sends an SDP answer to Teams without candidates in response to an SDP offer from Teams with 'a=ice-lite'.	Call failure	High	All	n/a
SBC-51861 SBC-51856	The device fails to re-open the channel when moving from SRTP tunneling and RTP forwarding to mediation, causing a loss of voice.	No voice after SIP re-INVITE	Medium	All	n/a

2.2 Version 7.40A.500.781

This version includes resolved constraints only.



Version 7.40A.500.781 is the baseline version for the Long Term Support (LTS) 7.4 releases.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 3.2.4 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.2.1 Resolved Constraints

This section lists resolved constraints.

Table 2-2: Resolved Constraints in Version 7.40A.500.781

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-50787	Provisioning the local user account in CLI causes the session to terminate.	CLI session terminates	Medium	All	n/a
SBC-50792	The device restarts upon a search in the Web interface when the 'LDAP Authentication Filter' is configured with a long string (~460 characters).	Device restarts	Medium	All	n/a
SBC-50827	The device doesn't send syslog messages to the syslog server without disabling and then enabling syslog functionality.	Syslog configuration is not on-the-fly	Medium	All	n/a

2.3 Previous Latest Release (LR) Versions

This section describes the previous LR versions of Release 7.4.

2.3.1 Version 7.40A.500.775

This version includes new features and resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**
Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.
When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 3.2.4 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.1.1 New Features

This section describes the new features introduced in this version.

2.3.1.1.1 IPv6 Support for Deployments on Azure and AWS Cloud Platforms

The device now supports IPv6 addresses when deployed on Microsoft Azure or Amazon AWS cloud platforms.

Applicable Application: SBC

Applicable Products: Mediant CE; Mediant VE

2.3.1.1.2 Support for Sending Syslog to Apache Kafka

The device's embedded syslog (Rsyslog) client can now send event logs (syslog messages) to Apache Kafka, an open-source platform for event streaming.

The device, as a Kafka *producer*, transmits syslog messages to the remote Kafka *broker*. The broker can be on a local server or hosted on the cloud.

The broker manages one or more *topics*, which act like categories for classifying syslog messages. For example, the device can be configured to send syslog messages to specific topics based on severity level. Multiple applications or services (Kafka *consumers*) can subscribe to these topics and receive the syslog messages.

The existing Syslog Servers table is used to configure this functionality. Kafka-specific configuration includes the following:

- 'Address' (existing) - defines the address (FQDN) of the Kafka broker.
- 'Kafka Topic' (new) - defines the Kafka topic (Event Hub name in Azure).
- 'Kafka Connection String' (new) - defines the authentication/encryption string (password) for connecting to the Kafka broker (topic).
- 'Transport Protocol' (existing) –set to the new optional value **KAFKA**.
- 'Port' (existing) – defines the listening port for Kafka (9093 for Azure Event Hub).

In addition to the above configuration, a TLS Context must be selected (using the global 'Syslog TLS Context' parameter).

Applicable Application: All

Applicable Products: All

2.3.1.1.3 New SNMP Alarms for Registration Failure and IP Group Connectivity

This release introduces the following new SNMP trap alarms:

- acIpGroupKeepAliveAlarm (OID 1.3.6.1.4.1.5003.9.10.1.21.2.0.163): This alarm is raised when there is no connection (based on keepalives) with an IP Group.
- acAccountRegistrationAlarm (OID 1.3.6.1.4.1.5003.9.10.1.21.2.0.164): This alarm is

raised when a registration failure occurs for an Account.

Applicable Application: All

Applicable Products: All

2.3.1.1.4 Configurable Static ARP Mappings

The device now supports the configuration of static Address Resolution Protocol (ARP) entries for mapping MAC addresses to IP addresses. These ARP entries are configured in the newly added Static ARP table (accessible through Setup menu > IP Network tab > Core Entities folder > Static ARP).

Static ARP entries map the MAC addresses in a network to their rightful IP addresses. Therefore, this functionality can significantly reduce the device's risk of falling victim to ARP poisoning, by keeping network communication secure.

Applicable Application: All

Applicable Products: All

2.3.1.1.5 Using Initial SIP INVITE Information for re-INVITE Messages

The device can be configured to use the initial incoming SIP INVITE message to create a re-INVITE message. This can be used, for example, when the device receives (and locally terminates) a REFER message, and then creates and sends a re-INVITE to the peer side. This may be useful if the initial incoming SIP INVITE includes customized headers or bodies that the Customer wants to preserve for the outgoing INVITE.

This feature is enabled by the newly added IP Profile parameter called 'Use Initial Incoming INVITE for re-INVITE'.

Note: Enabling this feature may reduce the device's performance by up to 10%.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.6 Test Calling through REST API

The device's REST API can now be used to run a test call, whereby the device initiates a call to a defined destination (and then ends the call). Previously, test calling was supported only by the Web and CLI (`debug test-call`) management platforms.

The test call is run using the new API URI endpoint `/api/v1/sipTestCall`:

- Start test call: `POST /api/v1/sipTestCall/dial`
- Get test call results: `GET /api/v1/sipTestCall/getStatus?sessionId=<id>`
- Get test call configuration: `GET /api/v1/sipTestCall/show` or `GET /api/v1/sipTestCall/show?sessionId=<id>`
- End test call: `DELETE /api/v1/sipTestCall/drop?sessionId=<id>`

Like other supported management platforms, the REST API for test calls also provides attributes for configuring parameters such as called and calling number, destination IP Group, outgoing SIP Interface, and DTMF digits or tone to play.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.7 New SDR Field for Call Route Attempt Failure

The device supports a new optional Session Detail Records (SDRs) field called "Is Route Attempt". This field indicates if an attempt to route a call that includes alternative or forking routing rules (in the IP-to-IP Routing table) was successful ("yes") or unsuccessful ("no").

This new field can be included in SDRs by customizing the SDR structure using the existing SBC SDR Format table.

Applicable Application: SBC

Applicable Products: Median 90xx; Mediant Software

2.3.1.1.8 Call Setup Rule in Routing Rule for Determining Destination Tag

The device can now be configured to run a Call Setup Rule (CSR) that is assigned to an IP-to-IP Routing rule to determine the destination tag. This feature is configured by the new IP-to-IP Routing table parameter called 'Pre Route Call Setup Rules Set ID'.

Previously, when the 'Destination Type' parameter of the IP-to-IP Routing rule was configured to **Destination Tag** and a CSR was assigned to it by the 'Call Setup Rules Set ID' parameter, the tag specified in the CSR was ignored. Instead, the tag was determined from a CSR assigned to other associated configuration entities such as the source SIP Interface, source IP Group, or Dial Plan.

One of the benefits of this feature is that a different tag and thus, a different destination IP Group can be used for each alternative route rule. This is done by assigning different CSRs per rule. Previously, such functionality wasn't supported because the CSR (if assigned to a source SIP Interface, source IP Group, or Dial Plan) ran only once for the initial incoming SIP dialog (during pre-routing stages such as classification and manipulation).

Note:

- The device first runs the CSR of the new 'Pre-Route Call Setup Rules Set ID' parameter before running the "regular" CSR of the 'Call Setup Rules Set ID' parameter (if assigned).
- The tag specified by the CSR of the 'Pre Route Call Setup Rules Set ID' parameter overrides all other previously determined tags.

Applicable Application: All

Applicable Products: All

2.3.1.1.9 New "Abort" Action for "Exit" Call Setup Rules

Call Setup Rules (CSR) can now be configured to stop (abort) all attempts at routing the call, even if additional alternative routing rules exist. This feature is supported when the CSR's 'Action Type' parameter is configured to **Exit** and the 'Action Value' parameter to the new value called **Abort**.

Previously, the CSR that was assigned to the IP-to-IP Routing rule continued searching for alternative routes upon failure to match current rule. Now, if the CSR rule **Exits** with an **Abort**, the device stops its attempt at routing the call (even if additional alternative routing rules exist).

Note: This feature is applicable when the CSR is assigned to the IP-to-IP Routing table, using the 'Call Setup Rules Set ID' or the new 'Pre Route Call Setup Rules Set ID' parameter.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.10 DiffServ for Video Media

Differentiated services (DiffServ) for quality of service (QoS) can now be configured specifically for video media. Previously, DiffServ was configured together for audio and video media traffic, using the IP Profile parameter 'RTP IP DiffServ'. Now, the device can mark video traffic with a user-defined differentiated services code point (DSCP) value.

Video DiffServ is configured using the newly added IP Profile parameter 'RTP Video DiffServ'.

Applicable Application: All

Applicable Products: All

2.3.1.1.11 Maximum Call Duration using Message Manipulation

Maximum call duration can now be configured using Message Manipulation rules (in the Message Manipulations table). This maximum call duration applies to calls belonging to the IP Group to which the Message Manipulation rule is associated.

This feature is supported by the new message manipulation call variables `Var.Call.Dst.MaxDuration` and `Var.Call.Src.MaxDuration` (depending on leg). The variable is set in the 'Action Subject' field of the Message Manipulation rule, while the call duration (in minutes) is set in the 'Action Value' field. The value is set in single quotes (e.g., '30'). A value of '0' means unlimited duration.

Note: If this variable is defined, its maximum call duration value overrides both the global parameter [SBCMaxCallDuration] and the IP Profile parameter 'SBC Max Call Duration'.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.12 Maximum Characters Increased for LDAP Queries

The device can now send significantly longer search queries to the LDAP server for LDAP-based user authentication. Previously, the maximum length of a search query was limited to 255 characters. This limit has been more than doubled, allowing the device to send queries of up to 650 characters long. The search query is configured using the existing 'LDAP Authentication Filter' parameter.

Applicable Application: All

Applicable Products: All

2.3.1.1.13 Maximum Characters Increased for SIP To/From Header 'tag'

The maximum number of characters supported by the device for the 'tag' parameter in the SIP To and From headers has been increased from 99 to 150 for all devices. Previously, only Mediant 90xx and Mediant Software SBCs supported up to 150 characters.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.14 Enabling or Disabling MSRP

Message Session Relay Protocol (MSRP) functionality can now be enabled or disabled. This is configured using the newly added parameter 'Enable MSRP' / [EnableMSRP] / `configure voip > sbc settings > enable-msrp`.

This new control over MSRP ensures that the device allocates resources for MSRP, only when it's enabled.

Note: By default, MSRP is disabled. Therefore, Customers using MSRP should make sure to implicitly enable MSRP after upgrading to this new software version.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.15 Keep-Alive for Keeping NAT Bindings Open of ICE Full Sessions

The device now sends keep-alive messages (per RFC) for media sessions using ICE Full. The purpose of these keep-alive messages is to keep NAT bindings open for the media session.

Applicable Application: SBC

Applicable Products: MP-1288; Mediant 500; Mediant 500L; Mediant 800; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 9000; Mediant SW

2.3.1.1.16 Classification to IP Groups by Proxy Sets using SIP OPTIONS

Classification of incoming SIP dialog messages to IP Groups based on Proxy Sets can now be restricted to SIP OPTIONS. Previously, classification by Proxy Set applied to all SIP message types (e.g., INVITE, OPTIONS, and REGISTER).

This feature is enabled by configuring the existing IP Group parameter 'Classify By Proxy Set' to the newly added optional value **Enable For OPTIONS**.

Applicable Application: SBC

Applicable Products: All

2.3.1.1.17 Alarm Update for Cloud Maintenance Events on SBC Virtual Machine

The HASystemFault SNMP alarm severity and description for HA switchovers during cloud platform maintenance events (Azure and GCP) has been updated.

When the device is deployed on a cloud platform and the virtual machine hosting it is undergoing a maintenance event, if a switchover occurs to the redundant device (triggered by a keepalive timeout), the HASystemFault SNMP alarm is now sent with minor severity level and its description indicates a switchover because of a maintenance event. Previously, the alarm was sent with major severity level and indicated a switchover because of a keep-alive error.

Note: This feature is applicable only to the following configuration setup:

- 'Maintenance Events Monitoring Enable' set to **Enable**.
- 'Maintenance Events Treatment Enable' set to **Disable**.

Applicable Application: SBC

Applicable Products: Mediant VE (HA)

2.3.1.1.18 Updates to Existing Parameters

The following updates have been made to existing parameters:

- The 'Web Hostname' parameter (WebHostname) has been renamed 'Web Server Name'.
- The 'DNS Rebinding Protection' (DNSrebindingProtectionEnabled) parameter is now obsolete.
- The [HostHeaderProtection] parameter is now obsolete.

Applicable Application: All

Applicable Products: All

2.3.1.1.19 Updates to CLI Commands

The optional values of the following CLI commands for the IP Profile table were changed to `enable` and `disable` to conform with CLI conventions:

- `sbc-generate-noop`
- `reliable-heldtone-source`
- `sbc-play-rbt-to-transferee`
- `sbc-renumber-mid`
- `sbc-rmt-can-play-ringback`

Applicable Application: All

Applicable Products: All

2.3.1.2 Resolved Constraints

This section lists resolved constraints.

Table 2-3: Resolved Constraints in Version 7.40A.500.775

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-47381	Device runs out of resources for the Intrusion Detection System (IDS) feature, preventing malicious attackers (by IP and port) from being added to the IDS blocklist (even though empty).	Vulnerability as device fails to add attackers to IDS blocklist	Medium	All	n/a
SBC-47714	When in HA mode, the Web Users table sometimes disappears (without any known reason).	No effect other than visually	Low	All	n/a
SBC-48177	When uploading a CLI Script file using the REST API, it's incremental instead of full configuration.	No restart after uploading CLI Script file through REST API	Low	All	n/a
SBC-48339	For a DTMF transcoding call, where one side uses DTMF RFC 2833 transport mode and the other uses DTMF	Duplicated DTMFs	High	All	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
	transparent mode (in band), sometimes the device sends DTMF as RFC 2833 instead of transparent to the side using DTMF transparent mode.				
SBC-48548 SBC-49622	When the Floating License is used, if the device restarts, the entries in the SBC User Information table are marked as invalid.	Invalid entries in SBC User Information table	Medium	All	n/a
SBC-48725	The CLI command <code>rest-cdr-http-server</code> is missing from the CLI. (Its corresponding Web parameter is 'REST CDR HTTP Server'.)	Missing CLI command	Low	All	n/a
SBC-48797 SBC-49182	When using the device's REST API to upload a CLI Script file containing a command with a filter (e.g., <code>show proxy-set display include proxy-name</code>), the output of the command isn't filtered.	Incorrect REST API output	Low	All	n/a
SBC-48805	The device sends the SIP INVITE message to the SRS with an incorrect urn format ('urn:ietf:params:xml:ns:recording' instead of 'urn:ietf:params:xml:ns:recording:1').	Partial support for RFC 7865	Medium	All	n/a
SBC-48851	The device restarts when importing a Dial Plan file, and at least one of the existing Dial Plans are deleted.	Device restart	Medium	All	n/a
SBC-48875	The device supports only up to 15 characters for the ID in SIP Event headers (truncating any additional characters).	Event header's ID in SIP SUBSCRIBE messages is truncated to 15 characters.	Medium	All	n/a
SBC-48881	The device restarts when installed with a License Key that exceeds users and session capacity according to the supported memory of the Azure instance type used for the device.	Device restart	Medium	Mediant-CE	Azure
SBC-48887	The device's VMWare Tools version (12.1.5) may pose a security vulnerability (CVE-2023-20900).	Security vulnerability	Medium	All	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-48919 SBC-49255	The device stops sending registration requests for users to the SIP server.	Device doesn't send SIP REGISTER requests to server	Medium	All	n/a
SBC-48920	The device drops MSRP calls because of incorrect handling of the [NoRTPDetectionTimeout] parameter.	MSRP calls dropped	Medium	All	n/a
SBC-49096	When the device is upgraded to 7.40A.500, the management interfaces don't show all the Ethernet ports (4 instead of 8 or 12, depending on hardware configuration).	Port degradation	Medium	Mediant 90xx	n/a
SBC-49117	The device fails to latch to the correct RTP stream for a Teams call in which ICE negotiation with multiple incoming candidates (more than 6) occurs.	One-way voice	Medium	All	n/a
SBC-49130 SBC-49498	The device fails to re-establish the MSRP connection with the UAC after connection failure.	MSRP connection failure	Medium	All	n/a
SBC-49133	The device fails to handle duplicated incoming RTP streams, causing corrupted voice (with incorrect RTP sequence) on the peer side.	Device sends corrupted voice	Medium	All	n/a
SBC-49221	When the device receives a SIP UPDATE message after call is established, and the other side doesn't support it, the device sends a re-INVITE, but with an SDP even though the UPDATE didn't have it.		Medium	All	n/a
SBC-49236	The device sends the SNMP traps PSTNSignalDSPUp and BoardConfigurationError upon a restart.	Unnecessary SNMP traps sent upon restart	Low	All	n/a
SBC-49400	The device loses HA mode and moves to an active-active state (both devices active) after numerous switch overs.	Loss of HA	High	Mediant CE \ VE	Azure
SBC-49444	The device can't be accessed through HTTPS redirection.	Device isn't accessible (reachable)	Medium	All	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-49453	When the device is configured to fork a call to two destinations, if one of the forked destinations fail, the device routes the call to an alternative route (instead of waiting for the second forked destination to also fail).	Incorrect alternative routing logic	Medium	All	n/a
SBC-49514 SBC-50006	Saving debug recording to the device's local storage [DebugRecordingLocalStorage] doesn't function.	Debug recording on local storage doesn't function	Medium	All	n/a
SBC-49520	When the device is in HA mode and deployed on Azure, it sends a false alarm that indicates a virtual machine maintenance event was detected ("Event type = Redeploy").	False alarm raised	Medium	Mediant CE/VE	Azure
SBC-49532	When an incremental ini file is uploaded to the device, the device fails to apply the changes of the Authentication table (uses previous credentials for registration).	Incorrect credentials used	Medium	All	n/a
SBC-49556	The device doesn't update the SIPREC SRS (by a SIP re-INVITE) when the DTMF payload type of the call changes.	Device doesn't send re-INVITE to SRS	Medium	Mediant-CE	n/a
SBC-49610	The device generates a metering reporting with null values.	Corrupted metering report	Medium	All	n/a
SBC-49623	The device adds an attribute without a reason ('a=extmap:1 urn:ietf:params:rtp-hdext:sdes:mid) to the SDP in the outgoing SIP INVITE.	Call failure	Medium	All	n/a
SBC-49636	The device's feature for playing background tones to call parties fails after more than five concurrent SBC calls.	Playing background tones doesn't function as expected	Medium	All	n/a
SBC-49665	Hitless software upgrade for HA devices fails because the redundant device doesn't acknowledge the receipt of the ini file from the active device.	Hitless upgrade failure	Medium	HA	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-49685	The device uses alternative routing for non-dialog initiating SIP requests (e.g., BYE).	Incorrect alternative routing logic	Medium	All	n/a
SBC-49790	The device restarts when running a SIP Message Manipulation rule on a URL's 'pn-provider' parameter in a specific SIP header when it doesn't exist.	Device restart	Medium	All	n/a
SBC-49820	The device doesn't forward all supported crypto keys ('a=crypto') in the SDP offer.	Device sends partial SDP offer	Medium	All	n/a
SBC-49872	No voice experienced for an attended call transfer attempt (SIP REFER with Replaces is sent at the same time when there is an ongoing UPDATE for a re-INVITE transaction in the other call).	No voice	Medium	All	n/a
SBC-49882	The number of Contacts in the device's registration table increases because of a resource leak, causing no available free ID messages.	Lack of resources	Medium	All	n/a
SBC-49934	The device repeatedly sends the syslog warning message "IsTimerOwnerIdValid".	No impact (repeated syslog warning message)	Low	All	n/a
SBC-49943	The device restarts without any error message information (exception).	SBC restart	Medium	All	n/a
SBC-49997	The device fails to connect to the LDAP server over TLS v1.3.	LDAP connection failure	Medium	All	n/a
SBC-50312 SBC-50523	The device doesn't F the ICE candidates in the outgoing SIP 200 OK response that it sends to Teams.	Call failure	Medium	All	n/a
SBC-49679 SBC-50966	The device displays the incorrect number of registered users after an HA switchover due to a resource leak in the registration process.	Device displays more than the allowed registered users	Medium	HA	n/a
SBC-49804	The device's RADIUS login password is limited to 40 characters.	Short password for RADIUS- or LDAP-based device login.	Low	All	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-50085	The device fails to add the STR XSRF-TOKEN when HTTP GET request returns a cookie that's too long to be added to the subsequent HTTP request.	Device fails to send subsequent HTTP requests	Medium	All	n/a
SBC-50390	The IP Group table's 'Validate Source IP' parameter doesn't function correctly with an FQDN.	Classification failure	Medium	All	n/a

2.3.2 Version 7.40A.500.357

This version includes new features and resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
 Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 3.1.1 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.2.1 New Features

This section describes the new features introduced in this version.

2.3.2.1.1 Support for ICE-Full

The device now supports Interactive Connectivity Establishment (ICE) Full (RFC 8445). Up until now, it supported only ICE-Lite.

Full ICE is used to implement local media optimization for Unified Communication (UC), provided the UC vendor supports it. For example, in a SIP Gateway environment.

For Full-ICE, the device can play the role as ICE-controlled or ICE-controlling. The device initiates STUN negotiations for all candidate pairs. It sends the candidates with its local IP address, and a public IP address if configured in the device's NAT Translation table.

To support ICE-Full, the existing IP Profile parameter 'ICE Mode' has a new optional value called **Full**.

Applicable Application: SBC

Applicable Products: MP-1288; Mediant 500; Mediant 500L; Mediant 800; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 90xx; Mediant Software

2.3.2.1.2 Dynamic Selective Coder Transcoding during Calls of Unregistered Users

The device can now dynamically switch voice coders to improve voice quality during a call for the unregistered user side. If it detects poor voice quality (based on MOS), it switches the coder from G.711 to Opus (by using an alternative IP Profile). If it subsequently detects an

improvement in the network (based on packet loss), it switches back to G.711. Up until now, this feature was supported only for registered users.

This functionality can be used for WebRTC click-to-call scenarios to reduce the number of transcoding resources on the device, by using transcoding only when voice quality is poor.

The feature is enabled by the following new IP Profile parameter:

- Web: 'Switch Coder Upon Voice Quality'
- CLI: `configure voip > coders-and-profiles ip-profile > switch-coder-upon-voice-quality`
- INI: [SwitchCoderUponVoiceQuality]

This feature also requires configuration of QoE profiles with severity-color thresholds for MOS (Quality of Experience Profile table), and configuration of Quality of Service rule with 'Rule Metric' set to **Poor Invoice Quality**, and 'Rule Action' to **Alternate IP Profile**.

Note: This feature doesn't support HA switchover. For example, if the coder changed to Opus before the switchover, after the switchover the call remains with Opus until it ends, even if voice quality improves.

Applicable Applications: SBC

Applicable Products: All

2.3.2.1.3 Load Balancing of SIPREC Servers (SRS)

SIPREC Servers (SRSs) can now be defined by the existing IP Group Set functionality, which is a group of IP Groups used for load balancing calls. Each time the device sends a SIPREC session, it chooses the IP Group based on the IP Group Set's load-balancing policy (i.e., round-robin, homing, or random weight).

This feature is configured by the new parameter in the SIP Recording Rules table called 'Recording Server (SRS) IP Group Set'. The parameter is a row pointer to the IP Group Set table.

Note: If the 'Recording Server (SRS) IP Group Set' parameter is used, the existing 'Recording Server (SRS) IP Group' and 'Redundant Recording Server (SRS) IP Group' parameters can't be used.

Applicable Applications: SBC

Applicable Products: MP-1288; Mediant 500; Mediant 500L; Mediant 800; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 90xx; Mediant Software

2.3.2.1.4 Alternative Routing for MSRP Calls upon Broken Connection

The device's Broken Connection feature now also applies to Message Session Relay Protocol (MSRP) calls. Up until now, it was applicable only to RTP (voice) calls.

Configuration of this feature is the same as for RTP-based Broken Connection, by configuring the existing 'Broken Connection Mode' parameter to **Reroute** or **Reroute with Original SIP Headers**.

If the MSRP endpoints don't establish an MSRP connection within a user-defined timeout (configured by the existing 'Timeout to Establish MSRP Connection' global parameter), or if the MSRP socket is closed after the call was established, the device ends the session and searches the IP-to-IP Routing table for an alternative route. Explicit alternative routing rules for broken connection can be configured by setting the existing 'Call Trigger' parameter to **Broken Connection**.

Applicable Application: All

Applicable Products: All

2.3.2.1.5 Increase in Maximum Concurrent TLS Connections

The maximum number of concurrent TLS connections has been increased from 1,000 to 2,500.

Applicable Applications: SBC

Applicable Products: Mediant 2600; Mediant 4000/B.

2.3.2.1.6 Capacity of Accounts Table Increased

The maximum number of Accounts that can be configured in the Accounts table has been increased to 5,000.

Applicable Applications: SBC

Applicable Products: Mediant 90xx; Mediant Software (64 GB or greater)

2.3.2.1.7 Consultative Call Transfer for NG9-1-1 Calls

The device now supports consultative call transfers that are initiated by the PSAP operator for emergency (NG9-1-1) calls, per NENA i3 Standard for Next Generation 9-1-1 (NENA-STA-010.2-2016).

This feature functions as follows:

1. When the device receives a SIP INVITE request that is a 911 call, it sends it to the PSAP operator through its FXO port interface.
2. The PSAP operator places the 911 caller on hold, and then establishes a new call with another party (e.g., emergency provider).
3. The PSAP operator transfers the 911 caller to the new call party. The device uses a SIP REFER message to bridge the 911 caller with the new call party when the PSAP operator goes on hook.

This feature is enabled (disabled by default) by the following new parameters:

■ **Global:**

- CLI: `configure voip > gateway analog fxo-setting > fxo-consult-call-transfer`
- ini: [FXOConsultCallTransfer]

■ **Tel Profiles table:**

- Web: 'FXO Consultative Call Transfer'
- CLI: `configure voip > coders-and-profiles tel-profile > fxo-consult-call-transfer`
- ini: [FXOConsultCallTransfer]

Applicable Application: FXO Gateways

Applicable Products: Mediant 500L; Mediant 800B/C; Mediant 1000B

2.3.2.1.8 Optimized Handling of SIP SUBSCRIBE Dialogs

The device's handling of SIP SUBSCRIBE dialogs for registered User Agents (UAs) has been optimized. The optimization frees up the device's resources that are otherwise utilized by stored SUBSCRIBE dialogs.

This feature is supported by the following new parameters:

- **Backing up SUBSCRIBE Dialogs (Applicable to HA Only):**

By default, when the device operates in HA mode, it backs up SUBSCRIBE dialogs of registered UAs. This allows the redundant (now active) device to maintain their subscriptions and send relevant NOTIFY messages to the SIP UAs after an HA switchover. However, for SUBSCRIBE dialogs over TLS or TCP connections, a new connection is usually established by the remote UA after a switchover and therefore, backing up SUBSCRIBE dialogs is unnecessary and wasteful to resources.

The following new parameter configures this feature:

- CLI: `config voip > sbc settings > backup-subscriptions`
- INI: [BackupSubscriptions]

The parameter provides the following optional behavior:

- Disables backup of all SUBSCRIBES.
- Enables backup of only SUBSCRIBES using the UDP transport protocol.
- Enables backup of all SUBSCRIBES, regardless of transport protocol (default).

■ **Clearing SUBSCRIBE Dialogs from Storage:**

By default (and like in previous versions), the device stores SUBSCRIBE dialogs of registered UAs until they expire. Now, the device can be configured to delete from storage (disconnect) SUBSCRIBE dialogs upon the following: an unregister, a register expiry, or a refresh register from a different source IP address / port (e.g., when transport protocol is TCP or TLS).

The following new parameter configures this feature:

- CLI: `config voip > sbc settings > disconnect-subscriptions`
- INI: [DisconnectSubscriptionsMode]

Applicable Applications: SBC

Applicable Products: All

2.3.2.1.9 Certificate Expiry SNMP Alarm Includes Common Name

The text description of the Certificate Expiry SNMP alarm (OID 1.3.6.1.4.1.5003.9.10.1.21.2.0.128) now also includes the Common Name (CN) of the TLS certificate, for example: "The certificate of TLS context 0 (**CN=SBC.audiocodesaas.com**) will expire in 30 days"

Note: If the certificate doesn't contain a CN, the first subject alternative name (SAN) is included in the description. If a SAN also doesn't exist, "" is included in the description.

Applicable Applications: All

Applicable Products: All

2.3.2.1.10 Multiple SIPREC Servers (SRS) Triggered by SIP INFO Messages

SIP INFO messages can now be used to trigger the device to record calls using multiple SIPREC servers (SRSs). Up until now, only a single SRS (IP Group) could be triggered by an INFO message.

This feature also allows the SIP INFO message to specify the SRS as an IP Group Set(s) instead of an IP Group(s). Using an IP Group Set may be useful, for example, if load balancing between IP Groups is required.

AudioCodes' proprietary 'X-AC-Action' header is also used to trigger multiple SRS IP Groups:

■ **Individual IP Groups:**

```
X-AC-Action: <action>;recording-ip-group="x, y, z"
```

■ **IP Group Set(s):**

```
X-AC-Action: <action>;recording-ip-group-set="x, y, z"
```

Where:

- <action> starts (*start-siprec*), stops (*stop-siprec*), pauses (*pause-siprec*), or resumes (*resume-siprec*) the SIPREC session.
- x, y and z represent the SRS IP Groups / IP Group Sets.

Note: Different IP Groups can be specified for each action. For example, the SIP REC session can be started (*start-siprec*) on SRS IP Groups x, y and z, and then later paused (*pause-siprec*) only on SRS IP Group y.

Applicable Applications: All

Applicable Products: MP-1288; Mediant 500; Mediant 500L; Mediant 800; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 90xx; Mediant Software

2.3.2.1.11 Performance Monitoring Parameters for Active TLS Connections

The device now provides new performance monitoring parameters (gauges) for indicating the number of active TLS connections for SIP sessions (total, maximum, and average):

- activeSipTlsConnTotal: Total number of currently active TLS connections.
- activeSipTlsConnMax: Historical maximum number of active TLS connections.
- activeSipTlsConnAvg: Historical average number of active TLS connections.

Applicable Applications: All

Applicable Products: All

2.3.2.1.12 SFTP Folder Access Permission Based on Management User Level

The device now permits access to its folders through SFTP, based on the SFTP client's management user level:

- Security Administrator and Master user levels can access all folders, for example, those containing CDRs, SDRs, and debug capture.
- Administrator user levels can access only folders containing CDRs and SDRs (i.e., */cdr*, */cdr-gw*, and */sdr*).
- Monitor users can't access any folder.

Applicable Applications: SBC

Applicable Products: Mediant 90xx; Mediant Software

2.3.2.1.13 Signaling Source in SIP Call Flow for OVOC

When the device is configured to send SIP call flows (ladder) to AudioCodes OVOC, it now includes the signaling source (IP address and port) of the SIP Interface that is associated with the call.

Applicable Applications: All

Applicable Products: All

2.3.2.1.14 Additional Device Information Sent over SNMP to OVOC

The device can now provide additional information (if requested) to OVOC through SNMP, using the following new SNMP parameters:

- acTrunkGlobalConfiguredE1Trunks: Number of configured E1 trunks.

- acTrunkGlobalConfiguredTrunks: Number of configured trunks (regardless of trunk protocol type).
- acSysLicenseKeySipRecSessions: Number of licensed SIPREC sessions.
- acSysLicenseKeySBCSignalingSessions: Number of licensed SBC signaling sessions.

Applicable Applications: All

Applicable Products: All

2.3.2.2 Resolved Constraints

This section lists resolved constraints.

Table 2-4: Resolved Constraints in Version 7.40A.500.357

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-45082 SBC-45620	When the device operates in HA mode and deployed in Azure, the redundant device “freezes” upon the receipt of an Azure maintenance event, which causes a switchover.	HA switchover	Medium	HA	Azure
SBC-45305	The device restarts when an trying to download the locally stored debug recoding files through FileZilla.	Device restart	Medium	All	n/a
SBC-45420	The device’s WebSocket tunnel connection with OVOC is shown in the debug recording (DR) file with the wrong IP interface.	Incorrect device IP interface in DR file	Medium	All	n/a
SBC-45799	When the device is in HA mode, a switchover occurs due to a software watchdog, and the redundant device takes over without certificates.	Switch over causes redundant device to take over without certificates	High	HA	n/a
SBC-46069	The device uses IP address 0.0.0.1 in the HTTP PUT URL request for the host (for OVOC’s feature of Host Header Validation), causing a failure of Host header verification for backing up device configuration on OVOC.	Failure of device configuration backup on OVOC	Medium	All	n/a
SBC-46214	Adding a new row to the Interface table through Stack Manager invalidates a row in the Ethernet Group table and disables the physical port corresponding to the new interface.	Switch over causes invalid network configuration	Medium	All	Cloud

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-46404	If the last row in the device's Access List table is to deny all access, the Web interface becomes inaccessible after upgrading the device to Version 7.4.500.	Web interface isn't accessible	Medium	All	n/a
SBC-46980	The device displays only up to 12 digits for the Caller ID (more than that is truncated).	Caller ID longer than 12 digits is truncated	Medium	MP-1288	n/a
SBC-47470	When the device is deployed in a cloud environment and operating in HA mode, the redundant device issues syslog warning messages ("cloudAPI: failed to export InterfaceTable CSV").	Repeated syslog warning messages	Medium	HA	Cloud
SBC-47946	When the device receives a SIP 408 in response to a forked 18x, it clears the entire SDP offer-answer process. As a result, when a new forked 183 is received, it fails to fork the call (and issues syslog message).	Forking failure, causing call termination	Medium	All	n/a
SBC-48271 SBC-48873	The device restarts because of a race condition, where it receives a SIP 4xx rejection of a call from the outgoing leg and a SIP CANCEL from the incoming leg, The device then sends an ARM request, receives an ARM response, but fails to allocate resources, and then restarts.	Device restart	Medium	All	n/a
SBC-48283	The device's VMWare Tools version may pose a security vulnerability (should be at least 12.0.5).	Vulnerability	Medium	All	n/a
SBC-48879	On-the-fly replacement of a TLS certificate for a TLS Context fails, causing SSL handshake failure.	On-the-fly certificate replacement fails, requiring device restart	Medium	All	n/a

2.3.3 Version 7.40A.500.019

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 3.0.6 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.3.1 Resolved Constraints

This section lists resolved constraints.

Table 2-5: Resolved Constraints in Version 7.40A.500.019

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-47672	When the device is in HA mode, uploading an incremental CLI script file through REST API causes configuration errors on the redundant device.	HA mode terminated	Medium	HA products	HA

2.3.4 Version 7.40A.500.017

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.9.5 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.4.1 Resolved Constraints

This section lists resolved constraints.

Table 2-6: Resolved Constraints in Version 7.40A.500.017

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-45095 SBC-45426 SBC-45689	Sometimes after modifying the device's configuration by uploading a new ini file or using the device's REST API, the standby (redundant) device of a High-Availability pair may lose some of its configuration.	After a switchover, the redundant device may not operate as expected and in some cases, may lead to loss of service.	Urgent	High Availability	High Availability
SBC-45544	HA mode fails when the device's management interface is configured to use HTTP and the port is configured to a value other than the default (80).	No HA	High	High Availability	High Availability

2.3.5 Version 7.40A.500.010

This version includes new features and resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.1368 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.9.3 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.5.1 New Features

This section describes the new features introduced in this version.

2.3.5.1.1 High-Availability in AWS Across Multiple Availability Zones

Mediant VE and CE in High-Availability (HA) mode can now be deployed in an AWS environment across multiple availability zones.

Applicable Application: SBC

Applicable Products: Mediant VE/CE

2.3.5.1.2 Background Tones for SBC Calls

The device can now play background tones to the call parties in an SBC call. The tone can be played to one or both call parties (caller and/or callee). If played to both parties, the tone is played simultaneously. This feature can be useful, for example, to indicate that a call is being recorded.

This feature is supported by configuring a Message Manipulation rule with the following new options:

- 'Action Subject' field: `Var.Call.Dst|Src.PlayBackgroundTone` enables background tone on configured side (Dst) or peer side (Src)
- 'Action Value' field: `<side>,<tone ID>,<time between play>`, where:
 - *side*: Defines the call party to which the device plays the tone – 'both' (both sides) or 'single' (only configured side).
 - *time between play*: Defines the duration of no tone play between each play of tone (i.e., periodic play). If not configured, the device plays the tone continuously.
 - *tone ID*: Defines the tone to play by index in the PRT file (`acUserDefineTone<ID>`).

For example: 'both,5,3000'

The background tone can be played after call establishment or during early media.

This feature is support for HA, allowing the resumption of tone play after a switchover.

Applicable Application: SBC

Applicable Products: All

2.3.5.1.3 Operating System using Rocky Linux 8

Starting with this version, the device uses a custom Linux OS version that is derived from Rocky Linux 8 (instead CentOS stream 8).

Rocky Linux 8 is based on the same codebase as CentOS, which has a long history of being a dependable and secure platform. One of the main reasons to move to Rocky Linux 8 is that it offers longer support than most other Linux distributions. With an end date of May 31, 2029, it provides security updates for the next 6 years.

Applicable Application: SBC

Applicable Products: Mediant VE/CE; Mediant 90xx

2.3.5.1.4 Component Replacement for FXS Blades

Due to global supply chain shortages, a component replacement has been done for the FXS analog blades that are installed in MediaPack 1288 (MP-1288).

As a result of this component replacement, the software version of MP-1288 was updated and the hardware revision incremented. For more information, please refer to the [Product Notice](#).

Applicable Application: Gateway.

Applicable Products: MP-1288.

2.3.5.1.5 Notifying Change in Remote Party (Called / Calling) after Call Transfer

The device now notifies a change in the remote party (calling or called) after a call transfer (locally handled by the device).

The updated information is provided by adding a Remote-Party-ID header to the outgoing message (INVITE, UPDATE, or 200 OK). As the From header in the SIP dialogs throughout the call transfer process contains the URI of the initial call, the inclusion of the Remote-Party-ID header resolves the problem for identifying the new party.

The device also sets the fields in the Remote-Party-ID header to 'party=calling;privacy=off;screen=yes'. However, if a Remote-Party-ID header with 'party=calling' is already present in the incoming request or response, the device only updates the URI. If a Remote-Party-ID header is present in the incoming request or response, but with a different value of the 'party' parameter (e.g. 'party=called'), the device adds an additional Remote-Party-ID header as described above.

This feature is configured by the new IP Profile parameter, 'Send Header for Transfer', which must be set to **Remote-Party-ID**. The device adds the Remote-Party-ID header to the message sent to the call party that is associated with the IP Profile.

Applicable Application: SBC.

Applicable Products: All.

2.3.5.1.6 SIPREC Enhancements

2.3.5.1.6.1 Sending DTMF Notifications to Session Recording Servers (SRS)

The device can now be configured to send DTMF notifications to SRS servers. These notifications are sent using SIP INFO messages. On the incoming leg (caller), all DTMF formats (e.g., RFC 2833, INFO, or in-band) are supported; on the outgoing leg (callee), only DTMF digits from SIP INFO messages are supported.

For example (assuming "A" is the caller):

- "A" sends DTMF (any format): The device sends an INFO message to the SRS and to "B" (which must support sending and receiving INFO messages).
- "B" sends DTMF in INFO message: The device forwards the INFO message to the SRS and sends the DTMF to "A" in the required format (such as RFC 2833, INFO, or in-band).

The device also adds the Remote-Party-ID header to the SIP INFO message that is sent to the SRS. The header's value is the URI of the sender of the DTMFs.

This feature is enabled using the new global parameter [FwdSignalingToSIPRec].

Applicable Application: SBC

Applicable Products: All

2.3.5.1.6.2 SIPREC Recording of Real-Time Text (RTT)

The device can now record real-time text (RTT) in SBC sessions and send the RTT to the Session Recording Server (SRS) for SIPREC call recording.

RTT is carried in RTP and allows text to be sent immediately as it's created through wireless handsets that use IP-based technology on networks that support RTT. With RTT, there is no need to press a "send" key as there generally is for SMS, chat, or other types of texting.

For recording audio with RTT calls (i.e., two media streams), additional SBC media channel resources are required. For example, recording 100 SBC sessions of which 30 contain RTT, the following licenses are required: "SIPREC Streams" = 100, "SBC Sessions" = 100, and "SBC Media" = 60 (30 for RTT sessions plus 30 for RTT SIPREC sessions).

Applicable Application: SBC

Applicable Products: All

2.3.5.1.7 Gateway CDR Customization for Adding SIP Header Information

The device can retrieve any SIP header's data from dialog-initiating (e.g., INVITE) or non-dialog initiating (e.g., SIP 200 OK) SIP messages and use it as the value for a CDR field in the generated Gateway CDR. Up until now, this was supported only by SBC CDRs.

The feature is supported by using call variable *Var.Call.Dst.UserDefined<1-5>* in Message Manipulation rules and by customizing the CDR in the Gateway CDR Format table. The Message Manipulation rule retrieves and stores the specified SIP header's value in the variable, and the CDR is customized to use the stored value for a CDR field. (The Message Manipulation rule is applied to the incoming or outgoing message, using the existing [GWInboundManipulationSet] or [GWOutboundManipulationSet] parameters, respectively.)

The 'Field Type' parameter in the Gateway CDR Format table provides new optional values that represent the CDR fields that retrieve stored information from the variables: **Var Call User Defined 1**, **Var Call User Defined 2**, **Var Call User Defined 3**, **Var Call User Defined 4**, and **Var Call User Defined 5**. (The title of these "variable" CDR fields can be modified.)

If a variable is not added or modified in the Message Manipulation rule and the CDR is customized to include its stored value, the CDR displays an empty string value.

Applicable Application: Gateway.

Applicable Products: MP-1288; Mediant 500; Mediant 500L; Mediant 800; Mediant 1000B; Mediant 3100.

2.3.5.1.8 RTP Streams Forwarding

The device can now be configured to support RTP stream forwarding without requiring SIP configuration.

By default, the device prohibits any RTP stream forwarding, and only specifically allowed sources can establish RTP-to-RTP sessions.

The feature is configured in the new RTP-Only table, by the CLI command `configure voip > rtp-only sessions` or ini file parameter table [RtpOnly]. Configuration specifies the number of sessions, local interface:port, remote IP address:port, and port spacing.

Monitoring RTP streams forwarding sessions is done using the new SNMP alarm `acRtpOnlyBrokenRtpConnectionAlarm` (OID 1.3.6.1.4.1.5003.9.10.1.21.2.0.160). The alarm is raised when one of the streams is "broken".

This feature supports up to 9,000 RTP streams forwarding sessions.

Note: The feature doesn't support DTLS, coder transcoding, or SRTP.

Applicable Application: SBC

Applicable Products: Mediant Software

2.3.5.1.9 Call Rerouting with Original SIP Headers upon RTP Timeout

When rerouting a call because of no voice (RTP) for a user-defined timeout (*Broken RTP Connection* feature), the device can now route the call to the new destination using the original headers and non-SDP bodies (XML only of multipart bodies) in the new SIP INVITE message. The SDP body is not copied but re-generated by the device.

This feature is configured using the new optional value **Reroute with Original SIP Headers** for the existing IP Profile parameter 'Broken Connection Mode'.

This feature is applicable for routing rules in the IP-to-IP Routing table whose 'Call Trigger' parameter is configured to **Broken Connection**.

Applicable Application: SBC.

Applicable Products: All.

2.3.5.1.10 Passwords Hidden in Activity Log

The device now automatically hides all passwords in the Activity Log. Passwords are hidden by asterisks (*). Up until now, some passwords were visible in the Activity Log (depending on configuration parameter or command).

Applicable Application: All

Applicable Products: All

2.3.5.1.11 Passwords Hidden in CLI Command History Buffer

The device can now be configured to show or hide (default) passwords in the CLI command history buffer. The device hides the passwords by replacing them with asterisks (*).

Therefore, when using the up and down arrow keys on the CLI prompt to recall previously typed commands from the history buffer, or using the existing `history` command to view the history buffer, passwords are hidden.

This feature is configured using the following new CLI command:

```
conf system > cli-settings > password-history-visible {off|on}
```

Applicable Application: All

Applicable Products: All

2.3.5.1.12 Configuration Package File Enhancements

The following enhancements have been introduced for the Configuration Package file:

- The 7-Zip file format (.7z) is now used (instead of .tar.gz) for the Configuration Package file. Support for 7-Zip allows the file to be compressed (LZMA2) and optionally, encrypted with a password and the AES-256 algorithm.

The Configuration File also supports the inclusion of TLS private keys, trusted root certificates, and TLS certificates (when file encryption is used).

- The CLI command for copying the Configuration Package file supports a new option for encrypting the file and optionally, for including the certificates (only `to`):

```
copy configuration-pkg to|from <URL> encrypted <password>  
certificates
```

- The Auto-Update mechanism can now provision the device with the Configuration Package file, using the following new CLI command:

```
(config-system) # automatic-update  
(auto-update) # configuration-pkg <URL>
```

If the file is password-protected, the password can be specified in the CLI, using the following new command:

```
(config-system) # automatic-update
(auto-update) # default-configuration-package-password
<password>
```

This feature is also applicable when downloading the Configuration Package file through SFTP.

Note: For backward compatibility, the device supports the upload of the Configuration Package file in TAR (.tar.gz) format.

Applicable Application: All

Applicable Products: All

2.3.5.1.13 Clearing of CLI Command History

The device's CLI command history buffer, which stores previously typed commands during the current CLI session, can now be cleared using the following new commands:

- To clear all history records:

```
clear history
```

- To clear a specific history record (by index):

```
clear history <index>
```

The CLI history of commands (and their indices) is displayed using the existing `history` command. Recalling previously typed commands from the history buffer is done using the up and down arrow keys, as previously supported.

Applicable Application: All

Applicable Products: All

2.3.5.1.14 IP Interfaces and Ethernet Devices Tables Read-Only for Azure

When the device is deployed on the Azure cloud platform, network configuration tables (i.e., IP Interfaces table and Ethernet Devices table) are now read-only (already supported for AWS deployments). This is because the Ethernet devices are automatically configured by the management interface of the cloud platform.

Applicable Application: SBC

Applicable Products: Mediant Software

2.3.5.1.15 Customizing DNS Servers and MTU Size for Azure and AWS

By default, when the device is deployed in Azure or AWS, the DNS servers and maximum transmission unit (MTU) size for each interface are automatically configured based on the public cloud network settings.

These settings are displayed in the IP Interface table's 'Primary DNS' and 'Secondary DNS' fields, as well as the Ethernet Devices table's 'MTU' field, which are all non-editable.

However, in the current version, users can now customize the DNS servers and MTU through the device's Web interface. This can be done using the newly added Custom DNS Servers table and Custom MTU table, enabling users to override the automatically obtained values with their own configurations.

Applicable Application: SBC

Applicable Products: Mediant Software

2.3.5.1.16 Registration Synchronization for SBC User Info Entities

Registration synchronization is now also supported for users configured in the SBC User Information table. Up until now, only SIP Accounts supported registration synchronization. Registration synchronization affects both Accounts and SBC User Information users that register to the same proxy server.

If an Account or user receives a timeout (configured by SipT1Rtx, SipT2Rtx, or SIPMaxRtx parameters) or response failure (e.g., SIP 403) for a sent SIP REGISTER request, the device stops sending REGISTER messages for all Accounts and users associated with the same serving IP Group (proxy server). The Account or user that first detected the no response (or failure) from the server is considered the *lead* Account or user. Only this Account or user continues to attempt registering to the proxy server.

When the lead Account or user receives a successful response from the proxy server, the device resumes the registration process for all the other Accounts and users associated with the same serving IP Group.

This feature is enabled by the ini file parameter [RegistrationSyncMode] and CLI command `configure voip > sip-definition proxy-and-registration > reg-sync-mode`.

Note: The Serving IP Group for an Account is configured in the 'Serving IP Group' field of the Account table. The Serving IP Group for a user is configured in the 'Destination IP Group' field of the IP-to-IP Routing table, matching the source 'IP Group' field in the SBC User Information table.

Applicable Application: SBC.

Applicable Products: All.

2.3.5.1.17 Debug Capturing of Network Traffic on Device Interfaces

The device can now be configured to debug capture (record) network packets on device interfaces such as eth0, eth1, lo, or tun0. Previously, the device only supported debug capture through VLAN. With this new feature, users can now capture packets on the interface used for WebSocket tunneling, among other use cases.

This feature is supported by the following new CLI command option `kernel-dev`:

```
# debug capture voip interface kernel-dev <Name>|vlan <VLAN ID>
```

Debug capturing can also be done on all interfaces, using the 'any' value.

Applicable Application: All

Applicable Products: All

2.3.5.2 Resolved Constraints

This section lists resolved constraints.

Table 2-7: Resolved Constraints in Version 7.40A.500.010

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-42999	When uploading a private key and certificate to a TLS Context, if the certificate file contains a chain (multiple certificates), the upload process deletes the trusted roots of the TLS Context.	Trusted root certificates are deleted.	Medium	All	-

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-43942	The 'SDR File Name' parameter doesn't accept certain symbols in the hostname (e.g., '<' and '>').	CDR file name failure	Low	All	All
SBC-44308	The SNMP trap event acRedundantBoardAlarm is not required as all alarms indicate if trap raised by active or redundant device (in source varbind).	None	Low	HA	-
SBC-44308	On HA systems, the redundant device sends trap events to the active device as alarms instead of as events, causing the user to receive alarms instead of events.	Incorrect SNMP reporting	Low	All	All

2.3.6 Version 7.40A.400.067

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
 Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.1342 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.
- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.8.5 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.6.1 Resolved Constraints

This section lists resolved constraints.

Table 2-8: Resolved Constraints in Version 7.40A.400.067

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-44799	The device restarts, generating error message "Board Was Crashed: Signal 11, Task SPLB".	Device restart	Medium	All	All
SBC-45123	No voice after an HA switchover when sending a SIP re-INVITE with different crypto keys.	No voice after HA switchover	Medium	All HA-supporting	HA
SBC-45461	The device sends an SDP answer to Teams with incorrect crypto and port upon a delayed offer call.	No voice	Medium	All	All
SBC-45578	The device fails to play a tone upon connect when trying to open the channel with DSP	Failure to play upon connect	Medium	All	All

Incident	Description	Impact	Severity	Affected Products	Affected Environments
	after it was already opened with DSP.				

2.3.7 Version 7.40A.400.063

This version includes new features and resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
 Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.1342 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.
- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.8.5 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.7.1 New Features

This section describes the new features introduced in this version.

2.3.7.1.1 Number of FXS Ports in Outgoing HTTP User-Agent Header

The device can now be configured to include the number of FXS ports in the HTTP User-Agent header when sending HTTP Get requests to the provisioning server for the Automatic Update mechanism.

This is supported by the new optional "<FXS>" placeholder (variable tag) for the existing [AupdHttpUserAgent] parameter. The device replaces this placeholder with the total number of FXS ports (and IDs of the FXS blades if the parameter's default is used).

Applicable Application: Gateway

Applicable Products: MP-1288

2.3.7.2 Resolved Constraints

This section lists resolved constraints.

Table 2-9: Resolved Constraints in Version 7.40A.400.063

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-43822	The Configuration wizard no longer provides the option to define an HTTP proxy.	Missing parameters in Configuration wizard	Low	All	All
SBC-44154	The device sends a SIP re-INVITE after an HA switchover with incorrect ICE parameters.	No voice after an HA switchover	High	All	HA

2.3.8 Version 7.40A.400.042

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
 Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.1223 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.8.5 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.8.1 Resolved Constraints

This section lists resolved constraints.

Table 2-10: Resolved Constraints in Version 7.40A.400.042

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-43274	Device requires DSP resources for SDP termination if offering side uses the 'a=label' attribute and termination side doesn't.	Calls now need DSPs and if no DSPs, call fails.	Medium	All	n/a
SBC-43999 SBC-44007	Connectivity with device's Web interface is lost after using the SBC Configuration wizard when "Agent Status is not Ready" appears in virtual machine.	Loss of connectivity with Web interface.	High	All	Azure
SBC-44047	Device fails to copy files (e.g., Auxiliary files) from Active to Redundant unit on HA systems when using the SBC Configuration wizard.	HA is not operational.	High	High Availability (HA)	Azure

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-44188	Device resets when uploading a Configuration file through ARM (or any routing server).	Device resets.	High	All	n/a

2.3.9 Version 7.40A.400.023

This version includes new features, known constraints, and resolved constraints.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.1223 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.6.7 or later. It's recommended to use Version 2.8.0 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.9.1 New Features

This section describes the new features introduced in this version.

2.3.9.1.1 Mediant VE/CE Support for Ddsv5-series Virtual Machines

Mediant VE/CE SBCs deployed on Microsoft Azure cloud platform now support the Ddsv5-series virtual machines. These SBCs now also support Azure's accelerated networking feature. This support provides enhanced networking performance and increased session SIP call / session capacity. For capacity, see SIP Signaling and Media Capacity.

Applicable Application: SBC

Applicable Products: Mediant VE; Mediant CE

2.3.9.1.2 Message Session Relay Protocol (MSRP) Enhancements

This version introduces the following MSRP enhancements:

- Support for Message Session Relay Protocol (MSRP) is now also offered on the Mediant CE SBC.
- The method for configuring MSRP ports has changed. Instead of configuring an MSRP port range in the Media Realms table ('TCP Port Range Start' and 'TCP Port Range End'), a single TCP and/or TLS port is configured in the SIP Interfaces table. This is done using the new SIP Interface parameters -- 'MSRP TCP Port' (non-secured MSRP) and 'MSRP TLS Port' (MSRPS, i.e., secured MSRP). The IP Interface and TLS Context that are associated with the specific SIP Interface are used for the MSRP session.

Note:

- This new port configuration is not backward compatible, and users need to reconfigure the MSRP ports accordingly after upgrading their device to this new software version.
- MSRP is currently supported only for IPv4 networks.
- Due to this feature, the 'TCP Port Range Start' and 'TCP Port Range End' parameters in the Media Realms table are now obsolete.
- A timeout for establishing an MSRP connection can now be configured. The timeout starts countdown from when the device opens an MSRP media socket (port) for the MSRP session. This is configured by a new parameter, 'Timeout to Establish MSRP Connection' (MSRPConnectionEstablishTimeout).

Applicable Applications: All

Applicable Products: All

2.3.9.1.3 Time Synchronization by PTP

When the device is deployed on Microsoft Azure or Hyper-V, the time of the SBC virtual machine can now be synchronized by the host's virtual PTP (Precision Time Protocol) device. PTP provides an alternative to external time synchronization services such as an NTP server or the Date header in SIP messages.

This feature is supported by a new configuration parameter called 'PTP Time Sync' (EnablePTP / configure system > clock > ptp-time-sync).

Note: The device places the highest preference for time synchronization on NTP, then SIP Date header, and lastly PTP. For example, if an NTP server is configured, the device ignores SIP Date header and PTP settings. If multiple synchronization methods are enabled, the device sends the existing SNMP alarm acClockConfigurationAlarm to notify of this configuration scenario.

Applicable Applications: SBC

Applicable Products: Mediant VE/CE

2.3.9.1.4 Max. Value Increase for Fields in Message Policies Table

The maximum value that can be configured for the following fields in the Message Policies table has been increased:

- 'Max Message Length': 65000
- 'Max Header Length': 4096
- 'Max Body Length': 61440
- 'Max Num Headers': 64
- 'Max Num Bodies': 64

Applicable Applications: All

Applicable Products: All

2.3.9.1.5 SIP Recording Rules Table Capacity (Rows) Increase

The maximum number of SIP-based media recording (SIPREC) rules (rows) that can be configured in the SIP Recording Rules table has been increased from 30 to 50.

Applicable Applications: SBC

Applicable Products: Mediant 9000; Mediant Software

2.3.9.1.6 SIPREC Session Recording Server (SRS) Increased to Six

The maximum number of SRS's to where the device sends recorded SIP call sessions (SIPREC) has been increased from three to six. In other words, the device can now send SIPREC sessions to up to six standalone SRS's, up to six active-standby SRS pairs, or a combination of standalone and active-standby SRS's.

Applicable Products: All.

2.3.9.1.7 IP-to-Tel Routing Table Capacity (Rows) Increase

The maximum number of IP-to-Tel routing rules (rows) that can be configured in the IP-to-Tel Routing table has been increased from 120 to 288.

Applicable Applications: Gateway

Applicable Products: MP-1288

2.3.9.1.8 Accounts Table Capacity (Rows) Increase

The maximum number of SIP account rules (rows) that can be configured in the Accounts table has been increased from 102 to 288.

Applicable Applications: Gateway

Applicable Products: MP-1288

2.3.9.1.9 Configurable Analog and Digital Port Description through CLI

A short description can now be configured per analog (FXO and FXS) and digital (PRI and BRI) ports through CLI. This is supported by the new `port-info` command, which is located under the relevant interface (BRI, FXS, or E1-T1). For example, for BRI interfaces:

```
(config-voip)# interface bri 1/1
(bri 1/1)# port-info MyDescription
```

In addition, this port description is now displayed in the output of the `display` command under the relevant interface, and also in the output of the `show run` and `show voip interface` commands.

Applicable Applications: Gateway

Applicable Products: Analog; Digital

2.3.9.1.10 Interworking SIP UPDATE and re-INVITE According to Allow Header

When the existing 'SIP UPDATE Support' parameter is configured to **According Remote Allow**, the device now prefers UPDATE messages and converts received re-INVITEs as follows:

- If the Allow header from the remote contained UPDATE and the received re-INVITE contains an SDP, the device sends an UPDATE.
- If the incoming INVITE is without an SDP, the device forwards the INVITE.
- If the Allow header didn't contain an UPDATE, the device forwards it as an INVITE.

Applicable Applications: SBC

Applicable Products: All

2.3.9.1.11 Service Preservation in Case of Public Cloud Maintenance Events

The device can now be enabled to monitor and detect scheduled virtual machine maintenance events performed by the cloud platform (Microsoft Azure or Google Cloud Platform / GCP) on which the device is deployed and hosted. A maintenance event can be, for example, a security patch update or a reboot.

Up until now, the device was not aware of cloud-initiated maintenance events on virtual machines. During such events, the device could become non-functional or performed an HA switchover.

When enabled (default), the device periodically queries the cloud platform's metadata service through REST API for scheduled maintenance events. The device logs the events (syslog) and sends the new SNMP alarm `acVMMaintenanceAlarm`, which indicates event type and estimated scheduled time. The alarm is automatically cleared when the event completes. Maintenance events monitoring is enabled by the new parameter, 'Maintenance Events Monitoring Enable'.

In addition, a new parameter 'Maintenance Events Treatment Enable' (enabled by default) was added to perform certain operations before the maintenance event occurs:

- For High-Availability (HA) systems, if the maintenance event is scheduled for the virtual machine of the active device, a switchover to the redundant device is triggered just before the event. If the maintenance event is scheduled for the virtual machine of the redundant device, a restart of the redundant device is triggered just before the event.
- For Mediant CE (Elastic Media Cluster mode), if the maintenance event is scheduled for a Media Component's virtual machine, the Signaling Component attempts to move all current sessions on the Media Component to a different Media Component (running on a different virtual machine).

Therefore, this feature allows the device to prepare itself for maintenance events and minimize traffic disruption.

These new parameters are located on a new page, Cloud Settings in the Web interface (Setup menu > IP Network tab > Advanced folder > Cloud Settings) and CLI (`configure network > cloud-settings`).

Applicable Applications: SBC

Applicable Products: Mediant VE/CE on Azure/GCP

2.3.9.1.12 Display of Active Port in Ethernet Port Group

The Ethernet Groups table now displays the currently active Ethernet port in the new 'Active Port' field. This is applicable to Ethernet Groups that contain two ports for active-standby or active-active redundancy schemes (1Rx-1Tx, 2Rx-1Tx, or 2Rx-2Tx modes).

Applicable Applications: All

Applicable Products: All

2.3.9.1.13 Ethernet Port Redundancy based on Remote Host Connectivity

For Ethernet port redundancy, the device now also supports port switchover to the standby port in the Ethernet Group, based on the reachability (connectivity) to user-defined network entities (destinations). If this feature is disabled, port switchover occurs only upon physical port failure (as already supported).

The device monitors the reachability of the destinations (IP addresses or FQDNs), by pinging them through the active port in the Ethernet Group. If there is no reachability (and according to various configuration settings), a switchover from active to redundant port is triggered.

The destinations to monitor are configured in the new Ethernet Port Group Network Monitor table (Setup menu > IP Network tab > Core Entities folder). Multiple "monitored" rows can be configured per Ethernet Group, where each row can include multiple destinations. A port switchover occurs only if a user-defined number of monitored rows are not reachable (i.e., all destinations of all the rows are not reachable). The monitored row threshold is configured by the new parameter 'Monitor Threshold' in the Ethernet Groups table (if configured to 0, the monitoring feature is disabled for the specific Ethernet Group).

The Ethernet Port Group Network Monitor table provides a child table, Ethernet Port Group Network Monitor Peers Status table, which displays the reachability status of all the destinations that were configured for a specific monitored row.

Note: This feature is applicable only to Ethernet Groups whose 'Mode' parameter is configured to **REDUN_1RX_1TX** and whose 'Monitor Threshold' parameter is configured to a non-zero value.

Applicable Applications: All

Applicable Products: MP-1288; Mediant 3100

2.3.9.1.14 Shortened CLI Commands using Aliases

The device now allows management users to create command aliases for its CLI. An alias is a shortened version (shortcut) of a command. Aliases may be useful for commands that are frequently used.

Aliases are configured in the new table, CLI Aliases (Setup > Administration > Web & CLI > CLI Aliases) - `configure system > cli-settings > cli-alias`.

An alias can be configured for a specific command (e.g., `copy`) or for a command sequence (e.g., `copy cli-script`). For example, if the alias of the `copy cli-script` command is "copyC", then instead of running the following command:

```
# copy cli-script from ...
```

the following alias command can be used:

```
# copyC from
```

A list of all configured aliases can be viewed in the CLI, using the new command `show aliases`.

Applicable Applications: All

Applicable Products: All.

2.3.9.1.15 Support for Non-Interactive SSH Sessions

The device now supports non-interactive SSH sessions that may be used for running multiple SSH commands via automated connections. Multiple commands must be entered on the single command line using semicolons to separate each command. For example:

- `show running-config network; show system utilization`
- `configure troubleshoot; syslog; syslog-ip 10.4.2.11; exit; exit`
- `configure voip; sip-definition settings; 100-to-18x-timeout 100; exit; exit`

You may use standard SSH clients to execute commands via non-interactive sessions. The exact syntax differs depending on the specific SSH client. For example, for plink (PuTTY Link) the syntax is as follows:

```
plink.exe -no-antispoof -ssh 10.4.30.11 -l Admin -pwd Admin "show running-config network; show system utilization"
```

Non-interactive SSH sessions are logged in the device's Activity Log as follows: "Activity Log: Executing multiple CLI commands".

Note:

- This feature is not supported for async commands (e.g., ping).
- Up to 8,000 characters can be entered on the command line (input).
- During non-interactive SSH session execution, new SSH connections (sessions) cannot be established.

Applicable Applications: All

Applicable Products: All.

2.3.9.1.16 Syslog Indication of Wrong Login Password or Username

The device can now be configured to indicate (in syslog) if the login username or password entered by the management user is wrong. Up until now, syslog only indicated that wrong credentials were entered, without specifying whether it was the username or password that was incorrect. This feature is configured by the existing parameter 'Invalid Login Report'.

Applicable Applications: All

Applicable Products: All

2.3.9.1.17 Firewall Defaults Changed

The default values of the following parameters in the Firewall table have changed:

- 'Prefix Length': from 0 to 32.
- 'Use Specific Interface': from Disable to Enable.

Note: Customers using CLI scripts for configuring this table must modify the script to explicitly specify the value of the 'Use Specific Interface' parameter.

Applicable Products: All.

2.3.9.1.18 Disconnecting Calls by Dial Plan Tag

Calls matching a specified Dial Plan tag (name=value or name only) can now be forcibly disconnected.

This is done using the new optional CLI command `tag` for the existing command `clear voip calls`. For example, below disconnects all calls whose tag is "region=usa":

```
clear voip calls tag region=usa
```

Applicable Applications: All

Applicable Products: All

2.3.9.2 Known Constraints

This section lists known constraints.

Table 2-11: Known Constraints in Version 7.40A.400.023

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-37942	If syslog is associated with a dynamic IPv6 interface, syslog messages are not sent until interface receives IP address from DHCP (can be retrieved using debug file).	Some syslog messages are not sent to syslog server.	Low	All	All
SBC-42036	The default value of the 'Use Specific Interface' parameter in the Firewall table was changed from Disable to Enable . As a result, Customers using CLI scripts for configuring this table must modify the script to explicitly specify the value for this parameter: <pre>configure network access-list <index> use-specific- interface disable</pre>	Configuration is preserved for the device when upgraded from earlier to later versions. This change only impacts Customers using a CLI script created for an earlier version and used to configure the device for this version or later.	Low	All	All

2.3.9.3 Resolved Constraints

This section lists resolved constraints.

Table 2-12: Resolved Constraints in Version 7.40A.400.023

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-37724	The CLI script is missing trunk configuration (<code>configure voip > interface e1-t1 x</code>) in the output of <code>show running config</code> .	Downloaded CLI script missing important E1\T1 trunk configuration section.	Medium	Mediant 3100	n/a
SBC-40710	Configuring TLS expiry for a single TLS Context affects all other TLS Contexts.	All TLS Contexts are affected when one of the TLS Contexts is modified.	High	All	n/a
SBC-40761	The SIP Header Value Encryption feature occasionally produces a "0d" or "0a" as its last character. These characters may be interpreted as the CRLF or end of line,	Outgoing messages (e.g., INVITEs) can be rejected with 4xx from remote side with "Bad SIP message structure".	Medium	All	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
	causing parser issues for network stack level devices.				
SBC-41226	The device's NTP offset is ignored following an upgrade to Version 7.4.300. (The offset doesn't affect the device's time and reapplying the offset after the upgrade resolves the issue.)	Report of wrong device time.	Medium	Mediant 9000; Mediant Software	n/a
SBC-41265 SBC-41307	Device upgrade to Version 7.4.300 disables an IP Interface if the DNS fields (primary and secondary) were empty (not even 0.0.0.0) before the upgrade.	Device may be inaccessible (if it was the OAMP IP Interface).	High	All	n/a
SBC-41569	The device sends a SIP re-INVITE repeatedly when the Play Tone Upon Connect feature is enabled.	Network may become congested if the device keeps sending re-INVITES.	Medium	All	n/a

2.3.10 Version 7.40A.300.021

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.1223 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to this compatible OVOC version prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.6.7 or later. It's recommended to use Version 2.8.2 or later.



Note: The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

2.3.10.1 Resolved Constraints

This section lists resolved constraints.

Table 2-13: Resolved Constraints in Version 7.40A.300.021

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-42536	The device replies to the wrong proxy server when AlwaysSendToProxy is enabled, and the Proxy Set includes 8 IP addresses with different priorities and weights in Homing mode.	Call failure due to device replying to wrong proxy server	Medium	Gateway	n/a
SBC-42974	The device fails to use its cache of DNS-resolved IP addresses, causing repeated DNS queries and overloading of the device.	Device overloads with repeated DNS requests	High	All	n/a
SBC-43180	The device restarts after a manual HA switch over because of wrong buffer	Device restarts	Medium	All	HA

Incident	Description	Impact	Severity	Affected Products	Affected Environments
	read/write allocation and deallocation.				

2.3.11 Version 7.40A.300.013

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
 Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**
 - ✓ This version is compatible only with OVOC Version 8.2.280 or later.
 - ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to a compatible version (see above) prior to upgrading your device to this SBC version.
- **Using this SBC version with a centralized license pool:**
 Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.
 When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.6.7 or later. It's recommended to use Version 2.7.4 or later.

2.3.11.1 Resolved Constraints

This section lists resolved constraints.

Table 2-14: Resolved Constraints in Version 7.40A.300.013

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-40890	P-Access-Network-Info header decryption using the device's Message Manipulation <i>func.decrypt</i> feature sometimes fails.	Device doesn't properly encrypt the key at the terminating end, causing call failure	High	All	n/a

2.3.12 Version 7.40A.300.012

This version includes new features, resolved constraints and known constraints.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.2.265 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to a compatible version (see above) prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to a compatible version (see above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.6.7 or later. It's recommended to use Version 2.7.1 or later.

2.3.12.1 New Features

This section describes the new features introduced in this version.

2.3.12.1.1 HA Support for Mediant VE SBC Deployed on Microsoft Azure

Mediant VE SBC now supports High-Availability (HA) mode when deployed on the Azure cloud platform.

To support this feature:

- A new parameter called 'Source IP Address' has been added to the NAT Translation table, which allows the device to perform NAT translations based on the local IP address (source) of the active and redundant devices. This is instead of using the IP Interface name, which is the same between devices.
- A new standalone parameter called [RelinviteAfterHA] has been added, which maintains active calls when an HA switchover occurs. The redundant (now active) device does this by sending a SIP re-INVITE message with its local IP address.
- For installation instructions, click [here](#).



Note: This feature requires that the remote endpoints support symmetric response routing according to RFC 3581.

Applicable Application: SBC.

Applicable Products: Mediant VE (Azure).

2.3.12.1.2 Preloaded Trusted Root Certificate Authorities

The device now provides a preloaded list of popular trusted root certificate authorities (CA). These CAs can be used only for TLS Context IDs 0 through 4. Up until now (and still for TLS Context IDs 5 and above), the CA(s) had to be uploaded to the device per TLS Context.

To support this feature:

- A new parameter called 'Use default CA Bundle' has been added to the TLS Contexts table, which enables (disabled by default) the use of the default CAs for a TLS Context.
- A new page called Default CA Bundle (Setup > IP Network > Security folder > Default CA Bundle) has been added, which displays a list of the default CAs.

Applicable Application: All

Applicable Products: MP-1288; Mediant 800C; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 9000; Mediant Software.

2.3.12.1.3 IPv6 Networking Support

The device now supports IPv6 networking, as described in the following subsections.

2.3.12.1.3.1 Autoconfiguration of IPv6 Interfaces

The device now supports autoconfiguration of IPv6 interfaces, configured in the IP Interfaces table. Dynamic IPv6 addressing allows the device to automatically obtain an IPV6 address and prefix length (and optionally, the DNS and Default Gateway addresses) through DHCP for the specific IP Interface.

To support this feature, the following new optional values have been added to the existing 'Interface Mode' parameter in the IP Interfaces table:

- **IPv6 Stateless:** Known as IPv6 Stateless Address Autoconfiguration (SLAAC), this method allows the device to automatically acquire IPv6 addresses without managing a DHCP server. The device generates addresses using local and non-local information. The non-local information is the prefix advertised by routers, which forms the first 64-bit segment (*network part*) of the 128-bit address. The local information is generated by the device using an algorithm based on the device's MAC address, which forms the second 64-bit segment (*client ID*). The device generates a unique address per IP Interface. This method can also be used to obtain the DNS addresses through DHCP and the Default Gateway through Router Advertisement (RA) messages.
- **IPv6 DHCP:** Known as Stateful (DHCPv6) Autoconfiguration, this method allows the device to act as a DHCP client to acquire IPv6 addresses from an external DHCP server. The device sends a DHCP request once configured and upon every device restart. The DHCP server can provide not only the IP address and prefix, but also the DNS server address and Default Gateway address. Based on the DHCP lease time, the device renews its lease over the IP address with the DHCP server.

For dynamic IPv6 addressing, the existing SNMP alarm acIPv6ErrorAlarm is raised (major) when an IPv6 address for an IP Interface is not received within 10 seconds from the server.

IP Interfaces configured for dynamic IPv6 addressing are supported by all the device's applications. This includes, for example, SIP signaling, media (RTP), RADIUS, LDAP, CDRs, HTTP services, debug recording, and syslog.

Note:

- Dynamic IPv6 addressing is not supported when the device operates in High-Availability (HA) mode.
- The SBC Configuration Wizard is not supported (and not available in Web interface) if the IP Interfaces table contains an IPv6 address.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.2 Dynamic Assignment of IPv6 DNS Server Address

The DNS server addresses (primary and secondary) configured per IP Interface in the IP Interfaces table can now be overwritten by IPv6 addresses obtained from a DHCP server when implementing dynamic IPv6 addressing (see description of previous feature).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.3 Two OAMP Interfaces (IPv4 and IPv6) in IP Interfaces Table

Up until now, the IP Interfaces table supported only one IP Interface configured with an “OAMP” Application Type, which had an IPv4 address. Now, an additional IP Interface with an “OAMP” Application Type can be configured that has an IPv6 address.

Therefore, this feature is about the support for configuring up to two OAMP IP Interfaces in the IP Interfaces table, where each has a different IP version (IPv4 or IPv6).

Note:

- The device is still shipped with a single default IP Interface, which has an “OAMP” Application Type and an IPv4 address.
- The IP Interfaces table must have at least one IP Interface (IPv4 or IPv6) that is configured with an “OAMP” Application Type. For example, if an IPv6 OAMP interface is configured, the default IPv4 OAMP interface can be deleted.
- The IPv4 OAMP interface is used by default by the device’s management interfaces (e.g., Web interface and CLI) and applications (e.g., syslog, RADIUS, and CDRs). Therefore, before deleting the IPv4 OAMP interface, a different IP Interface (which from this release no longer needs to be an OAMP interface) must be assigned to each of the management interfaces and required applications. If an IP Interface is not assigned, the IPv6 OAMP interface is used by default.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.4 SNMP over IPv6

The device now supports SNMP over IPv6.

To support this feature:

- A new parameter called 'IPv6 Interface Name' has been added, which assigns an IPv6 Interface for SNMP over IPv6.
- A new parameter called 'IPv4 Interface Name' has been added, which assigns an IPv4 Interface for SNMP over IPv4.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.5 IPv6 Hostname for SNMP Trap Manager

The address of the SNMP Trap Manager can now be configured with an FQDN (hostname) that resolves into an IPv6 address. Up until now, only a hostname that resolved into an IPv4 address was supported.

To support this feature, a new parameter called 'Trap Manager Host Name for IPv6' has been added.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.6 NTP over IPv6

The device can now automatically update its date and time through Simple Network Time Protocol (SNTP) from an NTP server over IPv6.

To support this feature:

- A new parameter called 'NTP Interface' has been added, which allows the user to select an IP Interface (IPv4 or IPv6).
- The existing 'Primary NTP Server Address' and 'Secondary NTP Server Address' parameters can now be configured with an IPv6 address.

In addition to this feature, a new parameter called 'Enable NTP' has been added, which enables or disables NTP.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.7 Auto-Provisioning over IPv6

Auto provisioning (Auto-Update mechanism) of the device can now be done over IPv6.

To support this feature:

- A new parameter called [AUPDInterface] has been added, which assigns an IP Interface from the IP Interfaces table to the Auto-Update mechanism. By default, the device uses the IPv4 OAMP interface.
- The URLs that define the location of the various files that can be uploaded by the Auto-Update mechanism (e.g., CmpFileURL) can now be configured with an IPv6 address.

Note: The IP version (IPv4 or IPv6) of the chosen IP Interface and the configured URLs must be the same.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.8 Remote HTTP Services over IPv6

The device now supports Remote Web Services (configured in the Remote Web Services > HTTP Remote Hosts table) over IPv6. Each Remote Web Service can be configured with multiple HTTP hosts with different IP address versions (IPv4 or IPv6).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.9 HTTP Proxy over IPv6

The device now supports HTTP Proxy over IPv6.

To support this feature, IPv6 interfaces can be used in the HTTP Proxy Server and HTTP Locations tables.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.10 LDAP over IPv6

The device now supports LDAP over IPv6.

To support this feature:

- The existing 'LDAP Network Interface' parameter in the LDAP Servers table can be assigned an IPv6 interface.
- The existing 'LDAP Server IP' parameter in the LDAP Servers table can be configured with an IPv6 address.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.11 RADIUS over IPv6

The device now supports RADIUS over IPv6.

To support this feature:

- The existing 'IP Address' parameter in the RADIUS Servers table can now be configured with an IPv6 address.
- A new parameter called 'Interface Name' has been added to the RADIUS Servers table, which assigns an IP Interface (IPv4 or IPv6) for RADIUS communication.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.12 SDRs over IPv6

The device now supports sending Session Detail Records (SDRs) to a remote server over IPv6.

To support this feature:

- A new parameter called 'Interface Name' has been added to the SBC SDR Remote Servers table, which assigns an IP Interface (IPv4 or IPv6) for communication with the server.
- The existing 'Address' parameter in the SBC SDR Remote Servers table, which configures the server's address can now be configured with an IPv6 address.

Applicable Application: SBC.

Applicable Products: Mediant 9000; Mediant Software.

2.3.12.1.3.13 SBC CDRs over IPv6

The device now supports sending CDRs of SBC calls to a remote server over IPv6.

To support this feature:

- A new parameter called 'Interface Name' has been added to the SBC CDR Remote Servers table, which assigns an IP Interface (IPv4 or IPv6) for communication with the server.
- The existing 'Address' parameter in the SBC CDR Remote Servers table, which configures the server's address can now be configured with an IPv6 address.

Applicable Application: SBC.

Applicable Products: Mediant 9000; Mediant Software.

2.3.12.1.3.14 CDRs and SDRs over IPv6 through REST API

The device now supports sending CDRs and SDRs through REST API to remote HTTP/S-based REST servers (Remote Web Service) over IPv6.

To support this feature, the existing 'Address' parameter in the HTTP Remote Hosts table can now be configured with an IPv6 address and the 'Interface' parameter can be associated with an IPv6 interface.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.15 Syslog over IPv6

The syslog server can now be configured with an IPv6 address.

To support this feature:

- The existing global 'Syslog Server IP' parameter and the 'Address' field in the Syslog Servers table can now be configured with IPv6 addresses.
- A new global parameter called 'Syslog Interface' has been added, which assigns an IP Interface (IPv4 or IPv6) to the primary syslog server.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.16 Packet Capturing using RPCAP over IPv6

Packet capturing using the device's embedded Remote Capture Protocol (rpcap) server now can be done over IPv6.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.17 Debug Recording over IPv6

The device now supports sending debug recording packets to a remote server over IPv6.

To support this feature:

- The existing 'Destination IP Address' (DebugRecordingDestIP) parameter can now be configured with an IPv6 address.
- The existing 'Interface Name' (DebugRecordingIpInterfaceName) parameter can now be assigned an IPv6 interface.
- The following debug recording operations through CLI now support IPv6:
 - `debug capture voip interface ... tftp-server <IPv4 / IPv6 Address>`
 - `debug capture voip physical stop <IPv4 / IPv6 Address>`
 - `debug capture voip physical get_last_capture <IPv4 / IPv6 Address>`

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.18 Online Certificate Status Protocol (OCSP) over IPv6

The OCSP server can now be configured with an IPv6 address. Up until now, it could only be configured with an IPv4 address.

To support this feature:

- The existing 'OCSP Server' parameter in the TLS Contexts table can be configured with an IPv6 address.
- The existing 'OCSP Interface' parameter in the TLS Contexts table can be assigned an IPv6 interface.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.19 QoE Reporting to OVOC over IPv6

The device now supports the sending of Quality of Experience (QoE) voice metric reports to OVOC over IPv6.

To support this feature:

- The existing 'Primary OVOC Address' and 'Secondary OVOC Address' parameters in the Quality of Experience Settings table can be configured with IPv6 addresses.
- The existing 'QoE Network Interface' parameter in the Quality of Experience Settings table can be assigned an IPv6 interface.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.20 File Transfer over IPv6 through CLI

The device's CLI can now be used to copy files to/from a remote server over IPv6.

To support this feature, the existing `copy` CLI command can now include URLs with IPv6 addresses and provides a new option called `network-source` to choose the IP Interface:

```
copy <File Type> from|to <URL> network-source <IP Interface Name>
```

By default, the device uses the IPv4 OAMP or IPv6 OAMP interface for the copy process for IPv4 or IPv6 servers, respectively. If there is no IP Interface with the same IP version (IPv4 or IPv6) as the remote server, the copy process fails.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.3.21 Network Traces of Both Source and Destination IPv6 Packets

The device can now be configured to include IP network traces of all IPv6 packets (source and destination) in syslog and debug recording messages. Up until now, the trace could either be configured for source or destination IPv6 address.

To support this feature, a new value called "ipv6" can now be configured in the 'Value' parameter of the Logging Filters table (applicable when the 'Filter Type' parameter is **IP Trace**).

Applicable Application: All

Applicable Products: All.

2.3.12.1.4 Maintenance Script

The device can now be loaded with a digitally signed maintenance script provided by AudioCodes. The script may be used, for example, to:

- Provide immediate mitigation for urgent security vulnerabilities.
- Apply minor software patches.

To upload the script, the Web interface's Auxiliary Files page now provides an additional file load area called "Maintenance Script file" which includes the buttons for selecting the file and loading it.

Only users with Security Administrator or Master level privileges can upload the Maintenance script file.

Applicable Application: SBC.

Applicable Products: Mediant 9000; Mediant Software.

2.3.12.1.5 Multiple Management Interfaces

Up until now, the device's management interfaces (e.g., Web, Telnet and SSH) only used the single (default) OAMP IP Interface in the IP Interfaces table. Now, any type of IP Interface (OAMP, Media or Control) can be used for management interfaces, and multiple management interfaces can now also be configured.

2.3.12.1.5.1 Multiple Web and REST Interfaces

The device can now be configured with multiple management interfaces for accessing its Web and REST interfaces.

To support this feature, a new table called Web Interfaces (Setup menu > Administration tab > Web & CLI folder > Web Interfaces) has been added. Access to the Web and REST management interfaces can only be done through these configured Web Interfaces.

The Web Interfaces table provides a default Web Interface, which is associated with the default IPv4 OAMP interface.

Notes:

- The [EnableWebAccessFromAllInterfaces] parameter, which allowed access to the Web interface from all IP Interfaces in the IP Interfaces table is now obsolete. If this parameter was enabled in a previous version and the device is updated to 7.40A.300, the device automatically configures Web Interfaces for all the IP Interfaces, thereby maintaining required functionality.
- The Additional Management Interfaces table is now obsolete.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.5.2 Multiple Telnet Interfaces

The device can now be configured with multiple IP interfaces for accessing its embedded CLI server using Telnet.

To support this feature, a new table called Telnet Interfaces (Setup > Administration > Web & CLI > Telnet Interfaces) has been added. Each Telnet interface can be assigned any IP Interface type from the IP Interfaces table (IPv4 or IPv6) and configured with a port number.

Note: As a result of this feature, the [TelnetServerPort] parameter is now obsolete.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.5.3 Multiple SSH and SFTP Interfaces

The device can now be configured with multiple IP interfaces for accessing its embedded CLI server using SSH.

To support this feature, a new table called SSH Interfaces (Setup > Administration > Web & CLI > SSH Interfaces) has been added. Each SSH interface can be assigned any IP Interface type from the IP Interfaces table (IPv4 or IPv6) and configured with a port number.

Note: As a result of this feature, the [SSHServerPort] parameter is now obsolete.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.6 SIPREC Triggered upon Early Media

The device can now start recording calls (SIPREC) as soon as media starts. SIPREC can start even before the call is answered in case of early media (i.e., 18x response prior to 200 OK, for example, playing ring tone) or media after call connect.

To support this feature, a new optional value called **Media Start** has been added to the existing 'Trigger' parameter in the SIP Recording Rules table.

Applicable Application: All.

Applicable Products: MP-1288; Mediant 500; Mediant 500L; Mediant 800; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 9000; Mediant Software.

2.3.12.1.7 New VM Types for Mediant VE/CE Deployed on AWS

Mediant VE and Mediant CE SBCs now support the c5n and m5n instance types on AWS. These instance types provide improved networking performance and stability compared to the previously (and still) supported c5 and m5 instance types. Therefore, the c5n and m5n instance types are more recommended.

Applicable Application: SBC.

Applicable Products: Mediant VE; Mediant CE

2.3.12.1.8 Automatic Configuration of Network Interfaces on Public Clouds

The Mediant VE and Mediant CE SBCs now automatically detect network interfaces attached/detached to/from the underlying virtual machine through cloud management interfaces and updates the IP Interfaces and Ethernet Devices tables accordingly. Configuration update is done online and without service disruption.

The feature is currently limited to public cloud environments (AWS, Azure, and Google) and requires that Ethernet port redundancy be disabled through a new parameter called [EnablePortRedundancy]. (This parameter is also applicable to Mediant 90xx and Mediant SE.)

Applicable Application: SBC.

Applicable Products: Mediant Software.

2.3.12.1.9 Elliptic Curve Digital Signature Algorithm (ECDSA) Support for TLS

The device can now generate Elliptic Curve Digital Signature Algorithm (ECDSA) public-private keys. This means that the device can generate certificate signing requests (CSRs) and self-signed certificates that are digitally signed with ECDSA keys.

This feature also provides support for using ECDSA keys for accessing the device's CLI through an SSH connection. Instead of logging in with username and password, only username is required, and authentication is automatically done using the public key. (Up until now, only RSA was supported for SSH.)


To support this feature, a new parameter called 'Private Key Format' has been added to the Change Certificates page (TLS Context table > Change Certificates). The parameter defines the required key algorithm (ECDSA or RSA). When ECDSA is selected, the existing 'Private Key Size' parameter defines the required ECDSA key size (256-bit, 384-bit, or 521-bit).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.10 Product Documentation Accessible from Web Interface

The device's documentation (e.g., User's Manual, Installation Manual, Security Guidelines, and Release Notes) can now be accessed from the Web interface. The Web interface's

toolbar provides a new icon  that when clicked, displays a drop-down list of documents that can be referenced. The documents' names are hyperlinked to their respective location on AudioCodes website, allowing users quick-and-easy access to these resources.

Note: For private labeling when the Web interface's logo is non-default, this new icon is not displayed. A workaround is to add a forward "/" slash at the end of the URL of a new parameter called [ExternalDocumentsBaseURL]:

```
ExternalDocumentsBaseURL =  
'https://acredirect.azurewebsites.net/api/'
```

Applicable Application: All.

Applicable Products: All.

2.3.12.1.11 FQDN for Server Address

An FQDN can now be configured for certain servers, as described in the following subsections.

2.3.12.1.11.1 FQDN for CDR and SDR Syslog Servers

The address of the CDR and SDR syslog servers for collecting CDRs and SDRs respectively, can now be configured as an FQDN. The device sends a DNS resolution query to a DNS server for the server's IP address (IPv4 or IPv6).

To support this feature, the existing 'CDR Syslog Server IP Address' [CDRSyslogServerIP] and 'SDR Server Address' [SDRServerIPAddress] parameters can now be configured with FQDNs.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.11.2 FQDN for OCSP Server Address

The OCSP server can now be configured with an FQDN. When configured with an FQDN, the device sends a DNS resolution query to a DNS server for the server's IP address (IPv4 or IPv6).

To support this feature, the existing 'OCSP Server' parameter in the TLS Contexts table can be configured with an FQDN.

Note: FQDN support for OCSP is applicable only to TLS Contexts that are dedicated for SIP traffic. If an FQDN is configured for a TLS Context that is used for non-SIP connections, the certificate is not checked by the OCSP server.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.11.3 FQDN for Syslog Server Address

The syslog server can now be configured with an FQDN. When configured as an FQDN, the device sends a DNS resolution query to a DNS server for the server's IP address (IPv4 or IPv6).

To support this feature, the existing global 'Syslog Server IP' parameter and the 'Address' field in the Syslog Servers table can now be configured with an FQDN.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.12 User-Friendly Coders Groups Table

The Coders Groups table, which configures groups of coders, now has a more user-friendly design. The new design provides two tables with parent-child relationship, where the parent table defines the name of the group while the child table defines the coders in the group.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.13 Registration Stickiness and Change in Proxy Set's IP Addresses

If an Account (configured in the Accounts table) is registered with a registrar server that the device no longer "knows" (e.g., removed from the DNS-resolved IP addresses of the associated Proxy Set) and the Registrar Stickiness feature is enabled, the device immediately initiates a new registration for the Account (with a different server belonging to the Proxy Set).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.14 Proxy Keep-Alive using Fake Register Requests

Proxy keep-alive can now be done by sending fake REGISTER request messages (Contact header contains a fake name). The mode of operation is identical to the method using OPTIONS messages, but with REGISTER messages. This feature is supported by the new optional value **Using Fake REGISTER** for the 'Proxy Keep-Alive' parameter in the Proxy Sets table.

Applicable Products: All.

2.3.12.1.15 CLI Display of IP Interfaces per IP Version

The `show network interface description` CLI command, which displays IP Interfaces that were configured in the IP Interfaces table, now provides two new options called `ipv4` and `ipv6` that can be used to filter the output by IPv4 or IPv6 interfaces, respectively.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.16 "Reset" Button in Web Interface Renamed "Restart"

The "Reset" button in the device's Web interface has been renamed "Restart".

Applicable Application: All.

Applicable Products: All.

2.3.12.1.17 Change in Rx Payload Type Behavior

The device's behavior for Rx payload type has changed. Up until now, certain media features (e.g., RFC 2833 DTMF, RTP redundancy, and fax bypass) were supported even if not negotiated in SDP, using configured payload types (see related parameters below). From this version, the device only supports media features that are negotiated in SDP and ignores the default / configured payload types.

For example, up until now, if the `[RFC2833RxPayloadType]` parameter was configured to "100", every packet whose payload type was 100 was processed as RFC 2833 packets. Now, even if the packets' payload type is 100, the device doesn't process the packets as RFC 2833 (unless SDP negotiation results in payload type 100).

To maintain backward compatibility, a new parameter called [BackwardPTBehavior] has been added, which must be enabled (disabled by default).

Affected parameters:

- [FaxBypassPayloadType]
- [ModemBypassPayloadType]
- [RxF38OverRTPPayloadType]
- [RTPNoOpPayloadType]
- [RFC2833RxPayloadType]
- [RFC2198PayloadType]

Note:

- For the SBC application, the "T38 over RTP" coder doesn't support transcoding (only forwarding).
- This feature affects only Rx behavior (Tx behavior remains without change).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.18 Core Dump Configuration through CLI

The Core Dump feature can now also be configured through CLI:

- To configure the server address to where the Core Dump file is sent [CoreDumpDestIP]:

```
configure troubleshoot > debug-file > core-dump-dest-ip
```

- To enable Core Dump file generation [EnableCoreDump]:

```
configure troubleshoot > debug-file > enable-core-dump
```

- To include the Core Dump file with the Debug file:

```
configure troubleshoot > debug-file > debug-file-mask
```

Applicable Application: All.

Applicable Products: All.

2.3.12.1.19 HTTP Host Header Validation for Web Access

The device can now be configured to validate the Host header of incoming HTTP requests for accessing the Web interface. When enabled, the device checks that the value of the Host header matches the device's OAMP IP address (or hostname, if configured). If there is no match, the device rejects the request with an HTTP 403 Forbidden response (redirected to a "403 Forbidden" page).

To support this feature, a new parameter called [HostHeaderProtection] has been added.

Enabling this feature (disabled by default) means that only direct access to the Web interface is allowed (i.e., access through a proxy or tunnel is blocked). This feature may also help to prevent malicious attacks on the device using Host header manipulation (injection).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.20 Capacity for Mediant VE/CE Deployed on Google Cloud Platform

Capacity for Mediant VE and Mediant CE SBCs deployed on Google Cloud Platform (GCP) has been added to the capacity table (see Table 3-1).

Applicable Application: SBC.

Applicable Products: Mediant VE; Mediant CE.

2.3.12.1.21 Encryption of SIP Header Value

For enhanced security, the device can now encrypt the value of a SIP header. This feature is typically used between two deployed AudioCodes devices, where the device that sends the SIP message encrypts the header's value while the device receiving the SIP message decrypts it. Note that this feature is intended for SIP headers (e.g., proprietary headers) that are not used in the device's classification and routing logic.

To support this feature:

- A new parameter called 'AES-256 Encryption Key' has been added, which configures the AES-256 encryption key. Both devices must be configured with the same key.
- The specific SIP header to encrypt (and decrypt) is configured in the existing Message Manipulations table, using the new syntax option "Func.Encrypt" (and "Func.Decrypt") in the 'Action Value' parameter, for example:

```
Func.Encrypt(Header.P-Access-Network-Info)
```

Applicable Application: All.

Applicable Products: All.

2.3.12.1.22 Multiple Sockets per HTTP Host

The device can now be configured to open multiple sockets per remote HTTP host. This is configured in the existing Remote Web Services table, using a new parameter called 'Number of Connections'.

Multiple sockets allow the device to send HTTP messages (e.g., POST) in parallel without waiting for a response from the host per sent message. Up until now, only a single socket was opened with the host.

Applicable Application: All.

Applicable Products: All.

2.3.12.1.23 Support for Standard SNMP MIB ipNetToMediaTable

The device now supports the standard MIB (MIB-2) ipNetToMediaTable (OID 1.3.6.1.2.1.4.22), which maps IPv4 addresses to physical addresses (IP Address Translation table).

Applicable Application: All.

Applicable Products: All.

2.3.12.1.24 SIP Transactions Rate for Performance Monitoring

The device's Performance Monitoring feature now also provides SIP transaction rate statistics for Gateway calls. This includes current, average, and maximum SIP transactions per second.

Only SIP requests are considered in the SIP transaction count. For example, a single SIP transaction is from the initial SIP INVITE request to the final SIP 200 OK response.

This feature also adds SIP transaction statistics to the Web interface's Monitor page (GW tab > "Transactions per Sec.").

Applicable Application: Gateway.

Applicable Products: Gateway.

2.3.12.1.25 Loss of Frame (LOF) Renaming for Performance Monitoring

The following Loss of Frame (LOF) Performance Monitoring parameters have been renamed:

- lofSecondsCurrent has been renamed lofEventsCurrent
- lofSeconds has been renamed lofEvents

Applicable Application: Gateway.

Applicable Products: Gateway.

2.3.12.2 Resolved Constraints

This section lists resolved constraints.

Table 2-15: Resolved Constraints in Version 7.40A.300.012

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-35891	The device is impacted by CVE-2004-0230 (TCP Sequence Number Approximation Based Denial of Service).	Vulnerability	Low	Mediant 4000 Mediant 2600 Mediant 1000 Mediant 800 Mediant 500 MP-1288	n/a
SBC-37695	The device doesn't support certificate formats with multiple X509.3 Subject Alternative Name headers.	Certificate format	Medium	All	n/a
SBC-38603	The device has TLS connections de-allocation wrong calculation, causing a memory leak Task SPLB	TLS resources leak	Medium	All	n/a
SBC-39057	The device has DNS cache de-allocation wrong calculation, causing a memory leak Task SPMR	DNS resources leak	Medium	All	ha

2.3.12.3 Known Constraints

This section lists known constraints.

Table 2-16: Known Constraints in Version 7.40A.300.012

Incident	Description	Impact	Severity	Affected Products	Affected Environments
-	When the device is configured to use an IPv6 OAMP interface, the following functionality is not supported:	<ul style="list-style-type: none"> Connectivity with ARM isn't supported, as a result, the device can't use ARM. OVOC-managed session licenses aren't supported, as a result Fixed, Floating, and Flex licensing models are not supported. Connectivity to OVOC using WebSocket is isn't supported, resulting with no connection with OVOC over WebSocket. SNMP Trusted Managers isn't supported, as a result Trusted SNMP Managers can't be configured. 	Medium	All	All
		Mediant CE doesn't support an IPv6 OAMP interface, and the device cannot be managed through an IPv6 OAMP.	Medium	Mediant CE Mediant VE	All
		Media Transcoding Cluster (MTC) is not supported.	Medium	Mediant VE Mediant 9000	MTC
		AWS PAYG (Pay-As-You-Go) deployments are not supported	Medium	Mediant VE	AWS
SBC-39368	When the 'Interface Mode' parameter of an IP Interface in the IP Interfaces table is configured to IPv6 Stateless (i.e., autoconfiguration of IPv6 interfaces), obtaining DNS server addresses via DHCP doesn't function.	DNS servers not obtained via Stateless IPv6 (device can use the overwrite DNS servers option which configures them manually; otherwise the default DNS at 8.8.8.8 is used).	Low	All	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-39368	<p>When the following are both configured, the device uses both for DNS servers:</p> <ul style="list-style-type: none"> The 'Interface Mode' parameter of an IP Interface in the IP Interfaces table is configured for autoconfiguration of IPv6 interfaces (i.e., IPv6 Stateless or IPv6 DHCP) and used to obtain DNS addresses through DHCP. The dedicated parameters for the HTTP Proxy feature ('Primary DNS Server IP' and Secondary DNS Server IP') are configured. 	A DNS server can't be specified for use. (The latest DNS-resolution response is used.)	Low	Mediant 500 Mediant 500L Mediant 800 Mediant 1000 Mediant 2600 Mediant 4000 Mediant 3100 MP-1288	n/a
SBC-38419	When using IPv6, the SNMP trap destination is not removed on the device after it's deleted on OVOC.	Need to delete the SNMP trap destination through the device's Web or CLI.	Low	All	n/a
SBC-39506	Performance degradation of the device is experienced.	Performance degradation with 1+x cores.	Medium	Mediant Software with 2 vCPU on KVM	KVM
SBC-38487	Downloading files from OVOC to the device through SNMP is not supported when OVOC is configured with a hostname.	Files can't be downloaded to the device.	Medium	All	n/a
SBC-39265	The device doesn't recognize the USB after removing it and then re-inserting it.	A device reset is required.	Low	Mediant 3100	n/a
SBC-39112	In some configuration tables (e.g., SIP Interfaces or IP Profiles), the name of the row entity can't be "Any".	Configuration entities can't be named "Any".	Low	All	n/a
SBC-40511	For WebRTC-to-WebRTC calls (using G.711 forwarding with RTP header extension), some noise is experienced at the beginning of the call.	WebRTC-to-WebRTC calls voice issues	Medium	Mediant Software	n/a
SBC-41214	For Hitless Upgrade from Version 7.4.300 or later to a version earlier than 7.4.300, the Web interface's Software Upgrade Wizard displays only the "stage 1/3" window and not the next "2/3 and "3/3" stage windows (even though the upgrade succeeds).	Web display issue.	Low	HA	n/a

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-41265	If the device is upgraded to Version 7.4.300 and the IP Interfaces table had a row whose DNS was not configured (empty; not even 0.0.0.0), the device deletes all the rows in the IP Interfaces table.	Connectivity to the device may be lost (if the OAMP network interface is deleted)	High	All	n/a

2.3.13 Version 7.40A.260.313

This version includes resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**
 Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).

**Note:**

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.0.3180 or later, and 8.2.280 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to Version 8.0.3137 or later, prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to Version 8.0.3137 or later, prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.3.2 or later. It's recommended to use Version 2.5.8 or later.

2.3.13.1 Resolved Constraints

This section lists resolved constraints.

Table 2-17: Resolved Constraints in Version 7.40A.260.313

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-43148	The SBC uses the incorrect Media Realm (associated with incorrect IP Interface index) on a single IP Voice-AI call (no background tone) where Media Realm on SIP side uses an IP Interface X and Voice.AI Connector table is configured with IP Interface Y.	No voice	Medium	All	AWS
SBC-43672	The device's soft-DSP causes transcoding calls to have corrupted voice on WebRTC-to-VoiceAI Connect calls.	Corrupted voice.	Medium	All	n/a
SBC-44519	For the sound moods feature, background music is played only for a few seconds.	Play of background music feature doesn't fully function	Medium	All	n/a

2.3.14 Version 7.40A.260.152

This version includes new features and resolved constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.0.3180 or later, and 8.2.280 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to Version 8.0.3137 or later, prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to Version 8.0.3137 or later, prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.3.2 or later. It's recommended to use Version 2.5.8 or later.

2.3.14.1 New Features

This section describes the new features introduced in this version.

2.3.14.1.1 Increase in Maximum DNS-resolved IP Addresses for All Proxy Sets

The maximum number of supported DNS-resolved IP addresses for all Proxy Sets (combined) has been increased. For updated values, see the [Proxy Sets table](#) capacity in Section 'Configuration Table Capacity'.

Applicable Application: All.

Applicable Products: All.

2.3.14.1.2 Capacity Increase for IP Profiles and Accounts Tables

The maximum number of rows that can be configured in the IP Profiles table and the Accounts table has been increased to 5,000.

Note: This capacity is applicable only when the device's License Key includes the VoiceAI Connect feature key.

Applicable Application: All.

Applicable Products: Mediant 9000; Mediant Software (64 GB).

2.3.14.1.3 Destination IP Group in Call Setup Rules

Destination IP Groups can now be included in Call Setup Rules. This is only supported when the CSR is assigned to an IP-to-IP Routing rule (in the IP-to-IP Routing table).

Up until now, it was only possible to access information from the source IP Group. Now, it's also possible to access information from the determined destination IP Group. For example, a CSR can be used to set a specific SIP header to the value of a destination IP Group's tag value.

This can be configured using the syntax *param.ipg.dst* in the 'Action Value' or 'Condition' fields of the Call Setup Rules table.

Applicable Application: All.

Applicable Products: All.

2.3.14.1.4 SDR Generation upon Call Connect for REST

The device can now generate Session Detail Reports (SDRs) upon call connect when sending SDRs to a REST server (over REST API). These SDRs are referred to as *START* SDRs and are generated as the call is connected.

To support this feature, the following new optional values have been added to the existing parameter 'REST SDR Record Type':

- **ATTEMPT, START and STOP**
- **ATTEMPT, START INTERMEDIATE and STOP**

Applicable Application: SBC.

Applicable Products: Mediant 9000; Mediant Software.

2.3.14.1.5 New SDR Fields Indicating Device or Call Party Released Call

SDRs can now be customized to include two new optional fields—'Ingress Released From IP' and 'Egress Released From IP'. These fields indicate if the call was terminated by the

device (i.e., internal reason, for example, “registered user not found”) or by one of the call parties.

Applicable Application: SBC.

Applicable Products: Mediant 9000; Mediant Software.

2.3.14.2 Resolved Constraints

This section lists resolved constraints.

Table 2-18: Resolved Constraints in Version 7.40A.260.152

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-40121	After performing a specific network configuration change, Mediant CE may lose network connectivity.	After removing a secondary IP address from a network interface, Mediant CE deployed in AWS loses a network configuration entry and needs to be manually reconfigured.	Medium	Mediant CE	AWS

2.3.15 Version 7.40A.260.007

This version includes new features and known constraints only.



IMPORTANT NOTICE for MEDIANT 90xx/VE/CE/SE SBCs

Starting with Version 7.40A.250.001, .cmp files are digitally signed. Prior to upgrading the device, please refer to the upgrade prerequisites and instructions in the document [Mediant SW-90xx SBC Signed-CMP Upgrade Procedure Configuration Note](#).



Note: Upgrading from Version 7.2 to a 7.4 version for all devices (hardware and software based):

- Upgrade to Version 7.4 can only be done from the following 7.2 versions:
 - ✓ 7.20A.260.*
 - ✓ 7.20A.259.*
 - ✓ 7.20A.258.*
 - ✓ 7.20A.256.*
 - ✓ 7.20A.204.878
 - ✓ 7.20A.204.549

Therefore, prior to upgrading to Version 7.4, make sure that the device is running one of these 7.2 versions.

- **Mediant 90xx and Mediant VE/CE/SE SBCs:**

Upgrade from Version 7.2 requires the use of a software image or an ISO file. For upgrade instructions, refer to the document [Mediant SW and 90xx SBC Upgrade Procedure from 7.2 to 7.4 Configuration Note](#).



Note:

- **Using this SBC version with AudioCodes One Voice Operations Center (OVOC):**

- ✓ This version is compatible only with OVOC Version 8.0.3137 or later.
- ✓ If you plan on using OVOC with this SBC version, first upgrade your OVOC to the compatible OVOC version (above) prior to upgrading your device to this SBC version.

- **Using this SBC version with a centralized license pool:**

Customers using OVOC to manage their centralized license pool (Fixed, Floating, or Flex pool) must first upgrade their OVOC to the compatible OVOC version (above) prior to upgrading the devices in the pool to this SBC version. Failure in doing so removes the 7.4 devices from the centralized license pool.

When using the Floating or Flex license pool for WebRTC and SIPREC sessions, OVOC version 8.0.3000 or later is required.



Note: This SBC version is compatible with Stack Manager Version 2.3.2 or later. It's recommended to use Version 2.5.8 or later.

2.3.15.1 New Features

This section describes the new features introduced in this version.

2.3.15.1.1 Dedicated TCP Connection per User in SBC User Information Table

The device can now be configured to use a dedicated TCP/TLS connection per user listed in the SBC User Information table, with a SIP registrar server (Proxy Set). The dedicated connection is established when the device initially registers (SIP REGISTER) the user with the server. All SIP dialogs (e.g., INVITE) originating from the user are sent to the server over this dedicated connection.

Typically, this feature is not required. It should **only** be used if the registrar server (or firewall) blocks the connection upon SIP authentication failures / SIP transaction failures, wrongly assuming, for example, it's a DOS attack (i.e., receives many SIP messages from the same address).

This feature is enabled by the new IP Groups table parameter 'Dedicated Connection Mode'.

Note: When this feature is enabled, the maximum number of supported TLS connections is limited (see Configuration Table Capacity).

Applicable Application: SBC.

Applicable Products: All.

2.3.15.1.2 Local UDP Port Spacing of 2 for Media Channels

The device can now allocate its local UDP ports for RTP/T.38 (use same ports) and RTCP traffic per media channel (leg) in increments (spacing) of 2.

For example, if the UDP port range starts at 6000 and the port spacing is 2, the available ports are 6000 (port 6000 for RTP/T.38 and port 6001 for RTCP), 6002 (port 6002 for RTP/T.38 and port 6003 for RTCP), 6004 (port 6004 for RTP/T.38 and port 6005 for RTCP), and so on.

This feature is supported by configuring the existing [UdpPortSpacing] ini file parameter to the new optional value of "2".

Note: For UDP port spacing of 2, you must configure the device to use the same port for RTP and T.38, by configuring the ini file parameter [T38UseRTPPort] to 1.

Applicable Application: All.

Applicable Products: Mediant 500; Mediant 500L; Mediant 800; Mediant 3100; Mediant 2600; Mediant 4000; Mediant 90xx; Mediant Software.

2.3.15.1.3 Improved Configuration for AWS and Azure Environments

This enhancement is applicable for Mediant VE and CE SBCs that are deployed in AWS and Azure public cloud environments.

Cloud Manager task for the AWS environment has been available since Version 7.2. However, it has been completely redesigned in this 7.40A.260 version. The new implementation is more robust, fully compatible with IMDSv2, provides improved handling for intermittent failures of AWS EC2 and metadata APIs, and generates clear alarms in case of any problem.

Cloud Manager task support for Azure environments has been added to Version 7.40A.260.

Cloud Manager task is responsible for updating SBC network configuration tables -- IP Interfaces table (InterfaceTable) and Ethernet Devices (DeviceTable) -- with network parameters of the specific virtual machine provisioned by the public cloud. For example, if you attach a new network interface to the virtual machine or add an additional secondary IP address to the existing network interface, Cloud Manager task discovers these changes and updates the InterfaceTable accordingly.

Cloud Manager task utilizes instance metadata service (available at <http://169.254.169.254>) to read current virtual machine configuration. It runs periodically and may take up to a minute to discover and apply the changes.

In an AWS environment, the SBC's network configuration tables are read-only and can only be provisioned by Cloud Manager task.

In an Azure environment, the SBC's network configuration tables are read-write and therefore, it's possible to configure and apply some changes manually, for example, DNS servers. However, most parameters in the InterfaceTable are configured by Cloud Manager task ('Name', 'Mode', 'IP Address', 'Prefix Length' and 'Gateway') and therefore, should NOT be configured manually.

Cloud Manager logs can be obtained using the following CLI commands:

- `tail cloud-manager-log <num of lines>`
- `show cloud-manager-log`

The logs are also included in the Debug file, which can be downloaded through the Web interface (Troubleshooting > Debug > Debug Files).

Applicable Application: SBC.

Applicable Products: Mediant CE/VE.

2.3.15.1.4 Improved Traffic Flow using Custom EC2 Endpoint for Mediant VE and CE AWS Environments

High-Availability (HA) deployments of Mediant VE and CE SBCs in AWS environments use AWS EC2 API to implement IP failover. Prior to Version 7.40A.260, the SBC software automatically generated the AWS EC2 API endpoint based on the region in which it was deployed (e.g., `ec2.eu-central-1.amazonaws.com`). However, if two SBC instances were deployed in separate availability zones within the same region, the same AWS EC2 API endpoint was used for both availability zones. This resulted in all traffic towards AWS EC2 API endpoint to flow through the first availability zone, even for virtual machines deployed in the second availability zone.

Version 7.40A.260 introduces a new configuration parameter that can be used to configure a custom EC2 API Endpoint FQDN and/or IP address:

- Ini file: `AwsEc2Endpoint`
- CLI: `configure network > network-settings > aws-ec2-endpoint`

The parameter may contain one of the following values:

- Empty (default): The SBC CE automatically generates AWS EC2 API endpoint based on the region in which it is deployed (e.g., `ec2.eu-central-1.amazonaws.com`)
- Custom EC2 API endpoint FQDN (e.g., `vpce-0123456789.ec2.eu-central-1.vpce.amazonaws.com`)
- Custom EC2 API endpoint FQDN followed by its IP address (e.g., `ec2.eu-central-1.amazonaws.com:10.1.2.3`)

Applicable Application: SBC.

Applicable Products: Mediant CE/VE.

2.3.15.1.5 Weak Password Detection

The device can now be configured to detect and alert if a user in the Local Users table has been configured with a weak password.

A password is considered weak if it is listed in the new Weak Passwords List table (Setup > Administration > Web & CLI > Weak Passwords List). This table can be configured with up to 150 weak passwords and provides 6 passwords by default.

This feature is enabled by the new 'Check Weak Passwords' parameter.

If the device detects a weak password, it raises the new SNMP alarm `acWeakPasswordAlarm` (OID `1.3.6.1.4.1.5003.9.10.1.21.2.0.156`).

Applicable Application: All.

Applicable Products: All.

2.3.15.1.6 SBC User Information Capacity Increase

The maximum number of supported far-end users that can be registered with the device has been increased from 20,000 to 50,000. Users are configured in the existing SBC User Information table.

Applicable Application: SBC.

Applicable Products: Mediant Software (16-64 GB); Mediant 90xx.

2.3.15.1.7 Hitless License Upgrade for WebRTC and SIPREC

The Hitless License Key Upgrade feature for devices in High-Availability (HA) mode now also supports WebRTC and SIPREC licenses. Up until now, hitless license upgrade was only supported for far-end users (FEU), SBC sessions, transcoding sessions, and SBC signaling licenses.

Applicable Application: All.

Applicable Products: Mediant 500 HA; Mediant 800 HA; Mediant 2600 HA; Mediant 4000 HA; Mediant 90xx HA; Mediant Software HA.

2.3.15.1.8 Call Duration Limit when using Device Free Trial Evaluation

Starting from this version, the free trial of the device offered by AudioCodes for evaluation purposes (without installing a License Key), not only restricts the device to three concurrent calls, but now also limits each call to three minutes.

Note: Devices connected to licensing models (e.g., Floating License) are not affected by this feature.

Applicable Application: SBC.

Applicable Products: Mediant Software.

2.3.15.1.9 Removal of CSRC Identifiers from RTP Packets

The device can now remove CSRC identifiers from RTP packets without using transcoding capabilities. Removing CSRC may be useful in some scenarios where, for example, the call is sent to a third-party application such as voicemail and the presence of CSRC causes a reduction in voice quality.

This feature is supported by the new IP Profiles table parameter 'Remove CSRC' (removes CSRC from packets sent to the SIP User Agent associated with the IP Profile).

Applicable Application: SBC.

Applicable Products: All.

2.3.15.1.10 Alarm Customization Based on Alarm Source Entity

The existing Alarms Customization table (Setup menu > Administration tab > SNMP folder > Alarm Customization) can now customize alarms based on the specific entity (e.g., IP Group 3, Ethernet port 1, Trunk 5) for which the alarm was raised. The entity appears in the alarm source after the hash (#) sign -- for example, Board#1/IPGroup#2, indicating that the alarm was raised for IP Group index 2. This feature may be useful, for example, to suppress specific alarms raised by a specific IP Group.

To support this feature, the new field 'Entity ID' has been added to the Alarms Customization table.

Applicable Application: All.

Applicable Products: All.

2.3.15.1.11 New CDR Field Indicating if Call Terminated by Device

The device supports a new CDR field called 'Released From IP' (IsReleasedFromIP), which indicates if the call was terminated by the device (i.e., because of an internal reason, for example, register user not found), or by the callee / called parties. The field is not included by default in the CDR, but it can be included by customizing the CDR using the SBC CDR Format table.

Applicable Application: SBC.

Applicable Products: All.

2.3.15.1.12 New SDR Field for Call Type

A new SDR field has been added called 'Call Type', which indicates the type of call (e.g., SIP-WebRTC call or SIP-bot call).

Applicable Application: SBC.

Applicable Products: Mediant Software; Mediant 90xx.

2.3.15.1.13 Tail CLI Command for Displaying Last Lines in Show Output

The CLI output of various log commands can now be configured to show the last lines (tail end) of the log output, using the new `tail` command. In addition, the number of lines to show can optionally be specified (if not, the last 100 lines are shown). This is especially useful for long outputs where the user needs to scroll all the way down to view the last lines.

The `tail` command can be used with the following commands:

- `tail cloud-init-log [<lines>]`: Shows cloud-init logs (Mediant Software SBC only)
- `tail aws-manager-log [<lines>]`: Shows aws-manager logs (Mediant Software SBC on AWS only)
- `tail system log [<lines>]`: Shows system logs
- `tail system log no-sip [<lines>]`: Shows system logs without SIP messages
- `tail system log persistent [<lines>]`: Shows persistent system logs

The `tail` command is available in privilege mode only (i.e., `> enable`).

Applicable Application: All.

Applicable Products: All.

2.3.15.1.14 SBC Configuration Wizard Templates for Orange and Alcatel-Lucent

The SBC Wizard provides new interoperability templates for Orange (OBS Business Talk & BTIP) and Alcatel-Lucent.

Applicable Application: SBC.

Applicable Products: All.

2.3.15.1.15 Mediant 3100 Power Type Status on Web Monitor Page Update

On the Web interface's Monitor page, the 'Power Type' read-only field for the Power Supply module now displays "N/A" if no module is installed, or if a new module is installed but not yet connected to power (DC or AC).

Applicable Application: All.

Applicable Products: Mediant 3100.

2.3.15.1.16 Update to Proxy Hot Swap Mode

For the existing Proxy Sets table parameter 'Proxy Hot Swap Mode' (ProxySet_IsProxyHotSwap), the textual description of value "0" was changed from **Disable** to **Enable Only Before Alternative Routing**, which now more accurately describes the device's behavior. Customers who want the hot-swap mode fully disabled, should choose the new value **Disable** (2).

Applicable Application: All.

Applicable Products: All.

2.3.15.1.17 Gateway-Type IP Group Status Updated

The read-only fields 'GW Group Registered IP Address' and 'GW Group Registered Status' in the IP Groups table now display "NA" when the IP Group is a **User**-type or **Server**-type. These fields are applicable only to Gateway-type IP Groups.

Applicable Application: All.

Applicable Products: All.

2.3.15.2 Known Constraints

This section lists known constraints.

Table 2-19: Known Constraints in Version 7.40A.260.007

Incident	Description	Impact	Severity	Affected Products	Affected Environments
SBC-42301	Configuring a name ('Name' field) in the Ethernet Devices table and IP Interfaces table instead of using the default name causes a networking issue (and device freezes upon restarts).	Loss of device's network information on Azure	Major	Mediant VE / CE	Azure

3 Session Capacity

This section provides capacity for the Gateway and SBC products.

3.1 SIP Signaling and Media Capacity

The following table lists the maximum, concurrent SIP signaling sessions, concurrent media sessions, and registered users per product.

Table 3-1: SIP Signaling and Media Capacity per Product

Product		Signaling Capacity		Media Sessions			
		SIP Sessions	Registered Users	Session Type	RTP	SRTP	Detailed Media Capabilities
Mediant 500		250	1,500	Hybrid	250	200	Transcoding: n/a GW: Table 3-4
				GW-Only	30	30	
Mediant 500L		60	200	Hybrid	60	60	Transcoding: n/a GW: Table 3-6
				GW-Only	8	8	
Mediant 800B		250	1,500	Hybrid	250	250	GW & Transcoding: Table 3-8 SBC Only: Table 3-7
				GW-Only	64	64	
Mediant 800C		400	2,000	Hybrid	400	250	GW & Transcoding: Table 3-10
				GW-Only	124	124	
Mediant 1000B		150	600	Hybrid	150	120	Transcoding: Table 3-14 GW: Tables Table 3-11, Table 3-12, Table 3-13
				GW-Only	192	140	
Mediant 3100		5,000	20,000	Hybrid	5,000	5,000	Transcoding: Table 3-16 GW: Table 3-15
		960	20,000	GW-Only	960	960	
MP-1288		588	350	Hybrid	588	438	Transcoding: n/a GW: Table 3-17
				SBC-Only	300	300	
				GW-Only	288	288	
Mediant 2600		600	8,000	SBC-Only	600	600	Transcoding: Table 3-18
Mediant 4000		5,000	20,000	SBC-Only	5,000	3,000	Transcoding: Table 3-19
Mediant 4000B		5,000	20,000	SBC-Only	5,000	5,000	Transcoding: Table 3-21
Mediant 9000	SIP Performance Profile (HT Enabled)	30,000	300,000	SBC-Only	30,000	16,000	Transcoding: n/a
		55,000	0	SBC-Only	55,000	18,000	Transcoding: n/a
	DSP Performance Profile (HT Enabled)	50,000	0	SBC-Only	50,000	18,000	Transcoding: Table 3-23
	SRTP Performance Profile (HT Enabled)	50,000	0	SBC-Only	50,000	40,000	Transcoding: n/a
Mediant 9000 Rev. B	SIP Performance Profile	50,000	500,000	SBC-Only	50,000	30,000	Transcoding: n/a
		70,000	0	SBC-Only	70,000	30,000	Transcoding: n/a
	DSP Performance Profile	50,000	0	SBC-Only	50,000	28,000	Transcoding: Table 3-25
	SRTP Performance Profile	70,000	0	SBC-Only	70,000	40,000	Transcoding: n/a

Product		Signaling Capacity		Media Sessions				
		SIP Sessions	Registered Users	Session Type	RTP	SRTP	Detailed Media Capabilities	
Mediant 9030	SIP Performance Profile	30,000	200,000	SBC-Only	30,000	30,000	Transcoding: n/a	
	DSP Performance Profile	30,000	200,000	SBC-Only	30,000	15,000	Transcoding: Table 3-28	
Mediant 9080	SIP Performance Profile	50,000	500,000	SBC-Only	50,000	30,000	Transcoding: n/a	
		70,000	0	SBC-Only	70,000	30,000	Transcoding: n/a	
	DSP Performance Profile	50,000	0	SBC-Only	50,000	28,000	Transcoding: Table 3-25	
	SRTP Performance Profile	70,000	0	SBC-Only	70,000	40,000	Transcoding: n/a	
Mediant 9000 with Media Transcoders (MT-type)		24,000	180,000	SBC-Only	24,000	16,000	Transcoding: Table 3-27	
Mediant 9000 Rev. B with Media Transcoders (MT-type)		60,000	200,000	SBC-Only	60,000	40,000	Transcoding: Table 3-27	
Mediant 9080 with Media Transcoders (MT-type)		60,000	200,000	SBC-Only	60,000	40,000	Transcoding: Table 3-27	
Mediant CE	AWS / EC2	50,000	100,000	SBC-Only	50,000	50,000	Forwarding: Table 3-30 Transcoding: Table 3-31	
	Azure	50,000	100,000	SBC-Only	50,000	50,000	Forwarding: Table 3-32 Transcoding: Table 3-33	
	VMware	12,000	100,000	SBC-Only	12,000	12,000	Forwarding: Table 3-34 Transcoding: Table 3-35	
	GCP	50,000	100,000	SBC-Only	50,000	40,000	Forwarding: Table 3-36 Transcoding: Table 3-38	
Mediant VE	VMware	1 vCPU 2-GB RAM (HT)	250	1,000	SBC-Only	250	250	Transcoding: n/a
		1 vCPU 8-GB RAM (HT)	4000	15,000	SBC-Only	4,000	2,600	Transcoding: n/a
		4 vCPU 16-GB RAM (HT)	10,000	75,000	SBC-Only	10,000	8,000	Transcoding: n/a
		2 vCPUs 8-GB RAM (HT)	4,000	15,000	SBC-Only	2,200	1,900	Transcoding: Table 3-39
		4 vCPU 8-GB RAM (HT)	4,000	15,000	SBC-Only	1,800	1,600	Transcoding: Table 3-39
		8 vCPU 16-GB RAM (HT)	9,000	75,000	SBC-Only	6,000	5,000	Transcoding: Table 3-39
	KVM / OpenStack	1 vCPU 2-GB RAM (HT)	250	1,000	SBC-Only	250	250	Transcoding: n/a
		1 vCPU 8-GB RAM (HT)	2,500	15,000	SBC-Only	2,500	1,700	Transcoding: n/a
		4 vCPU 16-GB RAM (HT)	4,500	75,000	SBC-Only	4,500	3,500	Transcoding: n/a
		2 vCPUs 8-GB RAM (HT)	1,900	15,000	SBC-Only	1,900	1,400	Transcoding: Table 3-39
		8 vCPU 16-GB RAM (HT)	5,800	75,000	SBC-Only	5,800	4,800	Transcoding: Table 3-39
		16 vCPU 16-GB RAM (HT)	3,800	75,000	SBC-Only	3,800	2,800	Transcoding: Table 3-39

Product			Signaling Capacity		Media Sessions			
			SIP Sessions	Registered Users	Session Type	RTP	SRTP	Detailed Media Capabilities
		8 vCPU 32-GB RAM SR-IOV Intel NICs (non-HT)	24,000	75,000	SBC-Only	24,000	10,000	Transcoding: n/a
		Hyper-V	1 vCPU 2-GB RAM (HT)	250	1,000	SBC-Only	250	250
	1 vCPU 8-GB RAM (HT)		1,500	15,000	SBC-Only	1,500	1,200	Transcoding: n/a
	4 vCPU 8-GB RAM (HT)		2,500	15,000	SBC-Only	2,500	2,300	Transcoding: n/a
	2 vCPUs 8-GB RAM (HT)		1,900	15,000	SBC-Only	1,900	1,400	Transcoding: Table 3-39
	8 vCPU 16-GB RAM (HT)		2,500	75,000	SBC-Only	2,500	2,300	Transcoding: Table 3-39
	AWS / EC2	m5n.large	3,200	30,000	SBC-Only	3,200	3,200	Transcoding: n/a
			2,500	20,000	SBC-Only	2,500	1,500	Transcoding: Table 3-40
		c5n.2xlarge	5,500	75,000	SBC-Only	5,500	5,000	Transcoding: n/a
			4,500	75,000	SBC-Only	4,500	2,400	Transcoding: Table 3-41
		c5n.9xlarge	7,000	75,000	SBC-Only	7,000	6,000	Transcoding: n/a
	7,000		75,000	SBC-Only	7,000	4,500	Transcoding: Table 3-42	
	Azure	DS1_v2	600	1,000	SBC-Only	600	500	Transcoding: n/a
			300	1,000	SBC-Only	300	300	Transcoding: Table 3-44
		D2ds_v5	3,200	15,000	SBC-Only	3,200	2,700	Transcoding: n/a
			2,500	15,000	SBC-Only	2,500	1,600	Transcoding: Table 3-44
		D4ds_v5	7,000	50,000	SBC-Only	7,000	6,000	Transcoding: n/a
			4,800	50,000	SBC-Only	4,800	3,200	Transcoding: Table 3-44
	D8ds_v5	12,000	75,000	SBC-Only	12,000	9,000	Transcoding: n/a	
		4,600	75,000	SBC-Only	4,600	3,000	Transcoding: Table 3-44	
	GCP	n2-standard-2	3,500	15,000	SBC-Only	3,500	2,400	Transcoding: n/a
			1,500	15,000	SBC-Only	1,500	1,100	Transcoding: Table 3-45
		n2-standard-4	4,000	75,000	SBC-Only	4,000	3,000	Transcoding: n/a
			2,400	75,000	SBC-Only	2,400	1,800	Transcoding: Table 3-45
		n2-standard-8	2,400	75,000	SBC-Only	2,400	1,800	Transcoding: Table 3-45
	n2-highcpu-32	3,600	75,000	SBC-Only	3,600	3,400	Transcoding: Table 3-45	
	Mediant SE	DL360p Gen8 or DL360 Gen9	24,000	120,000	SBC-Only	16,000	14,000	Transcoding: n/a
24,000			0	SBC-Only	24,000	14,000	Transcoding: n/a	
DL360 Gen10		SIP Performance Profile	50,000	500,000	SBC-Only	50,000	30,000	Transcoding: n/a
			70,000	0	SBC-Only	70,000	30,000	Transcoding: n/a
		DSP Performance Profile	50,000	0	SBC-Only	50,000	28,000	Transcoding: Table 3-46
SRTP Performance Profile	70,000	0	SBC-Only	70,000	40,000	Transcoding: n/a		



Note:

- The listed capacities are accurate at the time of publication of this document. However, they may change due to a later software update. For the latest capacities, please contact your AudioCodes sales representative.
- **GW** refers to Gateway functionality.
- **SIP Sessions** refers to the maximum concurrent signaling sessions for both SBC and Gateway (when applicable). Whenever signaling sessions is greater than the maximum media sessions, the remaining signaling sessions can be used for Direct Media.
- **Session Type** refers to Gateway-only sessions, SBC-only sessions, or Hybrid sessions which is any mixture of SBC and Gateway sessions under the limitations of Gateway-only or SBC-only maximum values.
- **RTP Sessions** refers to the maximum concurrent RTP sessions when all sessions are RTP-RTP (SBC sessions) or TDM-RTP (Gateway sessions).
- **SRTP Sessions** refers to the maximum concurrent SRTP sessions when all sessions are RTP-SRTP (for SBC sessions) or TDM-SRTP (for Gateway sessions).
- **Registered Users** refers to the maximum number of users that can be registered with the device. This applies to the supported application (SBC or CRP).
- Regarding signaling, media, and transcoding session resources:
 - ✓ A signaling session is a SIP dialog session between two SIP entities, traversing the device and using one signaling session resource.
 - ✓ A media session is an audio (RTP or SRTP), fax (T.38), or video session between two SIP entities, traversing the device and using one media session resource.
 - ✓ A gateway session (TDM-RTP or TDM-SRTP) is considered as a media session for the calculation of media sessions. In other words, the maximum media sessions shown in the table refer to the sum of Gateway and SBC sessions.
 - ✓ For direct media (i.e., anti-tromboning or non-media anchoring) where only SIP signaling traverses the device and media flows directly between the SIP entities, only a signaling session resource is used. Thus, for products with a greater signaling session capacity than media, even when media session resources have been exhausted, additional signaling sessions can still be handled for direct-media calls.
 - ✓ For call sessions requiring transcoding, one transcoding session resource is also used. For example, for a non-direct media call in which one leg uses G.711 and the other G.729, one signaling, one media, and one transcoding session resources are used.
- Cloud Resilience Package (CRP) application capacity appears under **Registered Users**.
- Lync Analog Device (LAD) application capacity appears under **Media Sessions**.



Note for MP-1288:

- The maximum number of media and signaling sessions is the sum of the maximum 300 RTP-to-RTP (SBC) sessions and the maximum 288 TDM-RTP (Gateway) sessions.
- The maximum number of SRTP sessions is the sum of the maximum 150 RTP-to-SRTP (SBC) sessions and the maximum 288 TDM-SRTP (Gateway) sessions.

**Note for Mediant 90xx SBC:**

- Mediant 90xx SBC with Media Transcoders limitations:
 - ✓ To allow DSP capabilities (such as transcoding), the 'Performance Profile' parameter must be configured to the DSP profile. Each transcoding session is weighted as two RTP-RTP sessions without transcoding. Therefore, the number of sessions without transcoding plus the doubled number of sessions with transcoding must be less than the maximum RTP-RTP figure specified in the table. As a result, if all sessions involve transcoding, the maximum number of sessions is half the maximum RTP-RTP sessions without transcoding specified in the table.
 - ✓ The maximum number of SRTP-RTP sessions is also affected by the above limitations. For example, if sessions involve transcoding, the maximum number of SRTP-RTP sessions is also limited by half of the maximum SRTP-RTP sessions without transcoding.
- The Media Transcoding Cluster (MTC) feature is supported only on Mediant 9080 SBC.

**Note for Mediant VE SBC:**

- **Mediant VE SBC on VMware:** Capacity was measured with ESXi Version 7.0.3 and a host of CPU Xeon 6226R with Hyper-Threading enabled. For example, a 4-vCPU virtual machine allocates only 2 physical cores. For minimum requirements, see Section 3.3.15.1 on page 134.
- **Mediant VE SBC on KVM:** Capacity for virtual machine instance with SR-IOV was done with Intel 82599 NIC.
- **Mediant VE SBC on Azure:** Capacity for virtual machine instances D2ds_v5, D4ds_v5, D8ds_v5 is with Accelerated Networking enabled. When operating in HA mode, it's not recommended to exceed 5,000 sessions because of the duration required for processing a failover.
- **Mediant VE SBC on AWS:**
 - ✓ Network performance on AWS cloud is subject to network conditions, which may depend on time and region.
 - ✓ Capacity shown in the table are based on lowest capacities found during performance testing.
 - ✓ It's recommended to use the m5n and c5n instance types as they provide more stable network characteristics. However, the m5 and c5 instance types are still supported.

Note for Mediant CE SBC:

Mediant CE SBC is based on the following instances:



- **AWS:**
 - ✓ Signaling Components (SC): m5.2xlarge
 - ✓ Media Components (MC) - forwarding only: m5n.large
 - ✓ MC - forwarding and transcoding: c5.4xlarge
- **Azure:**
 - ✓ SC: DS3_v2 (up to 10,000 sessions and 50,000 users) or D8ds_v5 (up to 50,000 sessions and 100,000 users)
 - ✓ MC - forwarding only: D2ds_v5, D4ds_v5, and D8ds_v5
 - ✓ MC - forwarding and transcoding: D2ds_v5, D4ds_v5, and D8ds_v5

It's not recommended to exceed 5,000 sessions per MC because of the duration required for processing an MC failover.
- **VMware:**
 - ✓ SC: 8 vCPU (Hyper-Threading), 16-GB RAM
 - ✓ MC - forwarding only: 2 vCPU (Hyper-Threading), 8-GB RAM
 - ✓ MC - forwarding and transcoding: 8 vCPU (Hyper-Threading), 8-GB RAM
- **GCP:**
 - ✓ SC: n2-standard-8 (8 vCPU, 32-GB RAM)
 - ✓ MC - forwarding only: n2-standard-2 (2 vCPU, 8-GB RAM)
 - ✓ MC - forwarding and transcoding: n2-standard-2 (2 vCPU, 8-GB RAM), n2_highcpu-8 (8 vCPU, 8-GB RAM)



Note for Mediant SE SBC: For new deployments, it's highly recommended to use the DL360 G10 server. For exact specifications and BIOS settings, please contact your AudioCodes sales representative.

3.2 Capacity per Feature

The table below lists maximum capacity per feature.

Table 3-2: Maximum Capacity per Feature

Product	Concurrent WebRTC Sessions		One-Voice Resiliency (OVR) Users	Concurrent SIPREC Sessions	Concurrent TLS Connections	Concurrent MSRP Sessions
	Click-to-Call	Registered Agents				
MP-1288	-	-	-	150	350	100
Mediant 500	-	-	-	125	300	100
Mediant 500L	-	-	-	30	100	100
Mediant 800B	100	100	100	200	300	100
Mediant 800C	100	100	150	200	450	100
Mediant 1000B	-	-	50	-	300	100
Mediant 3100	1,000	1,000	-	2,500	6,000	100
Mediant 2600	600	600	-	300	2,500	100
Mediant 4000/B	1,000	1,000	-	2,500	2,500	100
Mediant 9000	5,000	16,000	-	<ul style="list-style-type: none"> ▪ Hyper-Threading: 20,000 ▪ No Hyper-Threading: 12,000 	25,000	100
Mediant 9030	5,000	16,000	-	15,000	16,000	100
Mediant 9080	8,000	25,000	-	20,000	25,000	100
Mediant SE (see note #1)	5,000	25,000	-	12,000	25,000	100
Mediant VE (see note #2)	5,000	5,000	2,000	12,000	<ul style="list-style-type: none"> ▪ 2 GB: 100 ▪ 3 GB: 500 ▪ 4 GB: 5,000 ▪ 8-16 GB: 6,000 ▪ 32 GB: 16,000 ▪ 64 GB: 25,000 	100
Mediant CE (see note #2)	5,000	<ul style="list-style-type: none"> ▪ SC with 8 vCPUs: 16,000 ▪ SC with 4 vCPUs: 5,000 	-	20,000	<ul style="list-style-type: none"> ▪ 2 GB: 100 ▪ 3 GB: 500 ▪ 4 GB: 5,000 ▪ 8-16 GB: 6,000 ▪ 32 GB: 16,000 ▪ 64 GB: 25,000 	100



Note:

- WebRTC sessions:
 - ✓ The maximum number of concurrent WebRTC sessions can't be more than the maximum number of concurrent SRTP sessions (specified in Table 3-1). Therefore, the actual maximum number of concurrent WebRTC sessions per deployment environment is less than the numbers shown in the table below.
 - ✓ The maximum number of concurrent WebRTC sessions can't be greater than the maximum number of concurrent TLS connections.
- Capacity assumes that a TLS key size of 2048-bit is used for WebSocket and DTLS negotiations.
- SIPREC capacity assumes that there are no other concurrent, regular (non-SIPREC) voice sessions. SIPREC sessions are counted as part of the SBC session capacity. The maximum number of SIPREC sessions can't be more than the number of RTP sessions, as indicated in Table 3-1. Therefore, the actual maximum number of SIPREC sessions per deployment environment is less than the numbers shown in the table below.
- For TLS capacity, each registered user is assigned a TLS connection even if there are no ongoing SIP dialogs or transactions using the same connection.
- Capacity is when using the approved Mediant SE server specifications with an Intel Xeon Gold 6126 processor. For specifications, please contact AudioCodes.

3.3 Detailed Capacity

This section provides detailed capacity figures.

3.3.1 Mediant 500 E-SBC

The SBC session capacity and DSP channel capacity for Mediant 500 E-SBC are shown in the tables below.

3.3.1.1 Non-Hybrid (SBC) Capacity

Table 3-3: Mediant 500 E-SBC (Non-Hybrid) - SBC Capacity

Hardware Configuration	TDM-RTP Sessions				Max. SBC Sessions (RTP-RTP)
	DSP Channels Allocated for PSTN	Wideband Coders			
		G.722	AMR-WB (G.722.2)	SILK-WB	
SBC	n/a	n/a	n/a	n/a	250

3.3.1.2 Hybrid (with Gateway) Capacity

Table 3-4: Mediant 500 Hybrid E-SBC (with Gateway) - Media & SBC Capacity

Hardware Configuration	TDM-RTP Sessions				Max. SBC Sessions (RTP-RTP)
	DSP Channels Allocated for PSTN	Wideband Coders			
		G.722	AMR-WB (G.722.2)	SILK-WB	
1 x E1/T1	30 (full E1)	√	-	-	220
	24 (full T1)				226
	26 (partial E1)	√	√	-	224
	24 (full T1)	√	√	-	226
	26 (partial E1)	√	√	√	224
	24 (full T1)	√	√	√	226

3.3.2 Mediant 500L Gateway and E-SBC

The SBC session capacity and DSP channel capacity for Mediant 500L Gateway and E-SBC is shown in the tables below.

3.3.2.1 Non-Hybrid (SBC) Capacity

Table 3-5: Mediant 500L E-SBC (Non-Hybrid) - SBC Capacity

Hardware Configuration	TDM-RTP Sessions			Max. SBC Sessions (RTP-RTP)
	DSP Channels Allocated for PSTN	Wideband Coders		
		G.722	AMR-WB (G.722.2)	
SBC	n/a	n/a	n/a	60

3.3.2.2 Hybrid (with Gateway) Capacity

Table 3-6: Mediant 500L Hybrid E-SBC (with Gateway) - Media & SBC Capacity

Hardware Configuration	DSP Channels Allocated for PSTN	Additional Coders				Max. SBC Sessions
		Narrowband	Wideband			
		Opus-NB	G.722	AMR-WB (G.722.2)	Opus-WB	
2 x BRI / 4 x BRI	4/8	-	-	-	-	56/52
	4/8	-	√	-	-	56/52
	4/6	√	-	√	-	56/54
	4	-	-	-	√	56

3.3.3 Mediant 800 Gateway & E-SBC

This section describes capacity for Mediant 800 Gateway & E-SBC.

3.3.3.1 Mediant 800B Gateway & E-SBC

The DSP channel capacity and SBC session capacity for Mediant 800B Gateway & E-SBC are shown in the tables below.

3.3.3.1.1 Non-Hybrid (SBC) Capacity

Table 3-7: Mediant 800B Gateway & E-SBC - SBC Session Capacity per Capabilities (SBC Only)

HW Configuration	DSP Channels for PSTN	SBC Transcoding Sessions								Max. SBC Sessions
		From Profile 2 with Additional Advanced DSP Capabilities						To Profile 1	To Profile 2	
		Opus-NB	Opus-WB	AMR-NB / G.722	AMR-WB (G.722.2)	SILK-NB / iLBC	SILK-WB			
SBC	n/a	-	-	-	-	-	-	57	48	250
	n/a	-	-	√	-	-	-	51	42	250
	n/a	-	-	-	-	√	-	39	33	250
	n/a	-	-	-	√	-	-	36	30	250
	n/a	-	-	-	-	-	√	27	24	250
	n/a	√	-	-	-	-	-	27	24	250
	n/a	-	√	-	-	-	-	21	21	250



Note: "Max. SBC Sessions" applies to scenarios without registered users. When registered users are used, "Max. SBC Sessions" is reduced according to the main capacity table (see Section 3.1).

3.3.3.1.2 Hybrid (with Gateway) Capacity

Table 3-8: Mediant 800B Gateway & E-SBC - Channel Capacity per Capabilities (with Gateway)

Telephony Interface Assembly	DSP Channels Allocated for PSTN	SBC Transcoding Sessions									Conf. Participants	Max. SBC Sessions
		From Profile 2 with Additional Advanced DSP Capabilities							To Profile 1	To Profile 2		
		AMR-NB / G.722	AMR-WB (G.722.2)	SILK-NB	SILK-WB	Opus-NB	Opus-WB	V.150.1				
2 x E1/T1	60/48	-	-	-	-	-	-	-	3/15	2/13	-	190/202
2 x T1	48	-	-	-	-	-	-	√	11	9	-	202
1 x E1/T1 8 x FXS/FXO	38/32	-	-	-	-	-	-	-	22/28	18/22	-	212/218
	38/32	-	-	√	-	-	-	-	8/12	7/11	-	212/218
1 x E1/T1	30/24	-	-	√	-	-	-	√	14/18	12/16	-	220/226
1 x E1 4 x BRI	38	-	-	-	-	-	-	-	22	18	-	212
1 x E1 4 x FXS	34	-	-	-	-	-	-	-	26	21	-	216
2 x E1 4 x FXS	64	-	-	-	-	-	-	-	0	0	-	186
4 x BRI 4 x FXS 4 x FXO	16	-	-	-	-	-	-	-	5	4	-	234
8 x BRI 4 x FXS	20	-	-	-	-	-	-	-	1	1	-	230
8 x BRI	16	-	-	-	-	-	-	-	5	4	-	234
12 x FXS	12	-	-	√	-	-	-	√	3	3	-	238
4 x FXS 8 x FXO	12	-	-	√	-	-	-	-	3	3	-	238
8 x FXS 4 x FXO	12	-	-	√	-	-	-	-	3	3	-	238
4 x BRI 4 x FXS	12	-	-	√	-	-	-	-	3	3	-	238
4 x FXS 4 x FXO	8	-	-	-	-	-	-	-	7	5	6	242
	8	-	-	√	-	-	-	-	6	6	-	242
4 x BRI	8	-	-	-	-	-	-	-	7	5	6	242
	8	-	-	√	-	-	-	-	6	6	-	242
1/2/3 x BRI	2/4/6	-	-	-	-	-	-	-	17/15 /14	14/13 /11	-	248/246/ 244

Telephony Interface Assembly	DSP Channels Allocated for PSTN	SBC Transcoding Sessions									Conf. Participants	Max. SBC Sessions
		From Profile 2 with Additional Advanced DSP Capabilities							To Profile 1	To Profile 2		
		AMR-NB / G.722	AMR-WB (G.722.2)	SILK-NB	SILK-WB	Opus-NB	Opus-WB	V.150.1				
	2/4/6	-	-	√	-	-	-	-	11/10/8	10/8/7	-	248/246/244
4 x FXS or 4 x FXO	4	-	-	√	-	-	-	√	10	8	-	246
	4	√	-	-	-	-	-	-	12	10	4	246
	4	-	-	√	-	-	-	-	6	6	4	246
	4	-	√	√	-	-	-	-	4	4	4	246
	4	-	√	√	√	-	-	-	3	3	4	246
	4	-	-	-	-	√	-	-	1	0	4	246
	4	-	-	-	-	-	√	-	0	0	3	246
FXS, FXO, and/or BRI, but not in use	0	-	-	-	-	-	-	-	19	16	-	250

Notes:

- "Max. SBC Sessions" for Mediant 800B applies to scenarios without registered users. When registered users are used, "Max. SBC Sessions" is reduced according to the main capacity table (see Section 3.1).
- *Profile 1*: G.711 at 20ms only, with In-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2*: G.711, G.726, G.729 (A / AB), and G.723.1, T.38 with fax detection, In-band signaling (in voice channel), and Silence Compression.
- All hardware assemblies also support the following DSP channel capabilities: echo cancellation (EC), CID (caller ID), RTCP XR reporting, and SRTP.
- SBC enhancements (e.g., Acoustic Echo Suppressor, Noise Reduction) are also available for these configurations. For more information, please contact your AudioCodes sales representative.
- Automatic Gain Control (AGC) and Answer Detector / Answer Machine Detector (AD/AMD) are also available for these configurations. For more information, please contact your AudioCodes sales representative.
- V.150.1 is supported only for the US Department of Defense (DoD).
- *Transcoding Sessions* represents part of the total SBC sessions.
- *Conference Participants* represents the number of concurrent analog ports in a three-way conference call.
- For availability of the telephony assemblies listed in the table above, please contact your AudioCodes sales representative.



3.3.3.2 Mediant 800C Gateway & E-SBC

The DSP channel capacity and SBC session capacity for Mediant 800C Gateway & E-SBC are shown in the tables below.

3.3.3.2.1 Non-Hybrid (SBC) Capacity

Table 3-9: Mediant 800C Gateway & E-SBC - SBC Session Capacity per Capabilities (SBC Only)

H/W Configuration	SBC Transcoding Sessions								Max. SBC Sessions
	From Profile 2 with Additional Advanced DSP Capabilities						To Profile 1	To Profile 2	
	Opus-NB	Opus-WB	AMR-NB / G.722	AMR-WB (G.722.2)	SILK-NB / iLBC	SILK-WB			
SBC	-	-	-	-	-	-	120	96	400
	-	-	√	-	-	-	108	84	400
	-	-	-	-	√	-	78	66	400
	-	-	-	√	-	-	72	60	400
	-	-	-	-	-	√	54	48	400
	√	-	-	-	-	-	54	48	400
	-	√	-	-	-	-	42	42	400
	From Profile 1							156	120



Note: "Max. SBC Sessions" applies to scenarios without registered users. When registered users are used, "Max. SBC Sessions" is reduced according to the main capacity table (see Section 3.1).

3.3.3.2.2 Hybrid (with Gateway) Capacity

Table 3-10: Mediant 800C Gateway & E-SBC - SBC Session Capacity per Capabilities with Gateway

Telephony Interface Assembly	DSP Channels Allocated for PSTN	SBC Transcoding Sessions							Max SBC Sessions
		From Profile 2	From Profile 2 with SILK-NB / iLBC	From Profile 2 with SILK-WB	From Profile 2 with OPUS-NB	From Profile 2 with OPUS-WB	To Profile 1	To Profile 2	
4 x E1/T1 4 x FXS	124/100	√	-	-	-	-	2/23	2/18	276/300
	102/100	-	√	-	-	-	0	0	298/300
	78	-	-	√	-	-	0	0	322
	72	-	-	-	√	-	0	0	328
	54	-	-	-	-	√	0	0	346
1 x E1/T1 4 x FXS	35/29	√	-	-	-	-	25/30	20/25	365/371
	35/29	-	√	-	-	-	10/15	9/13	365/371
	35/29	-	-	√	-	-	1/5	1/5	365/371
	35/29	-	-	-	√	-	0/4	0/3	365/371
	27	-	-	-	-	√	0	0	373
8 x BRI 4 x FXS	20	√	-	-	-	-	38	31	380
	20	-	√	-	-	-	22	19	380
	20	-	-	√	-	-	12	11	380
	20	-	-	-	√	-	11	9	380
	20	-	-	-	-	√	4	3	380
Not in use	-	√	-	-	-	-	114	96	400
	-	-	√	-	-	-	78	66	400
	-	-	-	√	-	-	54	48	400
	-	-	-	-	√	-	54	48	400
	-	-	-	-	-	√	42	42	400



Notes:

- "Max. SBC Sessions" applies to scenarios without registered users. When registered users are used, "Max. SBC Sessions" is reduced according to the main capacity table (see Section 3.1).
- *Profile 1*: G.711 at 20ms only, with In-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2*: G.711, G.726, G.729 (A / AB), and G.723.1, T.38 with fax detection, In-band signaling (in voice channel), and Silence Compression.
- All hardware assemblies also support the following DSP channel capabilities: echo cancellation (EC), CID (caller ID), RTCP XR reporting, and SRTP.
- SBC enhancements (e.g., Acoustic Echo Suppressor, Noise Reduction) are also available for these configurations. For more information, please contact your AudioCodes sales representative.
- Automatic Gain Control (AGC) and Answer Detector / Answer Machine Detector (AD/AMD) are also available for these configurations. For more information, please contact your AudioCodes sales representative.
- V.150.1 is supported only for the US Department of Defense (DoD).
- *Transcoding Sessions* represents part of the total SBC sessions.
- *Conference Participants* represents the number of concurrent analog ports in a three-way conference call.
- For availability of the telephony assemblies listed in the table above, please contact your AudioCodes sales representative.

3.3.4 Mediant 1000B Gateway & E-SBC

This section lists the channel capacity and DSP templates for Mediant 1000B Gateway & E-SBC DSP.



Notes:

- The maximum number of channels on any form of analog, digital, and MPM module assembly is 192. When the device handles both SBC and Gateway call sessions, the maximum number of total sessions is 150. When the device handles SRTP, the maximum capacity is reduced to 120.
- Installation and use of voice coders is subject to obtaining the appropriate license and royalty payments.
- For additional DSP templates, contact your AudioCodes sales representative.

3.3.4.1 Analog (FXS/FXO) Interfaces

The channel capacity per DSP firmware template for analog interfaces is shown in the table below.

Table 3-11: Mediant 1000B Analog Series - Channel Capacity per DSP Firmware Template

	DSP Template	
	0, 1, 2, 4, 5, 6	10, 11, 12, 14, 15, 16
	Number of Channels	
	4	3
Voice Coder		
G.711 A/Mu-law PCM	√	√
G.726 ADPCM	√	√
G.723.1	√	√
G.729 (A / AB)	√	√
G.722	-	√

3.3.4.2 BRI Interfaces

The channel capacity per DSP firmware template for BRI interfaces is shown in the table below.

Table 3-12: Mediant 1000B BRI Series - Channel Capacity per DSP Firmware Template

DSP Template					
0, 1, 2, 4, 5, 6			10, 11, 12, 14, 15, 16		
Number of BRI Spans					
4	8	20	4	8	20
Number of Channels					
8	16	40	6	12	30
Voice Coder					
G.711 A/Mu-law PCM	√		√		
G.726 ADPCM	√		√		
G.723.1	√		√		
G.729 (A / AB)	√		√		
G.722	-		√		

3.3.4.3 E1/T1 Interfaces

The channel capacity per DSP firmware template for E1/T1 interfaces is shown in the table below.

Table 3-13: Mediant 1000B E1/T1 Series - Channel Capacity per DSP Firmware Templates

	DSP Template																								
	0 or 10					1 or 11					2 or 12					5 or 15					6 or 16				
	Number of Spans																								
	1	2	4	6	8	1	2	4	6	8	1	2	4	6	8	1	2	4	6	8	1	2	4	6	8
	Number of Channels																								
Default Settings	31	62	120	182	192	31	48	80	128	160	24	36	60	96	120	24	36	60	96	120	31	60	100	160	192
With 128-ms Echo Cancellation	31	60	100	160	192	31	48	80	128	160	24	36	60	96	120	24	36	60	96	120	31	60	100	160	192
With IPM Features	31	60	100	160	192	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	60	100	160	192
Voice Coder																									
G.711 A-Law/M-Law PCM	✓					✓					✓					✓					✓				
G.726 ADPCM	✓					✓					✓					✓					-				
G.723.1	✓					-					-					-					-				
G.729 (A / AB)	✓					✓					✓					✓					✓				
GSM FR	✓					✓					-					-					-				
MS GSM	✓					✓					-					-					-				
iLBC	-					-					-					✓					-				
EVRC	-					-					✓					-					-				
QCELP	-					-					✓					-					-				
AMR	-					✓					-					-					-				
GSM EFR	-					✓					-					-					-				
G.722	-					-					-					-					✓				
Transparent	✓					✓					✓					✓					✓				



Note: "IPM Features" refers to Automatic Gain Control (AGC), Answer Machine Detection (AMD) and Answer Detection (AD).

3.3.4.4 Media Processing Interfaces

The transcoding session capacity according to DSP firmware template (per MPM module) is shown in the table below.



Notes:

- The device can be housed with up to four MPM modules.
- The MPM modules can only be housed in slots 1 through 5.

Table 3-14: Transcoding Sessions Capacity per MPM According to DSP Firmware Template for Mediant 100B

	DSP Template				
	0 or 10	1 or 11	2 or 12	5 or 15	6 or 16
IPM Detectors Automatic Gain Control (AGC), Answer Machine Detection (AMD) and Answer Detection (AD)	Number of Transcoding Sessions per MPM Module				
-	24	16	12	12	20
✓	20	-	-	-	20
Voice Coder					
G.711 A-law / M μ -law PCM	✓	✓	✓	✓	✓
G.726 ADPCM	✓	✓	✓	✓	-
G.723.1	✓	-	-	-	-
G.729 (A / AB)	✓	✓	✓	✓	✓
GSM FR	✓	✓	-	-	-
MS GSM	✓	✓	-	-	-
iLBC	-	-	-	✓	-
EVRC	-	-	✓	-	-
QCELP	-	-	✓	-	-
AMR	-	✓	-	-	-
GSM EFR	-	✓	-	-	-
G.722	-	-	-	-	✓
Transparent	✓	✓	✓	✓	✓

3.3.5 Mediant 3100 Gateway & E-SBC

This section describes the capacity of Mediant 3100 Gateway & E-SBC.

3.3.5.1 Gateway Capacity

The following table shows the maximum number of Gateway sessions when there are no SBC transcoding sessions.

Table 3-15: Mediant 3100 - Gateway Channel Capacity per Capability Profile

Profile	Hardware Assembly		
	8 x E1	16 x E1	32 x E1
Profile 1	240	480	960
Profile 2	240	480	960
Profile 2 + SILK-NB	240	480	960
Profile 2 + AMR-WB	240	480	960
Profile 2 + G.722 / AMR-NB	240	480	960
Profile 2 + SILK-WB	208	416	832
Profile 2 + Opus-NB	240	480	960
Profile 2 + Opus-WB	240	480	960



Notes:

- *Profile 1:* G.711 at 20ms only, with in-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38 with fax detection, in-band signaling (in voice channel), and Silence Compression.
- Acoustic Echo Suppressor reduces performance. For more information, contact your AudioCodes sales representative.

3.3.5.2 Non-Hybrid (SBC) Transcoding Capacity

The following table shows the maximum number of SBC transcoding sessions when there are no Gateway sessions.

Table 3-16: Mediant 3100 - SBC Transcoding Capacity per Coder Capability Profile

Transcoding Session Coders		8xE1	16xE1	32xE1	64xE1
From Coder	To Coder				
Profile 1	Profile 1	460	925	1,855	3,700
Profile 1	Profile 2	400	800	1,600	3,200
Profile 2	Profile 2	350	700	1,405	2,800
Profile 1	Profile 2 + SILK-NB	260	525	1,055	2,100
Profile 2	Profile 2 + SILK-NB	245	495	990	1,975
Profile 1	Profile 2 + AMR-WB	255	510	1,020	2,025
Profile 2	Profile 2 + AMR-WB	240	480	960	1,900
Profile 1	Profile 2 + G.722 / AMR-NB	400	800	1,600	3,200
Profile 2	Profile 2 + G.722 / AMR-NB	350	700	1,405	2,800
Profile 1	Profile 2 + SILK-WB	180	365	735	1,450
Profile 2	Profile 2 + SILK-WB	175	350	700	1,400
Profile 1	Profile 2 + Opus-NB	220	445	895	1,775
Profile 2	Profile 2 + Opus-NB	205	415	830	1,650
Profile 1	Profile 2 + Opus-WB	205	415	830	1,650
Profile 2	Profile 2 + Opus-WB	190	380	765	1,525



Notes:

- *Profile 1:* G.711 at 20ms only, with in-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38 with fax detection, in-band signaling (in voice channel), and Silence Compression.
- Acoustic Echo Suppressor reduces performance. For more information, contact your AudioCodes sales representative.

3.3.6 MP-1288 Analog Gateway & E-SBC

Session capacity includes Gateway sessions as well as SBC sessions without transcoding capabilities. The maximum capacity of Gateway sessions for MP-1288 Gateway & E-SBC is shown in the table below.

Table 3-17: MP-1288 Gateway - Session Capacity

Coder	Gateway Sessions Capacity	
	Single FXS Blade	Fully Populated (4 x FXS Blades)
Basic: G.711, G.729 (A / AB), G.723.1, G.726 / G.727 ADPCM	72	288
G.722	72	288
AMR-NB	72	288
Opus-NB	60	240



Note:

- Quality Monitoring and Noise Reduction are not supported.
- SRTP is supported on all configurations.

3.3.7 Mediant 2600 E-SBC

The maximum number of supported SBC sessions is shown in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below:

Table 3-18: Mediant 2600 E-SBC - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Without MPM4	With MPM4
Profile 1	Profile 1	400	600
Profile 2	Profile 1	300	600
Profile 2	Profile 2	250	600
Profile 1	Profile 2 + AMR-NB / G.722	275	600
Profile 2	Profile 2 + AMR-NB / G.722	225	600
Profile 1	Profile 2 + iLBC	175	575
Profile 2	Profile 2 + iLBC	150	500
Profile 1	Profile 2 + AMR-WB (G.722.2)	200	600
Profile 2	Profile 2 + AMR-WB (G.722.2)	175	525
Profile 1	Profile 2 + SILK-NB	200	600
Profile 2	Profile 2 + SILK-NB	175	525
Profile 1	Profile 2 + SILK-WB	100	350
Profile 2	Profile 2 + SILK-WB	100	350
Profile 1	Profile 2 + Opus-NB	125	425
Profile 2	Profile 2 + Opus-NB	125	375
Profile 1	Profile 2 + Opus-WB	100	300
Profile 2	Profile 2 + Opus-WB	75	275

Notes:



- *Profile 1:* G.711 at 20ms only, with in-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38 with fax detection, in-band signaling (in voice channel), and Silence Compression.
- Acoustic Echo Suppressor reduces performance. For more information, contact your AudioCodes sales representative.
- MPM is the optional, Media Processing Module that provides additional DSPs, allowing greater capacity.

3.3.8 Mediant 4000 SBC

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below.

Table 3-19: Mediant 4000 SBC - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Without MPM8	With MPM8
Profile 1	Profile 1	800	2,400
Profile 2	Profile 1	600	1,850
Profile 2	Profile 2	500	1,550
Profile 1	Profile 2 + AMR-NB / G.722	550	1,650
Profile 2	Profile 2 + AMR-NB / G.722	450	1,350
Profile 1	Profile 2 + iLBC	350	1,150
Profile 2	Profile 2 + iLBC	300	1,000
Profile 1	Profile 2 + AMR-WB (G.722.2)	400	1,200
Profile 2	Profile 2 + AMR-WB (G.722.2)	350	1,050
Profile 1	Profile 2 + SILK-NB	400	1,200
Profile 2	Profile 2 + SILK-NB	350	1,050
Profile 1	Profile 2 + SILK-WB	200	700
Profile 2	Profile 2 + SILK-WB	200	700
Profile 1	Profile 2 + Opus-NB	250	850
Profile 2	Profile 2 + Opus-NB	250	750
Profile 1	Profile 2 + Opus-WB	200	600
Profile 2	Profile 2 + Opus-WB	150	550

Notes:

- *Profile 1:* G.711 at 20ms only, with in-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38 with fax detection, in-band signaling (in voice channel), and Silence Compression.
- Acoustic Echo Suppressor reduces performance. For more information, contact your AudioCodes sales representative.
- MPM is the optional, Media Processing Module that provides additional DSPs, allowing greater capacity.



3.3.8.1 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-20: Mediant 4000 SBC - Forwarding Capacity per Feature

Feature	Max. Sessions
Fax Detection	5,000
AD/AMD/Beep Detection	5,000
CP Detection	5,000
Jitter Buffer	5,000

Notes:



- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

3.3.9 Mediant 4000B SBC

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below.

Table 3-21: Mediant 4000B SBC - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions				
From Coder Profile	To Coder Profile	Without MPM	1 x MPM8B	1 x MPM12B	2 x MPM12B	3 x MPM12B
Profile 1	Profile 1	800	2,400	3,250	5,000	5,000
Profile 2	Profile 1	600	1,850	2,450	4,350	5,000
Profile 2	Profile 2	500	1,550	2,100	3,650	5,000
Profile 1	Profile 2 + AMR-NB / G.722	550	1,650	2,200	3,850	5,000
Profile 2	Profile 2 + AMR-NB / G.722	450	1,350	1,800	3,150	4,550
Profile 1	Profile 2 + iLBC	400	1,200	1,600	2,850	4,050
Profile 2	Profile 2 + iLBC	350	1,050	1,400	2,500	3,600
Profile 1	Profile 2 + AMR-WB (G.722.2)	400	1,200	1,600	2,850	4,050
Profile 2	Profile 2 + AMR-WB (G.722.2)	350	1,050	1,400	2,500	3,600
Profile 1	Profile 2 + SILK-NB	400	1,200	1,600	2,850	4,050
Profile 2	Profile 2 + SILK-NB	350	1,050	1,400	2,500	3,600

Session Coders		Max. Sessions				
From Coder Profile	To Coder Profile	Without MPM	1 x MPM8B	1 x MPM12B	2 x MPM12B	3 x MPM12B
Profile 1	Profile 2 + SILK-WB	200	700	950	1,650	2,400
Profile 2	Profile 2 + SILK-WB	200	700	950	1,650	2,400
Profile 1	Profile 2 + Opus-NB	250	850	1,150	2,000	2,850
Profile 2	Profile 2 + Opus-NB	250	750	1,050	1,800	2,600
Profile 1	Profile 2 + Opus-WB	200	600	850	1,500	2,150
Profile 2	Profile 2 + Opus-WB	150	550	750	1,300	1,900

Notes:

- *Profile 1*: G.711 at 20ms only, with In-band signaling (in voice channel), DTMF transcoding (RFC 2833 to in-band signaling), and Silence Suppression (no fax detection or T.38 support).
- *Profile 2*: G.711, G.726, G.729 (A / AB), G.723.1, AMR-NB, T.38 with fax detection, In-band signaling (in voice channel), and Silence Compression.
- Acoustic Echo Suppressor reduces performance by about 30%. For more information, contact your AudioCodes sales representative.
- MPMB is the optional, Media Processing Module that provides additional DSPs, allowing greater capacity.

3.3.9.1 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-22: Mediant 4000B SBC - Forwarding Capacity per Feature

Feature	Max. Sessions
Fax Detection	5,000
AD/AMD/Beep Detection	5,000
CP Detection	5,000
Jitter Buffer	5,000

Notes:

- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

3.3.10 Mediant 9000 SBC

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below.

Table 3-23: Mediant 9000 SBC - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions			
From Coder Profile	To Coder Profile	Without Hyper-Threading		With Hyper-Threading	
		Basic	Extended	Basic	Extended
Profile 1	Profile 1	3,025	2,525	6,575	3,875
Profile 2	Profile 1	1,500	1,325	2,125	1,700
Profile 2	Profile 2	1,000	900	1,275	1,100
Profile 1	Profile 2 + AMR-NB / G.722	1,500	1,300	2,075	1,625
Profile 2	Profile 2 + AMR-NB / G.722	1,000	900	1,225	1,050
Profile 1	Profile 2 + AMR-WB (G.722.2)	500	475	600	575
Profile 2	Profile 2 + AMR-WB	425	400	500	475
Profile 1	Profile 2 + SILK-NB	1,300	1,175	1,700	1,450
Profile 2	Profile 2 + SILK-NB	900	825	1,100	975
Profile 1	Profile 2 + SILK-WB	775	750	1,000	950
Profile 2	Profile 2 + SILK-WB	625	600	750	725
Profile 1	Profile 2 + Opus-NB	825	750	1,050	900
Profile 2	Profile 2 + Opus-NB	650	600	775	700
Profile 1	Profile 2 + Opus-WB	625	575	800	700
Profile 2	Profile 2 + Opus-WB	525	475	625	575



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.

3.3.10.1 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-24: Mediant 9000 SBC - Forwarding Capacity per Feature

Feature	Max. Sessions	
	Without Hyper-Threading	With Hyper-Threading
Fax Detection	24,000	40,000
AD/AMD/Beep Detection	24,000	39,000
CP Detection	24,000	44,000
Jitter Buffer	2,225	5,000

Notes:



- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

3.3.11 Mediant 9000 Rev. B / 9080 SBC

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below.

Table 3-25: Mediant 9000 Rev. B / 9080 - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	9,600	6,625
Profile 2	Profile 1	4,400	3,625
Profile 2	Profile 2	2,875	2,500
Profile 1	Profile 2 + AMR-NB / G.722	2,925	2,600
Profile 2	Profile 2 + AMR-NB / G.722	2,150	1,950
Profile 1	Profile 2 + AMR-WB (G.722.2)	950	925
Profile 2	Profile 2 + AMR-WB	850	825
Profile 1	Profile 2 + SILK-NB	2,750	2,500
Profile 2	Profile 2 + SILK-NB	2,050	1,900
Profile 1	Profile 2 + SILK-WB	1,575	1,475
Profile 2	Profile 2 + SILK-WB	1,300	1,250
Profile 1	Profile 2 + Opus-NB	1,700	1,450
Profile 2	Profile 2 + Opus-NB	1,375	1,200
Profile 1	Profile 2 + Opus-WB	1,375	1,200
Profile 2	Profile 2 + Opus-WB	1,175	1,025

Notes:



- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.

3.3.11.1 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-26: Mediant 9000 Rev. B / 9080 SBC - Forwarding Capacity per Feature

Feature	Max. Sessions
Fax Detection	45,000
AD, AMD, and Beep Detection	45,000
CP Detection	45,000
Jitter Buffer	6,000



Notes:

- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

3.3.12 Mediant 9000 / 9000 Rev. B / 9080 SBC with Media Transcoders

Mediant 9000, Mediant 9000 Rev. B, or Mediant 9080 SBC with Media Transcoders allows increasing the number of transcoding sessions by using Media Transcoders. The maximum number of transcoding sessions depends on the following:

- Number of Media Transcoders in the media transcoding cluster. (The cluster can have up to eight Media Transcoders.)
- Cluster operation mode (Best-Effort or Full-HA mode).
- Maximum transcoding sessions. Each transcoding session is weighted as two RTP-RTP sessions without transcoding. Therefore, the number of sessions without transcoding plus the doubled number of sessions with transcoding must be less than the maximum RTP-RTP value specified in the table. As a result, if all sessions are with transcoding, the maximum number of sessions is half the maximum RTP-RTP sessions without transcoding as specified in Table 3-1.

The following table lists maximum transcoding sessions capacity of a single Media Transcoder.

Table 3-27: Single Media Transcoder (MT) - Transcoding Capacity per Profile

Session Coders		Max. Sessions		
From Coder Profile	To Coder Profile	1 x MPM12B	2 x MPM12B	3 x MPM12B
Profile 1	Profile 1	2,875	5,000	5,000
Profile 2	Profile 1	2,300	4,025	5,000

Session Coders		Max. Sessions		
From Coder Profile	To Coder Profile	1 x MPM12B	2 x MPM12B	3 x MPM12B
Profile 2	Profile 2	1,800	3,175	4,550
Profile 1	Profile 2 + AMR-NB / G.722	2,000	3,525	5,000
Profile 2	Profile 2 + AMR-NB / G.722	1,625	2,850	4,075
Profile 1	Profile 2 + AMR-WB (G.722.2)	1,425	2,500	3,600
Profile 2	Profile 2 + AMR-WB (G.722.2)	1,225	2,175	3,100
Profile 1	Profile 2 + SILK-NB	1,425	2,500	3,600
Profile 2	Profile 2 + SILK-NB	1,225	2,175	3,100
Profile 1	Profile 2 + SILK-WB	850	1,500	2,150
Profile 2	Profile 2 + SILK-WB	850	1,500	2,150
Profile 1	Profile 2 + Opus-NB	1,050	1,825	2,625
Profile 2	Profile 2 + Opus-NB	950	1,675	2,400
Profile 1	Profile 2 + Opus-WB	750	1,325	1,900
Profile 2	Profile 2 + Opus-WB	650	1,175	1,675

Notes:



- *Profile 1:* G.711 at 20ms only, with In-band signaling (in voice channel) and Silence Suppression (no fax detection or T.38 support).
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, AMR-NB, T.38 with fax detection, In-band signaling (in voice channel), and Silence Compression.
- Acoustic Echo Suppressor reduces performance by about 30%. For more information, contact your AudioCodes sales representative.
- MPM12B is a Media Processing Module in the Media Transcoder that provides additional DSPs, allowing higher capacity.
- For best cluster efficiency, all Media Transcoders in the Cluster should populate the same number of MPM12Bs.
- The SBC employs load balancing of transcoding sessions among all Media Transcoders in the Cluster. Each Media Transcoder can handle up to 200 calls (transcoded sessions) per second (CPS).

3.3.13 Mediant 9030 SBC

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below.

Table 3-28: Mediant 9030 SBC - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	4,025	2,775
Profile 2	Profile 1	1,825	1,525
Profile 2	Profile 2	1,200	1,050
Profile 1	Profile 2 + AMR-NB / G.722	1,200	1,075
Profile 2	Profile 2 + AMR-NB / G.722	875	825
Profile 1	Profile 2 + AMR-WB (G.722.2)	400	375
Profile 2	Profile 2 + AMR-WB	350	350
Profile 1	Profile 2 + SILK-NB	1,150	1,050
Profile 2	Profile 2 + SILK-NB	850	775
Profile 1	Profile 2 + SILK-WB	650	625
Profile 2	Profile 2 + SILK-WB	525	525
Profile 1	Profile 2 + Opus-NB	700	600
Profile 2	Profile 2 + Opus-NB	575	500
Profile 1	Profile 2 + Opus-WB	575	500
Profile 2	Profile 2 + Opus-WB	475	425

Notes:

- *Profile 1*: G.711 at 20ms only, without T.38 support.
- *Profile 2*: G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic*: Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended*: Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.



3.3.13.1 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-29: Mediant 9030 SBC - Forwarding Capacity per Feature

Feature	Max. Sessions
Fax Detection	23,000
AD/AMD/Beep Detection	23,000
CP Detection	23,000
Jitter Buffer	3,000



Notes:

- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

3.3.14 Mediant Cloud Edition (CE) SBC

The Media Components (MC) in the media cluster of the Mediant CE must all be of the same instance type: either forwarding-only, or forwarding and transcoding. A maximum of 21 MCs can be used.

3.3.14.1 Mediant CE SBC for AWS EC2

3.3.14.1.1 Forwarding Sessions

The number of concurrent forwarding sessions per MC is shown in the following table.

Table 3-30: Forwarding Capacity per MC Instance Type

MC Instance Type	Max. Forwarding Sessions
m5n.large	3,200
c5.4xlarge	4,000



Note: Forwarding performance was tested in AWS Ireland Region.

3.3.14.1.2 Transcoding Sessions

For transcoding capabilities, the Media Component (MC) must be of the AWS instance type c5.4xlarge. The number of supported transcoding sessions per MC is shown in the following table.

Table 3-31: Transcoding Capacity per c5.4xlarge MC

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	3,500	2,825
Profile 2	Profile 1	2,375	1,900
Profile 2	Profile 2	1,625	1,425
Profile 1	Profile 2 + AMR-NB / G.722	1,500	1,300
Profile 2	Profile 2 + AMR-NB / G.722	1,150	1,050
Profile 1	Profile 2 + AMR-WB (G.722.2)	475	475
Profile 2	Profile 2 + AMR-WB	425	425
Profile 1	Profile 2 + SILK-NB	1,400	1,250
Profile 2	Profile 2 + SILK-NB	1,100	1,025
Profile 1	Profile 2 + SILK-WB	775	750
Profile 2	Profile 2 + SILK-WB	675	675
Profile 1	Profile 2 + Opus-NB	850	725

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 2	Profile 2 + Opus-NB	725	650
Profile 1	Profile 2 + Opus-WB	700	600
Profile 2	Profile 2 + Opus-WB	625	550



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.14.2 Mediant CE SBC for Azure

3.3.14.2.1 Forwarding Sessions

The number of concurrent forwarding sessions per Media Component (MC) is shown in the following table.

Table 3-32: Session Capacity per MC

MC VM Size	Max. Forwarding-Only Sessions	Max. Forwarding & Transcoding Sessions
D2ds_v5	3,000	3,000
D4ds_v5	6,500	5,500
D8ds_v5	12,000	6,000



Note: It's not recommended to exceed 5,000 sessions per MC because of the duration required for processing an MC failover.

3.3.14.2.2 Transcoding Sessions

For transcoding capabilities, the Media Component (MC) must be Azure virtual machine size D2ds_v5, D4ds_v5, or D8ds_v5. The number of supported transcoding sessions per MC is shown in the following table.

Table 3-33: Transcoding Capacity per MC

Session Coders		D2ds_v5		D4ds_v5		D8ds_v5	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended	Basic	Extended
Profile 1	Profile 1	275	175	575	350	1,725	1,100
Profile 2	Profile 1	150	125	300	250	925	750
Profile 2	Profile 2	100	75	200	175	625	550
Profile 1	Profile 2 + AMR-NB / G.722	75	75	175	150	575	500
Profile 2	Profile 2 + AMR-NB / G.722	75	50	150	125	450	400
Profile 1	Profile 2 + AMR-WB (G.722.2)	25	25	50	50	175	175
Profile 2	Profile 2 + AMR-WB	25	25	50	50	175	175
Profile 1	Profile 2 + SILK-NB	75	75	175	150	550	500
Profile 2	Profile 2 + SILK-NB	50	50	125	125	425	400
Profile 1	Profile 2 + SILK-WB	50	50	100	100	300	300
Profile 2	Profile 2 + SILK-WB	25	25	75	75	275	250
Profile 1	Profile 2 + Opus-NB	50	25	100	75	325	275

Session Coders		D2ds_v5		D4ds_v5		D8ds_v5	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended	Basic	Extended
Profile 2	Profile 2 + Opus-NB	25	25	75	75	275	250
Profile 1	Profile 2 + Opus-WB	25	25	75	75	275	225
Profile 2	Profile 2 + Opus-WB	25	25	75	50	250	200



Notes:

- Profile 1: G.711 at 20ms only, without T.38 support.
- Profile 2: G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- Basic: Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- Extended: Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.14.3 Mediant CE SBC for VMware

The following tables list maximum forwarding and transcoding capacities for Mediant CE SBC running on VMware hypervisor with Hyper-Threading.

Each vCPU refers to a single thread of a physical core. For example, a 4-vCPU virtual machine is allocated by only two physical cores.



Note:

- The profiles below require the following minimum requirements:
 - ✓ Intel Xeon Scalable Processors or later. The capacity listed in the following table refers to 3.3 GHz all-core Turbo speed. When using different all-core Turbo speed, capacity is increased or decreased accordingly.
 - ✓ Hyper-Threading is enabled on host.
 - ✓ VMware ESXi 6.7 or later.
 - ✓ CPUOverrideHT ini file parameter is configured to 1.
- CPU Affinity is recommended. For more information, refer to the *Installation Manual*.
- For Server Failure redundancy, the maximum active media sessions (before failure) on each server must not exceed 4,000 media sessions.

3.3.14.3.1 Forwarding Sessions

The number of concurrent forwarding sessions per Media Component (MC) is shown in the following table.

Table 3-34: Forwarding Capacity per MC Instance Type

MC Instance Type	Max. Sessions
2 vCPUs, 8GB	4,000 (Forwarding Only)
8 vCPUs, 8GB	4,000 (Forwarding and Transcoding)

3.3.14.3.2 Transcoding Sessions

For transcoding capabilities, the Media Component (MC) must be a virtual machine of 8 vCPUs and 8 GB. The number of supported transcoding sessions per MC is shown in the following table.



Note: For transcoding capabilities, the 'Media Component Profile' parameter on all Media Components must be configured to **Transcoding Enabled** (MCProfile = 1).

Table 3-35: Mediant CE SBC on VMware with Hyper-Threading - Transcoding Capacity

Session Coders		Max. Sessions 8 vCPU 8-GB RAM	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	1,800	1,175
Profile 1	Profile 2	975	775
Profile 2	Profile 2	675	575
Profile 1	Profile 2 + SILK-NB	575	525
Profile 2	Profile 2 + SILK-NB	450	425
Profile 1	Profile 2 + AMR-WB	200	175
Profile 2	Profile 2 + AMR-WB	175	175
Profile 1	Profile 2 + G.722 / AMR-NB	600	525
Profile 2	Profile 2 + G.722 / AMR-NB	475	425
Profile 1	Profile 2 + SILK-WB	325	300
Profile 2	Profile 2 + SILK-WB	275	275
Profile 1	Profile 2 + Opus-NB	350	300
Profile 2	Profile 2 + Opus-NB	300	275
Profile 1	Profile 2 + Opus-WB	300	250
Profile 2	Profile 2 + Opus-WB	250	225



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.14.4 Mediant CE SBC for GCP

3.3.14.4.1 Forwarding Sessions

The number of concurrent forwarding sessions (RTP-RTP) per Media Component (MC) is shown in the following table.

Table 3-36: Session Capacity per MC

MC VM Size	Max. Forwarding-Only Sessions
n2-standard-2	3,500

3.3.14.4.2 Transcoding Sessions

For transcoding capabilities, the MC should be of the n2-standard-2 or n2_highcpu-8 instance types.

When the transcoding session is at maximum, the total sessions is reduced as shown in the following table.

Table 3-37: Transcoding Sessions per MC

MC VM Size	Max. Forwarding and Transcoding Sessions
n2-standard-2	1,500 (up to 300 transcoding sessions)
n2-highcpu-8	1,600 (up to 1,500 transcoding sessions)

The number of supported transcoding sessions per MC is shown in the following table.

Table 3-38: Transcoding Capacity per MC

Session Coders		n2-standard-2		n2-highcpu-8	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended
Profile 1	Profile 1	300	175	1,500	1,175
Profile 2	Profile 1	150	125	975	775
Profile 2	Profile 2	100	75	675	575

Session Coders		n2-standard-2		n2-highcpu-8	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended
Profile 1	Profile 2 + AMR-NB / G.722	100	75	625	525
Profile 2	Profile 2 + AMR-NB / G.722	75	50	475	425
Profile 1	Profile 2 + AMR-WB (G.722.2)	25	25	200	175
Profile 2	Profile 2 + AMR-WB	25	25	175	175
Profile 1	Profile 2 + SILK-NB	75	75	575	525
Profile 2	Profile 2 + SILK-NB	75	50	450	425
Profile 1	Profile 2 + SILK-WB	50	50	325	300
Profile 2	Profile 2 + SILK-WB	25	25	275	275
Profile 1	Profile 2 + Opus-NB	50	50	350	300
Profile 2	Profile 2 + Opus-NB	50	25	300	275
Profile 1	Profile 2 + Opus-WB	50	25	300	250
Profile 2	Profile 2 + Opus-WB	25	25	250	225

Notes:

- *Profile 1*: G.711 at 20ms only, without T.38 support.
- *Profile 2*: G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic*: Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended*: Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.15 Mediant Virtual Edition (VE) SBC

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required (DSP Performance Profile), the number of sessions that can use DSP capabilities is reduced, as shown in the tables in this section.

3.3.15.1 Mediant VE SBC for Hypervisors with Hyper-Threading

The following tables list maximum transcoding capacity for Mediant VE SBC running on the following hypervisors with Hyper-Threading: VMware, KVM/OpenStack, and Hyper-V.

Each vCPU refers to a Hyper-Threaded core (logical). For example, a 4-vCPU virtual machine allocates only 2 physical cores.

Note:

- The transcoding profiles below require the following minimum requirements:
 - ✓ Intel Xeon Scalable Processors or later. The capacity listed in the table below refer to 3.3 GHz all-core Turbo speed. When using different all-core Turbo speed, the capacity is increased or decreased accordingly.
 - ✓ Hyper-Threading enabled on host.
 - ✓ VMware Hypervisor:
 - VMware ESXi 6.7 or later. Capacities in table Table 3-1 were achieved using ESXi Version 7.0.3.
 - CPUOverrideHT ini file parameter is configured to 1.
 - ✓ KVM Hypervisor/OpenStack: Host-Passthrough mode must be used. For more information, refer to the [Installation Manual](#).
- CPU Affinity is recommended. For more information, refer to the *Installation Manual*.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to Optimized for Transcoding (2).



Table 3-39: Mediant VE SBC on Hypervisors with Hyper-Threading - Transcoding Capacity

Session Coders		Max. Sessions							
		2 vCPU 8-GB RAM		4 vCPU 8-GB RAM (VMware Only)		8 vCPU 16-GB RAM		16 vCPU 16-GB RAM (Not Hyper-V)	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended	Basic	Extended	Basic	Extended
Profile 1	Profile 1	300	200	800	600	1,200	825	2,400	2,400
Profile 1	Profile 2	150	125	500	400	675	550	2,075	1,650
Profile 2	Profile 2	100	100	350	300	475	400	1,425	1,250
Profile 1	Profile 2 + SILK-NB	100	75	300	275	400	350	1,225	1,100
Profile 2	Profile 2 + SILK-NB	75	75	225	225	325	300	975	900
Profile 1	Profile 2 + AMR-WB	25	25	100	100	125	125	425	400
Profile 2	Profile 2 + AMR-WB	25	25	75	75	125	125	375	375

Session Coders		Max. Sessions							
		2 vCPU 8-GB RAM		4 vCPU 8-GB RAM (VMware Only)		8 vCPU 16-GB RAM		16 vCPU 16-GB RAM (Not Hyper-V)	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended	Basic	Extended	Basic	Extended
Profile 1	Profile 2 + G.722 / AMR-NB	100	75	325	275	425	375	1,300	1,150
Profile 2	Profile 2 + G.722 / AMR-NB	75	75	250	225	325	300	1,000	925
Profile 1	Profile 2 + SILK- WB	50	50	175	150	225	200	700	650
Profile 2	Profile 2 + SILK- WB	50	50	150	150	200	200	600	600
Profile 1	Profile 2 + Opus- NB	50	50	175	150	250	200	750	650
Profile 2	Profile 2 + Opus- NB	50	25	150	125	200	175	650	575
Profile 1	Profile 2 + Opus- WB	50	25	150	125	200	175	625	525
Profile 2	Profile 2 + Opus- WB	25	25	125	100	175	150	550	475


Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.15.2 Mediant VE SBC for Amazon AWS EC2

The following tables list maximum channel capacity for Mediant VE SBC on the Amazon EC2 platform.

3.3.15.2.1 Transcoding Sessions



Note: For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.

3.3.15.2.1.1 m5n.large

Table 3-40: Mediant VE SBC on m5n.large - Transcoding Capacity

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	250	150
Profile 2	Profile 1	125	100
Profile 2	Profile 2	75	75
Profile 1	Profile 2 + AMR-NB / G.722	75	75
Profile 2	Profile 2 + AMR-NB / G.722	50	50
Profile 1	Profile 2 + AMR-WB	25	25
Profile 2	Profile 2 + AMR-WB	25	25
Profile 1	Profile 2 + SILK-NB	75	50
Profile 2	Profile 2 + SILK-NB	50	50
Profile 1	Profile 2 + SILK-WB	25	25
Profile 2	Profile 2 + SILK-WB	25	25
Profile 1	Profile 2 + Opus-NB	50	25
Profile 2	Profile 2 + Opus-NB	25	25
Profile 1	Profile 2 + Opus-WB	25	25
Profile 2	Profile 2 + Opus-WB	25	25

**Notes:**

- *Profile 1*: G.711 at 20ms only, without T.38 support.
- *Profile 2*: G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic*: Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended*: Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.15.2.1.2 c5n.2xlarge**Table 3-41: Mediant VE SBC on c5n.2xlarge - Transcoding Capacity**

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	1,950	1,275
Profile 2	Profile 1	1,050	850
Profile 2	Profile 2	725	625
Profile 1	Profile 2 + AMR-NB / G.722	675	575
Profile 2	Profile 2 + AMR-NB / G.722	500	475
Profile 1	Profile 2 + AMR-WB	200	200
Profile 2	Profile 2 + AMR-WB	175	175
Profile 1	Profile 2 + SILK-NB	625	550
Profile 2	Profile 2 + SILK-NB	500	450
Profile 1	Profile 2 + SILK-WB	350	325
Profile 2	Profile 2 + SILK-WB	300	300
Profile 1	Profile 2 + Opus-NB	375	325
Profile 2	Profile 2 + Opus-NB	325	300
Profile 1	Profile 2 + Opus-WB	300	275
Profile 2	Profile 2 + Opus-WB	275	250



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.15.2.1.3 c5n.9xlarge

Table 3-42: Mediant VE SBC on c5n.9xlarge - Transcoding Capacity

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	7,000	6,800
Profile 2	Profile 1	5,725	4,575
Profile 2	Profile 2	3,925	3,450
Profile 1	Profile 2 + AMR-NB / G.722	3,600	3,125
Profile 2	Profile 2 + AMR-NB / G.722	2,775	2,550
Profile 1	Profile 2 + AMR-WB	1,175	1,150
Profile 2	Profile 2 + AMR-WB	1,050	1,000
Profile 1	Profile 2 + SILK-NB	3,400	3,025
Profile 2	Profile 2 + SILK-NB	2,675	2,475
Profile 1	Profile 2 + SILK-WB	1,900	1,800
Profile 2	Profile 2 + SILK-WB	1,650	1,625
Profile 1	Profile 2 + Opus-NB	2,075	1,775
Profile 2	Profile 2 + Opus-NB	1,775	1,600
Profile 1	Profile 2 + Opus-WB	1,725	1,450
Profile 2	Profile 2 + Opus-WB	1,500	1,325



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.

3.3.15.2 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-43: Mediant VE SBC on Amazon EC2 - Forwarding Capacity per Feature

Feature	Max. Sessions	
	c5.2xlarge	c5.9xlarge
Fax Detection	5,500	7,000
AD/AMD/Beep Detection	5,500	7,000
CP Detection	5,500	7,000
Jitter Buffer	1,800	7,000



Notes:

- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

3.3.15.3 Mediant VE SBC for Azure

The following tables list maximum channel capacity for Mediant VE SBC on the Azure platform.

Table 3-44: Mediant VE SBC on DS1_v2, D2ds_v5, D4ds_v5, D8ds_v5 - Transcoding Capacity

Session Coders		Max. Sessions							
		DS1_v2		D2ds_v5		D4ds_v5		D8ds_v5	
From Coder Profile	To Coder Profile	Basic	Extended	Basic	Extended	Basic	Extended	Basic	Extended
Profile 1	Profile 1	200	200	300	175	600	375	1,800	1,175
Profile 2	Profile 1	100	100	150	125	325	250	975	775
Profile 2	Profile 2	75	50	100	75	225	175	675	575
Profile 1	Profile 2 + AMR-NB / G.722	100	100	100	75	200	175	600	525
Profile 2	Profile 2 + AMR-NB / G.722	75	50	75	50	150	125	475	425
Profile 1	Profile 2 + AMR-WB (G.722.2)	25	25	25	25	50	50	200	175
Profile 2	Profile 2 + AMR-WB	25	25	25	25	50	50	175	175
Profile 1	Profile 2 + SILK-NB	100	75	75	75	175	175	575	525
Profile 2	Profile 2 + SILK-NB	50	50	75	50	150	125	450	425
Profile 1	Profile 2 + SILK-WB	50	50	50	50	100	100	325	300
Profile 2	Profile 2 + SILK-WB	50	25	25	25	75	75	275	275
Profile 1	Profile 2 + Opus-NB	50	50	50	50	100	100	350	300
Profile 2	Profile 2 + Opus-NB	50	50	50	25	100	75	300	275
Profile 1	Profile 2 + Opus-WB	50	25	50	25	100	75	300	250
Profile 2	Profile 2 + Opus-WB	25	25	25	25	75	75	250	225

**Notes:**

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.

3.3.15.4 Mediant VE SBC for GCP

The following tables list maximum channel capacity for Mediant VE SBC on the GCP platform.

Table 3-45: Mediant VE SBC on GCP - Transcoding Capacity

Session Coders		n2-standard-2		n2-standard-4		n2-standard-8		n2-highcpu-32	
From Coder Profile	To Coder	Basic	Extended	Basic	Extended	Basic	Extended	Basic	Extended
1	Profile 1	300	200	625	400	1900	1225	3600	3600
2	Profile 1	150	125	325	275	1025	825	3600	3600
2	Profile 2	100	100	225	200	700	625	3350	2925
1	Profile 2 + AMR-NB / G.722	100	75	200	175	650	575	3075	2675
2	Profile 2 + AMR-NB / G.722	75	75	150	150	500	450	2375	2175
1	Profile 2 + AMR-WB	25	25	50	50	200	200	1000	975
2	Profile 2 + AMR-WB	25	25	50	50	175	175	900	875
1	Profile 2 + SILK-NB	100	75	200	175	600	550	2900	2600
2	Profile 2 + SILK-NB	75	75	150	150	475	450	2275	2125
1	Profile 2 + SILK-WB	50	50	100	100	350	325	1650	1550
2	Profile 2 + SILK-WB	50	50	100	100	300	300	1425	1400
1	Profile 2 + Opus-NB	50	50	125	100	375	325	1775	1525

Session Coders		n2-standard-2		n2-standard-4		n2-standard-8		n2-highcpu-32	
From Coder Profile	To Coder	Basic	Extended	Basic	Extended	Basic	Extended	Basic	Extended
2	Profile 2 + Opus-NB	50	25	100	75	325	275	1525	1350
1	Profile 2 + Opus-WB	50	25	100	75	300	250	1475	1250
2	Profile 2 + Opus-WB	25	25	75	75	275	225	1275	1125



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.

3.3.16 Mediant Server Edition (SE) SBC



Note: Digital signal processing (DSP) is supported only on Mediant SE SBC based on DL360 G10.

The maximum number of supported SBC sessions is listed in Section 3.1 on page 93. These SBC sessions also support SRTP and RTCP XR. When DSP capabilities are required, the number of sessions that can use DSP capabilities is reduced, as shown in the table below.

Table 3-46: Mediant SE SBC (DL360 G10) - Transcoding Capacity per Coder Capability Profile

Session Coders		Max. Sessions	
From Coder Profile	To Coder Profile	Basic	Extended
Profile 1	Profile 1	9,600	6,625
Profile 2	Profile 1	4,400	3,625
Profile 2	Profile 2	2,875	2,500
Profile 1	Profile 2 + AMR-NB / G.722	2,925	2,600
Profile 2	Profile 2 + AMR-NB / G.722	2,150	1,950
Profile 1	Profile 2 + AMR-WB (G.722.2)	950	925
Profile 2	Profile 2 + AMR-WB	850	825
Profile 1	Profile 2 + SILK-NB	2,750	2,500
Profile 2	Profile 2 + SILK-NB	2,050	1,900
Profile 1	Profile 2 + SILK-WB	1,575	1,475
Profile 2	Profile 2 + SILK-WB	1,300	1,250
Profile 1	Profile 2 + Opus-NB	1,700	1,450
Profile 2	Profile 2 + Opus-NB	1,375	1,200
Profile 1	Profile 2 + Opus-WB	1,375	1,200
Profile 2	Profile 2 + Opus-WB	1,175	1,025



Notes:

- *Profile 1:* G.711 at 20ms only, without T.38 support.
- *Profile 2:* G.711, G.726, G.729 (A / AB), G.723.1, T.38.
- *Basic:* Excludes in-band signaling (in voice channel), VAD, Silence Suppression and fax detection.
- *Extended:* Includes DTMF transcoding (RFC 2833 to in-band signaling), VAD, Silence Suppression and fax detection
- Acoustic Echo Suppressor may reduce capacity. For more information, contact your AudioCodes sales representative.
- For transcoding capabilities, the 'SBC Performance Profile' (SBCPerformanceProfile) parameter must be configured to **Optimized for Transcoding (2)**.

3.3.16.1 Forwarding Session Capacity per Feature without Transcoding

The table below lists the maximum number of concurrent forwarding sessions per feature without using transcoding.

Table 3-47: Mediant SE SBC (DL360 G10) - Forwarding Capacity per Feature

Feature	Max. Sessions
Fax Detection	45,000
AD/AMD/Beep Detection	45,000
CP Detection	45,000
Jitter Buffer	6,000



Notes:

- All figures were calculated for call duration of 100 seconds.
- For fax detection, figures are based on the following assumptions:
 - ✓ Timeout for fax detection is 10 seconds (default)
 - ✓ Fax detection is required on both legs of the call
- Figures for Call Progress (CP), AD, AMD, and Beep detection assume that detection is only on one leg of the call (if not, figures will be reduced).

4 Configuration Table Capacity

The maximum rows (indices) that can be configured per configuration table is listed in the table below.

Table 4-1: Capacity per Configuration Table

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
Access List	50	50	50	50
Accounts	<ul style="list-style-type: none"> ▪ MP-1288: 288 ▪ Mediant 500 / 500L / 800 / 1000: 102 ▪ Mediant 3100: 1,500 	625	5,000	<ul style="list-style-type: none"> ▪ 2-32 GB: 1,500 ▪ 64 GB: 5,000
Allowed Audio Coders Groups	10 (20 for Mediant 3100)	20	20	20
Allowed Video Coders Groups	5	5	5	5
Alternative Routing Reasons	20	20	20	20
Bandwidth Profile	486 (1,724 for Mediant 3100)	1,009	1,884	1,884
Call Admission Control Profile	102	1,500	1,500	1,500
Call Admission Control Rule (per Profile)	8	8	8	8
Call Setup Rules	<ul style="list-style-type: none"> ▪ MP-1288 / Mediant 1000/3100: 64 ▪ Mediant 500/500L/800: 100 	400	1,000	<ul style="list-style-type: none"> ▪ 2-8 GB: 500 ▪ 16-64 GB: 1,000
Calling Name Manipulation for IP-to-Tel Calls	120	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Calling Name Manipulation for Tel-to-IP Calls	120	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Char Conversion	40	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Charge Codes	25	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Classification	102 (1,500 for Mediant 3100)	1,500	1,500	<ul style="list-style-type: none"> ▪ 2 GB: 750 ▪ 3.5-64 GB: 1,500
Coders Groups	11 (21 for Mediant 3100)	21	21	21

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
Coders Groups > Coders	10 (per Coders Group)	10 (per Coders Group)	10 (per Coders Group)	10 (per Coders Group)
Cost Groups	10	10	10	10
Custom DNS Servers	n/a	n/a	32 (Mediant SE)	32
Custom MTU	n/a	n/a	16 (Mediant SE)	16
Destination Phone Number Manipulation for IP-to-Tel Calls	120	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Destination Phone Number Manipulation for Tel-to-IP Calls	120	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
DHCP Servers	1	1	1	1
Dial Plan	10 (25 for Mediant 3100)	25	50	50
Dial Plan Rule	2,000 (10,000 for Mediant 3100)	10,000	100,000	<ul style="list-style-type: none"> ▪ < 16 GB: 2,000 ▪ > 16 GB: 100,000
Ethernet Devices	16 (1,024 for Mediant 3100)	1,024	1,024	1,024
External Media Source	1	1	1	1
Firewall	50 (500 for Mediant 3100)	500	500	500
Forward On Busy Trunk Destination	<ul style="list-style-type: none"> ▪ MP-1288: 288 ▪ Mediant 500/500L/800: 100 ▪ Mediant 1000: 240 ▪ Mediant 3100: 512 	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Gateway CDR Format	128 Syslog; 40 RADIUS (128 for Mediant 3100); 64 Locally Stored & JSON	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
HA Network Monitor	10	10	10	10
HTTP Directive Sets	30	30	30	30
HTTP Directives	500	500	500	500
HTTP Locations	40	40	120	<ul style="list-style-type: none"> ▪ < 8 GB: 40 ▪ ≥ 8 GB: 120
HTTP Proxy Servers	10	10	40	<ul style="list-style-type: none"> ▪ < 8 GB: 10 ▪ ≥ 8 GB: 40
HTTP Remote Hosts	10 (per Remote Web Service)	10 (per Remote Web Service)	10 (per Remote Web Service)	10 (per Remote Web Service)
IDS Matches	20	20	20	20

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
IDS Policies	20	20	20	20
IDS Rule	100 (20 per Policy)	100 (20 per Policy)	100 (20 per Policy)	100 (20 per Policy)
Inbound Manipulations	205 (3,000 for Mediant 3100)	3,000	3,000	3,000
Internal DNS	20	20	20	20
Internal SRV	10	10	10	10
IP Group Set	51 (350 for Mediant 3100)	350	2,500	<ul style="list-style-type: none"> ▪ 2 GB: 40 ▪ 3.5 GB: 500 ▪ 4-16 GB: 750 ▪ 32-64 GB: 2,500
IP Groups	80 (700 for Mediant 3100)	700	5,000	<ul style="list-style-type: none"> ▪ 2 GB: 80 ▪ 3.5 GB: 1,000 ▪ 4-16 GB: 1,500 ▪ 32-64 GB: 5,000
IP Interfaces	16 1,024 (Mediant 3100)	1,024	1,024	1,024
IP Profiles	<ul style="list-style-type: none"> ▪ MP-1288/Mediant 500/500L/800: 20 ▪ Mediant 1000: 40 ▪ Mediant 3100: 300 	300	<ul style="list-style-type: none"> ▪ Mediant 9030: 300 ▪ Mediant 9000/9080 /SE: 1,500 (5,000 if License Key includes VoiceAI Connect) 	<ul style="list-style-type: none"> ▪ 2 GB: 150 ▪ 5-32 GB: 300 ▪ 64 GB: 1,500 (5,000 if License Key includes VoiceAI Connect)
IP-to-IP Routing	615 (9,000 for Mediant 3100)	9,000	9,000	<ul style="list-style-type: none"> ▪ 2 GB: 4,500 ▪ 3.5-64 GB: 9,000
IP-to-Tel Routing	120 (288 for MP-1288)	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
LDAP Server Groups	41 (600 for Mediant 3100)	600	600	600
LDAP Servers	82 (1,200 for Mediant 3100)	1,200	1,200	1,200
Local Users	20	20	20	20
Logging Filters	60	60	60	60
Login OAuth Servers	1	1	1	1
Malicious Signature	20	20	20	20

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
Media Realm Extension	<ul style="list-style-type: none"> MP-1288 / Mediant 500/500L/800: 2 x Max. Media Realms Mediant 3100: 5 x Max. Media Realms 	<ul style="list-style-type: none"> Mediant 2600: 2 x max. Media Realms Mediant 4000B: 5 x max. Media Realms 	5 x Max. Media Realms	5 x Max. Media Realms
Media Realms	12 (1,024 for Mediant 3100)	1,024	1,024	1,024
Message Conditions	82 (1,200 for Mediant 3100)	1,200	1,200	1,200
Message Manipulations	<ul style="list-style-type: none"> MP-1288 / Mediant 500/500L/800: 100 Mediant 1000: 200 Mediant 3100: 500 	500	500	500
Message Policies	20	20	20	20
NAT Translation	32	32	32	32
OAuth Servers	1	1	1	1
Outbound Manipulations	205 (3,000 for Mediant 3100)	3,000	3,000	3,000
OVOC Services	1	1	1	1
Phone Contexts	20	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Pre-Parsing Manipulation Rules	30	30	30	30
Pre-Parsing Manipulation Sets	10	10	10	10
Proxy Sets	80 (700 for Mediant 3100)	700	5,000	<ul style="list-style-type: none"> 2 GB: 80 3.5 GB: 1,000 4-16 GB: 1,500 32-64 GB: 5,000
Proxy Sets > Proxy Address (per Proxy Set)	10	10	50	<ul style="list-style-type: none"> 2 GB: 10 3.5 GB: 10 8-16 GB: 10 32-64 GB: 50
Proxy Sets > Proxy Address (DNS-resolved IP addresses per Proxy Set)	15	15	50	<ul style="list-style-type: none"> 2 GB: 15 3.5 GB: 15 8-16 GB: 50 32-64 GB: 50
Proxy Sets > Proxy Address	500	2,100	20,000	<ul style="list-style-type: none"> 2 GB: 500 3.5 GB: 3,000

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
(DNS-resolved IP addresses for all Proxy Sets combined)				<ul style="list-style-type: none"> ▪ 4 GB: 4,500 ▪ 8-16 GB: 6,000 (20,000 for VAIC feature) ▪ 32-64 GB: 20,000
QoS Mapping	64	64	64	64
Quality of Experience Color Rules	256	256	256	256
Quality of Experience Profile	256	256	256	256
Quality Of Service Rules	510 (3,500 for Mediant 3100)	3,500	7,500	7,500
RADIUS Servers	3	3	3	3
Reasons for IP-to-Tel Alternative Routing	10	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Reasons for Tel-to-IP Alternative Routing	10	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Redirect Number IP-to-Tel	20	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Redirect Number Tel-to-IP	20	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Release Cause ISDN->ISDN	10	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Release Cause Mapping from ISDN to SIP	12	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Release Cause Mapping from SIP to ISDN	12	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Remote Media Subnet	5	5	5	5
Remote Web Services	7	7	7	7
Routing Policies (SBC)	20 (600 for Mediant 3100)	600	600	<ul style="list-style-type: none"> ▪ 2 GB: 20 ▪ 3.5 GB: 70 ▪ 4 GB: 100 ▪ 8 GB: 200 ▪ 16 GB: 400 ▪ 32-64 GB: 600

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
Routing Policies (Gateway)	1	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
RTP-Only	n/a	n/a	3,000 (Mediant SE)	3,000
SBC CDR Format	128 Syslog; 40 RADIUS (128 for Mediant 3100); 64 Locally Stored & JSON	128 (Syslog); 128 (RADIUS); 64 (Locally Stored & JSON)	128 (Syslog); 128 (RADIUS); 64 (Locally Stored & JSON)	128 (Syslog); 128 (RADIUS); 64 (Locally Stored & JSON)
SBC User Information	<ul style="list-style-type: none"> ▪ Mediant 500: 1,600 ▪ Mediant 500L/800: 2,000 ▪ Mediant 1000: 800 ▪ Mediant 3100: 20,000 ▪ MP-1288: 350 	20,000	50,000	<ul style="list-style-type: none"> ▪ 2 GB: 1,000 ▪ 3-4 GB: 3,000 ▪ 8 GB: 20,000 ▪ 16-64 GB: 50,000
	Note: The device limits the maximum number of users that can use a TLS connection:			
	<ul style="list-style-type: none"> ▪ Mediant 500: 300 ▪ Mediant 500L: 100 ▪ Mediant 800: 300 ▪ Mediant 1000: 300 ▪ Mediant 3100: 6,000 ▪ MP-1288: 350 	1,000	25,000	<ul style="list-style-type: none"> ▪ 2 GB: 100 ▪ 3 GB: 500 ▪ 4 GB: 5,000 ▪ 8-16 GB: 6,000 ▪ 32 GB: 16,000 ▪ 64 GB: 25,000
SIP Interfaces	80 (1,200 for Mediant 3100)	700	1,200	<ul style="list-style-type: none"> ▪ 2 GB: 40 ▪ 3 GB: 200 ▪ 4 GB: 400 ▪ 8 GB: 800 ▪ 16 GB: 1,200 ▪ 32-64 GB: 1,200
SIP Recording Rules	30	30	50	50
SNI-to-TLS Mapping	12 (15 for Mediant 1000; 100 for Mediant 3100)	100	100	100
SNMP Trap Destinations	5	5	5	5
SNMP Trusted Managers	5	5	5	5
SNMPv3 Users	10	10	10	10
Source Phone Number Manipulation for IP-to-Tel Calls	120	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Source Phone Number Manipulation for Tel-to-IP Calls	120	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
SRDs	20 (600 for Mediant 3100)	600	600	<ul style="list-style-type: none"> ▪ 2 GB: 20 ▪ 3.5 GB: 70

Configuration Table	Mediant 500 / 500L / 800 / 1000B / 3100 MP-1288	Mediant 2600 / 4000B	Mediant 90xx / SE	Mediant VE / CE
				<ul style="list-style-type: none"> ▪ 4 GB: 100 ▪ 8 GB: 200 ▪ 16 GB: 400 ▪ 32-64 GB: 600
SSH Interfaces	16	16	16	16
Static Routes	30	30	30	30
Supplementary Services	100	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Syslog Servers	4	4	4	4
TCP/UDP Proxy Servers	10	10	10	10
Tel Profiles	9 (40 for Mediant 3100)	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Tel-to-IP Routing	180	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Telnet Interfaces	16	16	16	16
Test Call Rules	5 (default)	5 (default)	5 (default)	5 (default)
Time Band	70 (21 per Cost Group)	70 (21 per Cost Group)	70 (21 per Cost Group)	70 (21 per Cost Group)
TLS Contexts	<ul style="list-style-type: none"> ▪ MP-1288 / Mediant 500/500L/800: 12 ▪ Mediant 1000: 15 ▪ Mediant 3100: 100 	100	100	100
Tone Index	50	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Trunk Group	<ul style="list-style-type: none"> ▪ MP-1288: 288 ▪ Mediant 500/500L/800: 24 ▪ Mediant 1000: 240 ▪ Mediant 3100: 512 	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Trunk Group Settings	<ul style="list-style-type: none"> ▪ MP-1288: 289 ▪ Mediant 500/500L/800: 101 ▪ Mediant 1000: 241 ▪ Mediant 3100: 512 	n/a (Gateway only)	n/a (Gateway only)	n/a (Gateway only)
Upstream Groups	10	10	10	10
Upstream Hosts	50 (5 per Upstream Group)	50 (5 per Upstream Group)	50 (5 per Upstream Group)	50 (5 per Upstream Group)
Weak Passwords List	150	150	150	150
Web Interfaces	20	20	20	20

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5 Supported SIP Standards

This section lists SIP RFCs and standards supported by the device.

5.1 Supported SIP RFCs

The table below lists the supported RFCs.

Table 5-1: Supported RFCs

RFC	Description	Gateway	SBC
draft-choudhuri-sip-info-digit-00	SIP INFO method for DTMF digit transport and collection	√	√
draft-ietf-bfcpbis-rtc4583bis-12	Session Description Protocol (SDP) Format for Binary Floor Control Protocol (BFCP) Streams	×	√ (forwarded transparently)
draft-ietf-sip-connect-reuse-06	Connection Reuse in SIP	√	√
draft-ietf-sipping-cc-transfer-05	Call Transfer	√	√
draft-ietf-sipping-realtimefax-01	SIP Support for Real-time Fax: Call Flow Examples	√	√ (forwarded transparently)
draft-ietf-sip-privacy-04.txt	SIP Extensions for Network-Asserted Caller Identity using Remote-Party-ID header	√	√
draft-johnston-sipping-cc-uui-04	Transporting User to User Information for Call Centers using SIP	√	√ (forwarded transparently)
draft-levy-sip-diversion-08	Diversion Indication in SIP	√	√
draft-mahy-iptel-cpc-06	The Calling Party's Category tel URI Parameter	√	√ (forwarded transparently)
draft-mahy-sipping-signaled-digits-01	Signaled Telephony Events in the Session Initiation Protocol	√	√
draft-sandbakken-dispatch-bfcp-udp-03	Revision of the Binary Floor Control Protocol (BFCP) for use over an unreliable transport	×	√ (forwarded transparently)
ECMA-355, ISO/IEC 22535	QSIG tunneling	√	√ (forwarded transparently)
RFC 2327	SDP	√	√
RFC 2617	HTTP Authentication: Basic and Digest Access Authentication	√	√
RFC 2782	A DNS RR for specifying the location of services	√	√
RFC 2833	Telephone event	√	√
RFC 2976	SIP INFO Method	√	√
RFC 3261	SIP	√	√

RFC	Description	Gateway	SBC
RFC 3262	Reliability of Provisional Responses	√	√
RFC 3263	Locating SIP Servers	√	√
RFC 3264	Offer/Answer Model	√	√
RFC 3265	(SIP)-Specific Event Notification	√	√
RFC 3310	Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA)	√	×
RFC 3311	UPDATE Method	√	√
RFC 3323	Privacy Mechanism	√	√
RFC 3325	Private Extensions to the SIP for Asserted Identity within Trusted Networks	√	√
RFC 3326	Reason header	√	√ (forwarded transparently)
RFC 3327	Extension Header Field for Registering Non-Adjacent Contacts	√	×
RFC 3361	DHCP Option for SIP Servers	√	×
RFC 3362	Real-time Facsimile (T.38) - image/t38 MIME Sub-type Registration	√	√
RFC 3372	SIP-T	√	√ (forwarded transparently)
RFC 3389	RTP Payload for Comfort Noise	√	√ (forwarded transparently)
RFC 3420	Internet Media Type message/sipfrag	√	√
RFC 3455	P-Associated-URI	√	√ (using user info \ account)
RFC 3489	STUN - Simple Traversal of UDP	√	√
RFC 3515	Refer Method	√	√
RFC 3550	RTP: A Transport Protocol for Real-Time Applications	√	√
RFC 3578	Interworking of ISDN overlap signalling to SIP	√	×
RFC 3581	Symmetric Response Routing - rport	√	√
RFC 3605	RTCP attribute in SDP	√	√ (forwarded transparently)
RFC 3608	SIP Extension Header Field for Service Route Discovery During Registration	√	×
RFC 3611	RTCP-XR	√	√
RFC 3665	SIP Basic Call Flow Examples	√	√
RFC 3666	SIP to PSTN Call Flows	√	√ (forwarded transparently)
RFC 3680	A SIP Event Package for Registration (IMS)	√	×

RFC	Description	Gateway	SBC
RFC 3711	The Secure Real-time Transport Protocol (SRTP)	√	√
RFC 3725	Third Party Call Control	√	√
RFC 3824	Using E.164 numbers with SIP (ENUM)	√	√
RFC 3842	MWI	√	√
RFC 3891	"Replaces" Header	√	√
RFC 3892	The SIP Referred-By Mechanism	√	√
RFC 3903	SIP Extension for Event State Publication	√	√
RFC 3911	The SIP Join Header	Partial	×
RFC 3960	Early Media and Ringing Tone Generation in SIP	Partial	√
RFC 3966	The tel URI for Telephone Numbers	√	√
RFC 4028	Session Timers in the Session Initiation Protocol	√	√
RFC 4040	RTP payload format for a 64 kbit/s transparent call - Clearmode	√	√ (forwarded transparently)
RFC 4117	Transcoding Services Invocation	√	×
RFC 4168	The Stream Control Transfer Protocol (SCTP) as a Transport for SIP	×	√
RFC 4235	Dialog Event Package	Partial	Partial
RFC 4240	Basic Network Media Services with SIP - NetAnn	√	√ (forwarded transparently)
RFC 4244	An Extension to SIP for Request History Information	√	√
RFC 4320	Actions Addressing Identified Issues with SIP Non-INVITE Transaction	√	√
RFC 4321	Problems Identified Associated with SIP Non-INVITE Transaction	√	√
RFC 4411	Extending SIP Reason Header for Preemption Events	√	√ (forwarded transparently)
RFC 4412	Communications Resource Priority for SIP	√	√ (forwarded transparently)
RFC 4458	SIP URIs for Applications such as Voicemail and Interactive Voice Response	√	√ (forwarded transparently)
RFC 4475	SIP Torture Test Messages	√	√
RFC 4497 or ISO/IEC 17343	Interworking between SIP and QSIG	√	√ (forwarded transparently)
RFC 4566	Session Description Protocol	√	√
RFC 4568	SDP Security Descriptions for Media Streams for SRTP	√	√
RFC 4582	The Binary Floor Control Protocol (BFCP)	×	√ (forwarded transparently)

RFC	Description	Gateway	SBC
RFC 4715	Interworking of ISDN Sub Address to sip isub parameter	√	√ (forwarded transparently)
RFC 4730	A SIP Event Package for Key Press Stimulus (KPML)	Partial	×
RFC 4733	RTP Payload for DTMF Digits	√	√
RFC 4904	Representing trunk groups in tel/sip URIs	√	√ (forwarded transparently)
RFC 4960	Stream Control Transmission Protocol	×	√
RFC 4961	Symmetric RTP and RTCP for NAT	√	√
RFC 4975	The Message Session Relay Protocol (MSRP)	×	√
RFC 5022	Media Server Control Markup Language (MSCML)	√	×
RFC 5079	Rejecting Anonymous Requests in SIP	√	√
RFC 5627	Obtaining and Using Globally Routable User Agent (UA) URIs (GRUU) in SIP	√	√ (forwarded transparently)
RFC 5628	Registration Event Package Extension for GRUU	√	×
RFC 5806	Diversion Header, same as draft-levy-sip-diversion-08	√	√
RFC 5853	Requirements from SIP / SBC Deployments	-	√
RFC 6035	SIP Package for Voice Quality Reporting Event, using sip PUBLISH	√	√
RFC 6135	An Alternative Connection Model for the Message Session Relay Protocol (MSRP)	×	√
RFC 6140	Registration for Multiple Phone Numbers in the Session Initiation Protocol (SIP)	√	√
RFC 6337	Session Initiation Protocol (SIP) Usage of the Offer/Answer Model	-	√
RFC 6341	Use Cases and Requirements for SIP-Based Media Recording (Session Recording Protocol - draft-ietf-siprec-protocol-02, and Architecture - draft-ietf-siprec-architecture-03)	√	√
RFC 6442	Location Conveyance for the Session Initiation Protocol	-	√
RFC 7245	An Architecture for Media Recording Using the Session Initiation Protocol	√	√
RFC 7261	Offer/Answer Considerations for G723 Annex A and G729 Annex B	√	√
RFC 7865	Session Initiation Protocol (SIP) Recording Metadata	√	√
RFC 7866	Session Recording Protocol	√	√
RFC 8068	Session Initiation Protocol (SIP) Recording Call Flows	√	√

5.2 SIP Message Compliancy

The SIP device complies with RFC 3261, as shown in the following subsections.

5.2.1 SIP Functions

The device supports the following SIP Functions:

Table 5-2: Supported SIP Functions

Function	Comments
User Agent Client (UAC)	-
User Agent Server (UAS)	-
Proxy Server	The device supports working with third-party Proxy Servers such as Nortel CS1K/CS2K, Avaya, Microsoft OCS, Alcatel, 3Com, BroadSoft, Snom, Cisco and many others
Redirect Server	The device supports working with third-party Redirection servers
Registrar Server	The device supports working with third-party Registration servers

5.2.2 SIP Methods

The device supports the following SIP Methods:

Table 5-3: Supported SIP Methods

Method	Comments
ACK	-
BYE	-
CANCEL	-
INFO	-
INVITE	-
MESSAGE	Supported only by the SBC application and send only
NOTIFY	-
OPTIONS	-
PRACK	-
PUBLISH	Send only
REFER	Inside and outside of a dialog
REGISTER	Send only for Gateway application; send and receive for SBC application
SUBSCRIBE	-
UPDATE	-

5.2.3 SIP Headers

The device supports the following SIP headers:

Table 5-4: Supported SIP Headers

SIP Header	SIP Header
Accept	Proxy- Authenticate
Accept-Encoding	Proxy- Authorization
Alert-Info	Proxy- Require
Allow	Prack
Also	Reason
Asserted-Identity	Record- Route
Authorization	Refer-To
Call-ID	Referred-By
Call-Info	Replaces
Contact	Require
Content-Disposition	Remote-Party-ID
Content-Encoding	Response- Key
Content-Length	Retry-After
Content-Type	Route
Cseq	Rseq
Date	Session-Expires
Diversion	Server
Expires	Service-Route
Fax	SIP-If-Match
From	Subject
History-Info	Supported
Join	Target-Dialog
Max-Forwards	Timestamp
Messages-Waiting	To
MIN-SE	Unsupported
P-Associated-URI	User- Agent
P-Asserted-Identity	Via
P-Charging-Vector	Voicemail
P-Preferred-Identity	Warning
Priority	WWW- Authenticate
Privacy	-



Note: The following SIP headers are not supported:

- Encryption
- Organization

5.2.4 SDP Fields

The device supports the following SDP fields:

Table 5-5: Supported SDP Fields

SDP Field	Name
v=	Protocol version number
o=	Owner/creator and session identifier
a=	Attribute information
c=	Connection information
d=	Digit
m=	Media name and transport address
s=	Session information
t=	Time alive header
b=	Bandwidth header
u=	URI description header
e=	Email address header
i=	Session info header
p=	Phone number header
y=	Year

5.2.5 SIP Responses

The device supports the following SIP responses:

Table 5-6: Supported SIP Responses

Response Type		Comments
1xx Response (Information Responses)		
100	Trying	The device generates this response upon receiving a Proceeding message from ISDN or immediately after placing a call for CAS signaling.
180	Ringing	The device generates this response for an incoming INVITE message. Upon receiving this response, the device waits for a 200 OK response.
181	Call is Being Forwarded	The device doesn't generate these responses. However, the device does receive them. The device processes these responses the same way that it processes the 100 Trying response.

Response Type		Comments
182	Queued	The device generates this response in Call Waiting service. When the SIP device receives a 182 response, it plays a special waiting Ringback tone to the telephone side.
183	Session Progress	The device generates this response if the Early Media feature is enabled and if the device plays a Ringback tone to IP
2xx Response (Successful Responses)		
200		OK
202		Accepted
204		No Notification
3xx Response (Redirection Responses)		
300	Multiple Choice	The device responds with an ACK, and then resends the request to the first new address in the contact list.
301	Moved Permanently	The device responds with an ACK, and then resends the request to the new address.
302	Moved Temporarily	The device generates this response when call forward is used to redirect the call to another destination. If such a response is received, the calling device initiates an INVITE message to the new destination.
305	Use Proxy	The device responds with an ACK, and then resends the request to a new address.
380	Alternate Service	The device responds with an ACK, and then resends the request to a new address.
4xx Response (Client Failure Responses)		
400	Bad Request	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
401	Unauthorized	Authentication support for Basic and Digest. Upon receipt of this message, the device issues a new request according to the scheme received on this response.
402	Payment Required	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
403	Forbidden	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
404	Not Found	The device generates this response if it is unable to locate the callee. Upon receiving this response, the device notifies the User with a Reorder Tone.
405	Method Not Allowed	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
406	Not Acceptable	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.

Response Type		Comments
407	Proxy Authentication Required	Authentication support for Basic and Digest. Upon receipt of this message, the device issues a new request according to the scheme received on this response.
408	Request Timeout	The device generates this response if the no-answer timer expires. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
409	Conflict	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
410	Gone	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
411	Length Required	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
413	Request Entity Too Large	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
415	Unsupported Media	If the device receives a 415 Unsupported Media response, it notifies the User with a Reorder Tone. The device generates this response in case of SDP mismatch.
420	Bad Extension	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
423	Interval Too Brief	The device does not generate this response. Upon receipt of this message the device uses the value received in the Min-Expires header as the registration time.
424	Bad Location Information	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
428	Use Identity Header	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
429	Provide Referrer Identity	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
433	Anonymity Disallowed	If the device receives a 433 Anonymity Disallowed, it sends a DISCONNECT message to the PSTN with a cause value of 21 (Call Rejected). In addition, the device can be configured, using the Release Reason Mapping, to generate a 433 response when any cause is received from the PSTN side.
436	Bad Identity Info	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
437	Unsupported Credential	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.

Response Type		Comments
438	Invalid Identity Header	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
439	First Hop Lacks Outbound Support	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
440	Max-Breadth Exceeded	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
470	Consent Needed	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
480	Temporarily Unavailable	If the device receives this response, it notifies the User with a Reorder Tone. This response is issued if there is no response from remote.
481	Call Leg/Transaction Does Not Exist	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
482	Loop Detected	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
483	Too Many Hops	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
484	Address Incomplete	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
485	Ambiguous	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
486	Busy Here	The SIP device generates this response if the called party is off-hook and the call cannot be presented as a call waiting call. Upon receipt of this response, the device notifies the User and generates a busy tone.
487	Request Canceled	This response indicates that the initial request is terminated with a BYE or CANCEL request.
488	Not Acceptable	The device doesn't generate this response. Upon receipt of this message and before a 200 OK has been received, the device responds with an ACK and disconnects the call.
491	Request Pending	When acting as a UAS: the device sent a re-INVITE on an established session and is still in progress. If it receives a re-INVITE on the same dialog, it returns this response to the received INVITE. When acting as a UAC: If the device receives this response to a re-INVITE, it starts a timer. After the timer expires, the UAC tries to send the re-INVITE again.

Response Type		Comments
5xx Response (Server Failure Responses)		
500	Internal Server Error	Upon receipt of any of these responses, the device releases the call, sending an appropriate release cause to the PSTN side. The device generates a 5xx response according to the PSTN release cause coming from the PSTN.
501	Not Implemented	
502	Bad gateway	
503	Service Unavailable	
504	Gateway Timeout	
505	Version Not Supported	
6xx Response (Global Responses)		
600	Busy Everywhere	Upon receipt of any of these responses, the device releases the call, sending an appropriate release cause to the PSTN side.
603	Decline	
604	Does Not Exist Anywhere	
606	Not Acceptable	

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