

AudioCodes Routing Manager (ARM)

Version 10.0



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Abbreviations and Terminology

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

Related Documentation

Manual Name
ARM Installation Manual
ARM User's Manual
ARM REST API Developer's Guide
Mediant 9000 SBC User's Manual
Mediant 4000 SBC User's Manual
Mediant SE SBC User's Manual
Mediant SE-H SBC User's Manual
Mediant VE SBC User's Manual
Mediant VE-H SBC User's Manual
Mediant 1000B Gateway and E-SBC User's Manual
Mediant 800B Gateway and E-SBC User's Manual
Mediant 500 Gateway and E-SBC User's Manual

Manual Name
Mediant 500 MSBR User's Manual
Mediant 500L Gateway and E-SBC User's Manual
Mediant 500L MSBR User's Manual
MP-1288 High-Density Analog Media Gateway User's Manual
One Voice Operations Center Server Installation, Operation and Maintenance Manual
One Voice Operations Center Integration with Northbound Interfaces
One Voice Operations Center User's Manual
One Voice Operations Center Product Description
One Voice Operations Center Alarms Guide
One Voice Operations Center Security Guidelines

Documentation Revision Record

LTRT	Description
41959	SecureLogix – Hosted Call. Custom REST API Request. Preparing and Sending the Request. Using the Response. Adding UMP Server. New Actions in File Repository. Scheduling Synchronization for Each File Repository. DIDs Count. Configuring DIDs Count. Reroute Peer Connection for REFER and 3XX Requests.
42360	[9.8.200 Fix 1] Resolved Issues
42361	Rocky Linux 8.9

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1 Overview

These *Release Notes* describe the new features and known issues in version 10.0 of the AudioCodes Routing Manager (ARM).

1.1 Managed AudioCodes Devices

ARM 10.0 supports the following AudioCodes devices (Gateways and SBCs) referred to in the ARM GUI as *nodes*:

Table 1-1: AudioCodes Devices Supported by ARM Version 10.0

Device	Major Versions
MP-1288 Gateway	7.20A.258.119 and later
Mediant 9000 SBC	7.20A.258 and later
Mediant 4000 SBC	7.20A.258 and later
Mediant 2600 SBC	7.20A.258 and later
Mediant SE/VE SBC	7.20A.258 and later
Mediant 1000B Gateway and E-SBC	7.20A.258 and later
Mediant 800B Gateway and E-SBC	7.20A.258 and later
Mediant 800C	7.20A.258 and later
Mediant 500 E-SBC	7.20A.258 and later
Mediant 500L - SBC	7.20A.258 and later
Mediant SBC CE (Cloud Edition)	7.20A.258 and later
Mediant 3000 Gateway only	7.00A.142.001 and later
Mediant 3100 SBC, Gateway or Hybrid	7.40M3.002.084 and later



Note: See also Section 4 for the earliest device version supported by the ARM *per ARM feature*.

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2 What's New in Version 10.0

This section covers the new features and capabilities introduced in ARM 10.0.

2.1 Rocky Linux 8.9 OS

ARM 10.0 is provided with a new operating system Rocky Linux 8.9, including all the latest updates. The previous ARM versions were based on CentOS stream 8 which became end of builds as of 2024-05-31. Rocky Linux 8.9 will have security support until May 01, 2029. All ARM elements are now based on Rocky Linux 8.9 (ARM Configurator and ARM Router).

2.1.1 Upgrading to ARM 10.0 with Rocky Linux 8.9

Software upgrades to ARM 10.0 will be supported from ARM versions 9.8 and later.

If using previous versions of 9.8 (minimum version of ARM 9.2), operators must first upgrade to 9.8 latest version and then upgrade to 10.0.

ARM versions prior to 9.2 must first upgrade to 9.2 latest version and then to 9.8 latest and then to 10.0.



Note: Before upgrading to ARM 10.0, operators must carefully read the description of the process of upgrading to ARM 10.0 in the *Installation Manual*.

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3 Supported Platforms

ARM 10.0 supports the platforms shown in the table below.

Table 3-1: ARM 10.0 Supported Platforms

ARM	Platform	Application
GUI	Web Browser	Firefox, Chrome, Edge
Deployment	VMWare	VMware ESXI 6.7, 7.0 Update 2
	HyperV	Windows Server 2016 Hyper-V Manager Microsoft Corporation Version: 10.0.14393.0

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4 Earliest SBC/GW Software Versions Supported by ARM Features

Some ARM features are developed in coordination with nodes (AudioCodes' SBCs and Media Gateways). To activate and use an ARM feature, the node needs to be upgraded to the earliest software supporting that feature if it's configured with software that does not support it.

The following table displays ARM features supported by the earliest node software.

Table 4-1: ARM Features Supported by the Earliest Node Software

#	Feature	Earliest Node Software Supporting It	Comments
1	Quality-based routing	Version 7.2.158 and later	The quality-based routing feature is not supported when operating with nodes version 7.0 (for Mediant 3000).
2	Separate interface at the node level for ARM traffic	Version 7.2.158 and later	The capability to configure a separate interface at the node level for ARM traffic is not supported when operating with nodes earlier than version 7.2.154 (for Mediant 3000).
3	Call preemption	Version 7.2.158 and later	The call preemption for emergency calls feature is not supported when operating with nodes version 7.20A.154.044 or earlier (not applicable for Mediant 3000).
4	Number Privacy	Version 7.2.250 or later	-
5	Support of IP Group of type User without 'dummy' IP	7.20A.250 and later	Network administrators who want to use a node's IP Group of type 'User' as the ARM Peer Connection can avoid configuring a dummy IP Profile if using node version 7.20A.250 and later. Customers who use ARM version 8.4 with node version earlier than 7.2.250 and who want to configure an IP Group of type 'User' as the ARM Peer Connection, must configure a dummy IP Profile (with a dummy IP address) at the node level, to be associated with this IP Group.
6	Support of ARM Routers group and policies.	Version 7.20A.240 or later	-
7	Support of ARM Routed Calls/CDRs representation	Version 7.20A.250.205 or later	-
8	Support of Forking in ARM (SBC only)	Version 7.20A.252 or later	-
9	Support for Registered users in ARM	Version 7.20A.254.353 or later	-

#	Feature	Earliest Node Software Supporting It	Comments
10	Support for combined ARM and SIP based Routing decision (Route based on Request URI)	Version 7.20A.256.391	Supported for SBC only
11	Support for combined ARM and SBC Routing decision	Version 7.20A.256.391	Supported for SBC only
12	ARM as an Information Source for Users Credentials	Version 7.20A.256.713	Supported for SBC only
13	Support for Microsoft Teams LMP (Local Media Optimization) and additional IP Profiles	Versions: 7.20A.258 -0313, 7.20A.260-180 7.40A.005 (official release) and later	-
14	ARM connection with ABC level defined IP Profile and Media Realm	Versions: 7.20A.258 -0313, 7.20A.260-180 7.40A.005 (official release) and later	SBC only
15	ARM 'Customer' entity (Team multi-tenancy) - support for Contact header manipulation	7.40A.005.509 or later	-
16	Delayed Alternative Routing	Official build from SBC 7.4.200 stream	-
17	Story of a call: Integration with Voca. Additional information in ARM calls information.	Official build from SBC 7.4.200 stream	-
18	Support for more efficient way of synchronization of SBC IP groups with ARM	Official build from SBC 7.4.200 stream	If the customer runs earlier SBC SW, the synchronization will work in a pre-ARM 9.6 way.
19	Support for multiple connections from SBC to ARM Router	Official build from SBC 7.4.300 stream	-
20	Support for SIP Conditions and Manipulations for SIP Header fields (SBC-level bug fixes)	Latest official build from SBC 7.2.250, SBC 7.4.250, SBC 7.4.400	-

#	Feature	Earliest Node Software Supporting It	Comments
21	Preserving of the same Call ID when traversing more than one SBC.	SBC 7.40A.490.134 or later	

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5 Resolved Issues in ARM 10.0

This is the first release of ARM with the Rocky Linux operating system.

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6 Tested ARM Capacities

The table below lists the tested capacities of ARM Low Profile and ARM High Profile. The table presents the results of *the maximum capacities* tested. If customers require *higher capacities* tested, they should communicate this to AudioCodes.

Table 6-1: Tested ARM Capacities

Item	ARM Low Profile	ARM High Profile
CAPs (assuming the average call duration is 100 seconds)	50 CAPs per ARM Router	300 CAPs per ARM Router
	ARM total: 100 CAPs	ARM total: 3000 CAPs
ARM Routers	4	150
Routing Groups	100	2,000
Routing Rules per ARM	1,000	10,000
ARM Users (either local or LDAP/Azure AD)	100,000	1 million Possible extension to 4 million when ordering a special Feature Key. Requires 16 GB memory for Routers.
'Customer' entities (Teams tenants)	2,000	Up to 20,000
Nodes number	10	150 by default Possible extension to 300 requires ARM Configurator with 8 CPUs and 32 GB memory.
Peer Connections	Per Node: 60	Per Node: 600
	ARM total: 100	ARM total: 30,000
Connections	100	10,000
Prefix Groups	200	2,000
Prefixes in a single Prefix Group	200	2,000
Normalization rules	50	2,000
Calls history	1 million	10 million
Threshold alarms	10 threshold rules	150 threshold rules
	5 elements/entities per rule	25 elements/entities per rule
Statistics history	3 months	1 year

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7 Known Limitations and Workarounds

The table below lists the known limitations and workarounds in ARM 10.0.

Table 7-1: Known Limitations and Workarounds

Incident	Problem / Limitation	Comments/Workaround
-	Attaching / detaching a user to / from an Active Directory Group is reflected in the ARM's Users page (and Users Groups page) only after performing a full update (synchronization) with the LDAP server (by default performed automatically every 24 hours).	Network administrators should take this into consideration
-	When defining a Users Group, the condition is applied to the pre-manipulated value of the property used in the condition definition (the original value taken from the Active Directory).	Network administrators should take this into consideration
-	For VMware users, after rebooting or upgrading an ARM Configurator, its clock 'drifts'. This can sometimes cause inconsistency between ARM Configurator and ARM Router data.	Make sure the clock in the machine (Host) and the VM (Guest) are the same. Both should be synchronized with the same NTP.
-	For customers who use auto-detect mode to add a new node (SBC / gateway) to the ARM, the name of the Configurator Web service configured at the node level for auto-discovery <i>must</i> be ARMTopology else the ARM data center recovery mechanism will not work correctly for the node; it will not be redirected to the new Configurator.	Generally, it's preferable to add a node using the ARM GUI rather than auto-detection.
-	When the ARM is used with Load Balancing CE SBC in an Azure environment, the operator should make sure to define the FQDN / IP Address as the Hostname of the LB CE SBC and add the LB CE SBC in the ARM using that Hostname.	-
ARM-6403	SBC Media Security Mode "offer-both-answer-prefer-protected" is not supported by ARM.	If the operator has to configure SBC level IP profile with this mode, this IP profile should not be used by ARM.
Installation Manual	The chapter 'Deploying the ARM from Microsoft's Azure Marketplace' in the 'Installation Manual' includes screenshots of an old Azure version which are currently inaccurate.	These screenshots will be changed in the document in the next major release.

Incident	Problem / Limitation	Comments/Workaround
Security		
-	The ARM does not prevent the opening of HTTP for debugging purposes. HTTPS should be used for debugging purposes.	Operators should consider security threats when enabling HTTP communication between ARM network components and SBCs.
ARM-5846 CVE: 2021-41617	ARM 10.0 uses openSSH version 8.0. This openSSH version is potentially exposed to CVE: 2021-41617. ARM OS default settings make sure that the ARM machine is not exposed to this CVE finding even though version 8.0 is used.	ARM operators are required not to change the default configuration of AuthorizedKeysCommand and AuthorizedPrincipalsCommand attributes (default = disabled).
CESA-2021:4150	When ARM 10.0 is deployed in Azure and if the customer chooses to activate the WALinuxAgent agent, it will imply usage of Python 36 which is exposed to security vulnerability.	For Azure ARM users, it's up to the customer to either deactivate WALinuxAgent or to use an older version of Python (Python 36).
Breaking changes		
-	ARM 10.0 does not support 'Build Star' and 'Build Mash' capabilities. These capabilities were removed from the GUI and REST API starting from ARM 9.4 as they are not widely used by customers and are potentially problematic.	Operators should add Connections and build the ARM Network Topology based on customer requirements.
-	For operators of the pre-9.2 ARM version: ARM 9.2 changes the REST API for ARM Users management (Add, Delete, Modify) in a way that is not backward compatible.	Customers must take this into consideration. The new REST API for users is described in the <i>REST API Developer's Guide for ARM 9.2 and later</i> . If customers develop scripts based on this REST API, these scripts should be adjusted to the new REST API when moving to ARM 9.2 and later.
-	Starting from ARM 9.4, the REST API for getting all VoIP Peers (VoIP Peers GET API) is changed. This non-backward compatible change was implemented to support Paging.	Customers should take this into consideration. The new REST API for getting the VoIP Peers is described in the <i>REST API Developer's Guide for ARM 9.4</i> . If customers develop scripts based on this REST API, these scripts should be adjusted to the new REST API when moving to ARM 9.4 and later.
-	For a two-step upgrade (for customers upgrading from ARM 8.6 or earlier): The redesigned ARM 8.8 Add Routing Rule – Routing Actions screen does not feature the 'via' action as previous versions did. The same applies to ARM 9.0, ARM 9.2, ARM 9.4, ARM 9.6, ARM 9.8, ARM 9.8.100 and ARM 9.8.200 Fix 1.	Customers upgrading from a previous version will still view the action but are advised to exclude it from routing definitions.
-	In ARM 9.8.200 Fix 1 (starting from ARM 9.4), when an alarm for a Routing Rule is generated, the detailed alarm information is placed in both Additional Info 1 and Additional Info 2 .	Operators should use information from both fields. This is done to provide detailed information about the alarm without truncation.

Incident	Problem / Limitation	Comments/Workaround
-	ARM 9.8.200 Fix 1 (starting from ARM 9.6) REST API is not backward compatible in the definition (Add / Edit / Delete) of 'Alternative Routing SIP Reason'. This is due to the new feature (Sets of SIP Reasons for Alternative Routing).	Customers should take this into consideration. The new REST API for managing SIP reasons is described in the <i>REST API Developer's Guide for ARM 9.6</i> .
Upgrade		
-	Direct upgrade from ARM 9.0 and earlier to ARM 9.8.200 Fix 1 is not supported.	For these cases, a three-step upgrade is required: Step 1: Upgrade to ARM 9.2 (not regular upgrade, including OS upgrade) Step 2: Upgrade to ARM 9.8.200 Fix 1 Step 3: Upgrade to ARM 10.0 Note: The following direct upgrades are supported: <ul style="list-style-type: none"> ARM 9.2 > ARM 9.8.200 Fix 1 ARM 9.4 > ARM 9.8.200 Fix 1 ARM 9.6 > ARM 9.8.200 Fix 1 ARM 9.8 > ARM 9.8.200 Fix 1 ARM 9.8 > ARM 10.0
-	For pre-ARM 9.2 deployments, the upgrade to ARM 10.0 is not a regular upgrade. It requires three steps: first to ARM 9.2 and then to ARM 9.8.200 and then to ARM10.0. The upgrade to ARM 9.2 upgrades the OS of all components to CentOS Stream from CentOS6. Note that for ARM 9.2 and ARM 9.4 deployments (running CentOS8), the upgrade to ARM 9.8.200 is smooth. ARM 9.6, ARM 9.8, ARM 9.8.100 and ARM 9.8.200 Fix 1 also run on CentOS Stream. The upgrade from ARM 9.8 to ARM 10.0 changes the OS from CentOS8 to Rocky 8.9.	Make the following preparations: <ul style="list-style-type: none"> Make sure you downloaded not only the upgrade but also the installation images for the ARM Configurator and the ARM Router (not as for the usual upgrade). Request from AudioCodes a Feature Key with all the ordered features and ordered number of sessions for the new VM in ARM 10.0. Prepare temporary IP and VM resources required for each server upgrade. Prepare extended storage for the ARM Configurator (the ARM Configurator allocates 80 GB in ARM 10.0 - like in ARM 9.4, ARM 9.6 and ARM 9.8).
-	To upgrade to ARM 10.0 in a VMware environment, the customer must have VMware ESXI 6.7 or 7.0 update 2 (earlier versions are not supported with CentOS Stream).	-
-	Miscellaneous issues with the ARM GUI after upgrading from previous releases.	Customers are requested to clear the browser cache after performing a software upgrade (Ctrl+F5).
GUI Incidents		
ARM-3249 ARM - 2724	Prefixes in a Prefix Group cannot be edited. Double-clicking an existing prefix to modify it doesn't work.	The customer can remove the old prefix and define a new prefix.

Incident	Problem / Limitation	Comments/Workaround
ARM-6392	Advanced search for Peer Connections with a specific 'Operative state' filter does not function correctly.	-
ARM in Azure		
ARM-4676	[ARM in Azure with SBCs behind Load Balancer] After a switchover of an SBC occurs, the node can temporarily (for few seconds) switch between available and unknown state in the ARM; calls are unaffected as routing continues regularly.	The issue occurs as it takes time for the Load Balancer (usually up to 10 seconds) to switch to the secondary SBC.
ARM-4676	[ARM in Azure with SBCs behind Load Balancer] After a switchover of an SBC occurs, the connections to the HA SBC are indicated for a few minutes as unavailable.	The connection between the HA SBCs behind the Load Balancer and the other nodes should have Keep connection properties synchronized disabled. Also, the IP of the proxy set towards the node behind the Load Balancer should be configured manually (at the SBC level) with the Load Balancer's IP.
ARM-6108	In an Azure deployment, if the customer upgrades to ARM 9.8.200 Fix 1 from ARM 9.6 or earlier, the WALinuxAgent agent is not present. Or if upgrading from ARM 9.8 to ARM 9.8.200 Fix 1, the agent will not be activated.	Check whether the Azure Linux Agent is installed: <pre>dnf list installed WALinuxAgent</pre> If the Azure Linux Agent is installed, enable and restart it using the following commands: <pre>systemctl enable waagent service waagent restart</pre> To install the Azure Linux Agent, run the following commands: <pre>dnf install -y WALinuxAgent systemctl enable waagent service waagent restart</pre> Check the status of the Azure Linux Agent service: <pre>systemctl status waagent</pre>

International Headquarters

Naimi Park
Ofra Haza Street 6
Or Yehuda, 6032303, Israel
Tel: +972-3-976-4000
Fax: +972-3-976-4040

AudioCodes Inc.

80 Kingsbridge Rd.,
Piscataway, NJ 08854, USA
Tel: +1-732-469-0880
Fax: +1-732-469-2298

Contact us: <https://www.audiocodes.com/corporate/offices-worldwide>

Website: <https://www.audiocodes.com/>

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