Polycom RealPresence Distributed Media Application (DMA)

Contents

What's New in the Version 10.0.0.4 Release

Version 10.0.0.4 of the Polycom® RealPresence® Distributed Media Application (DMA®) system offers the following new features and enhancements to previous functionality:

- License Sharing and Direct Call Routing
- Security and Privacy Documentation

In addition to these release notes, it's recommended that you read the release notes for version 10.0 of the RealPresence DMA system. They contain information about the major changes to the 10.0 line of software.

Important: The RealPresence DMA system version 10.0.0.4 can be used with the Polycom® RealPresence® Web Suite version 2.1.5 or later. Previous versions are not supported.

License Sharing and Direct Call Routing

This version of the RealPresence DMA system provides a new API that enables license sharing between an edge system and a core system. When an outside endpoint registered to an edge system makes a call to another outside endpoint registered to an edge system or to a Video-as-a-Service (VaaS) conference (for example, Microsoft Teams), the edge system will check if it has an available call license. If it doesn't, it will borrow a license from the core system via the license-sharing API and directly route the call to the Internet (an endpoint or VaaS conference). This feature improves the efficiency of call routing. Prior to version 10.0.0.4, this type of call had to be routed to a core system to get a license, routed back to the edge system, and then routed to the Internet.

To enable this feature to correctly route VaaS calls, you need to configure two new dial rules, one for the H.323 public dial plan and one for the SIP public dial plan. If an incoming call to the edge system matches one of these dial rules, the edge system directly routes the call to the VaaS conference.

To add dial rules that correctly route VaaS calls:

1. In the RealPresence DMA edge system's web interface, go to **Service Config > Dial Plan > Dial Plans**.
2. Select **H.323 Dial Plan Public**.
3. Under **Dial Rules**, select the **Add** button.
4. Complete the following fields:
   a. **Description** – enter a brief description of the new dial rule.
   b. **Action** – select **Resolve to external address**.
5. Select the following options:
   a. **Relay Media**
   b. **Use SIP URI**

c Use H.323 url-ID

d Use H.323 email-ID

6 Select the **Preliminary** tab.

7 Enter a script that will enable correct routing for VaaS calls. You must revise the following sample script as needed for your environment:

```
if (!(DIAL_STRING.match("<your-companies-Microsoft-Teams-Domain>")||
DIAL_STRING.match("webex.com") || DIAL_STRING.match("zoomcrc.com"))


{ println("not Teams or Webex or Zoom call"); return NEXT_RULE; }
```

8 Click **OK** to add the new dial rule.

9 Select **SIP Dial Plan Public**.

10 Repeat steps 3 – 8.

Security and Privacy Documentation

The following documents address security and privacy for the RealPresence DMA system and are available at RealPresence DMA Support.

- Praetorian security assessment for edge-configured RealPresence DMA systems, version 10.0.0.4
- Firewall Traversal for Video Conferencing with Polycom RealPresence DMA 10.x
- RealPresence DMA System Security and Privacy Guide

Core and Edge Configuration Options

The RealPresence DMA system supports two types of configuration: core configuration and edge configuration. A system with a core configuration provides conference management and call server functionality. A system with an edge configuration provides additional security features and incorporates the functionality of the Polycom® RealPresence® Access Director™ system, combined with gatekeeper, registrar, and call server capabilities.

When you install one or more RealPresence DMA systems, you need to configure each system with a core configuration, an edge configuration, or a combination configuration as follows:

- A core configuration if you deploy the system inside your enterprise network environment.
- An edge configuration if you deploy the system in the DMZ and it communicates with one or more core-configured systems inside your enterprise network.
- A combination configuration if the system is one of the following:
  - an edge-configured system that resides in the DMZ and does not communicate with any core configured system, or
  - an edge-configured system inside the enterprise that is part of a VPN tunnel and does not communicate with any core configured system.

RealPresence DMA System Supported Features

The RealPresence DMA system version 10.0.0.4 provides all features in an edge, core, or combination configuration. Specific systems can be configured in a variety of ways, but not all configurations are supported.

The following table lists the features and configurations that have been tested and are supported in version 10.0.0.4 of the RealPresence DMA system.

RealPresence DMA System Supported Features

Feature/ Configuration	***Edge System***	***Core System***	***Combination System***	***New Feature in Version 10.0***
Access proxy	Yes	No	Yes	Yes
Access control lists	Yes	Yes	Yes	Yes
Active Directory integration	Yes	Yes	Yes	
Auto dial-out cascading to cloud service-based conferences	No	Yes	Yes	10.0.0.2
Certificates	Yes	Yes	Yes	
Clariti VMR licensing	No	Yes	Yes	Yes
Conference management (MCUs, VMRs, conference templates, conference settings)	No	Yes	Yes	
Edge services	Yes	No	Yes	Yes
Embedded DNS	No	Yes	No	
External H.323 gatekeepers	Yes	Yes	Yes	
External SIP peers	Yes	Yes	Yes	
H.323	Yes	Yes	Yes	
High Availability (HA)	Yes	Yes	Yes	Yes (active-active)
High Availability support for Polycom ContentConnect HA and geo-redundancy	No	Yes	Yes	Yes
Immersive Telepresence (ITP) layout (new)	No	Yes	Yes	Yes
IVR	No	Yes	Yes	
License sharing and direct call routing	Yes	NA	NA	10.0.0.4
MCU conference thresholds	No	Yes	Yes	Yes
Media traversal (relay)	Yes	No	Yes	Yes
Microsoft Exchange	No	Yes	Yes	
NAT	Yes	No	Yes	Yes
Polycom ContentConnect (PCC) integration	No	Yes	Yes	

Feature/ Configuration	*Edge System*	*Core System*	*Combination System*	*New Feature in Version 10.0*
RealPresence® Resource Manager integration (site topology, scheduling)	No	Yes	Yes	
RealPresence Resource Manager licensing (Clariti)	Yes	Yes	Yes	
Registration sharing (from)	Yes	No	No	Yes
REST API	Yes	Yes	Yes	
Security settings	Yes	Yes	Yes	
Shared number dialing	No	Yes	Yes	
SIP	Yes	Yes	Yes	
SIP conference factories	No	Yes	Yes	
Site topology	Yes	Yes	Yes	
Skype for Business integration	No	Yes	Yes	
SNMP	Yes	Yes	Yes	
Superclustering	No	Yes	No	
Synchronize pooled conference name from the RealPresence Resource Manager system to RMX	No	Yes	Yes	Yes
TIP version 8 support	Yes	Yes	Yes	Yes Can connect to devices that use TIP 8
TURN	Yes	No	Yes	Yes
VPN tunnel	Yes	No	Yes	Yes
WebRTC	No	Yes	Yes	

See the *Polycom® RealPresence® Distributed Media Application (DMA®) System Operations Guide* for further information about features or access the online help from the system's web interface.

Unsupported Configurations

The following configurations of one or more RealPresence DMA systems are not supported. Note that the use of unsupported features and configurations will not be prevented.

- Superclustering of systems in edge configuration
- Superclustering of systems in edge standalone configuration (combination systems)
- Superclustering between systems in edge configuration and systems in core configuration
- High Availability between a system in edge configuration and a system in core configuration
- High Availability active-active systems in core configuration in a supercluster
- High Availability for a VPN tunnel

Clariti License Enforcement in the Polycom RealPresence Collaboration Server

With Polycom RealPresence Clariti™ licensing, the Polycom RealPresence Collaboration Server (version 8.8 and higher) will only work with the RealPresence DMA version 10.0 and above and it will block incoming and outgoing SIP and H.323 calls that are not routed through the RealPresence DMA system.

Viewing Usage Data and Settings

When you accept the End User License Agreement (EULA) for the Polycom RealPresence DMA system, you can select the **Automatically send usage data** check box. This option enables your system to send various types of usage data to a Polycom collection point (*customerusagedatacollection.polycom.com*). As this data is used to continually improve the product, Polycom recommends that you keep the setting enabled. See the *Automatically Send Usage Data* section in the *Polycom® RealPresence® DMA® System Operations Guide* for a description of the types of data your system sends.

To view or change your selection for sending usage data:

1. Go to **Admin > Server > Licenses** in the system web interface.
2. Select or clear the **Automatically send usage data** check box.
3. Click **Update** if you change the setting.

To view the data your RealPresence DMA system sends to Polycom:

1. Go to **Admin > System Log Files** in the system web interface.
2. Click **Roll Logs**.

   The system prompts you to download the log archive.
3. Click **OK** and save the log archive to your local machine.
4. After the download is complete, unpack the log archive.

   The *analytics.json* file in the *var/log/polycom/rpp* directory contains the data that your RealPresence DMA system sends to Polycom.

Note: If your local DNS server does not resolve *customerusagedatacollection.polycom.com*, the analytics service in the RealPresence DMA system will query the Google DNS server (8.8.8.8) to resolve that DNS name.

Other Changes

Version 10.0 and above of the RealPresence DMA system can be configured so that not all systems in a call path will count licenses. A single call may touch more than one system but the call will consume only one license.

For Microsoft® Skype® for Business conferences, the RealPresence DMA system counts one license for the cascade call between the Polycom ContentConnect® (PCC) system and the Microsoft AVMCU. No licenses are used for the cascade call between the PCC system and the Polycom MCU, or any additional content calls.

Security Updates

Praetorian (an independent cyber security company) performed a security assessment of the RealPresence DMA edge-configured system, version 10.0.0.4. The system received an A grade for excellent security. See RealPresence DMA Support to view the full report.

Version 10.0.0.4 of the RealPresence DMA system includes the following security updates:

- Resolved TCP SACK vulnerabilities:
  - CVE-2019-11477
  - CVE-2019-11478
  - CVE-2019-11479

You can enable and disable Secure Shell (SSH) system access from **Security Settings** in the system web interface. When enabled, if a user logs in to the RealPresence DMA system by SSH, access to the system is provided only via the interface you selected for management in the **Services** settings for your network.

If a problem occurs with the RealPresence DMA system that causes it to crash or not boot up correctly, SSH access will be enabled automatically for the management interface. This way, when you contact Polycom Support for assistance, a Polycom Support technician, with your permission and access to your network, can access your RealPresence DMA system with SSH and troubleshoot the issue.

Refer to the Polycom Security Center for information about known and resolved security vulnerabilities.

Release History

The following table lists only the RealPresence DMA versions released for General Availability.

Software Version History

Release	*API Version*	*System*	*Release Date*	*Features*
10.0.0.4	3.6.3	CentOS 6.10 OpenJDK 1.8.0.222 PostgreSQL 10.9-1	August 2019	License sharing and direct call routing Bug fixes
10.0.0.3	3.6.0	CentOS 6.10 OpenJDK 1.8.0.181-3 PostgreSQL 10.4-1	May 2019	Auto dial-out cascading to cloud service-based conferences Bug fixes

Release	*API Version*	*System*	*Release Date*	*Features*
10.0.0.2	3.6.0	CentOS 6.10 OpenJDK 1.8.0.181-3 PostgreSQL 10.4-1	February 2019	Maintenance release to fix issues
10.0.0.1	3.6.0	CentOS 6.10 OpenJDK 1.8.0_171 PostgreSQL 10.4	December 2018	Maintenance release to fix issues
10.0	3.6.0	CentOS 6.10 OpenJDK 1.8.0_171 PostgreSQL 10.4	October 2018	Access proxy Access Control Lists (ACLs) Integration with multiple Polycom® ContentConnect™ systems Support for ContentConnect High Availability and geo-redundancy Clariti VMR licensing and local burst Edge services High Availability (active-active) Immersive Telepresence (ITP) layout (new) Media traversal MCU conference thresholds NAT Registration sharing from edge to core Pooled conference name synchronizing from the RealPresence Resource Manager system to RMX TURN services TIP version 8 support VPN tunnel
9.0.1	3.5.2	CentOS 6.9 OpenJDK 1.8.0_151 PostgreSQL 9.6.6	January 2018	Load balancer to support multiple Polycom ContentConnect systems Security updates Bug fixes
9.0.0.3	3.5.1	CentOS 6.9 OpenJDK 1.8.0_131 PostgreSQL 9.6.3	November 2017	Maintenance release to fix issues

Release	*API Version*	*System*	*Release Date*	*Features*
9.0.0.2	3.5.0	CentOS 6.9 OpenJDK 1.8.0_131 PostgreSQL 9.6.3	August 2017	New system web interface Multiple dial plans Enhanced High Availability Peer-to-Peer to MCU Escalation Two-system installation with the USB Configuration Utility Network packet capture troubleshooting utility Single log file downloads Enhanced network settings Revised security settings Licensing changes Revised superclustering Enhanced security features Bug fixes
6.4.1.8	3.4.6	CentOS 6.7 OpenJDK 1.8.0_77 PostgreSQL 9.5.2	December 2017	Maintenance release to fix issues
6.4.1.7	3.4.5	CentOS 6.7 OpenJDK 1.8.0_77 PostgreSQL 9.5.2	September 2017	Maintenance release to fix issues
6.4.1.6	3.4.4	CentOS 6.7 OpenJDK 1.8.0_77 PostgreSQL 9.5.2	July 2017	Maintenance release to fix issues
6.4.1.5	3.4.3	CentOS 6.7 OpenJDK 1.8.0_77 PostgreSQL 9.5.2	July 2017	Maintenance release to fix issues
6.4.1.4	3.4.0	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4	June 2017	Maintenance release to fix issues
6.4.1.1	3.4.0	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4	December 2016	Maintenance release to fix issues

Release	*API Version*	*System*	*Release Date*	*Features*
6.4.1	3.4.0	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4	September 2016	Maintenance release to fix issues
6.4.0.1	3.4.0	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4	September 2016	Maintenance release to fix issues
6.4.0	3.4.0	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4	August 2016	Microsoft Skype for Business MCU Affinity Integration with the Polycom RealPresence Collaboration Server MMCU and RDP Content Translator Scheduled Conference Support for Microsoft Office 365 Panoramic Layout Support for Skype for Business Clear SNMP Traps API Additions and Changes Fixes the issues identified in the Resolved Issues section
6.3.2.4	3.1.3	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4		Maintenance release to fix issues
6.3.2.3	3.1.3	CentOS 6.7 OpenJDK 1.8.0 PostgreSQL 9.4.4	July 2016	Maintenance release to fix issues
6.3.2.2	3.1.3	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.4.4	May 2016	Maintenance release to fix issues
6.3.2.1	3.1.2	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.4.4	April 2016	Maintenance release to fix issues

Release	*API Version*	*System*	*Release Date*	*Features*
6.3.2	3.1.2	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.4.4	March 2016	Support for RealPresence Clariti Resolved some known issues
6.3.1.2	3.1.0	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.4.4	February 2016	Maintenance release to fix issues
6.3.1.1	3.1.0	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.4.4	February 2016	Maintenance release to fix issues
6.3.1	3.1.0	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.4.4	December 2015	Maintenance release to fix issues
6.3.0.2	2.7.3	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.3	September 2015	Maintenance release to fix issues
6.3.0.1	2.7.3	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.3	August 2015	Maintenance release to fix issues
6.3.0	2.7.2	CentOS 6.6 OpenJDK 1.8.0 PostgreSQL 9.3	June 2015	Enhanced CSR Dialog, Enhanced Chairperson Functionality for Cascaded Conferences, External Lync System Integration, Lobby Support for Polycom RealConnect Conferences, Scheduled Backups, Signaling Diagram, SIP 302 Redirect Support, Support for Polycom Rack Server 630 (R630), VEQ support for RealConnect Conferences, WebRTC Conferencing
6.2.2.2	2.6.3	CentOS 6.6 Java 8u5 PostgreSQL 9.3	October 2015	Maintenance release to fix issues
6.2.2.1	2.6.3	CentOS 6.6 Java 8u5 PostgreSQL 9.3	September 2015	Maintenance release to fix issues

Release	*API Version*	*System*	*Release Date*	*Features*
6.2.2	2.6.3	CentOS 6.6 Java 8u5 PostgreSQL 9.3	August 2015	Maintenance release to fix issues
6.2.1.2	2.6.2	CentOS 6.6 Java 8u5 PostgreSQL 9.3	June 2015	Maintenance release to fix issues
6.2.1.1	2.6.2	CentOS 6.6 Java 8u5 PostgreSQL 9.3	April 2015	Maintenance release to fix issues
6.2.1	2.6.2	CentOS 6.6 Java 8u5 PostgreSQL 9.3	March 2015	Maintenance release to fix issues. Conference room dial-out improvements
6.1.3.1	2.5.5	CentOS 6.5 Java 8u5 PostgreSQL 9.3	April 2015	Maintenance release to fix issues
6.1.3	2.6.0	CentOS 6.5 Java 8u5 PostgreSQL 9.3	March 2015	Maintenance release to fix issues
6.2	2.6.0	CentOS 6.6 Java 8u5 PostgreSQL 9.3	December 2014	1080p SVC or SVC/AVC support, SIP peer high availability, faster post-deployment setup, improved Lync 2013 integration, RealPresence Resource Manager geographic redundancy support, scripting for VMR dial-out participants, MCU site name overlay support, enhanced VEQ scripting, and enhanced API functionality
6.1.2	2.5.4	CentOS 6.5 Java 8u5 PostgreSQL 9.3	October 2014	Maintenance release to fix issues
6.1.1.1	2.5.3	CentOS 6.5 Java 8u5 PostgreSQL 9.3	August 2014	Maintenance release to fix issues

Release	*API Version*	*System*	*Release Date*	*Features*
6.1.1	2.5.2	CentOS 6.5 Java 8u5 PostgreSQL 9.3	July 2014	Maintenance release to fix issues SIP peer high availability support
6.0.6	1.7.6	CentOS 6.4 Java 7u21 PostgreSQL 9.2.4	July 2014	Maintenance release to fix issues
6.1	2.5.2	CentOS 6.5 Java 8u5 PostgreSQL 9.3	June 2014	Lync 2013 support, enhanced upgrade framework, centralized licensing support, Management Instrumentation, enhanced H.323 and SIP statistics, enhanced High Availability functionality, H.323 firewall rate limit, enhanced conference template features, enhanced API functionality, and cascade support for SVC and mixed-mode conferences
6.0.5	1.7.6	CentOS 6.4 Java 7u21 PostgreSQL 9.2.4	May 2014	Maintenance release to fix issues
6.0.4	1.7.5	CentOS 6.4 Java 7u21 PostgreSQL 9.2.4	February 2014	Maintenance release to fix issues MPMRx and RealPresence Collaboration Server 1800 MCU support
5.2.2.6	1.2.2	CentOS 5.8 Java 7u9 PostgreSQL 9.2.1	January 2014	Maintenance release to fix issues
6.0.3	1.7.4	CentOS 6.4 Java 7u21 PostgreSQL 9.2.4	December 2013	Maintenance release to fix issues Conference template enhancements surrounding high resolution content
5.2.2.5	1.2.2	CentOS 5.8 Java 7u9 PostgreSQL 9.2.1	December 2013	Maintenance release to fix issues
5.2.2.4	1.2.2	CentOS 5.8 Java 7u9 PostgreSQL 9.2.1	October 2013	Maintenance release to fix issues

Release	*API Version*	*System*	*Release Date*	*Features*
6.0.2.1	1.7.2	CentOS 6.4 Java 7u9 PostgreSQL 9.2.2	August 2013	Maintenance release to fix issues
5.2.2.3	1.2.2	CentOS 5.8 Java 7u9 PostgreSQL 9.2.1	August 2013	Maintenance release to fix issues
6.0.2	1.7.1	CentOS 6.4 Java 7u9 PostgreSQL 9.2.2	July 2013	RealPresence DMA-controlled VEQs with operator support, enhanced call/conference history and CDRs, resource priority (AS-SIP) support, ANAT support, gatekeeper blacklist, management connection whitelist, simplified history retention settings, single-server shutdown, and new conference template setting.

System Capabilities and Limitations

The RealPresence DMA system is available in an Appliance Edition and a Virtual Edition.

If your RealPresence DMA system is licensed for more than 200 concurrent calls, the server you use must have 16 GB of RAM.

- If you are using a Virtual Edition, you need to create a new virtual machine (VM) with the required 16 GB of RAM and at least 146 GB of hard disk space.
- If you are using an Appliance Edition, you must use an R620, R630, or R640 server, or a combination of two servers (see Supported High Availability Cluster Configurations). These servers come with 16 GB RAM.

Supported High Availability Cluster Configurations

The RealPresence DMA system supports two-system clusters configured for High Availability (HA) only with certain server and virtual instance combinations. The following table details the combinations of server models and Virtual Edition instances that can be configured for HA:

Supported Two-System Combinations for High Availability Configuration

	Polycom Rack Server 620 (R620)	*Polycom Rack Server 630 (R630)*	*Polycom Rack Server 640 (R640)*	*Polycom Rack Server 220 (R220)*	*Polycom Rack Server 230 (R230)*	*RealPresence DMA Virtual Edition*
Polycom Rack Server 620 (R620)	Supported	Supported	Supported	Not Supported	Not Supported	Supported[1]
Polycom Rack Server 630 (R630)	Supported	Supported	Supported	Not Supported	Not Supported	Supported[1]
Polycom Rack Server 640 (R640)	Supported	Supported	Supported	Not Supported	Not Supported	Supported[1]
Polycom Rack Server 220 (R220)	Not Supported	Not Supported	Not Supported	Supported	Supported	Supported[2]
Polycom Rack Server 230 (R230)	Not Supported	Not Supported	Not Supported	Supported	Supported	Supported[2]
RealPresence DMA Virtual Edition	Supported[1]	Supported[1]	Supported[1]	Supported[2]	Supported[2]	Supported

[1] The default OVA settings for the VM match the specifications of the R620, R630, and R640 servers.

[2] The default OVA settings for the VM must be adjusted to match the specifications of the R220 and R230 servers.

Appliance Edition

This version of the RealPresence DMA system, Appliance Edition, can be installed on the following Polycom servers:

- Polycom Rack Server 620 (R620)
- Polycom Rack Server 630 (R630)
- Polycom Rack Server 640 (R640)
- Polycom Rack Server 220 (R220) – deployments with 200 or fewer licensed concurrent calls
- Polycom Rack Server 230 (R230) – deployments with 200 or fewer licensed concurrent calls

Maximum Capabilities of Servers – Core Configuration

The maximum capabilities of the system differ with the server you are using. The following table lists the maximum capabilities of Polycom Rack Servers running a core configuration of the RealPresence DMA system software.

Maximum Capabilities for Polycom Rack Servers 220/230 and 620/630/640 – Core Configuration

Maximum Capability	*Polycom Rack Server 220/230*	*Polycom Rack Server 620/630/640*
Number of sites	100	500
Number of subnets	1000	5000
Number of RealPresence DMA clusters in a supercluster	3	10
Number of clusters enabled for conference rooms	3	3
Number of MCUs enabled for conference rooms	5	64
Number of concurrent SIP<->H.323 gateway calls	200	500
Size of Active Directory supported	1,000,000 users and 1,000,000 groups (up to 10,000 groups maybe imported)	1,000,000 users and 1,000,000 groups (up to 10,000 groups maybe imported)
Number of contacts registered to a Skype for Business server per cluster	25000	25000
Number of network usage data points retained per cluster	8,000,000	8,000,000
Concurrent registrations per cluster	1600	15000
Total concurrent conference room (VMR) calls per cluster	200	1200 H.323 only 3600 SIP only
Total point-to-point concurrent calls per cluster	200	5000
Total concurrent conference room (VMR) calls for a supercluster[1]	600	3600 H.323 only 10800 SIP only[1]
Total point-to-point concurrent calls for a supercluster	600	50000

1 To support 3600 H.323 or 10800 SIP calls, the supercluster must contain at least three clusters.

Maximum Capabilities of Servers – Edge Configuration

The following table lists the maximum capabilities of Polycom Rack servers with an edge configuration of the RealPresence DMA system software.

Maximum Capabilities for Polycom Rack Servers 220/230 and 620/630/640 – Edge Configuration

Maximum Capability	*Polycom Rack Server 220/230*	*Polycom Rack Server 620/630/640*
Registrations	2000	5000
Concurrent calls[1]	200	1000
HTTPS tunnel calls (RealPresence Web Suite SIP guest calls only)	200	200
Throughput (Mbps)	700	700

1 In a VPN tunnel configuration, the maximum concurrent call capacities are reduced.

Trial Licenses

All new RealPresence DMA Appliance Edition systems include a trial license for 5 concurrent calls that can be used after you install the software on your server. When you purchase and activate your call license, any remaining trial license calls are no longer available – they are not added to your number of purchased licensed calls. For example, if you use 3 trial license calls, then activate a 50 concurrent-call license, you will have a total of 50 concurrent calls available, not 52.

If you deploy two RealPresence DMA Appliance Edition systems as an HA pair, the two systems combined include a trial license for 5 concurrent calls.

Virtual Edition

This version of the RealPresence DMA system is available in an edition packaged for VM-based deployment. The RealPresence DMA system, Virtual Edition, is supported in VMware environments and Microsoft Hyper-V environments.

Polycom supports mixed Hyper-V/VMware environments, but has not tested all configurations and combinations.

New RealPresence DMA Virtual Edition systems do not include a trial license for calls.

Host Installation Guidelines

The RealPresence DMA system OVA is configured to require 146 GB hard disk capacity, which Polycom has set for standard installations. To modify the required hard disk capacity, create a VM instance with the desired hard disk capacity and install the system using the RealPresence DMA system ISO file.

Note: The only benefit to having greater hard disk capacity is the ability to store more log files.

If you deploy two systems as a High Availability pair, one of which is a virtual instance and the other is a Polycom server, the profile of the VM should be consistent with the server's profile.

The following table describes the recommended VM host deployment settings for each instance of the RealPresence DMA system, Virtual Edition. It also shows the typical performance capacities of that deployment.

Recommended VM Host Deployment Settings

Component	*Recommended Small Deployment Settings*	*Recommended Medium-Large Deployment Settings*
Virtual Cores	6	12
Min. CPU Speed	2.4 GHz	2.4 GHz
Total Required GHz	14.4 GHz	28.8 GHz
Min. CPU Family	Haswell	Haswell
Memory	16 GB	16 GB
Storage	146 GB	146 GB
Random IOPS	110 total	210 total
Performance	200 concurrent calls	5000 concurrent calls • Up to 1200 H.323 calls, not to exceed 5000 total calls • Up to 3600 SIP calls (encrypted or unencrypted), not to exceed 5000 total calls • Up to 5000 point-to-point calls, not to exceed 5000 total calls

Because of differences in hardware and VM environments, the performance information is provided for guidance purposes only and does not represent a guarantee of any kind by Polycom.

Interoperability Limitations

The following table lists limitations of other products that may cause interoperability issues with the RealPresence DMA system.

Interoperability Limitations

Product	*Description*	*Workaround*
Polycom RealPresence Group Series	When a RealPresence Group Series system is registered to a RealPresence DMA system and hosts an encrypted conference, Cisco C-series endpoints that are registered to the RealPresence DMA system and dial in to the conference are unable to complete the SSL handshake with the RealPresence Group Series system's MCU.	Dial out from the RealPresence Group Series system to the Cisco endpoints.
Polycom HDX endpoints	A Polycom HDX endpoint using the RealPresence DMA system as its SIP registrar is unable to complete a point-to-point call to a Microsoft Lync or Skype for Business client.	In the RealPresence DMA system, edit the Microsoft external SIP peer on the External SIP Peers page and enable the **Postliminary** feature.
Polycom HDX endpoints	Polycom HDX endpoints can be used with Lync Server but do not support Skype for Business video conferencing.	
Polycom HDX endpoints, Polycom Trio	DMA does not support H.264 high profile (HP) for SIP <–> H.323 calls.	
Sony, Radvision, Avaya, and Polycom VVX endpoints	In the RealPresence DMA system, the **Terminate calls based on failed responses to IRQs** call server setting is enabled by default, causing some Sony, Radvision, Avaya, and Polycom VVX endpoints to be disconnected during conferences.	In the RealPresence DMA system, disable the **Terminate calls based on failed responses to IRQs** call server setting.
Various endpoints	The RealPresence DMA system version 6.4 or later no longer supports certificates with an RSA key size less than 1024 bits in length. Manufacturers of some endpoints have not yet enhanced their software to support more secure encryption. As a result, TLS connections made from the RealPresence DMA system to some endpoints will no longer work.	

Product	*Description*	*Workaround*
Cisco SX endpoints	When Cisco SX devices running CE 8.X software are registered to the RealPresence DMA system using SIP/TLS, SSL handshake failures between the Cisco SX and RealPresence DMA system during establishment of SIP/TLS connections can result in call failures.	Add a certificate to the Cisco SX device and enable the certificate for use with SIP. See the Cisco SX CE 8.X Administrator Guide on the Cisco website for additional details.
Microsoft Skype for Business and Polycom RealPresence Desktop	When Microsoft Skype for Business and Polycom RealPresence Desktop are connected in a point-to-point call, the call does not include video media. When Microsoft Skype for Business and Polycom RealPresence Desktop are connected in a VMR call, the call does include video.	As an alternative to a point-to-point call, if Skype for Business joins a VMR or Polycom RealConnect conference with RealPresence Desktop, the conference will include video.
Microsoft Skype for Business and Polycom RealPresence DMA Virtual Entry Queues	On RealPresence DMA systems, Virtual Entry Queues (VEQs) do not support direct dialing from Skype for Business clients into the RealPresence Platform.	
Microsoft Skype for Business and Polycom RealPresence DMA presence publishing	After editing a VMR in the RealPresence DMA system, Skype for Business (and Lync) clients experience a delay in updating presence information.	
F5 BIG-IP device	The RealPresence DMA system setting for the Diffie-Hellman public key size changes during an upgrade to version 9.0.1. The new setting differs from the F5 BIG-IP Diffie-Hellman public key size.	Choose one of the following options: • Customers using an F5 BIG-IP device to load balance ContentConnect servers in a Polycom RealConnect environment should contact Polycom Support before upgrading to version 9.0.1. Some settings may need to be changed to ensure interoperability with version 9.0.1 of the RealPresence DMA system. • Use the load balancer function in version 10.0.x of the RealPresence DMA system to support load balancing across multiple ContentConnect systems.

System Requirements

The Polycom RealPresence DMA system requires the following hardware, software, and network capabilities.

Hardware

The following hardware requirements were determined based on test scenarios. Your system's actual performance may vary based on software or hardware configurations.

To access the management interface, you need a client system running Microsoft® Windows® with the following hardware:

- 1280x1024 (SXGA) minimum display resolution; 1680x1050 (WSXGA+) or greater recommended
- USB and Ethernet ports
- DVD-RW drive or an external DVD burner (Appliance Edition only)

Software

The client system used to access the system web interface requires a web browser that supports HTML5. Microsoft Internet Explorer® must be version 11 or later.

Network Performance

The following table describes different types of RealPresence DMA system network connections and the related network performance requirements.

Network Performance Requirements

RealPresence DMA System Network Connections	*Network Performance*
Between clusters of a RealPresence DMA supercluster – core configuration	• Bandwidth above 10 Mbps, regardless of packet loss or latency • Less than 1 percent packet loss if network latency is 300 ms or less (one-way) **Or** • No packet loss if network latency is below 350 ms (one-way)
Between the RealPresence DMA system and all MCUs – core and combination system configurations	• Less than 200 ms round-trip latency • Less than 2 percent round-trip packet loss Since this network carries only signaling traffic (the RTP stream goes directly from the endpoint to the MCU), bandwidth is not an issue.

RealPresence DMA System Network Connections	*Network Performance*
Between the RealPresence DMA system and video endpoints – core, edge, and combination system configurations	• Less than 200 ms round-trip latency • Less than 6 percent round-trip packet loss
Between the RealPresence DMA system and Microsoft® Active Directory® (if integrated) – core, edge, and combination system configurations	• Less than 200 ms round-trip latency • Less than 4 percent round-trip packet loss

Products Tested with This Release

Polycom RealPresence DMA systems are tested extensively with a wide range of products. The list in this section is not a complete inventory of compatible systems.

The following table lists the versions of products that have been tested with version 10.0 of the RealPresence DMA system. If a product does not include a version number, it has not been tested with version 10.0 of the RealPresence DMA system.

Note: Polycom recommends that you upgrade all your Polycom systems with the latest software versions. Any compatibility issues may have been addressed by software updates. Go to http://support.polycom.com/PolycomService/support/us/support/service_policies.html to view the current Interoperability Matrix.

Products Tested with this Release

Product	*Tested Versions*
Polycom Devices	
Border Controllers	
Polycom RealPresence Access Director	4.2.x
Call Processors / Gatekeepers / SIP Servers	
Polycom ISDN Gateway	
Polycom RealPresence DMA Hardware Edition	10.0.0.4
Polycom RealPresence DMA Virtual Edition	10.0.0.4
Polycom RealPresence WebSuite MEA	2.2.1
Polycom RealPresence WebSuite WSP	2.2.1

Product	*Tested Versions*
Polycom Work Flow Server (OTD)	1.6.1
Endpoints	
Polycom RealPresence Centro	6.1.8, 6.2.0
Polycom RealPresence Immersive Studio	6.1.8, 6.2.0
Polycom RealPresence Immersive Studio Flex	6.1.8
Polycom RealPresence WebSuite Client	
Polycom Touch Control for Group Series	2.1.8
Polycom RealPresence Touch	2.1.8
Polycom Touch Control for HDX	
Polycom CMA Desktop	
Polycom CMA Desktop for MAC	
Polycom CX5500	1.3.4
Polycom CX8000	
Polycom Debut	1.3.2
Polycom Group Series	6.1.8, 6.2.0
Polycom HDX	
Polycom RealPresence Desktop for Mac	3.9.0
Polycom RealPresence Desktop for Windows	3.9.0
Polycom RealPresence Mobile for Android™	3.9.0
Polycom RealPresence Mobile for Apple iOS	3.9.0
Polycom Trio 8500	5.7.1, 5.7.2
Polycom Trio 8800	5.7.1, 5.7.2
Polycom VVX 1500	
Polycom VVX UCS	5.8.0
Management Systems	

Product	*Tested Versions*
Polycom RealPresence Resource Manager Hardware Edition	10.4.0
Polycom RealPresence Resource Manager Virtual Edition	10.4.0
MCUs	
Polycom RealPresence Collaboration Server 1500	
Polycom RealPresence Collaboration Server 1800	8.8.0
Polycom RealPresence Collaboration Server 2000	8.8.0
Polycom RealPresence Collaboration Server 4000	8.8.0
Polycom RealPresence Collaboration Server Virtual Edition	8.8.0
Recorders / Content Servers	
Polycom Content Connect	1.6.2
Polycom Pano	1.1.1
Polycom Pano App	1.1.0
Polycom RealPresence MediaSuite Hardware Edition	
Polycom RealPresence MediaSuite Virtual Edition	2.8.2
Third-Party Devices	
Border Controllers	
Sonus SBC	
Call Processors / Gatekeepers / SIP Servers	
Avaya Aura CM	
Avaya Aura SM	
Broadsoft Server	
Cisco TelePresence Video Communication Server	8.8.1
Cisco Unified Communications Manager	12.0(1)
Cisco 3241 ISDN Gateway	
Radvision Scopia P10 ISDN Gateway	

Product	*Tested Versions*
Radvision ECS Gatekeeper	
Microsoft Exchange 2016	15.1(Build-1466.3)
Microsoft Lync 2013 Server	
Microsoft Lync 2015 Skype for Business (SfB) Server	6.0.9319.516
Unify OpenScape Branch	
Unify OpenScape SBC	
Unify OpenScape Voice Server	
Endpoints	
Avaya 10XX	
Avaya 1X Communicator	
Avaya ADVD	
Avaya Flare Desktop	
Avaya Flare Mobile (iOS)	
Avaya Scopia XT5000	08.03.07.0051 V8_3_7_51
Avaya Scopia XT7000	
Avaya Voice Phone	
Broadsoft BTBC_Android (Mobile)	
Broadsoft BTBC_Android (Tablet)	
Broadsoft BTBC_iOS (Mobile)	
Broadsoft BTBC_iOS (Tablet)	
Broadsoft BTBC_PC	
Cisco DX70 / DX650	SIP10.2.5 & CE9.2.4
Cisco DX80	CE9.2.4
Cisco MX300 G2	CE9.2.4
Cisco TelePresence 1300	

Product	*Tested Versions*
Cisco TelePresence 150 MXP	
Cisco TelePresence 1700 MXP	
Cisco TelePresence 3010	
Cisco TelePresence 500-32	6.1.13
Cisco TelePresence 500-37	
Cisco TelePresence C40	TC7.3.14
Cisco TelePresence C60	TC7.3.14
Cisco TelePresence C90	TC7.3.14
Cisco TelePresence EX60	TC7.3.14
Cisco TelePresence EX90	TC7.3.12
Cisco TelePresence IX5000	8.3.1.1
Cisco TelePresence SX10	CE9.2.4
Cisco TelePresence SX20	CE9.2.4
Cisco TelePresence SX80	CE9.3.0
Cisco TelePresence TX1310	6.1.13
Cisco TelePresence TX9000	6.1.13
Huawei TE30	
Huawei TE40	
IBM SameTime	
TCSPI Adapter	
LifeSize Express 220	LS_EX2_5.0.9(2)
LifeSize Icon 600	LS_RM3_2.9.0 (1982)
LifeSize Team 220	
Microsoft CX500/CX600	
Microsoft Lync 2010 Client	

Product	*Tested Versions*
Microsoft Lync 2015 Client	
Microsoft Lync Mac Client	16.17.65
Microsoft Skype for Business (SfB) 2016 Client	16.0.10228.20080
Microsoft SfB Client (Android-Phone)	6.21.0
Microsoft SfB Mobile Client (iOS-Phone)	6.21.1
Microsoft SfB Client (Android-Tablet)	6.21.0
Microsoft SfB Mobile Client (iOS-Tablet)	6.21.1
Radvision Scopia XT1000	
Sony PCS-XG100	
Sony PCS-XG80	
Unify OpenScape UC	
Unify Openscape UC Client	
Unify Openstage 60/80	
MCUs	
Cisco 5310 MCU	
Cisco TelePresence MCU 4505	
Cisco TelePresence Server	
Hypervisor Environments for Virtual Edition Polycom supports mixed Hyper-V and VMware environments, but has not tested all configurations and combinations.	
VMware vSphere®	6.5, 6.7
VMware vCenter® Server	6.5, 6.7
Microsoft Hyper-V	Microsoft Windows Server 2016, Datacenter edition

Installation and Upgrade Notes

You can upgrade previous versions of the RealPresence DMA system software to version 10.0.0.4 (see Supported Upgrade Paths – RealPresence DMA System). You can also upgrade the RealPresence Access Director system to version 10.0.0.4 of the RealPresence DMA system (see Supported Upgrade Paths – RealPresence Access Director System). When you log into the RealPresence DMA support portal, you can download the 10.0.0.4 upgrade package and any interim upgrade packages you need for both the Appliance Edition and Virtual Edition.

Note: If you have a RealPresence Access Director Polycom Rack Server 620 (R620), v2 or v3 (shipped from January 2013 through June 2014), you must perform a new installation of the RealPresence DMA system, version 10.0 or later, on the server. The RealPresence Access Director R620 servers cannot be upgraded.

Caution: Customers using an F5 BIG-IP device to load balance ContentConnect servers in a Polycom RealConnect environment should contact Polycom Support before upgrading to version 10.0.0.4. Some settings may need to be changed to ensure interoperability with version 10.0.0.4 of the RealPresence DMA system.

Network Firewall/Router

When you install or upgrade the RealPresence DMA system in an edge or core configuration, you must turn off SIP and H.323 ALG, as well as any packet inspection/modification, on your network firewall and/or router. Your call scenarios will fail if the network firewall/router modifies any incoming packet to the RealPresence DMA system. To detect if your network firewall/router is modifying packets, do one of the following:

- Run a sniffer trace and observe the signaling packets (H.323 or SIP) to determine if the network firewall/router is inserting its IP address.
- In the RealPresence DMA system web interface, go to Monitoring > Endpoints and see if the IP address of the endpoint is the network firewall/router IP address.

SIP and H.323 Dynamic Ports

When you install a new RealPresence DMA edge-configured system and then run the DMA edge wizard, you can specify the **Maximum number of simultaneous calls** for your system to support. When you do so, the wizard will assign three SIP and three H.323 dynamic ports for the maximum number of calls you specified. For example, if you enter 500 as the **Maximum number of simultaneous calls**, the wizard will assign 1500 dynamic ports for SIP calls and 1500 dynamic ports for H.323 calls.

OVA Files

Installing and configuring the RealPresence DMA system, Virtual Edition, from the RealPresence Resource Manager system using an OVA file is not supported. Instead, use your virtual environment tools to deploy the RealPresence DMA system OVA file. You can use thinshell or the RealPresence DMA system web interface to configure the network address, then add the instance to the RealPresence Resource Manager system for licensing.

Order of Ethernet Ports for Polycom R230 Servers

If you have a RealPresence DMA Appliance Edition, you need to connect your enterprise network to the Ethernet port on the server that's assigned to eth0. If you recently purchased a Polycom Rack Server 230 (R230), the NICs on the server have different MAC address ranges than older versions of the server, which has caused the NIC ordering to change.

Typically, the operating system of the server assigns the order of Ethernet interfaces so that the NIC with the lowest MAC address is assigned to eth0 and the NIC with the highest MAC address is assigned to eth3. In this case, the Ethernet port labeled **Port 0** on an R230 server is the eth0 network interface. However, on some newer R230 servers, **Port 0** is the eth2 network interface.

- To determine the order of the MAC addresses and associated Ethernet interfaces, go to the BIOS Setup menu (F2) and view the Device settings. Then connect the port associated with eth0 to your enterprise network.

Example Ethernet Interface Order on Older R230 Servers

NIC	*MAC Address of the Ethernet Interface*	*Ethernet Interface*
Embedded NIC 1 Port 1: Broadcom Gigabit Ethernet BCM5720	34:17:EB:F0:95:E3	eth2
Embedded NIC 2 Port 1: Broadcom Gigabit Ethernet BCM5720	34:17:EB:F0:95:E4	eth 3 (highest MAC address)
NIC in Slot 2 Port 1: Broadcom Gigabit Ethernet BCM5720	00:0A:F7:96:D1:7A	eth 0 (lowest MAC address)
NIC in Slot 2 Port 2: Broadcom Gigabit Ethernet BCM5720	00:0A:F7:96:D1:7B	eth1
34:17:EB network interface cards are registered by Dell 00:0A:F7 network interface cards are registered by Broadcom You can find MAC address vendors at: https://macvendors.com/		

Example Ethernet Interface Order on Newer R230 Servers

NIC	*MAC Address of the Ethernet Interface*	*Ethernet Interface*
Embedded NIC 1 Port 1: Broadcom Gigabit Ethernet BCM5720	6C:2B:59:7B46:0E	eth 0 (lowest MAC address)

NIC	*MAC Address of the Ethernet Interface*	*Ethernet Interface*
Embedded NIC 2 Port 1: Broadcom Gigabit Ethernet BCM5720	6C:2B:597B:46:0F	eth1
NIC in Slot 2 Port 1: Broadcom Gigabit Ethernet BCM5720	B0:26:28:19:FD:DE	eth2
NIC in Slot 2 Port 2: Broadcom Gigabit Ethernet BCM5720	B0:26:28:19:FD:DF	eth3 (highest MAC address)
6C:2B:59 network interface cards are registered by Dell B0:26:28 network interface cards are registered by Broadcom You can find MAC address vendors at: https://macvendors.com/		

Ethernet Interface to Network Adapter Mapping in Virtual Edition Installations

When you deploy a new RealPresence DMA Virtual Edition using an OVA template in a virtual environment, the Ethernet interface (in CentOS) to network adapter mapping (in the hypervisor) can sometimes occur in a different order. For example, eth0 will be mapped to network adapter 2, eth1 will be mapped to network adapter 1. This is due to how hypervisors interact with CentOS running in the RealPresence DMA system.

The Ethernet interface names in CentOS (eth0, eth1, eth2, eth3) are assigned to network adapters in the hypervisor in the alphanumeric order of the MAC addresses of the Ethernet interfaces.

Assign Networks to Network Adapters

After deploying the RealPresence DMA OVA, complete the following steps before you start the virtual machine (VM).

1 Go to the VM's Network Settings in the hypervisor.

If the MAC addresses are in ascending alphanumeric order, the network adapters will be mapped to Ethernet interfaces as follows:

Network Adapter (VMware)	*MAC Address of the Ethernet Interface*	*Ethernet Interface (CentOS)*
Network adapter 1	00:0c:29:db:42:89	eth0
Network adapter 2	00:0c:29:db:42:91	eth1
Network adapter 3	00:0c:29:db:42:af	eth2

Network Adapter (VMware)	*MAC Address of the Ethernet Interface*	*Ethernet Interface (CentOS)*
Network adapter 4	00:0c:29:db:43:a5	eth3

2 If the MAC addresses are not in ascending alphanumeric order, you need to assign the network adapters to the appropriate Ethernet interface in the hypervisor. Use the following table as an example.

Network Adapter (VMware)	*MAC Address of the Ethernet Interface*	*Ethernet Interface (CentOS)*
Network adapter 1	00:0c:29:db:42:91	eth1
Network adapter 2	00:0c:29:db:42:89	eth0
Network adapter 3	00:0c:29:db:43:a5	eth3
Network adapter 4	00:0c:29:db:42:af	eth2

3 After assigning the network adapters to network connections, you can start the RealPresence DMA VM.

Suggested Configurations for Network Interfaces

The following tables list suggested network interface settings for RealPresence DMA edge-configured systems, based on the number of network interfaces you use.

Number of NICs	*Name of Interface*	*Assigned Traffic*	*Description*
4	eth0	Management services Private (LAN) signaling services Private (LAN) access proxy services	Private LAN-side signaling and management
	eth1	Private (LAN) media traversal services	Private LAN-side media
	eth2	Public (WAN) media traversal services	Public WAN-side media

Number of NICs	*Name of Interface*	*Assigned Traffic*	*Description*
	eth3	Public (WAN) signaling services Public (WAN) access proxy services	Public WAN-side signaling

Number of NICs	*Name of Interface*	*Assigned Traffic*	*Description*
4	eth0	Management services	Private LAN-side management
	eth1	Private (LAN) signaling services Private (LAN) access proxy services Private (LAN) media traversal services	Private LAN-side signaling, access proxy, and media traversal
	eth2	Public (WAN) signaling services Public (WAN) access proxy services Public (WAN) media traversal services	Public WAN-side signaling, access proxy, and media traversal
	eth3	Public (WAN) TURN Services Private (LAN) TURN services	Optional public WAN-side and private LAN-side TURN services used for WebRTC calls

Number of NICs	*Name of Interface*	*Assigned Traffic*	*Description*
3	eth0	Management services Private (LAN) signaling services Private (LAN) access proxy services Private (LAN) media traversal services	Private LAN-side management, signaling, access proxy, and media traversal

Number of NICs	*Name of Interface*	*Assigned Traffic*	*Description*
	eth1	Public (WAN) signaling services Public (WAN) access proxy services Public (WAN) media traversal services	Public WAN-side signaling, access proxy, and media traversal
	eth2	Public (WAN) TURN Services Private (LAN) TURN services	Optional public WAN-side and private LAN-side TURN services used for WebRTC calls

Supported Upgrade Paths – RealPresence DMA System

You can upgrade to version 10.0.0.4 of the RealPresence DMA system *only* from version 9.0.x or 10.0.x.

If your RealPresence DMA system is running a version prior to 9.0.x, you must perform interim upgrades before you can upgrade to version 10.0.0.4. If you try to upgrade from a non-supported version, the RealPresence DMA system displays the following message:

> "This upgrade version cannot be used to upgrade the current system. Please refer to the release notes for allowed upgrade paths or perform a backup, then a fresh install, followed by restoring the backup to upgrade the system to this version."

Do not perform a fresh installation of version 10.0.0.4 and then restore a backup of a non-supported version. You must upgrade a non-supported version to one of the supported versions before upgrading to 10.0.0.4.

Note: If you have a system running version 6.4.x that has two default territories and is integrated with a RealPresence Resource Manager system, you must delete one of the territories before you upgrade to version10.0.0.4. If you upgrade without deleting one of the default territories, the system will display an error when you attempt to change some user settings. To resolve the error, you need to remove your integration with the RealPresence Resource Manager system, then reintegrate.

Your upgrade to version 9.0.1 or 10.0.0.4 may be blocked if you are running one of the following versions of the RealPresence DMA system on a Polycom Rack Server 630 (R630). In this case, you must upload and install `DELL-HW-Utility.bin` before upgrading to 9.0.1 or 10.0.0.4.

6.4.1.3
6.4.1.4
6.4.1.5
6.4.1.6
6.4.1.7
9.0.0
9.0.0.1
9.0.0.2

The following table outlines the supported paths you can use to upgrade a previous version of the RealPresence DMA system to version 10.0.0.4, depending on which version your system is currently running. Read the release notes for each version in your upgrade path to review any upgrade notes.

Supported Upgrade Paths: RealPresence DMA System to RealPresence DMA System, Version 10

Current Version		*Intermediate Upgrade*		*Intermediate Upgrade*		*Intermediate Upgrade*		*Final Upgrade*	*New License Required?*
5.0.x 5.1.x 5.2.0	→	5.2.1	→	6.2.2.2	→	6.4.1.1	→	9.0.1	Yes
5.2.1 5.2.2.x 6.0.x	→	6.2.2.2			→	6.4.1.1	→	9.0.1	Yes
6.1.x 6.2.x 6.3.x					→	6.4.1.1	→	9.0.1	Yes
6.4.0.x 6.4.1 6.4.1.1 6.4.1.2							→	9.0.1	Yes
6.4.1.3 6.4.1.4 6.4.1.5 6.4.1.6 6.4.1.7					→	DELL-HW Utility (only if using Polycom R630 server)	→	9.0.1	Yes
6.4.1.8							→	9.0.1	Yes

Current Version	*Intermediate Upgrade*	*Intermediate Upgrade*		*Intermediate Upgrade*		*Final Upgrade*	*New License Required?*
9.0.0 9.0.0.1 9.0.0.2			→	DELL-HW Utility (only if using Polycom R630 server)	→	10.0.0.4	Yes
9.0.0.3					→	10.0.0.4	Yes
9.0.1.x					→	10.0.0.4	Yes
10.0.x					→	10.0.0.4	No

Supported Upgrade Paths – RealPresence Access Director System

The following table outlines the supported path you can use to upgrade the RealPresence Access Director system to version 10.0.0.4 of the RealPresence DMA system.

Supported Upgrade Paths: RealPresence Access Director System to RealPresence DMA System, Version 10

Current Version	*Intermediate Upgrade*	*Intermediate Upgrade*		*Intermediate Upgrade*		*Final Upgrade*	*New License Required?*
4.1.x or earlier			→	4.2.x	→	10.0.0.4	Yes

Upgrading to Version 10.0.0.4 of the RealPresence DMA System

Upgrading the RealPresence DMA system typically takes approximately 30-60 minutes but can sometimes take longer. Once you start the upgrade process, you should not reboot the server.

Note the following:

- If you're upgrading a RealPresence DMA system from version 9.0.x to version 10.0.0.4 and a RealPresence Access Director system version 4.2.x to version 10.0.0.4, it's recommended that you upgrade as follows:
  - First, upgrade your RealPresence DMA system from version 9.0.x to version 10.0.0.4. The 10.0.0.4 system will automatically have a core configuration.

  - Next, upgrade your RealPresence Access Director system from version 4.2.x to version 10.0.0.4 The 10.0.0.4 system will automatically have an edge configuration.
- A RealPresence Access Director system, version 4.2.x, will operate with a RealPresence DMA core-configured system (version 10.0 or later).
- A RealPresence DMA edge-configured system (version 10.0 or later) will not operate with any older versions of the RealPresence DMA system.
- If you configure your RealPresence DMA edge system in a combination configuration, you need to add subnets for your internal endpoints to the **Default Site**, or you can create a new site for internal endpoints. See **Site Topology** in the system web interface.
- The subnet of internal endpoints and MCUs on a core system or a combination system should always be in a site other than Internet/VPN.
- If you are a RealPresence Clariti customer, you must license the RealPresence DMA system through the RealPresence Resource Manager. If you plan to use concurrent VMR licenses, you must use version 10.4 or later of the RealPresence Resource Manager system.
- If your systems are integrated with a RealPresence Collaboration Server, upgrade the RealPresence DMA system to version 10.0.0.4 before upgrading the RealPresence Collaboration Server to version 8.8.

Port Information for the RealPresence DMA System Version 10.0.0.4

No port numbers can overlap in version 10.0.0.4 of the RealPresence DMA system. Some prior versions of the RealPresence Access Director system and the RealPresence DMA system did not check for port overlaps and this may have resulted in dropped calls.

Adjusting Ports After Upgrading to Version 10.0.0.4

After you upgrade to version 10.0.0.4, alerts for overlapping ports may display based on the system you upgraded (RealPresence Access Director version 4.2.x or RealPresence DMA version 9.0.x). To clear the alerts, you can use the formula described in the following table to adjust the port range settings for the services identified in the alerts. You can shrink the port ranges of the services based on the number of call licenses you have. When you revise the port range settings, keep the first port number the same and decrease the last port number so that the total ports to reserve match the formula in the following table. By using this method, you may not have to make network or firewall changes.

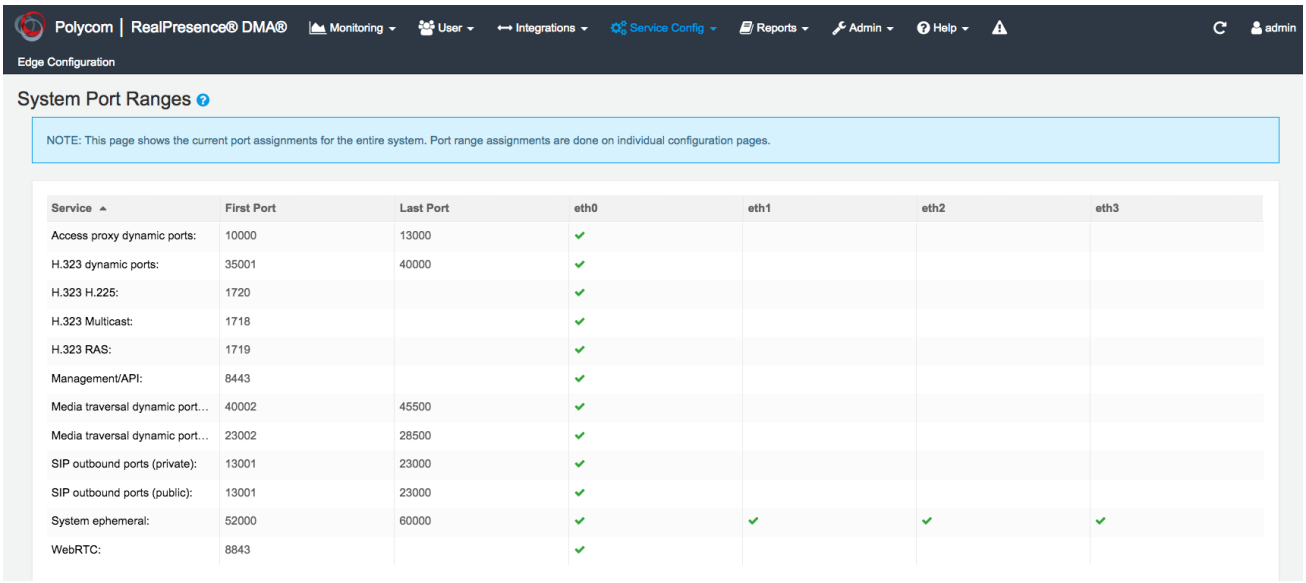
Formula for Adjusting Port Ranges

	H.323 Dynamic Ports	*SIP Dynamic Ports (public)*	*SIP Dynamic Ports (private)*	*Media Traversal Dynamic Ports (public)*	*Media Traversal Dynamic Ports (private)*	*Access Proxy*	*System Ephemeral*
Number of ports used for each call	3	3	3	5	5	NA	NA
Number of calls	Y	Y	Y	Y	Y	NA	NA

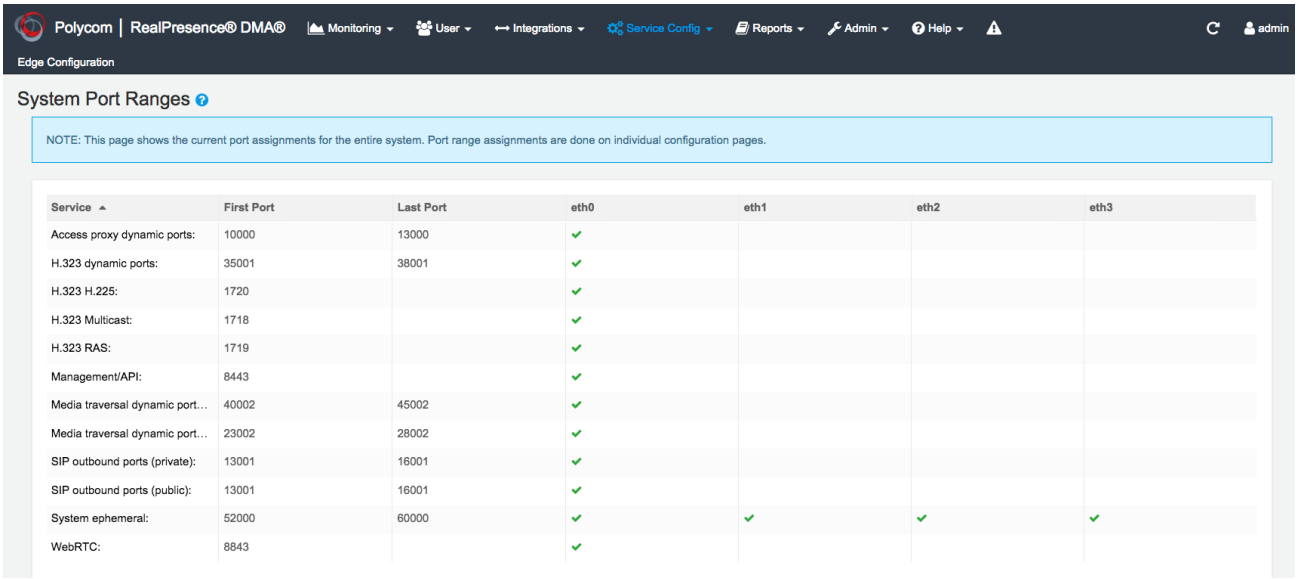
	H.323 Dynamic Ports	*SIP Dynamic Ports (public)*	*SIP Dynamic Ports (private)*	*Media Traversal Dynamic Ports (public)*	*Media Traversal Dynamic Ports (private)*	*Access Proxy*	*System Ephemeral*
Total ports to reserve	**3 x Y**	**3 x Y**	**3 x Y**	**5 x Y**	**5 x Y**	**3000**	**3000**
Notes	Applies to edge, core or combination configurations. To change the port range for this service, from the system web interface, go to **Service Config> H.323 Settings** and click **Port Range Settings**.	Applies to edge, core or combination configurations. Applies only if your public and private interfaces are different. To change the port range for this service, from the system web interface, go to **Service Config>SIP Settings** and click **Port Range Settings**.	Applies to edge, core or combination configurations. To change the port range for this service, from the system web interface, go to **Service Config>SIP Settings** and click **Port Range Settings**.	Applies to edge or combination configurations. To change the port range for this service, from the system web interface, go to **Service Config>Media Traversal Settings** and click **Port Range Settings**.	Applies to edge or combination configurations. To change the port range for this service, from the system web interface, go to **Service Config>Media Traversal Settings** and click **Port Range Settings**.	Applies to edge or combination configurations. To change the port range for this service, from the system web interface, go to **Service Config> Access Proxy Settings** and click **Port Range Settings**.	Applies to edge, core, or combination configurations. Changing the min. and max. ports in the port range should not affect your network firewall configuration since these ports are primarily outbound. To change this port range, from the system web interface, go to **Admin->Server> Network Settings** and click **System Ephemeral Ports**.

Adjusting Ports After Performing a Fresh Installation of Version 10.0.0.4

When you perform a fresh installation of a RealPresence DMA edge-configured system, the default ports for the system's services are defined, as shown in the following image:



After installation, if you run the DMA Edge Wizard and specify the **Maximum number of simultaneous calls** as *x*, the default port ranges for each service will adjust to the total number of ports required to support *x* simultaneous calls. The system calculates the total number of ports required using the formula described in the preceding table. The following image shows the port ranges for 1000 simultaneous calls, with services bound only to eth0:



Upgrading Superclustered or High Availability Systems

When two RealPresence DMA systems (versions 9.0 and higher) are configured for High Availability (HA), each of the HA nodes acts as an individual server and must be upgraded independently. The benefit that version 9.0 and higher provides is less downtime during upgrades. You can upgrade the

standby node while the active node continues to process calls, then release resources to switch the VIP to the standby node, which becomes the new active node. You can upgrade the new standby node when convenient, while the new active node continues to process calls.

If you have superclustered or High Availability systems to upgrade, review the following information:

- If you upgrade the RealPresence DMA system from version 6.4.x to 9.0.x, break your superclusters before upgrading. You can reestablish the superclusters before or after upgrading to version 10.0.0.4.
- If you upgrade a RealPresence DMA HA pair from version 6.4.x to 9.0.x, keep the HA nodes connected before upgrading. Then upgrade one of the systems or the virtual IP address and the upgrade will be applied across both HA systems. You can reenable the HA pair before or after upgrading to version 10.0.0.4.
- You don't need to break superclusters or HA pairs when upgrading version 9.0.x systems to version 10.0.0.4 systems with core configurations. Superclustering in a mixed-version environment of 9.0.x and 10.0.x core-configured systems is supported but, after upgrading any systems to version 10.0.x, inviting an additional 10.0.x node to join the supercluster is not supported.
- If you install new version 9.0.x and version 10.0.0.4 RealPresence DMA systems, superclustering between the new systems running different versions is not supported.

Upgrading Systems Integrated with RealPresence Resource Manager

If your RealPresence DMA system is integrated with a RealPresence Resource Manager system, you need to revise the RealPresence DMA instance.

Complete the following steps if you have not yet upgraded the RealPresence DMA system:

1. In the RealPresence Resource Manager system web interface, edit the RealPresence DMA instance and uncheck the Call Server option and the Support DMA Supercluster option (if your RealPresence DMA system is part of a supercluster).
2. Upgrade the RealPresence DMA system.
3. In the RealPresence Resource Manager system web interface, edit the RealPresence DMA instance and check the Call Server option and the Support DMA Supercluster option (if your RealPresence DMA system is part of a supercluster).

   Calls and conferences will not be affected by the revisions.

Complete the following steps if you have already upgraded the RealPresence DMA system:

1. In the RealPresence Resource Manager system web interface, edit the RealPresence DMA instance and uncheck the Call Server option and the Support DMA Supercluster option (if your RealPresence DMA system is part of a supercluster).
2. Edit the RealPresence DMA instance again and check the Call Server option and the Support DMA Supercluster option (if your RealPresence DMA system is part of a supercluster).

   Calls and conferences will not be affected by the revisions.

Upgrading Systems that have Custom Prompt Sets

If you've uploaded custom prompt sets to your RealPresence DMA system, you need to make a manual change to the sys-backup-restore script before upgrading. This will enable the custom prompt files to be restored correctly during the upgrade.

To upgrade a RealPresence DMA system that has custom prompt sets:

1. Before starting the upgrade process, SSH to the RealPresence DMA system as root and execute the following command from the shell:

   ```
   sed -i -e 's!${PROMPTS_DIR:-"/proximo/config/cluster"}!${PROMPTS_DIR:-"/proximo/config/promptsets"}!' /proximo/current/bin/backup_scripts/sys-backup-restore
   ```

2. Upgrade to version 10.0.0.4.

Upgrade the RealPresence DMA System to Version 10.0.0.4

You can upgrade a RealPresence DMA system to version 10.0.0.4 from the system's web interface.

See "*DNS Records for the Polycom RealPresence DMA System*" in the *Polycom RealPresence DMA System Operations Guide* or the online help to ensure you have the correct DNS entries for a successful deployment.

To upgrade the RealPresence DMA system:

1. Log into the Polycom Support Portal.
2. Go to **Documents and Software > UC Infrastructure > Management & Scheduling**.
3. Select **RealPresence Distributed Media Application (DMA)**.
4. Under the **Current Releases** tab, select the upgrade package to download.
5. Read and accept the End User License Agreement and the Export Restrictions.
6. Save the upgrade package to your local client system.
7. From the RealPresence DMA system web interface, go to **Admin > Software Upgrade**.
8. Select **Upload and Upgrade**.
9. Navigate to the upgrade package you saved and select **Open**.

   After the upload is complete, the upgrade begins.
10. Select **Upgrade status page** below the status bar.

    The **RPP Install Status** page displays. After the installation status reaches 100%, the system will reboot.
11. After the system reboots, log into the RealPresence DMA system with your administrator credentials.
12. Read and accept the End User License Agreement.

    The system web interface opens and displays any alerts you need to resolve to complete the upgrade.
13. See Resolve Upgrade Alerts if necessary to complete the upgrade.

Upgrade the RealPresence Access Director System to the RealPresence DMA System, Version 10.0.0.4

You can upgrade version 4.2.x of the RealPresence Access Director system to version 10.0.0.4 of the RealPresence DMA system. A new license is required.

Important: Upgrading a RealPresence Access Director system to a RealPresence DMA system is a major upgrade. Configuration changes are required after upgrading to ensure that the RealPresence DMA edge-configured system functions like your RealPresence Access Director system did.

If you have two RealPresence Access Director systems in a two-box tunnel configuration, you must disable two-box tunnel mode on both systems before you migrate them to version 10.0 of the RealPresence DMA system. After migration, you need to create a VPN tunnel between the two systems and configure the default connections required for communication between the outside edge and inside edge or combination system and between the inside edge or combination system and a core-configured system. The default connections include external SIP peers, external H.323 gatekeepers, registration sharing, dial rules, and access proxies.

The RealPresence Access Director system that resides in the DMZ remains in the DMZ after you upgrade it to a RealPresence DMA edge-configured system. However, after migration, its communication settings will point to the RealPresence DMA core-configured system. You need to revise the settings so that external SIP peers, external H.323 gatekeepers, registration sharing, dial rules, and access proxies on the outside edge system point to the inside edge or combination system. The same settings on the inside edge or combination system must point to the core system.

Note: If you use a combination system as the inside system for the VPN tunnel, you don’t need to configure that system to point to a core RealPresence DMA. The combination system serves as both an edge and core system.

Additionally, to enable outbound calling through the VPN tunnel, you need to create an external SIP peer and external gatekeeper on the inside edge or combination system that point to the signaling address of the outside edge system.

When configuring the two VPN tunnel systems, follow these guidelines:

On the outside RealPresence DMA edge system

- Point external SIP peers, external H.323 gatekeepers, registration sharing, and access proxies to the inside edge or combination system.
- Assign standard ports to the HTTPS, LDAP, and XMPP proxies on the public side; assign non-standard ports on the private side.

On the inside RealPresence DMA edge or combination system

- Point external SIP peers, external H.323 gatekeepers, registration sharing, and access proxies to the core system.

- Assign non-standard ports (the same ones you assigned to the private side of the outside system) to the HTTPS, LDAP, and XMPP proxies on the public side; assign standard ports on the private side.

For complete instructions on how to set up a VPN tunnel and configure settings, see the *VPN Tunnel Settings* chapter in the *Polycom RealPresence DMA System Operations Guide*.

Before upgrading single or two-box tunnel systems, review the following information:

- If you have a RealPresence Access Director Polycom Rack Server 620 (R620), v2 or v3 (shipped from January 2013 through June 2014), you must perform a new installation of the RealPresence DMA system, version 10, on the server. The RealPresence Access Director R620 servers cannot be upgraded.
- If you upgrade a RealPresence Access Director High Availability pair, you must disable HA on both systems before upgrading.
- You need to enter the RealPresence DMA 10.0 administrator user credentials in the registration sharing settings to complete the upgrade. See Resolve Upgrade Alerts.
- You must open port 8443 on your internal firewall for the registration sharing feature in the RealPresence DMA system version 10.0 to work correctly. An edge-configured system uses port 8443 on the physical interface to connect to a core-configured system for registration sharing.
- No changes to the RealPresence Access Director system's default port ranges are required when you upgrade to version 10 of the RealPresence DMA system. However, the RealPresence DMA system will display a port overlap alert for the system ephemeral port range. After upgrading, you need to change the RealPresence DMA system's ephemeral port range to prevent port conflicts. You do not need to make changes to your firewall.
- The RealPresence Access Director SSH passwords for the following user accounts will be migrated to the RealPresence DMA system during the upgrade:
  - `polycom`
  - `root`
  - `rpad` (the `rpad` user will be converted to the `dmaremote` user but the password will remain the same).

Note: For HA systems, to prevent having to change your firewall settings after you upgrade, it's recommended that you transition your existing physical IP addresses for media interfaces to virtual IP addresses. You can then assign new physical IP addresses to the media interfaces.

To upgrade the RealPresence Access Director system to the RealPresence DMA system:

1. Log into the Polycom Support Portal.
2. Go to **Documents and Downloads > UC Infrastructure > Management & Scheduling**.
3. Select **RealPresence Distributed Media Application (DMA)**.
4. Under the **Current Releases** tab, download one of the following upgrade files:
   - If you upgrade any version from 4.2.0 through 4.2.5, download the `.upg` file.
   - If you upgrade from version 4.2.5.1 or higher, download either the `.upg` file or `.bin` file.

5 Read and accept the End User License Agreement and the Export Restrictions.

6 Save the upgrade package to your local client system.

7 From the RealPresence Access Director system web interface, go to **Maintenance > Software Upgrade**.

8 Select **Upload and Upgrade**.

9 Navigate to the upgrade package you saved and select **Open**.

After the upload is complete, the upgrade starts and a status bar displays.

10 Select **Upgrade status page** below the status bar.

The **RPP Install Status** page displays. After the installation status reaches 100%, the system will reboot.

11 After the system reboots, select **Click here to connect to DMA in Edge mode when the upgrade is complete** to display the RealPresence DMA login screen.

The RealPresence DMA login screen will not display until the system has finished rebooting.

12 Using your administrator login credentials from the RealPresence Access Director system, log into the RealPresence DMA system web interface.

13 Read and accept the End User License Agreement.

The system web interface opens and displays any alerts you need to resolve to complete the upgrade.

14 See Resolve Upgrade Alerts to complete the upgrade.

Verify and Revise RealPresence DMA Edge System Settings

After you upgrade a RealPresence Access Director system to a RealPresence DMA edge-configured system, you need to verify that the RealPresence Access Director system's configuration settings migrated correctly. You also need to revise some of the RealPresence DMA edge system's settings.

RealPresence Access Director system licenses will not migrate to a RealPresence DMA edge-configured system. Calls through the edge system will work if the edge system is communicating with a core system. Adding licenses for concurrent calls and concurrent VMRs in an edge-configured system is optional.

After upgrading single or two-box tunnel systems, complete the following steps on each upgraded system:

To verify and revise RealPresence DMA edge system settings:

1 Go to **Service Config > Call Server Settings** and enter the **Registration sharing user name** and the **Registration sharing password** to enable registration sharing. Click **Update** to save the settings.

- For the registration sharing feature to work correctly, you need to open port 8443 on your network's internal firewall. An edge-configured system uses port 8443 on the physical interface to connect to a core-configured system for registration sharing.

2 Go to **Admin > Server > Network Settings** and complete the following steps:

a Revise the **System Ephemeral Ports** to resolve any conflicts with ports migrated from the RealPresence Access Director system.

b Click **Services** and verify that the services mapping is the same as it was in the RealPresence Access Director system.

c Under **Network Interface Settings**, select an interface and click the Edit button to verify the **NAT address** (on the **IPv4 Configuration** tab) for the interface. Repeat for each interface.

3 If your signaling service for private and public is on the same NIC, go to **Service Config > H.323 Settings** and select **By Topology** as the Policy Selection.

4 Go to **Admin > Server > Certificates** and verify that your signed certificates are installed. Reinstall if necessary.

5 Go to **Service Config > Access Control** and verify that the **ACL Variables**, **ACL Rules**, and **ACL Settings** are correct. If not, edit or create new variables, rules, and settings as needed.

6 Go to **Service Config > SIP Settings**, select a port, click the Edit button, and select **Factory Core Registration Policy** as the default registration policy. Repeat this setting for all SIP ports to enable calling from non-provisioned SIP endpoints.

7 Go to **Service Config > H.323 Settings** and select **Factory Core Registration Policy** as the default registration policy on both the **Private** and **Public** NICs. This setting enables calling from non-provisioned H.323 endpoints.

8 go to **Service Config > Dial Plan > Domain Restrictions** and add all local domains. This setting enables SIP calls to work correctly.

9 Go to **Service Config > Dial Plan > Dial Plans** and complete the following steps:

a Select **SIP Dial Plan Public** and verify that the **Resolve to external address** dial rule points to the correct external SIP peer (the core RealPresence DMA system). If you have more than one core system in a supercluster, the dial rule should point to the embedded DNS name of the territory.

b Select **H.323 Dial Plan Public** and verify that the **Dial to External H.323 Gatekeeper** dial rule points to the correct external H.323 gatekeeper (the core RealPresence DMA system). If you have more than one core system in a supercluster, the dial rule should point to the embedded DNS name of the territory.

10 Go to **Service Config > Site Topology > Sites** and verify that the **Default Site** includes subnets for all RealPresence DMA systems in the supercluster.

Resolve Upgrade Alerts

When you upgrade to version 10.0.0.4 of the RealPresence DMA system, you may need to make changes in the system to complete the upgrade. After you log into the system web interface, a list of alerts automatically displays. Most of the alerts link to the **Backup and Restore** page, which summarizes the restore status and the upgrade issues that need to be resolved.

Note: If you upgrade a RealPresence Access Director system to version 10.0.0.1 of the RealPresence DMA system, you will need to enter the administrator user credentials for the RealPresence DMA system web interface in the registration sharing settings to complete the upgrade.

To resolve upgrade alerts:

1. From the system web interface, do one of the following:
   - In the **Alerts** window, click an alert (most alerts link to the **Backup and Restore** page).
   - Go to **Admin > Backup and Restore**.
2. Review the upgrade **Restore status** and any upgrade issues that occurred.
3. Resolve any upgrade issues as described in the following table.

Upgrade Issues and Resolutions

Restore Status	*Issue*	*Steps to Resolve*
Successfully restored <xxxx.xxx>, where xxxx.xxx is the name of the backup file	NA	NA
An error occurred while restoring <xxxx.xxx>, where xxxx.xxx is the name of the backup file	NA	Contact Polycom Global Support for assistance.
Port conflict detected: service <xxxx>: Range <xxxxx,xxxxx> conflicts with SYSTEM_EPHEMERAL: Range <xxxxx,xxxxx> on <xxx>, where xxxx is the name of the service, xxxxx,xxxxx is the port range, xxx is the ethernet interface		1. Go to **Admin > Server > Network Settings**. 2. Click **System Ephemeral Ports**. 3. Revise the port range as needed to prevent port overlap with the ports used for services. 4. Click **OK**.
User action is required to complete the restoration of <xxxx.xxx>, where xxxx.xxx is the name of the backup file	Unable to migrate registration sharing credentials	1. Go to **Service Config > Call Server Settings**. 2. Enter the **Registration sharing user name** and the **Registration sharing password**. 3. Click **Update**.
	Review the access proxy public interface	1. Go to **Admin > Server > Network Settings**. 2. Click **Services**. 3. Select a different access proxy public interface if necessary. 4. Click **OK**.

Restore Status	*Issue*	*Steps to Resolve*
	Unable to migrate the H.323 Gatekeeper (Next hop) address	1. Convert the FQDN of the gatekeeper to an IP address. 2. Go to **Service Config > Site Topology > Sites**. 3. Select **Default Site** and click the **Edit** button. 4. Select **Subnets**, then **Add** a new subnet for the IP address. 5. Click **OK**.
	Unable to migrate the SIP registrar (Next hop) address	1. Convert the FQDN of the SIP registrar to an IP address. 2. Go to **Service Config > Site Topology > Sites**. 3. Select **Default Site** and click the **Edit** button. 4. Select **Subnets**, then **Add** a new subnet for the IP address. 5. Click **OK**.
	Unable to migrate the SIP proxy (Next hop) address	1. Convert the FQDN of the SIP proxy to an IP address. 2. Go to **Service Config > Site Topology > Sites**. 3. Select **Default Site** and click the **Edit** button. 4. Select **Subnets**, then **Add** a new subnet for the IP address. 5. Click **OK**.
	Changes are needed to complete H.323 setup	1. Go to **Service Config > H.323 Settings**. 2. Adjust the H.225 and RAS ports in one of the following ways: a. Make all the ports match and select **Policy Selection By topology**. b. Make each port unique. c. Assign signaling to different interfaces in **Network Settings**.

4 After you resolve any issues, select **Dismiss Notification** if you want to delete the restore status and alert details (optional).

Rolling Back System Software to Previous Versions

After you upgrade your RealPresence DMA system to a new version, you can roll back the upgrade to restore the previous version of software you were running. However, if a rollback is necessary, you may need to reconfigure supercluster or High Availability configuration settings for your system(s).

Caution: If you upgrade a RealPresence Access Director system to version 10.0.0.4 of the RealPresence DMA system, rolling back the upgrade is not supported.

The state of a RealPresence DMA system after you perform an upgrade and then roll back to the previous version may vary, depending on the software version from which you upgraded and whether you configured any of the settings on your upgraded system before performing a rollback.

The following table describes the states of a RealPresence DMA system before and after an upgrade and after a rollback.

RealPresence DMA System States Before and After an Upgrade and Rollback

System Version and State Before Upgrade		*System State After Upgrade and Additional Configuration*	*System Version and State After Rollback*	
9.0.x	Standalone single-server cluster	Part of an HA pair or supercluster	10.0.x	Standalone single-server cluster, core configuration
9.0.x	Part of an HA pair or supercluster	Part of an HA pair or supercluster	10.0.x	Part of an HA pair or supercluster, core configuration; remains part of the HA pair or supercluster
9.0.x	Standalone single-server cluster	Part of an HA pair or supercluster	9.0.x	Standalone single-server cluster
9.0.x	Part of an HA pair or supercluster	Part of an HA pair or supercluster	9.0.x	Part of an HA pair or supercluster; remains part of the HA pair or supercluster
6.4.x	Standalone single-server cluster	Part of an HA pair or supercluster	6.4.x	Standalone single-server cluster; cannot pair or supercluster with 9.0.x systems.

System Version and State Before Upgrade		*System State After Upgrade and Additional Configuration*	*System Version and State After Rollback*	
6.4.x	Part of an HA pair or supercluster	Part of an HA pair or supercluster	6.4.x	Standalone single-server cluster; cannot pair or supercluster with 9.0.x systems; may be able to pair or supercluster with 6.4.x systems.[1]

[1] After rolling back superclustered systems to version 6.4.x, the systems may be able to re-establish supercluster communications, but this is not guaranteed.

Resolved Issues

All issues resolved through versions 6.4.1.8 and 9.0.1.4 of the RealPresence DMA system have corresponding fixes applied in version 10.0.0.4. The following table lists the additional issues resolved in version 10.0.0.4.

Resolved Issues

Category	*Issue Number*	*Found in Version*	*Description*
Access Control List	EN-142030	10.0.0.3	An Access Control List rule on a RealPresence DMA edge system rejects a reINVITE on an established outbound SIP call-
Access Control List	EN-141068	10.0.0.3	Access Control List rules for SIP calls on a RealPresence DMA edge system do not work as expected after an upgrade from the RealPresence Access Director system configured with the Basic Call Policy.
Access Control List	EN-134765	10.0	A RealPresence DMA system ACL rule denies H.323 registration of provisioned endpoints.
Access Control List	EN-134343	10.0.0.3	The factory edge ACL configured to deny all traffic allows all SIP spam calls to be logged in call history.
Access Proxy	EN-130247	10.0	The RealPresence DMA edge system denies calls through an HTTP access proxy tunnel.
API	EN-144387	10.0.0.3	Internal 500 errors occur when querying /api/rest/mcus.
API	EN-142643	10.0.0.2	Unable to export a full list of VMRs from the RealPresence DMA system using API commands.

Category	*Issue Number*	*Found in Version*	*Description*
Bandwidth	EN-132987	9.0.1	The total bandwidth allocated for multiple ITP codecs is limited by the **Default maximum bit rate (kbps)** setting (**Service Config > Conference Manager Settings > Conference Settings**).
Call Detail Records	EN-135583	10.0.0.1	Cannot export CDRs for call history if the Export Time Frame is more than 12 days.
Call Detail Records	EN-134589	10.0.0.1	Cannot export CDRs from conference history.
Call Rate	EN-144571	10.1	A remote G7500 device joined a call with a 128 mbps call rate instead of 3840 mbps in a point-to-point call between an internal G7500 and the remote G7500.
Content Sharing	EN-138427	10.0.0.3	When a provisioned and H.323-registered RealPresence Group Series sends content to a RealPresence DMA edge system, the DMA edge system does not relay content to the RMX, causing content sharing to fail.
Custom IVR Prompt Sets	EN-145748	10.0.0.4	Custom IVR prompt sets are not retained after upgrading the RealPresence DMA system.
Endpoints	EN-132895	10.0.0.2	The RealPresence DMA system does not send SIP CRLF keep-alive pings to endpoints that do not support SIP RFC-5626.
H.323	EN-126916	10.0.0.3	Outbound H.323 calls to external email-ID address fail to connect when traversing multiple RealPresence DMA core and edge systems.
Licenses	EN-113313	10.0	An unlicensed RealPresence DMA edge system cannot borrow licenses from the core system so that it can process calls.
MCU	EN-138158	10.0.0.3	When a RealPresence Collaboration Server 1800 registered to a RealPresence DMA system dials a non-Skype for Business SIP call, an error displays: "RMX is in Clariti Mode and call is not routed though DMA v10.0 or above."
Media Relay	EN-148223	10.0.0.4	Increase number of default Media Relay ports in DMA Edge
Password	EN-142467	10.0.0.4	Selecting the **Reject previous passwords** option in **Local Password Settings** does not prevent use of a previous password.

Category	*Issue Number*	*Found in Version*	*Description*
Password	EN-142043	10.0.0.4	When logged into the RealPresence DMA system as an Active Directory (AD) user, the user can attempt to change the user password even though AD manages the passwords.
Password	EN-142041	10.0.0.4	When changing a password in **User > Users > Edit User**, any value can be entered in the **Old Password** field and a new password is not required to save and exit the screen.
Polycom ContentConnect	EN-134740	10.0.0.1	The RealPresence DMA system does not release Polycom ContentConnect resources and content stops working in subsequent calls.
Polycom ContentConnect	EN-134355	10.0.0.4	The RealPresence DMA system cannot connect to a Polycom ContentConnect (PCC) system after the PCC system reboots.
RPAD Upgrade to DMA	EN-145609	10.0.0.3	After upgrading the RealPresence Access Director system v4.2.5.2 to the RealPresence DMA system v10.0.0.3, the DMA system rejects inbound H.323 calls because the data migration script creates separate ACL rules for H.323 port 1719 and H.323 port 1720.
SIP	EN-138783	10.0.0.3	The RealPresence DMA system does not include the correct SIP header when responding to an inbound call from the RealPresence Collaboration Server (RPCS) in Clariti mode, causing RPCS to terminate the call.
Skype Pool	EN-138254	9.0.1.4	The RealPresence DMA system reports a Skype pool as "Not Responsive over TLS status code: 503."
Supercluster	EN-146827	10.0.0.3	API participant subscription list does not work correctly in a supercluster environment.
System Performance	EN-148722	10.0, 10.0.0.3	An edge-configured system is unresponsive and stops receiving calls.
System Web Interface	EN-147687	10.0	Access to the system web interface may be lost after a supercluster failover test.
System Performance	EN-146957	10.0	The RealPresence DMA system stops processing H.323 calls and then reboots.-
System Performance	EN-136676	10.0	The RealPresence DMA system rejects refresh GRQs when the far end includes the gatekeeper ID.

Category	*Issue Number*	*Found in Version*	*Description*
System Web Interface	EN-133998	10.0	The RealPresence DMA system includes the **CsTrustedApplication ServiceGruu** (**Service Config > External SIP Peers > Add (or Edit) External SIP Peer > Skype Integration**) if the text field has a value, even when the check box is disabled and the text field is grayed out.
VMR Calls	EN-134312	10.0.0.1	Several calls connected to different RMX servers suddenly drop.
VPN Tunnel	EN-135125	10.0.0.2	Cannot make inbound or outbound calls in a VPN tunnel configuration.

Known Issues

The following table lists known issues of the Polycom RealPresence DMA system version 10.0.0.4.

Note: These release notes do not provide a complete listing of all known issues that are included in the software. Issues not expected to significantly impact customers with standard voice or video conferencing environments may not be included. In addition, the information in these release notes is provided as-is at the time of release and is subject to change without notice.

Known Issues

Category	*Issue ID*	*Release*	*Description*	*Workaround*
Access Control Lists	EN-128836	10.0.x	When using an IE browser to access the system web interface, a RealPresence DMA edge-configured system doesn't save the custom variable values that can be added to ACL Variables.	
API	EN-130890	9.0.1	The RealPresence DMA system has replication delays caused by excessive API updates from Workflow server.	
Backup	EN-149790	10.0	Cannot create a full system backup if an IVR prompt set filename has a space in it.	

Category	*Issue ID*	*Release*	*Description*	*Workaround*
Backup and Restore	EN-109539	9.0.1	The backup-restore.sh file fails to restore a configuration backup if the filename contains special characters such as parentheses. The system web interface does not prevent the file from being uploaded.	
Call Event Details	EN-125424	10.0.0.2, 10.0.0.3	During RealConnect calls with the Polycom ContentConnect system, the RealPresence DMA system's call event details show the PCC IP address with the name of the RealPresence Collaboration server instead of the name of the PCC system.	
Conference Template	EN-107775	9.0.1	An error occurs when setting the line rate in Conference Templates back to 1920 kbps: The customized content rate value '1920' is not valid for specified line rate value '1920' and H239 settings value 'HIREGRAPHICS.'	
Content Sharing	EN-148418	9.x and higher	When an endpoint registered to a RealPresence DMA edge system shares content in an H.323 VMR call, the endpoint consumes additional media ports on the edge system each time it stops and starts sharing content. When the call ends, the media ports are released.	
Dial Rules	EN-149430	10.0.0.3	Incoming call setup requests from unregistered endpoints to a RealPresence DMA edge system that are denied by an ACL continue to be processed by the dial rules, even after they are rejected.	
DNS	EN-109567	6.4.1.6, 9.0.1.3, 10.0	The RealPresence DMA system does not resolve the embedded DNS name for all sites.	
Embedded DNS	EN-109567	6.4.1.6 9.0.1.3 10.0	The RealPresence DMA system doesn’t resolve the embedded DNS name for all sites.	
Gatekeeper	EN-105699	6.4.1.8	The RealPresence DMA system stops responding to H.323 gatekeeper registration requests but continues to route calls.	

Category	*Issue ID*	*Release*	*Description*	*Workaround*
H.323	EN-146819	10.0.0.3	After disabling and re-enabling H.323 from the RealPresence DMA system web interface, the H.323 Radvision stack crashes; rebooting the system is necessary.	
High Availability	EN-145654	10.0.0.3	After a HA failover, SIP calls do not work.	
High Availability	EN-149819	10.0.0.4	A SIP-to-H.323 external call fails to establish media when the endpoints are registered to the two different NAT addresses of the active-active HA pair of RealPresence DMA edge systems.	
Logs	EN-148417	10.0.0.3	Log rolling or downloading active logs sometimes fails to work.	
Network Settings	EN-130185	10.0	The RealPresence DMA system's network settings cannot be changed after the management service has been allocated to a bonded interface.	
SIP	EN-142038	9.0.1	Slow processing of SIP messages causes a RealPresence Group Series to drop a conference call into a Cisco Codian MCU.	
Sites	EN-147536	10.0.0.3	Direct VMR calls from Skype for Business clients fail from sites that do not have a site-link to the Internet site.	
Supercluster	EN-137275	9.0.1.5, 10.0	The RealPresence DMA system becomes inaccessible and without SSH access after it reboots following a join to a supercluster; an additional hard reboot is necessary.	
System Performance	EN-107667	6.4.1.4	The RealPresence DMA system has performance issues when a Skype for Business front-end pool is unreachable due to the network blocking the port.	
System Performance	EN-130890	9.0.1, 10.0.x	The RealPresence DMA system has replication delays due to excessive API updates from the workflow server.	

Category	*Issue ID*	*Release*	*Description*	*Workaround*
System Web Interface	EN-128836	10.0	The RealPresence DMA system is unable to save the custom value in an ACL rule when the system web interface is accessed with an IE browser.	

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