Release Notes

AudioCodes One Voice™ Operations Center

AudioCodes Routing Manager (ARM)

Version 8.4

audiocodes

Table of Contents

List of Tables

List of Figures

Notice

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Date Published: Nov-12-2018

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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
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
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

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1 Overview

This document describes the new features and known issues in Version 8.4 of the AudioCodes Routing Manager (ARM).

1.1 Managed AudioCodes Devices

ARM Version 8.4 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 8.4

Device	Major Versions
Mediant 9000 SBC	7.2.158 and later
Mediant 4000 SBC	7.2.158 and later
Mediant SE/VE SBC	7.2.158 and later
Mediant 1000B Gateway and E-SBC	7.2.158 and later
Mediant 800B Gateway and E-SBC	7.2.158 and later
Mediant 500 E-SBC	7.2.158 and later
Mediant SBC CE (Cloud Edition)	7.2.250 and later
Mediant 3000 Gateway only	7.00A.129.004 and later

Note:

- Customers are strongly recommended to upgrade their devices to Version 7.2.158 or later as issues were encountered with device version releases earlier than 7.2.158.
- 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 8.4

This section describes the new features introduced in ARM Version 8.4.

2.1 ARM Integrated into OVOC

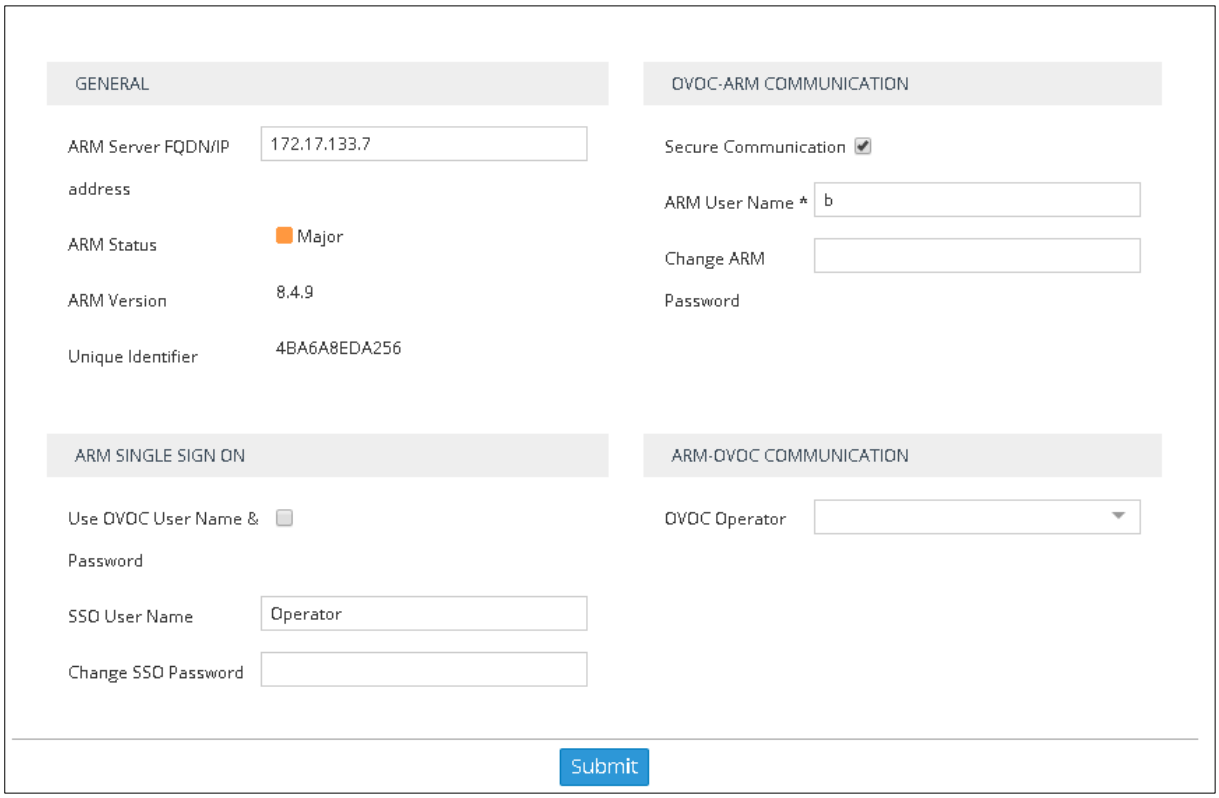
ARM Version 8.4 is fully integrated into AudioCodes' One Voice Operations Center (OVOC) management system (OVOC Version 7.6 and later).

In addition to the Single Sign-On feature supported in previous version releases of ARM and OVOC, ARM Version 8.4 combined with OVOC Version 7.6 provides the features described in the subsections following.

2.1.1 ARM Status

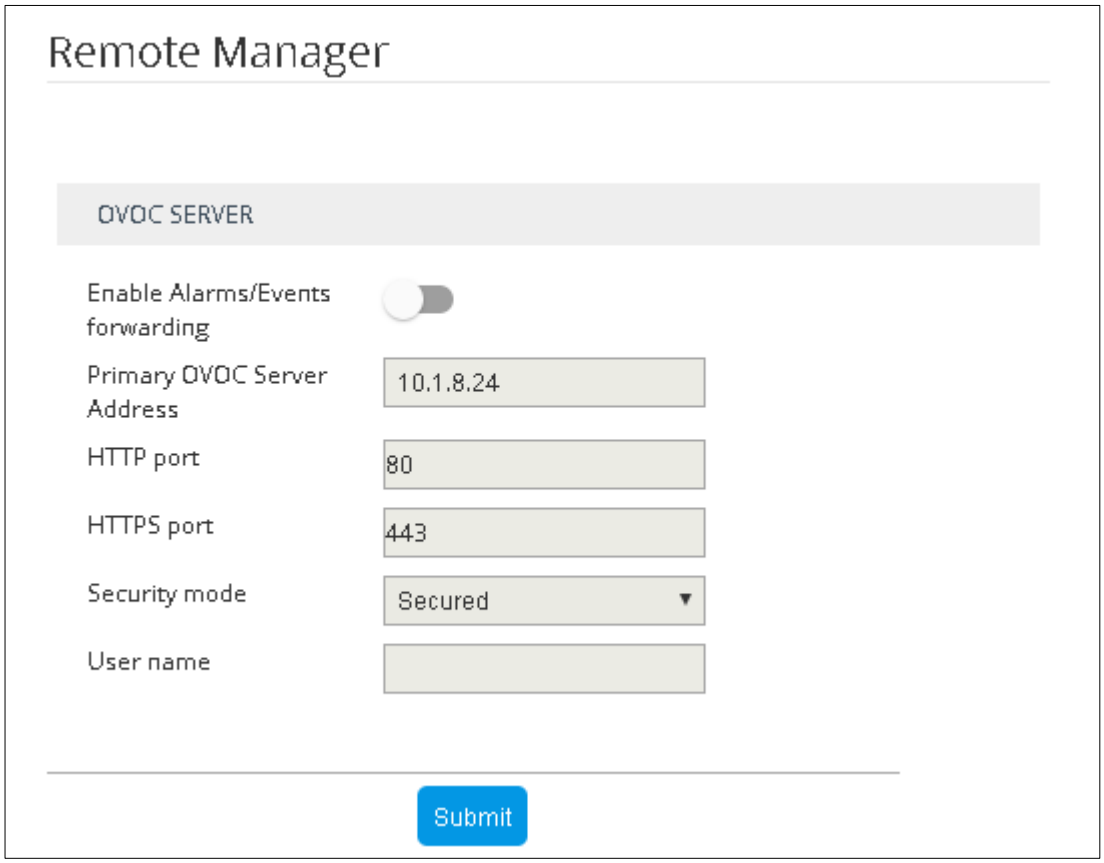
For ARM status to be indicated in the OVOC, the operator must configure ARM-related information such as the IP address of the ARM Configurator, ARM credentials, etc., in the OVOC (System > Configuration > External Applications > ARM).

Figure 2-1: Configuring ARM Status to be Indicated in the OVOC



When the OVOC is connected to the ARM, read-only OVOC information is shown in the ARM (Settings > Administration > Remote Manager).

Figure 2-2: Read-Only OVOC Information Displayed in the ARM



ARM status (as well as the statuses of other applications) can then be viewed in the OVOC after the ARM updates the OVOC with its status.

Figure 2-3: Viewing ARM Status in the OVOC

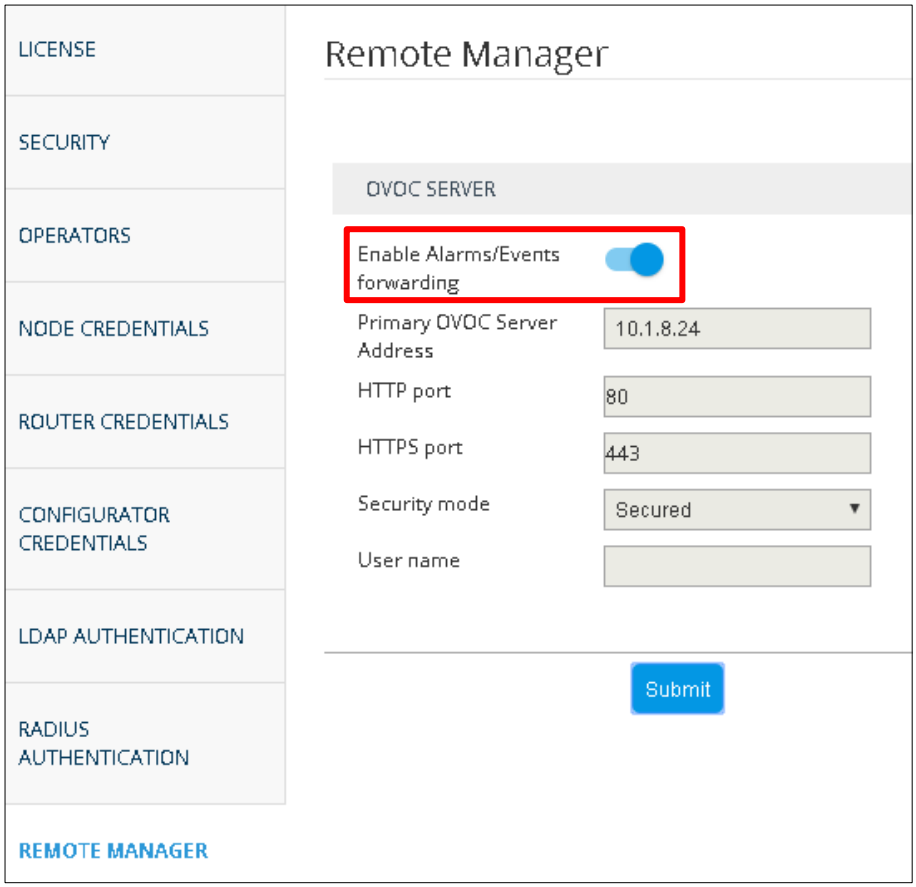
The example in the figure above indicates that the network is managed by the ARM and that there is an alarm in the ARM-managed network whose severity is Major.

If the color code had been green, the indication would have been that the network is managed by the ARM and that there are no alarms in the ARM-managed network.

2.1.2 ARM Alarms and Events Report to OVOC

ARM-generated alarms and events can be displayed in the OVOC. The operator must enable the capability in the ARM (assuming the ARM is already connected to the OVOC).

Figure 2-4: Configuring ARM-Generated Alarms and Events to be Displayed in the OVOC



After enabling the feature, the ARM forwards alarms and events to the OVOC allowing the operator to receive all the benefits of ARM-sourced alarms and events handling that already exist in the OVOC such as Active Alarms, History Alarms, Carrier Grade Alarms, Alarms Forwarding (via e-mail or syslog).

2.2 Increased Number of ARM Routers

ARM Version 8.4 supports up to 40 ARM Routers for handling calls coming from SBCs and Gateways.

The feature is required for very large ARM deployments of almost unlimited scale.

In average size deployments, the feature allows an ARM Router to be deployed close to each Node (or small group of Nodes), providing additional Node Survivability. If a network disconnection occurs, a Node's Routing requests will be served by the adjacent, almost co-existing ARM Router. If a very high number of ARM Routers is used for survivability purposes, it's recommended to apply the 'Sticky primary' routing policy for a Node and to provide the adjacent ARM Router as the priority for handling the Node's routing requests.

A high number of ARM Routers is maintained in the same way, in the GUI's Routing Servers page (Settings > Routing Servers). The page includes a Status indication for each ARM Router and for the Lock/Unlock functionality:

Figure 2-5: Routing Servers Page

		r32	10.8.2.150	443	https	
		r33	10.8.2.152	443	https	
		r34	10.8.2.33	443	https	
		r35	10.8.2.157	443	https	
		r36	10.8.2.160	443	https	
		router1	router8.corp.audi...	443	https	Beer_Sheva_8, 63, 69, 68, 133.154-12, 60, New_Jersey_6, 133.153-11, 65, 66, Israel-HQ_3, China_4, New_Yor...
		router10	172.17.133.248	443	https	64, 61, 133.155-13, New_York_1, 68, Haifa_5, Beer_Sheva_8, Texas_7, 67, Israel-HQ_3, 65, China_4, 133.153-...
		router2	172.17.133.9	443	https	New_York_1, Beer_Sheva_8, 133.152-10, 63, Haifa_5, 64, 67, Texas_7, 60, GW-100-14, Israel-HQ_3, 65, 68, 1...
		router3	172.17.133.241	443	https	Texas_7, 133.155-13, 69, 61, 68, 63, Haifa_5, New_York_1, 67, 133.153-11, 133.152-10, GW-100-14, 62, 65, Is...
		router4	172.17.133.242	443	https	Beer_Sheva_8, 60, New_York_1, Israel-HQ_3, 62, 68, 133.154-12, 133.153-11, 63, China_4, CCE, Texas_7, 133...
		router5	172.17.133.243	443	https	Israel-HQ_3, 67, New_Jersey_6, 64, 68, New_York_1, CCE, Haifa_5, 133.155-13, 63, Beer_Sheva_8, 66, 65, Pari...

Despite a very high number of ARM Routers, they receive full ARM configuration from the ARM Configurator and get all the updates on Configuration changes, Topology elements availability, Quality, etc.

2.3 HyperV Virtualization Platform

ARM Version 8.4 can be installed on Microsoft's Hyper-V virtualization platform.

AudioCodes provides the ARM Virtual Machines in VHD (Virtual Hard Disk) format. The Virtual Machine settings are detailed in the *ARM Installation Manual*. For more information about Hyper-V, see the *Microsoft Hyper-V Server 2016 Manual*.

Note: ARM support for Microsoft HyperV will be available at the end of November 2018. Support is not included in ARM Version 8.4 GA.

2.4 Number Portability and Web-Based Pre-Routing Advisory Service

ARM Version 8.4 supports number portability solutions for querying an external source for additional information about each call.

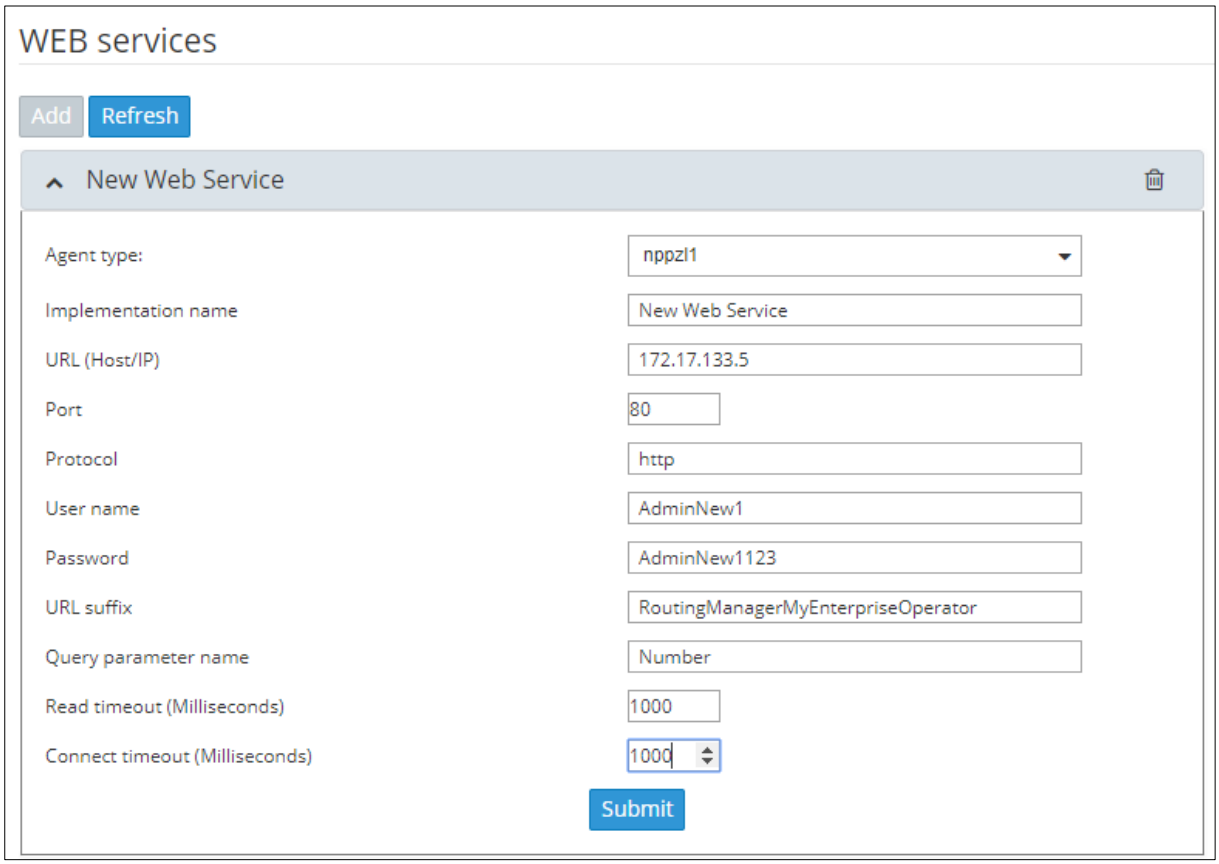
It also provides a general infrastructure for any future Web-based advisory service that can impact ARM call routing.

The prominent example is to query a number portability server that contains a database of every phone number in the country, and the actual carrier network that it currently belongs to.

The feature can conform to any protocol or design, using a plug-in which AudioCodes will provide per the protocol required by the customer. The feature is invisible in the ARM GUI unless enabled in the License Key.

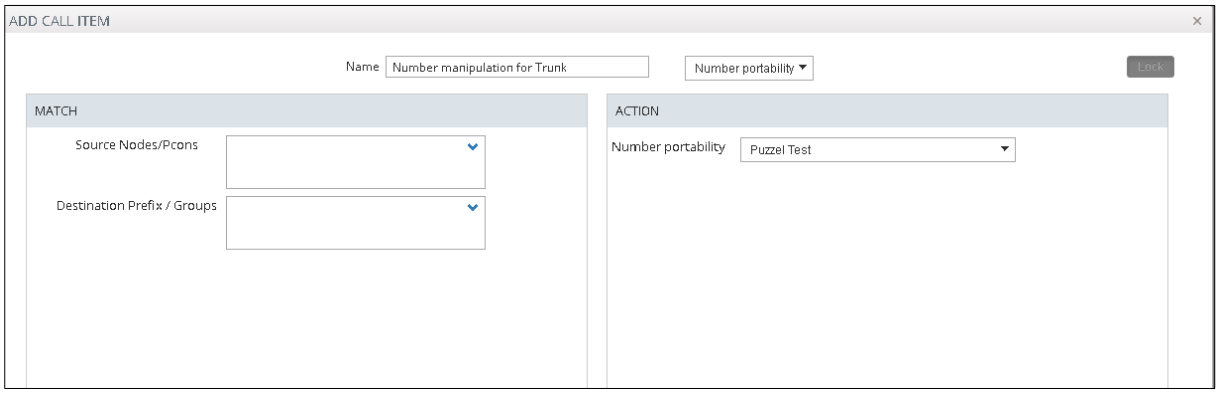
To configure it in the ARM GUI, the operator must first configure the Web Service (Settings > Call Flow Configurations > Web Services > New implementation).

Figure 2-6: Web Services – New Web Service



After configuring the Web-based Advisory Service (and Web server), it can be applied for specific pre-routing smart manipulation and replacing, using the ARM's Policy Studio (Settings > Call Flow Configurations > Policy Studio).

Figure 2-7: Add Call Item



To apply Number Portability, the operator must select **Number portability** as shown in the preceding figure. The default is **User** to preserve the existing functionality of Policy Studio.

Number Manipulation can be applied to specific conditions (see under MATCH in the Add Call Item screen above):

- Source Nodes and/or Peer Connections

  and

- Specific Destination Prefixes or Prefix Groups

2.5 Extended ARM Router Survivability

ARM Version 8.4 provides extended support for ARM Router survivability.

Until Version 8.4, if the ARM Router disconnected from the ARM Configurator, the ARM Router by design provided routing services based on the last configuration and information received from the Configurator.

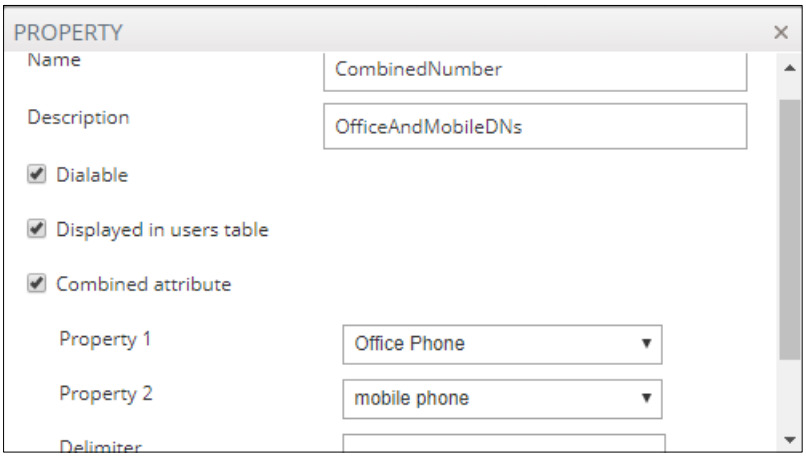
In Version 8.4, if a Node (SBC or Gateway) is unavailable or un-routable per the last configuration received from the Configurator and it starts sending a Routing Request, the disconnected ARM Router will determine it to be 'available', update the local configuration and serve it.

2.6 Users Dictionary Attribute Triggered (Combined) by Two Other Attributes

ARM Version 8.4 provides the capability to add an attribute in the Users Dictionary triggered by a combination of two other Users Dictionary attributes with a predefined delimiter.

If any of the basic attributes [that the new attribute is combined of] changes, the new attribute will change. To accomplish this, the operator must configure the new attribute as **Combined attribute**.

Figure 2-8: Property – Combined Attribute

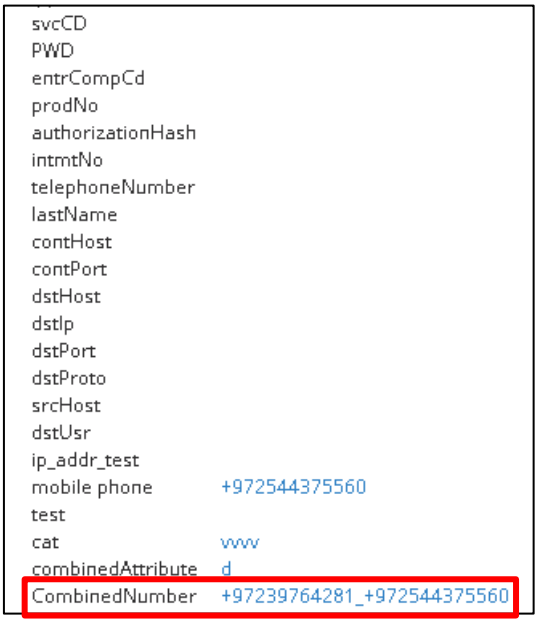


[Refer to the example in the figure above] The new attribute whose name is configured as **CombinedNumber** will be composed of the existing attributes **Office Phone** and **mobile phone**, with the delimiter '_' (not shown in the figure above).

A change to the value of any of the comprising attributes will trigger a change in **CombinedNumber**.

The combined attribute will automatically be created for each user.

Figure 2-9: Combined Number



The feature allows a Users Group to be configured for routing based on a combination of other attributes.

In addition, the operator can configure rules using one of the combined attributes (phone numbers) with the option to apply post-routing manipulation to remove any unnecessary prefix or suffix from the combined number.

2.7 New Policy Studio Design

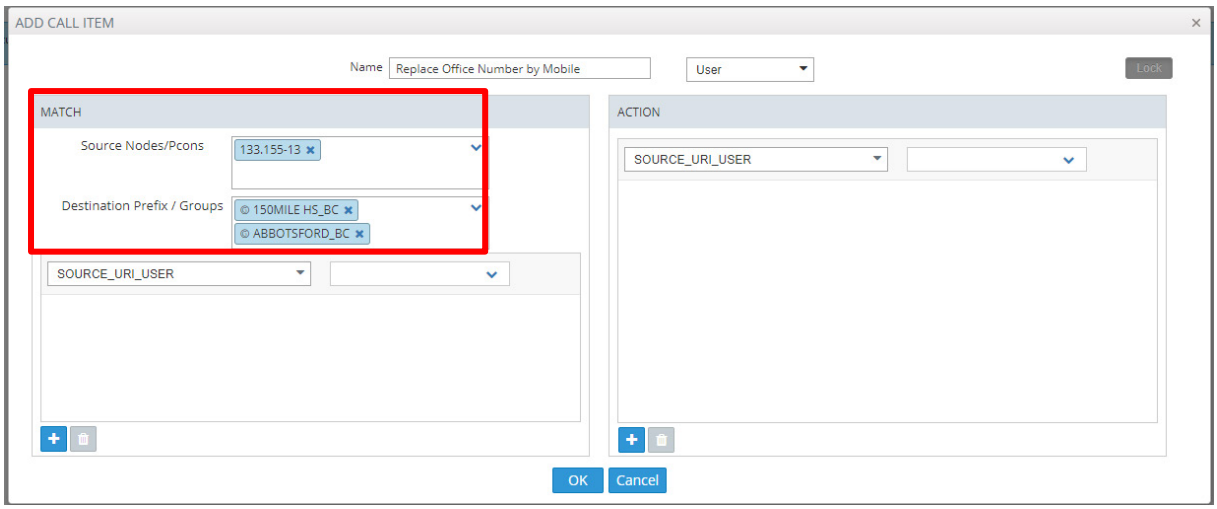
ARM Version 8.4 implements the Number Portability feature as pre-routing using Policy Studio (see Section 2.4). The GUI design of Policy Studio was changed to support both usages. To configure the previous functionality of Policy Studio based on information taken from ARM Users Data, the operator must select **User** (default):

Figure 2-10: User

2.7.1 Destination Prefix/Prefix Groups as a Condition

In ARM Version 8.4, the operator can add an additional condition for users' information-based pre-routing – Destination Prefixes or Prefix Groups.

Figure 2-11: Destination Prefix/Prefix Groups as a Condition

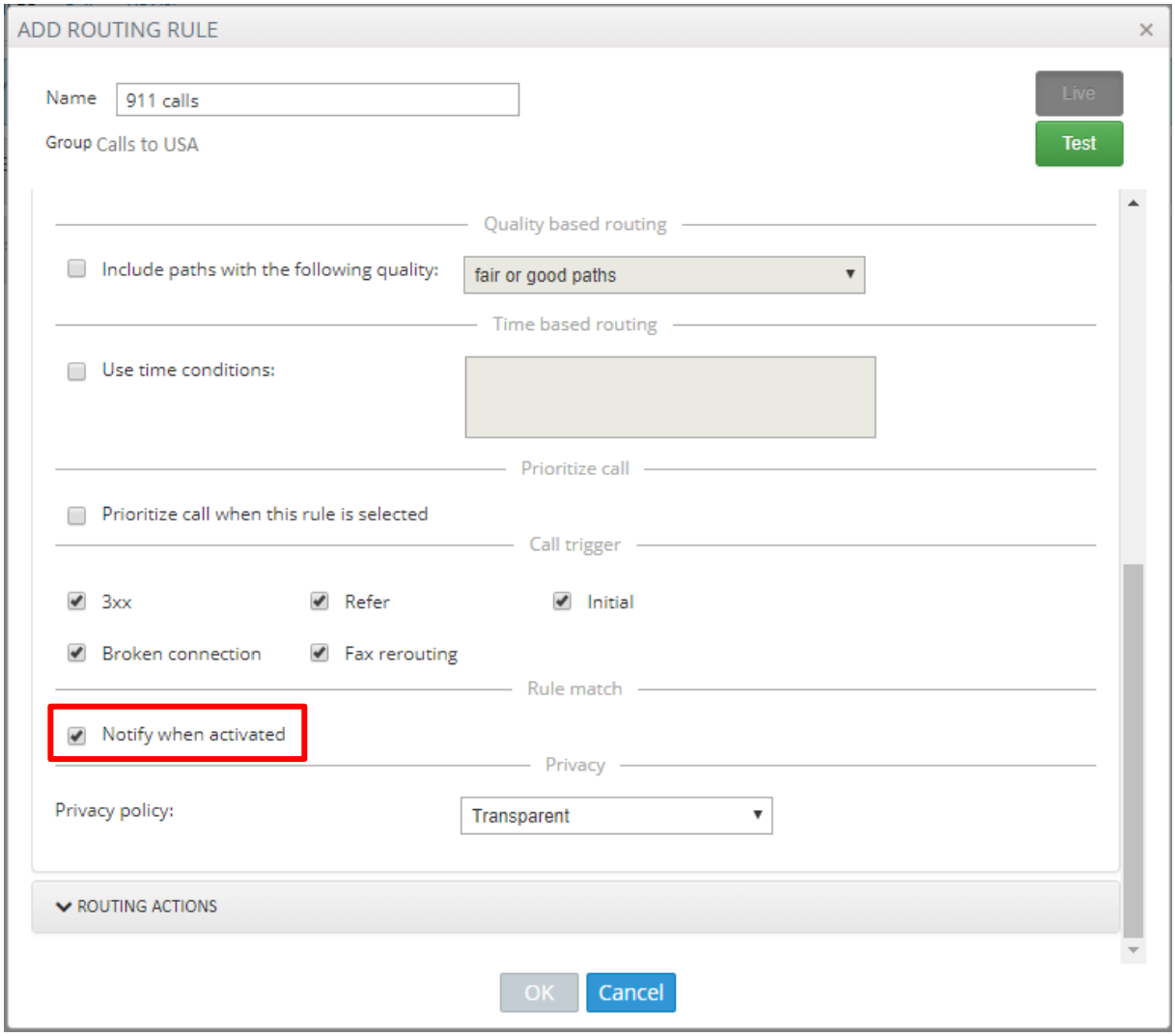


2.8 Notification on Calls Matching a Rule

ARM Version 8.4 allows operators to request a notification on a call (for example, a 911 emergency call) matching a specific rule.

For this feature to function, the operator must configure it under the 'Rule Match' section of the Add Routing Rule screen.

Figure 2-12: Notify When Activated



When the ARM receives a call matching this rule condition [shown in the figure above], a notification (event) with related information is issued by the ARM Configurator.

At the ARM level, the event can be sent to an SNMP target.

With the ARM integrated into the OVOC, the call notification can trigger the issuance of an email by the OVOC, for example:

```
***** Event Info *****
Alarm Name: General Alarm
Date & Time: 09:24:16 AM September 6, 2018
Source: Router#172.17.113.23
Source Description:
Severity: info
Unique ID: 67
Alarm Type: other
Alarm Probable Cause: other
```

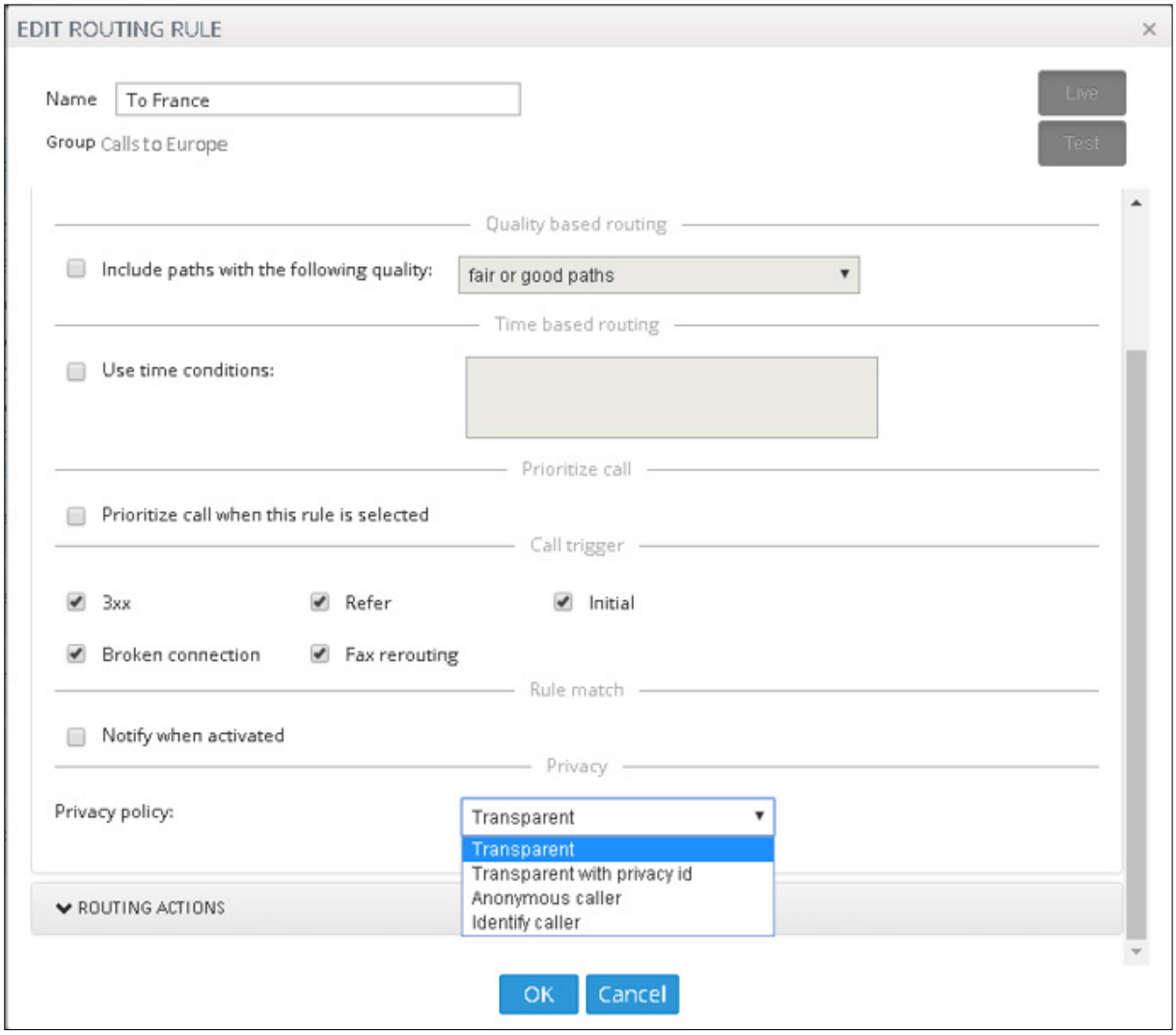
```
Description: Routing Rule 911 was matched
Additional Info 1:
Additional Info 2: Routing Rule "911" of Group "911" is matched.
Call from Pcon "Pcon Pcon-1" , Node "Node 16161104" - From number
"+12345", To number "911".
Additional Info 3:
***** ARM Info *****
ARM IP Address: 172.17.113.23
```

Notifications are typically required and used for 911 emergency calls, which should typically be reported via an email application or another notification application. The notification engine, however, can be used for any other matching rule.

2.9 Calling Number Privacy

ARM Version 8.4 supports calling number privacy with different flavors (Privacy policy). A calling number privacy policy can be applied per Routing Rule and configured in the Edit Routing Rule screen.

Figure 2-13: Edit Routing Rule - Privacy Policy



If a call matches the rule, the Privacy Policy is applied. Based on the Privacy Policy of the matching rule, the ARM instructs the SBC or Gateway how to handle calling number privacy in terms of SIP headers.

Privacy Policy options are:

Table 2-1: Privacy Policy Options

ARM Value	SBC Value	Comment
Transparent	[0] Transparent	Default. Leave as is.
Transparent with Privacy ID	[1] Don't change privacy	• Regular call = regular call (as is) • Anonymous = Anonymous + Normalization of URI
Anonymous caller	[2] Restrict	Turn the call into anonymous
Identify caller	[3] Remove Restriction	• If a regular call, stay as is • If anonymous, make it exposed in the SIP 'From' header

2.10 Configuring Credentials for REST Communications

Before ARM Version 8.4, the credentials for REST communications between Node - ARM Router, Node - ARM Configurator and ARM Configurator - ARM Router were hard-coded defaults.

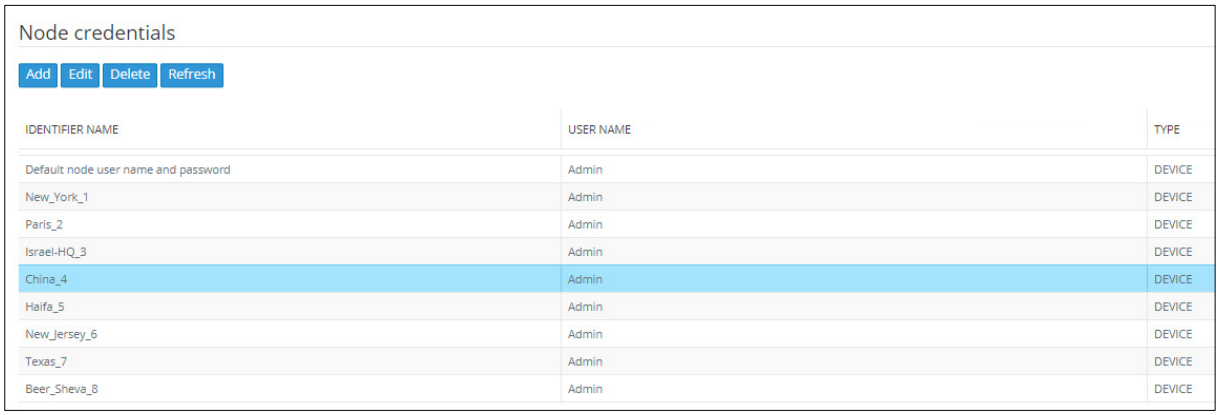
ARM Version 8.4 allows operators to change these communications credentials in the ARM GUI. Credentials for the following REST communications can be changed:

- ARM Configurator – Node (see the following section)
- Node - ARM Configurator (see Section 2.10.2)
- ARM Router - ARM Configurator (see Section 2.10.3)
- ARM Configurator - ARM Router (see Section 2.10.4)

2.10.1 ARM Configurator - Node Communications

The operator can apply credentials *per Node* for ARM Configurator - Node communications. The credentials are defined in the Node Credentials page (Settings > Administration > Node Credentials).

Figure 2-14: Node Credentials

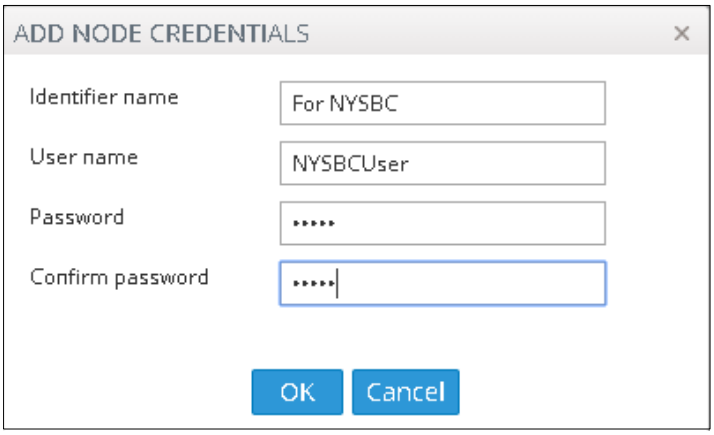


IDENTIFIER NAME	USER NAME	TYPE
Default node user name and password	Admin	DEVICE
New_York_1	Admin	DEVICE
Paris_2	Admin	DEVICE
Israel-HQ_3	Admin	DEVICE
China_4	Admin	DEVICE
Haifa_5	Admin	DEVICE
New_Jersey_6	Admin	DEVICE
Texas_7	Admin	DEVICE
Beer_Sheva_8	Admin	DEVICE

Note:

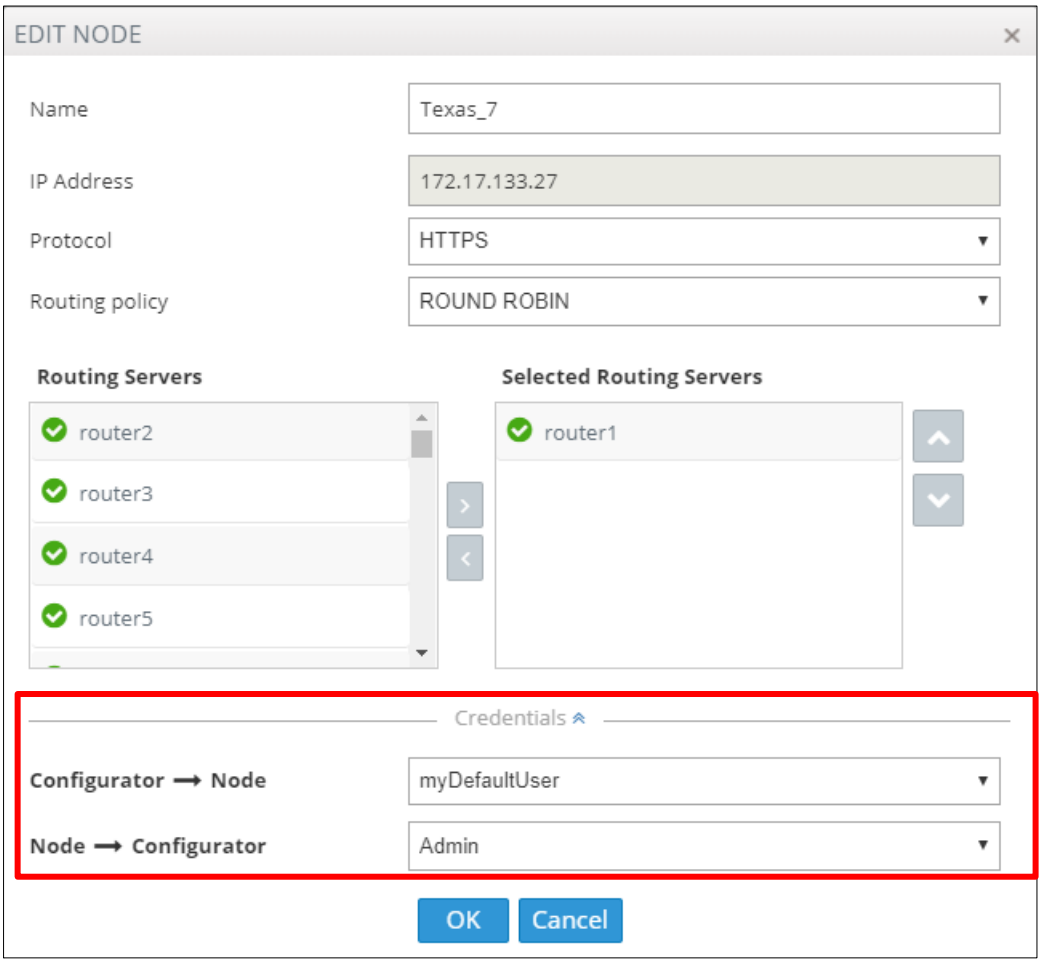
- The Node Credentials page shown in the preceding figure displays existing Node credentials for entries indicated as **Device** in the 'Type' column.
- Only operators whose role is configured as SECURITY_ADMIN can make changes to credentials.
- Before changing the Node's credentials in the ARM, the credentials must be updated in the Node itself. See your Node's *User's Manual* for more information.

Figure 2-15: Add Node Credentials



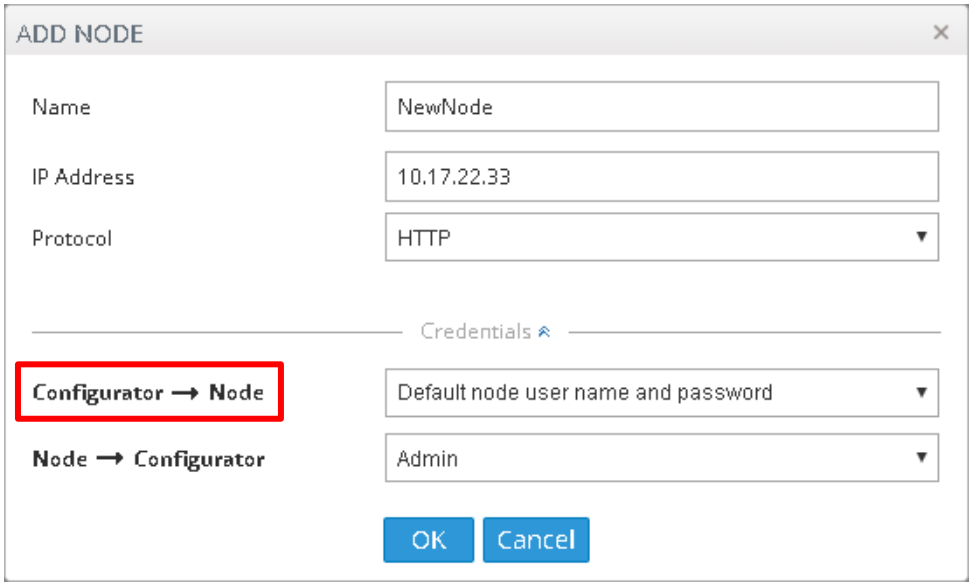
After adding Node credentials, the operator can apply one of the previously defined settings to a specific Node (or use the default one), in the Edit Node screen (Network > Map > <select the specific node> > Edit); the operator must expand the 'Credentials' section of the screen (shown in the following figure) to do this.

Figure 2-16: Edit Node



The same applies to 'Add Node' and 'Offline Planner'.

Figure 2-17: Add Node



2.10.2 Node - ARM Configurator Communications

The operator can change the ARM Configurator's credentials to be used for Node - ARM Configurator communications.

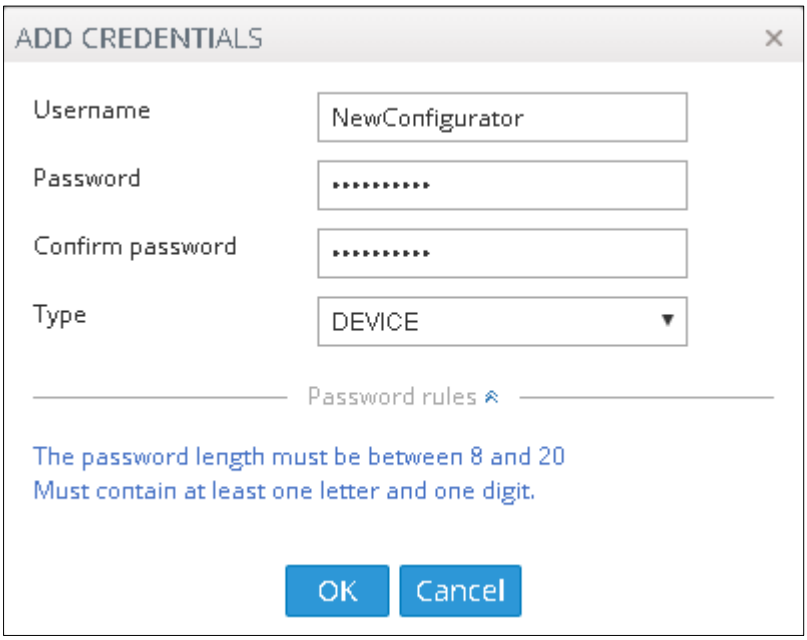
The credentials are defined in the Node Credentials page (Settings > Administration > Configurator Credentials).

Figure 2-18: Configurator Credentials

Note:

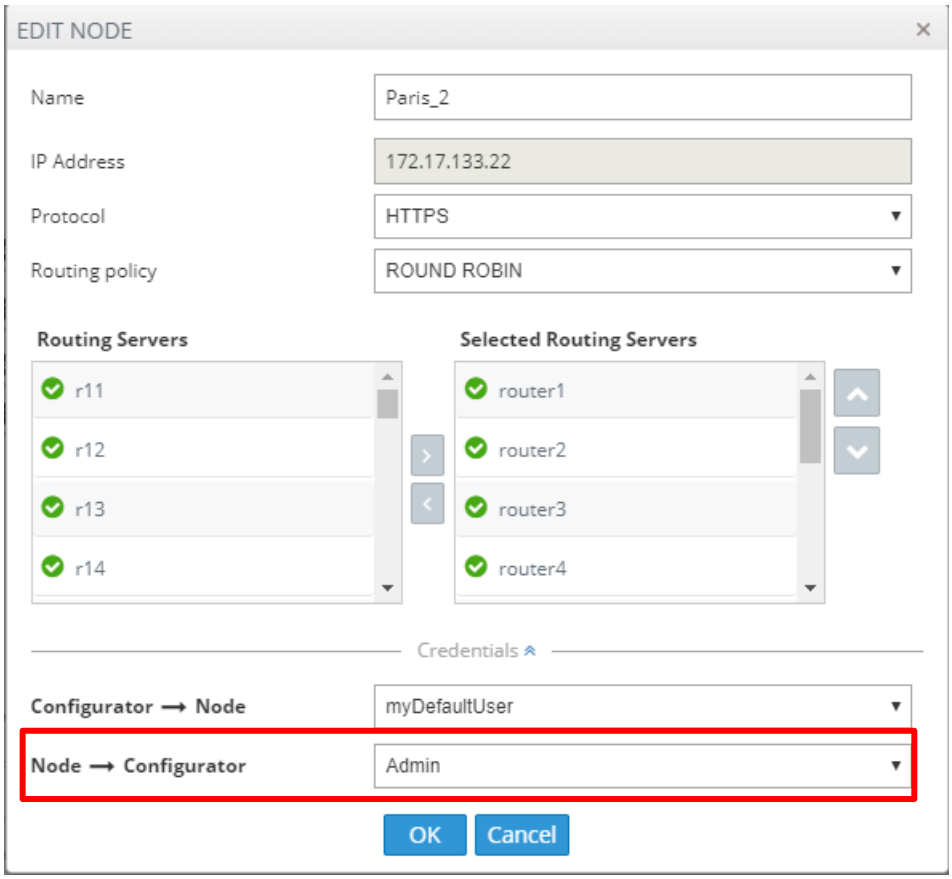
- The Node Credentials page shown in the preceding figure displays existing Node credentials for entries indicated as **Device** in the 'Type' column.
- Only operators whose role is configured as SECURITY_ADMIN can make changes to credentials.

Figure 2-19: Add Credentials



After adding Node credentials, the operator can apply one of the previously defined settings to a specific Node (or use the default one), in the Edit Node screen (Network > Map > <select the specific node> > Edit); the operator must expand the 'Credentials' section of the screen (shown in the following figure) to do this.

Figure 2-20: Edit Node Screen: Node - Configurator Credentials



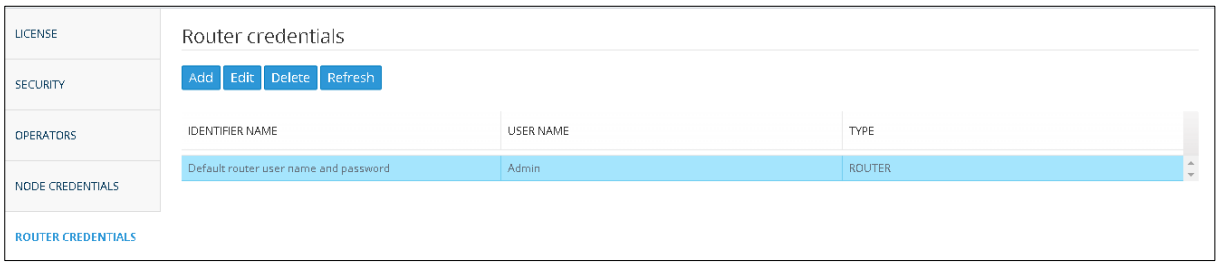
The same applies to 'Add Node' and 'Offline Planner':

When the operator applies newly configured ARM Configurator credentials to a specific Node, the Node is automatically displayed in the 'Configurator credentials' page in the 'Used in Elements' column.

2.10.3 ARM Configurator - ARM Router Communications

The operator can change the ARM Routers credentials to be used for ARM Configurator > ARM Router communications. New credentials are configured in the 'Router Credentials' page (Settings > Administration > Router credentials).

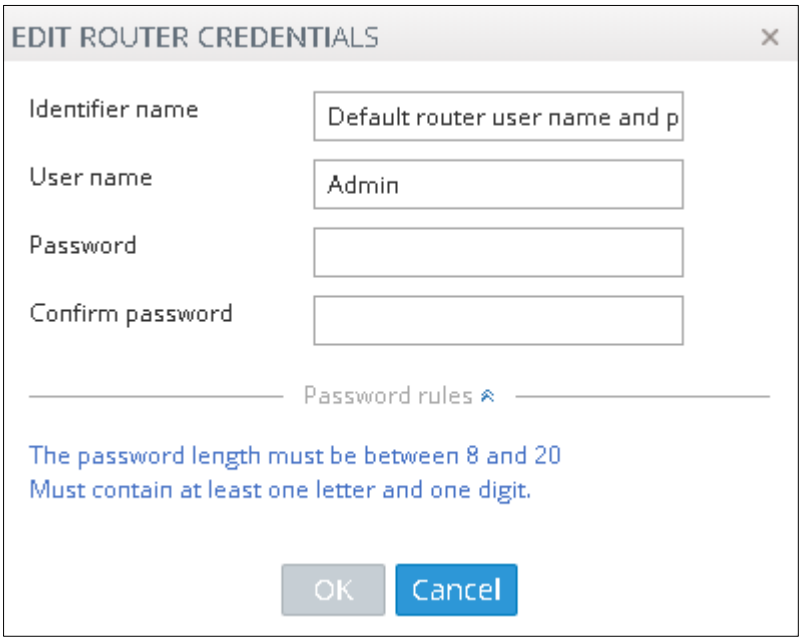
Figure 2-21: Router Credentials



Note:

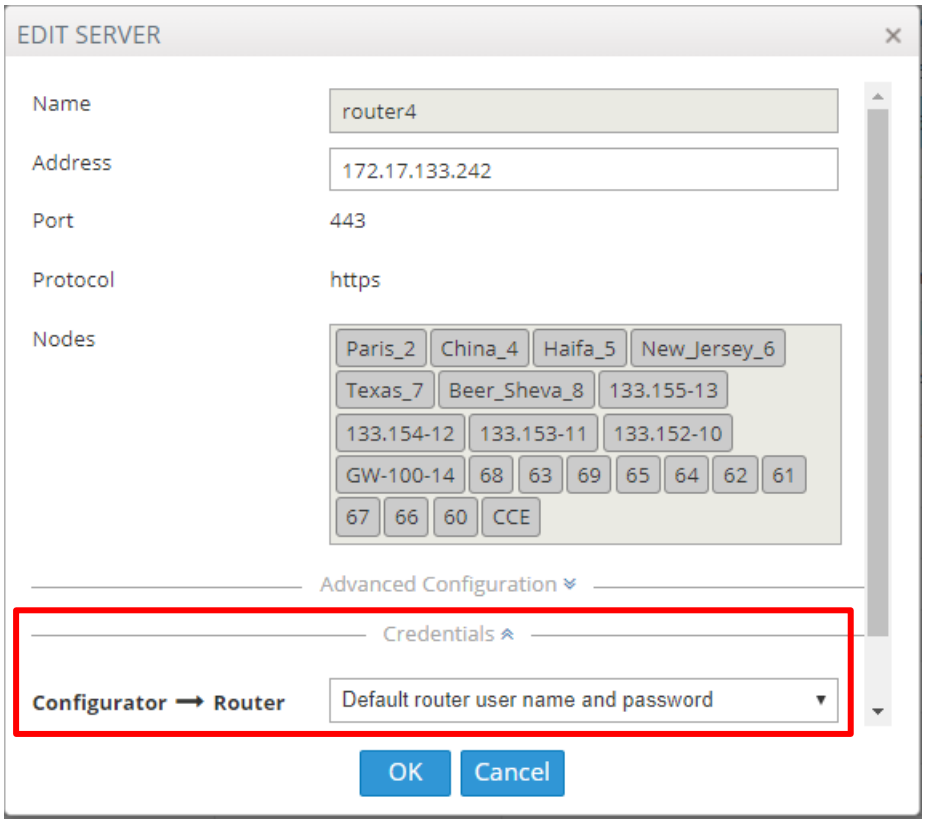
- The Router Credentials page shown in the preceding figure displays existing Router credentials for entries indicated as **Router** in the 'Type' column.
- Only operators whose role is configured as SECURITY_ADMIN can make changes to credentials.

Figure 2-22: Edit Router Credentials



To associate the Routing Server with a specific ARM Router, the operator must open the Routing Servers page (Settings > Routing Servers) and then Add or Edit the specific ARM Router; the operator must expand the 'Credentials' section of the screen (shown in the following figure) to do this.

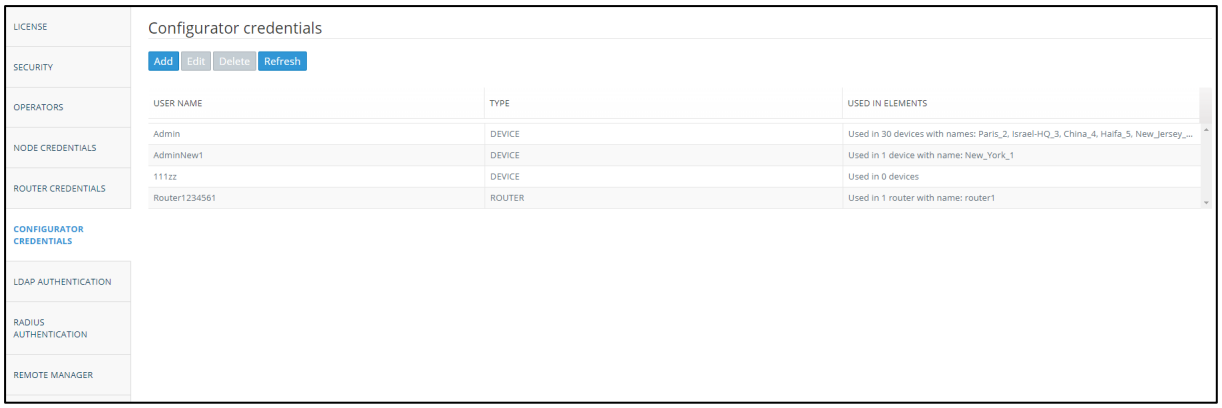
Figure 2-23: Edit Server: Configurator > Router Credentials



2.10.4 ARM Router - ARM Configurator Communications

Operators can change ARM Configurator credentials to be used for ARM Router - ARM Configurator communications. New credentials are configured in the Configurator Credentials page (Settings > Administration > Configurator credentials).

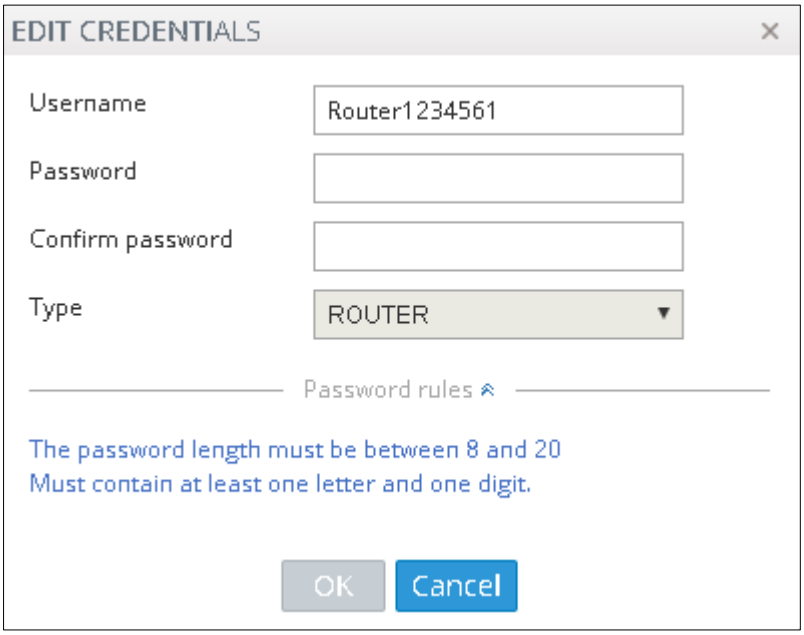
Figure 2-24: Configurator Credentials



Note:

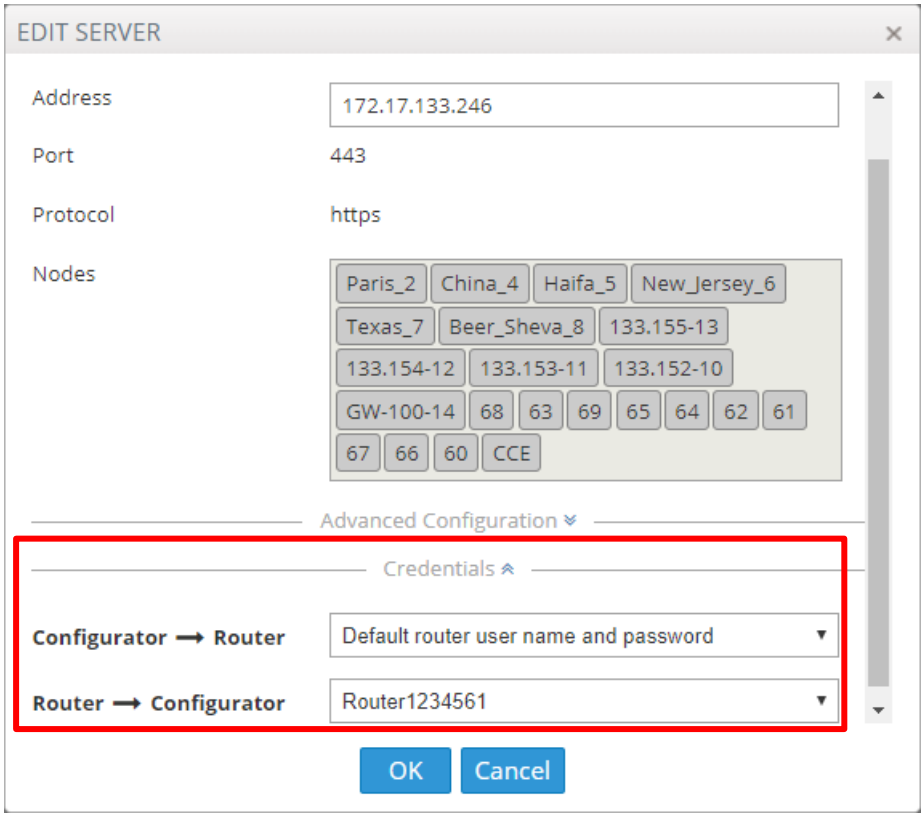
- The Configurator Credentials page shown in the preceding figure displays existing Configurator credentials whose entry is indicated as **Router** in the 'Type' column.
- Only operators whose role is configured as SECURITY_ADMIN can make changes to credentials.

Figure 2-25: Edit Credentials



To associate the router with a specific ARM Router, the operator must open the Routing Servers page (Settings > Routing Servers) and then Add or Edit the specific ARM Router; the operator must expand the 'Credentials' section of the screen (shown in the following figure) to do this.

Figure 2-26: Edit [Routing] Server



After the operator applies newly configured ARM Configurator credentials to a specific Router, the Router is automatically displayed in the 'Configurator credentials' page in the appropriate 'Used in Elements' column.

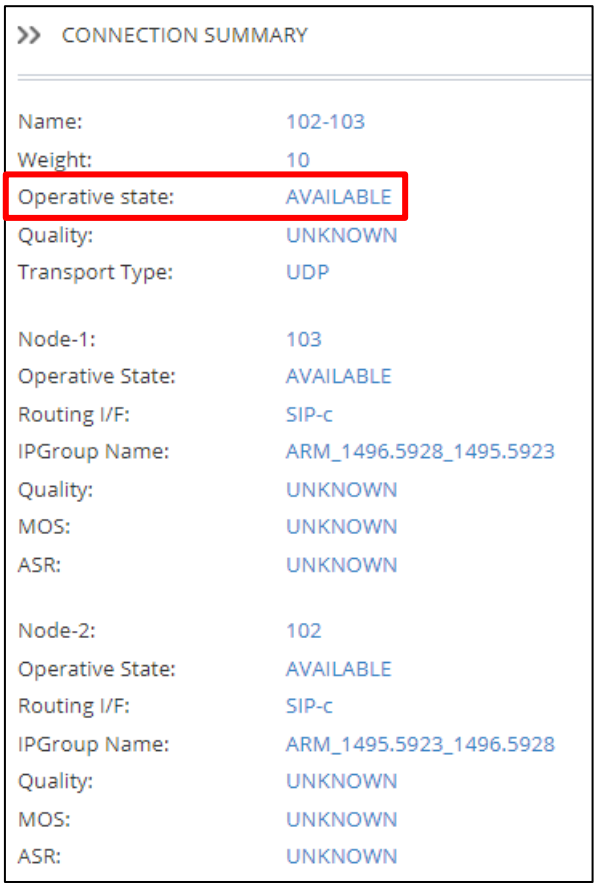
2.11 New Network Map Capabilities

The previous major version release (ARM Version 8.2) introduced a completely redesigned ARM Network Map, including new capabilities and capacity. ARM Version 8.4 adds new capabilities based on a redesigned Network Map user interface component.

2.11.1 Indication of the Aggregated Operative State of a Connection

Connections between Nodes are bidirectional. Each direction has its internal operative state. In the ARM's Network Map, however, the connection is represented as a single line with an aggregated operative state. In ARM Version 8.4, this aggregated state is displayed in the 'Connection Summary' pane.

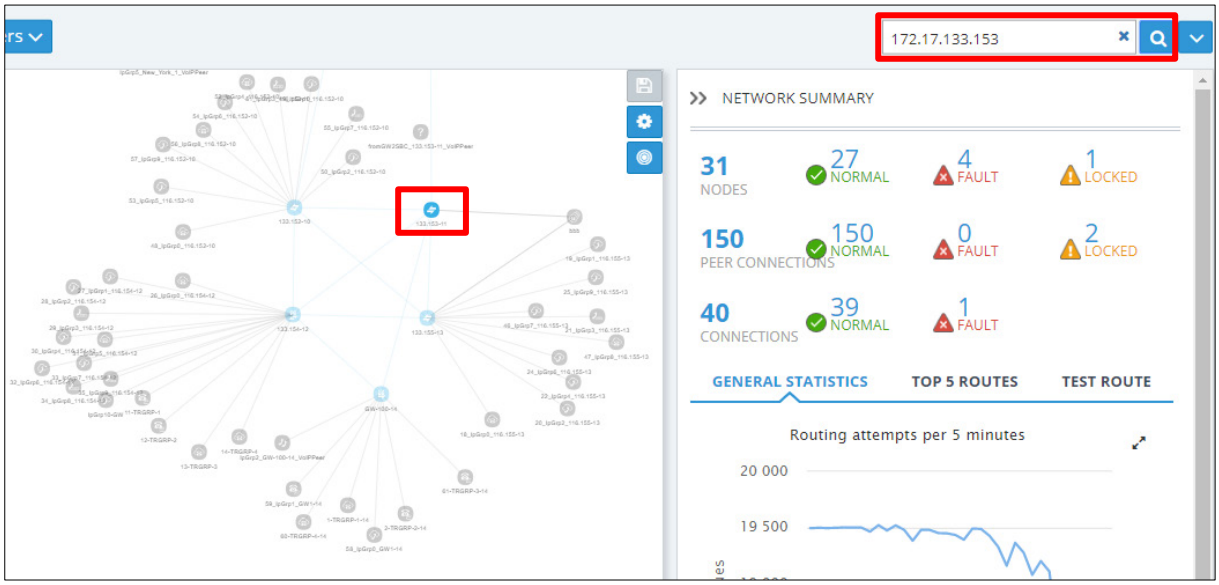
Figure 2-27: Connection Summary



2.11.2 New Option to Search for a Node by IP Address in Network Map

ARM Version 8.4 makes it possible for operators to search in the Network Map for a Node by the Node's IP address (and not only by the Node's name), as free text.

Figure 2-28: Searching for a Node by IP Address



The capability is essential in very large deployments with high numbers of Nodes.

2.11.3 Number of VoIP Peers / Peer Connections Indicated in Cluster Summary

ARM Version 8.4 makes it possible for operators to determine the number of collapsed VoIP Peers / Peer Connections in a Cluster, from the Cluster Summary pane.

Figure 2-29: Cluster Summary: Number of VoIP Peers

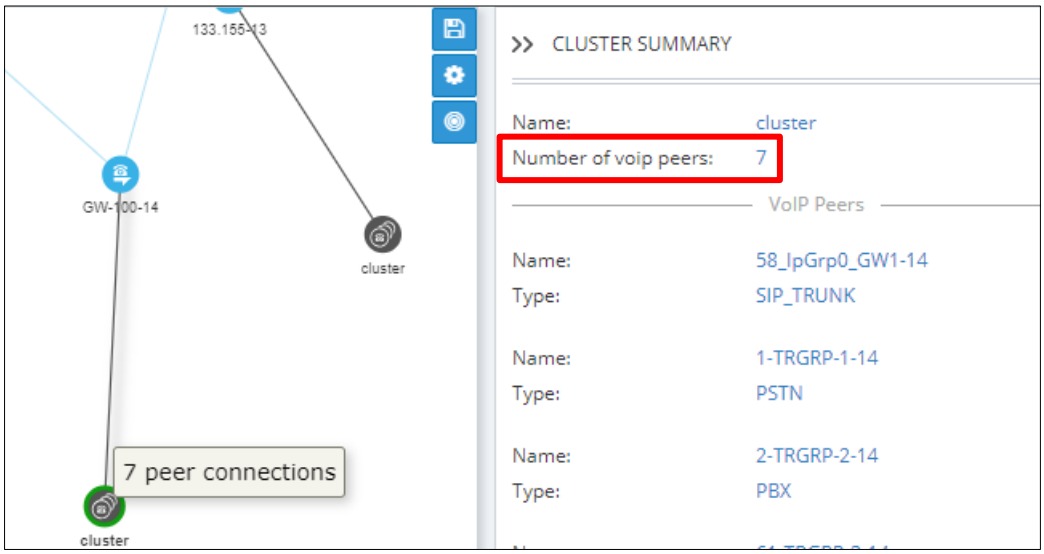
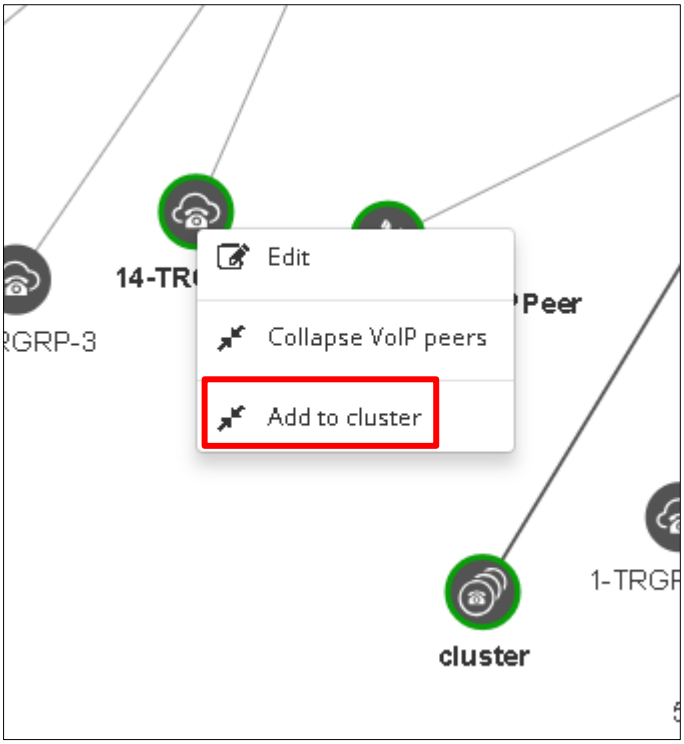


Figure 2-30: Peer Connection Aggregation Summary: Number of Peer Connections

2.11.4 Adding VoIP Peers to an Existing Cluster

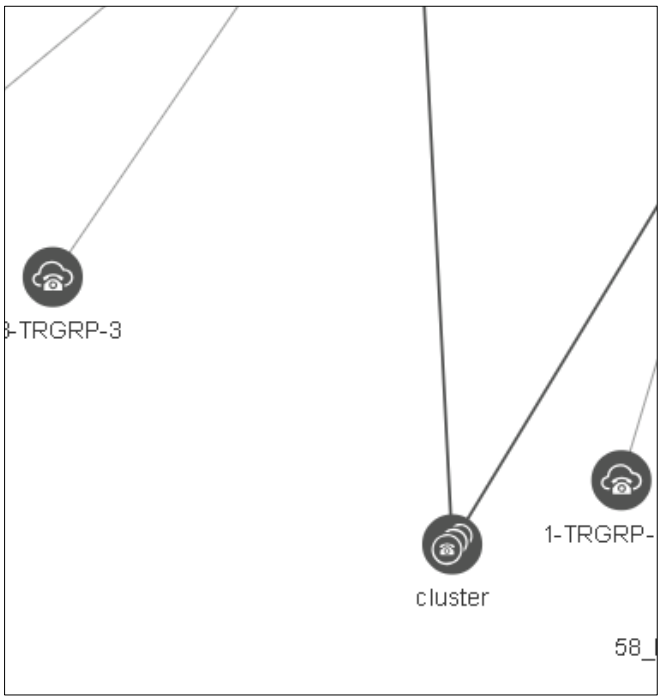
In ARM Version 8.4 it's possible to add an additional VoIP Peer or multiple VoIP Peers to an existing cluster. To do this, operators must multi-select the target Cluster and one or multiple VoIP Peers; a new action **Add to cluster** is available from the right-click menu.

Figure 2-31: Add to Cluster



The action adds the selected VoIP Peers to the existing cluster.

Figure 2-32: VoIP Peers Added to the Cluster



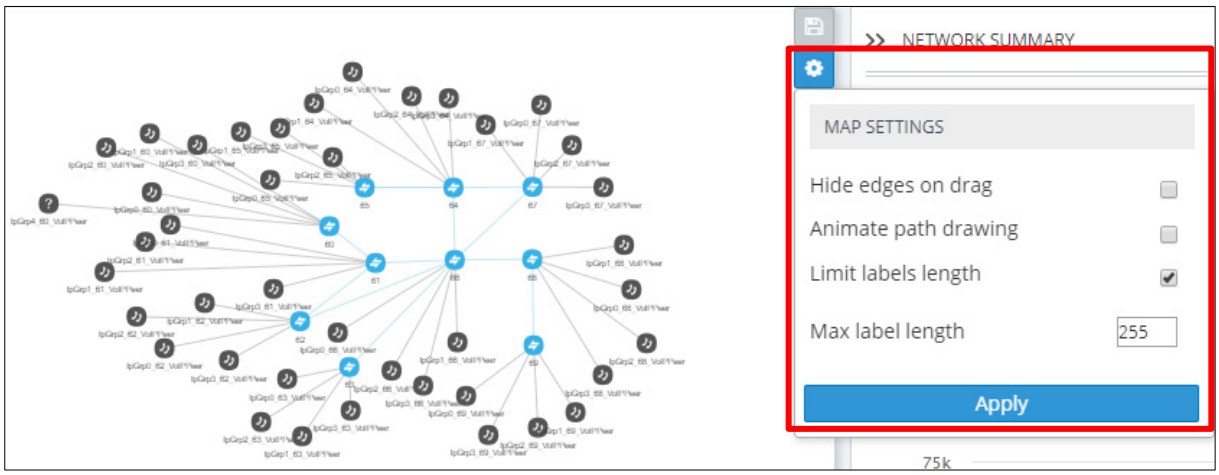
2.11.5 Limited Node/VoIP Peer Label Lengths in Network Map

ARM Version 8.4 makes it possible to limit the lengths of the labels of the displayed Nodes and VoIP Peers, to a predefined number of characters.

This feature is very useful for customers with large networks and long Node and/or VoIP Peer names which clutter the Network Map; it's hard work trying to find a network element in an ARM Map that is cluttered.

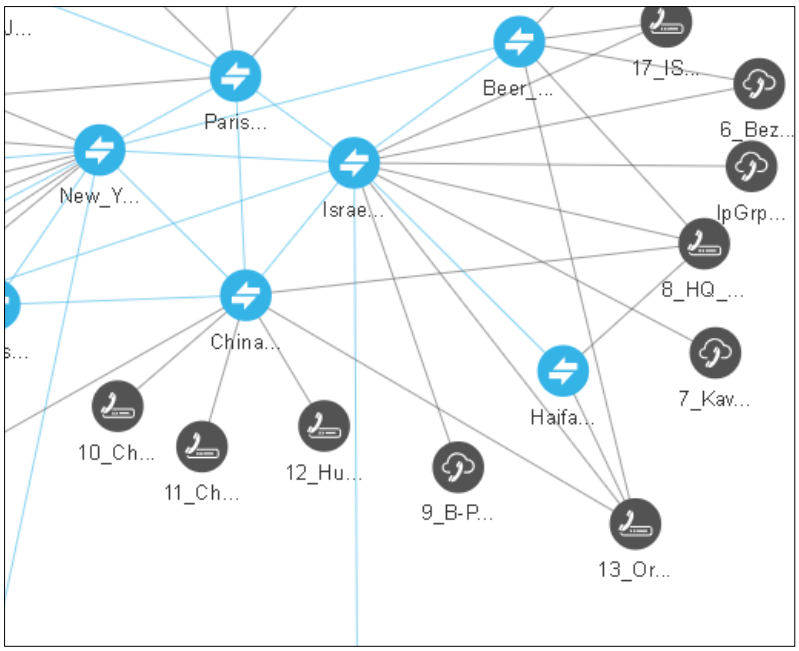
To limit label lengths, customers can configure the 'Max label length' in the Network Diagrams popup menu (located in the uppermost right corner of the Network Map).

Figure 2-33: Configuring Maximum Label Length



The labels in the Network Map will then display the predefined maximum number of characters with '…' indicating a label has been limited, making the Network Map clearer.

Figure 2-34: Limited-Length Labels in the Network Map



2.12 Extended GUI Capabilities

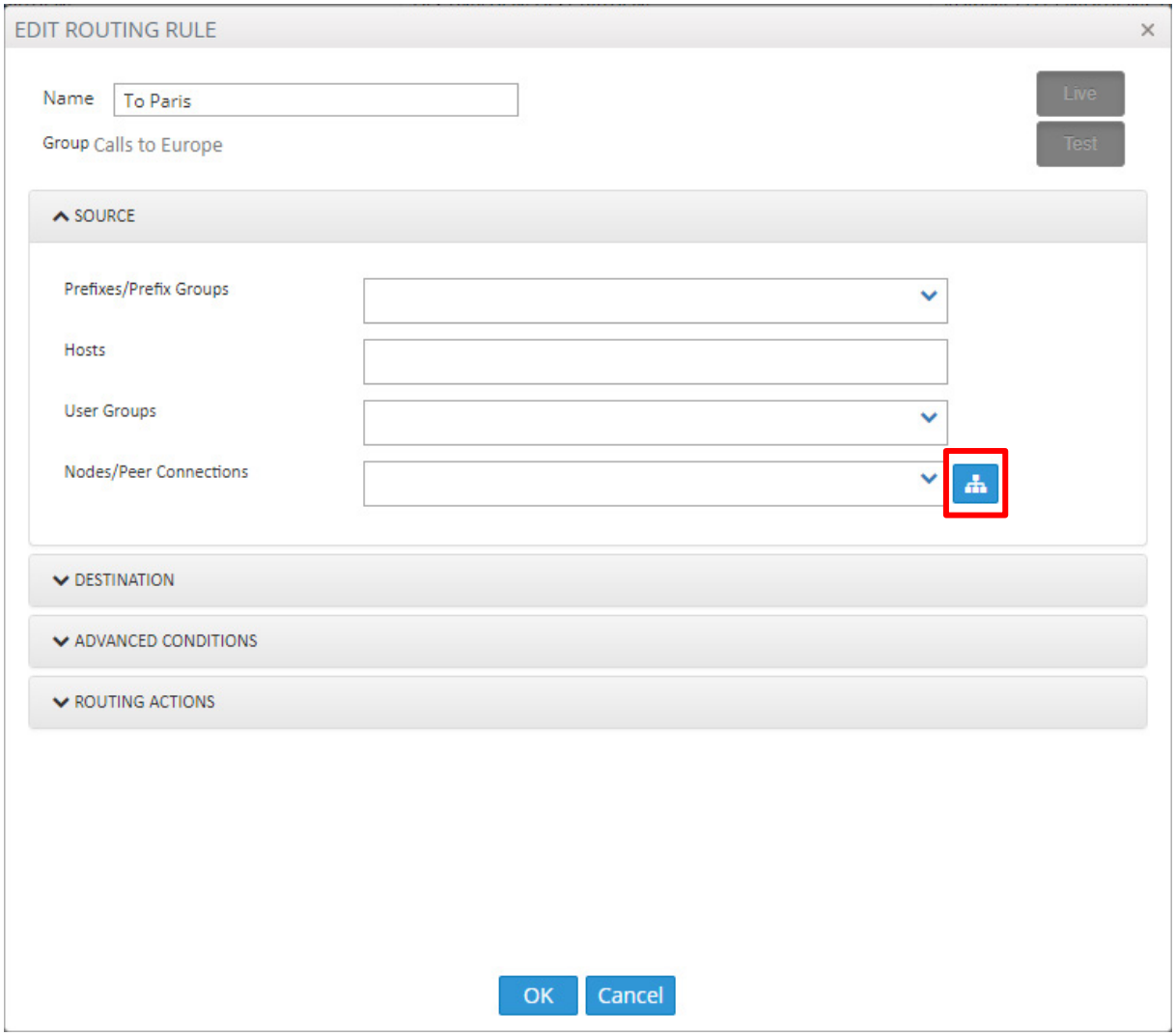
AudioCodes added many GUI capabilities to the ARM in Version 8.4 in response to customer feedback. This section describes some of them.

2.12.1 Selecting Source Node / Peer Connection when Configuring a Routing Rule

ARM Version 8.4 adds the capability to visually and easily select a source Node or Peer Connection when configuring a Routing Rule, in the same way as when selecting a Routing Rule action.

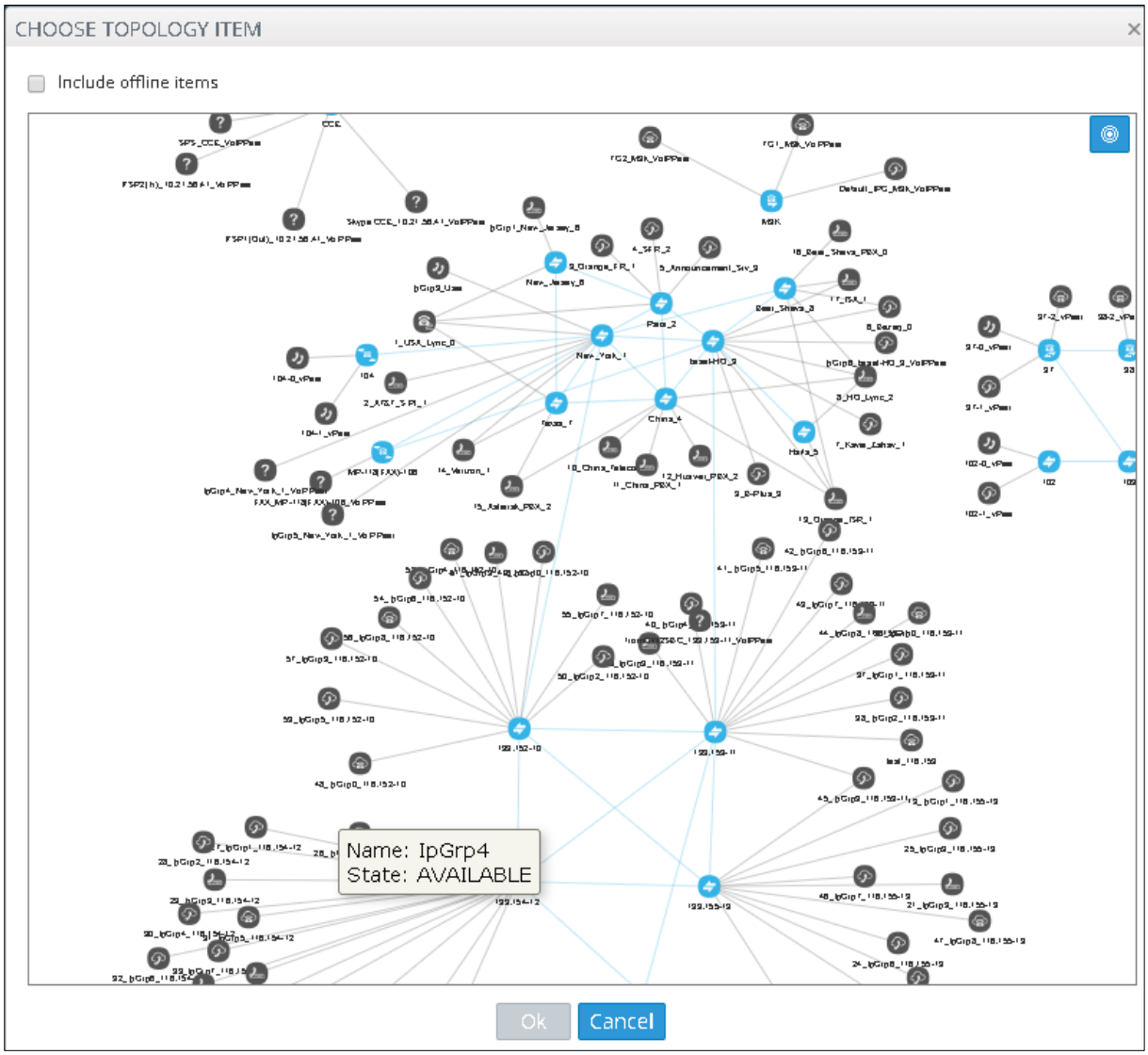
When selecting the Topology element for the Routing Rule Source, the operator can now click a new icon and make sure they're selecting the correct Peer Connection or Node.

Figure 2-35: Selecting Node / Peer Connection in a Routing Rule



The 'Choose Topology Item' screen opens from which the operator can select the source Node / Peer Connection.

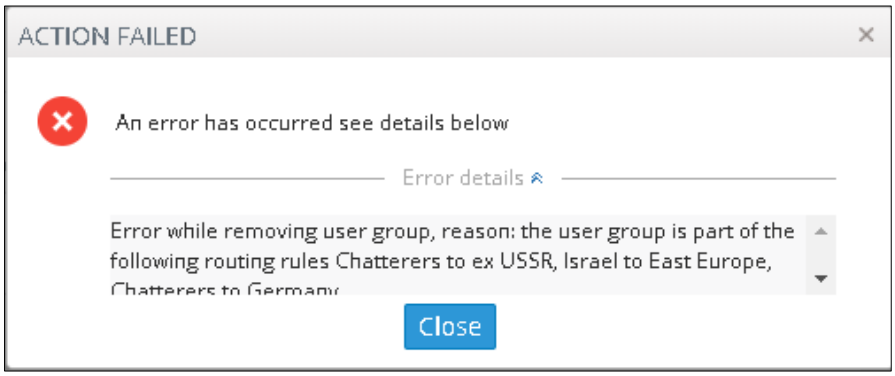
Figure 2-36: Choose Topology Item



2.12.2 Error Messages Display Name of Routing Rule | Users Group

ARM Version 8.4 displays the names of the Routing Rule and the Users Group in GUI Error messages (Exception messages), instead of index entry. For example, if the operator attempts to remove a Users Group which appears in existing Routing Rules, the error message indicates specific names, making it easier to find and remove the unnecessary Routing Rules.

Figure 2-37: Error Message Displaying Name of Routing Rule | Users Group



2.12.3 Test Route Results Preserved Even if Moving to Another Tab

If an operator performs Test Route in ARM 8.4, the results - including the selected path - are preserved in the Network Map even if the operator switches to another tab.

This functionality is very convenient for debugging a Dial Plan, when the operator fixes Routing Rules and reverts to testing it in the Network Map with the 'Test Route' feature.

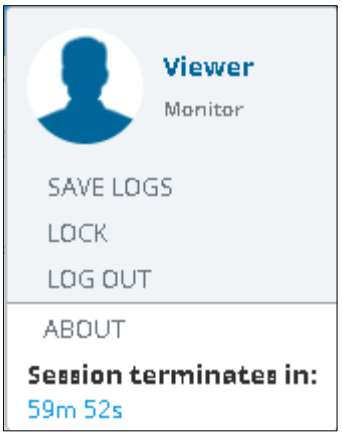
2.12.4 Optimized ARM UI for Huge Dial Plans

In ARM 8.4, the ARM's User Interface is optimized to function smoothly even when very high numbers of Routing Rules and Prefix Groups are configured.

2.12.5 Indication of Operator's Security (Permission) Level

ARM Version 8.4 provides an indication of security/permission level of Operator currently logged in available at the upper right corner of the ARM GUI.

Figure 2-38: Operator's Security (Permission) Level: Monitoring



2.12.6 QoS (MOS and ASR) Displayed in Peer Connections Page

ARM Version 8.4 provides indications of the MOS and ASR quality metrics received for Peer Connections, in the Peer Connections page (Network > Peer Connections).

Figure 2-39: New Columns Indicating Quality, MOS and ASR in the Peer Connections Page

STATUS	NODE	NAME	VOIP PEER	IP GROUP	OPERATIVE STATE	ADMINISTRATIVE STATE	QUALITY	MOS	ASR
	New_York_1	IpGrp0	1_USA_Lync_0	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN
	New_York_1	AT&TSIPtGrp1	2_AT&T_SIPt_1	IpGrp1			UNKNOWN	UNKNOWN	UNKNOWN
	Paris_2	IpGrp0	1_USA_Lync_0	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN
	Paris_2	OrangeFRGrp1	3_Orange_FR_1	IpGrp1			UNKNOWN	UNKNOWN	UNKNOWN
	Paris_2	SFRGrp2	4_SFR_2	IpGrp2			UNKNOWN	UNKNOWN	UNKNOWN
	Paris_2	AnnouncementSrvGrp3	5_Announcement_Srv_3	IpGrp3			UNKNOWN	UNKNOWN	UNKNOWN
	Israel-HQ_3	BezekGrp0	6_Bezeq_0	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN
	Israel-HQ_3	KaveiZahavGrp1	7_Kavei_Zahav_1	IpGrp1			UNKNOWN	UNKNOWN	UNKNOWN
	Israel-HQ_3	IpGrp2	8_HQ_Lync_2	IpGrp2			UNKNOWN	UNKNOWN	UNKNOWN
	Israel-HQ_3	IpGrp3	9_B-Plus_3	IpGrp3			UNKNOWN	UNKNOWN	UNKNOWN
	China_4	IpGrp0	10_China_Telecom_0	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN
	China_4	IpGrp1	11_China_PBX_1	IpGrp1			UNKNOWN	UNKNOWN	UNKNOWN
	China_4	HuaweiPBXGrp2	12_Huawei_PBX_2	IpGrp2			UNKNOWN	UNKNOWN	UNKNOWN
	Haifa_5	HQLyncGrp0	8_HQ_Lync_2	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN
	Haifa_5	OrangeIsrGrp1	13_Orange_ISR_1	IpGrp1			UNKNOWN	UNKNOWN	UNKNOWN
	New_Jersey_6	IpGrp0	1_USA_Lync_0	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN
	Texas_7	IpGrp0	1_USA_Lync_0	IpGrp0			UNKNOWN	UNKNOWN	UNKNOWN

2.13 ARM Machine OS Upgraded with Latest CentOS6.10 Security Patches

ARM Version 8.4 runs on the latest edition of the CentOS 6 (CentOS 6.10) operating system. The latest security patches are automatically applied during the upgrade to ARM Version 8.4. The changes in the upgrade procedure are described in the *ARM Installation Manual*.

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3 Supported Platforms

ARM Version 8.2 provides support for the platforms shown in the table below.

Table 3-1: ARM Version 8.2 Supported Platforms

ARM	Platform	Application
GUI	Web Browser	Firefox, Chrome, Internet Explorer (Version 11)
Deployment	Hypervisor	VMware ESXI 5.5, 6.0, 6.5; allowed to run with VMware Tools 6.0 and 6.5

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4 Earliest Node Software Versions Supported by ARM Features

Some ARM features are developed in coordination with Nodes (AudioCodes' SBCs and 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 define 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	The Number Privacy feature is supported as of Node Version 7.20A.250.
5	Support of IP Group of type User without 'dummy' IP	7.20A.250 and later	Operators who want to use a Node's IP Group of type 'User' as the ARM Peer Connection can avoid definition of a dummy IP Profile if using Nodes 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 define an IP Group of type 'User' as the ARM Peer Connection, must define a dummy IP Profile (with a dummy IP address) at the Node level, to be associated with this IP Group.

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5 Known Limitations and Workarounds

The table below lists the known limitations and workarounds in this version release.

Table 5-1: 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).	Operators must take this into consideration
-	There is a minor bug in old versions of the VMware vSphere client application that may cause the following error message to be sent when deploying ARM Virtual Machines: 'Provided manifest file is invalid: Invalid OVF manifest entry'	Two workarounds: ✓ Upgrade the VMware environment to a newer version. ✓ Use the VMware vSphere Web client rather than the client application.
GUI Incidents		
-	In the ARM Map, the 'drag' feature used to 'draw' a connection between two Nodes does not complete successfully when the 'hide edges on drag' option is selected. When the option is selected, if the operator starts the 'Drag connection' action but does not end it at the Node (does not complete the 'Drag Connection' action), the Map remains in a state in which edges are hidden.	Moving (repositioning) any Map element (Node or VoIP Peer) fixes the situation.
-	The maximum number of aggregated Peer Connections in a VoIP Peers cluster is 99.	-

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LTRT-41946