Polycom RealPresence Distributed Media Application (DMA) System

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Before You Begin

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The Polycom RealPresence Distributed Media Application (DMA) Getting Started Guide provides instructions to install and initially configure your RealPresence DMA system.

RealPresence DMA System Editions

The RealPresence DMA system is available in an Appliance Polycom Rack Server, and a Virtual Edition (packaged as software only).

Most of the functionality described in this document applies to both editions, and so the product references are general, that is, the RealPresence DMA system. However, when information applies to a specific edition, the reference will be specific, that is, RealPresence DMA, Virtual Edition or RealPresence DMA, Appliance Edition.

Audience, Purpose and Required Skills

This document is written for a technical audience. You must know or have the following:

- Basic computer and network system administration skills
- Virtual machine (VM) concepts
- Network configuration, including IP addressing, subnets, gateways, domains, DNS, time servers, and possibly network routing
- The deployment plan for the RealPresence DMA system being installed and the video conferencing/collaboration network of which it will be a part

If necessary, obtain the assistance of the appropriate IT or network administration personnel before proceeding.

This guide assumes that you are starting with a RealPresence DMA system that has never been configured.

Related Poly and Partner Resources

See the following sites for information related to this product.

- The [Polycom Support Site](#) is the entry point to online product, service, and solution support information including **Licensing & Product Registration**, **Self-Service**, **Account Management**, **Product-Related Legal Notices**, and **Documents & Software** downloads.

- The Polycom Document Library provides support documentation for active products, services, and solutions. The documentation displays in responsive HTML5 format so that you can easily access and view installation, configuration, or administration content from any online device.

- The Polycom Community provides access to the latest developer and support information. Create an account to access Poly support personnel and participate in developer and support forums. You can find the latest information on hardware, software, and partner solutions topics, share ideas, and solve problems with your colleagues.

- The Polycom Partner Network are industry leaders who natively integrate the Poly standards-based RealPresence Platform with their customers' current UC infrastructures, making it easy for you to communicate face-to-face with the applications and devices you use every day.

- The Polycom Collaboration Services help your business succeed and get the most out of your investment through the benefits of collaboration.

Preparing for System Installation

Topics:

You can complete certain preparation tasks before you install and configure a RealPresence DMA system.

Prepare Client Systems

To log into the RealPresence DMA system, you need a client system with the following hardware and software:

- Hardware
  - Monitor with 1024x768 (SXGA) minimum display resolution; 1400x900 (WSXGA+) or greater recommended
  - USB and Ethernet ports
- Software
  - Web browser that supports HTML5. Microsoft Internet Explorer must be version 11 or later.

Prepare the USB Flash Drive (Appliance Edition Only)

You can configure the RealPresence DMA system, Appliance Edition, server(s) using the Network Configuration Utility (available at Polycom Support) and the USB flash drive included in the server package.

If you do not use the Network Configuration Utility, you can configure your system servers manually by using your client system to log into the web user interface and configure the settings. See Configure Initial Settings Without the USB Flash Drive on page 17.

Procedure

1. From your local client system, go to the Polycom Support site and download the Network Configuration Utility that matches your version of the RealPresence DMA system software.
2. Connect the blank USB flash drive to your client system.
3. Unzip the Network Configuration Utility files to the root of the USB flash drive.

   The Network Configuration Utility files must be at the root of the flash drive, not in a folder.
4. Do one of the following to launch the Network Configuration Utility:

   a. From a client system running Microsoft Windows, launch the *dma7000-usb-gui.exe* file.

   b. From a client system running a Unix-based OS (including Mac) run the *runUsbGui.sh* file.
5. In the Network Configuration Utility window, click **Configure the System Parameters**.

6. In the **Node Selection** window, click **Edit** next to **Node_1**.

7. Select **Core configuration** or **Edge configuration** and click **Next**.

8. On the **Network** tab, enter the **Host name**, **Domain**, **DNS Search domains**, and **DNS 1**.

9. Select the **System IP type**.

10. Under **Network Interface Settings**, click **Add eth0**.

11. Under **IP Configuration**, select the **Mode** and enter the IP information for the **System IP type** you chose.

12. Configure the **Link Settings** and **LAN Security Settings** as needed.

13. Click **Done**.

14. Click **Next** to display the **Services** tab.

15. Select the **Interface** for **Management service**.

16. Select the **Private (LAN)** and **Public (WAN)** interfaces for the different **System Services**.

17. Click **Next** to display the **Routing** tab and add routes if necessary.

18. Click **Next** to display the **NTP** tab.

19. Select the correct **System time zone** for your location.

    Polycom recommends that you select the best location-specific setting, not one of the generic GMT offset settings. The location-specific settings automatically include the correct daylight saving time adjustments (if any) for that location and will be updated as locales change their time policies in the future.

20. Under **NTP servers**, enter the IP addresses (or domain names) for the time servers.

    Polycom recommends specifying at least one and preferably two time servers. At least one time server must be specified before creating or joining a supercluster.

21. Click **Done** to return to the initial Network Configuration Utility menu.

22. Verify that **The USB stick is set to apply system parameters** displays in the initial menu, as shown in the following figure.

23. Close the program.
24. On your PC, eject the USB flash drive.

Disable SIP ALG, H.323 ALG, and Packet Modification on the Network Firewall

When you install or upgrade the RealPresence DMA system, you need to disable SIP and H.323 ALG and any packet modification on your network firewall.

Call scenarios fail on the RealPresence DMA system if SIP ALG, H.323 ALG, and packet modification are enabled on your network firewall or router. To disable these settings, contact your network firewall administrator.

Note: You can disable the settings before or after you install or upgrade the system.

The following options describe how to determine if your network firewall or router modifies incoming packets.

Procedure

» Do one of the following:

▪ Run a sniffer trace and observe the signaling packets (H.323 or SIP) to determine if the network firewall or router inserts its IP address.

▪ In the system web interface, go to **Monitoring** > **Endpoints** to check if the IP address of the endpoint is the network firewall or router IP address.

System Installation

Topics:

- [Virtual Edition Installation](#)
- [Appliance Edition Installation](#)

The RealPresence DMA system is available in an Appliance Edition and a Virtual Edition. Refer to the following installation instructions based on your edition.

Virtual Edition Installation

Before you install the RealPresence DMA system in your environment, review the *System Capabilities* section in the *Polycom RealPresence DMA Release Notes* to ensure that your host machine has the capacity for your planned Virtual Edition deployment. In addition, ensure that it meets the host guidelines that recommends.

You can install the Virtual Edition in the following environments:

- VMware
- Microsoft Hyper-V
- Kernel-based Virtual Machine (KVM)
- Amazon Web Services (AWS)
- Microsoft Azure

See the documentation for VMware, Microsoft Hyper-V, and KVM on the respective websites. See the following documentation at [Polycom Support](#):

- Polycom RealPresence DMA for Amazon AWS Cloud Environment
- Polycom RealPresence DMA for Microsoft Azure Cloud Environment

Host Installation Guidelines for Virtual Editions

Before deploying your Polycom RealPresence Virtual Edition software, review the following planning guidelines for your deployment. Unless otherwise noted, use these guidelines for all Polycom Virtual Editions.

Polycom recommends that a virtual environment administrator install the Virtual Edition software. After the installation of a Virtual Edition, additional configuration should be completed by someone who understands video conferencing.

CPU Allocation

- Leave 2 cores unallocated, regardless of the number of cores present, how many licenses are purchased, and what other VMs will be present.
- For VMware, do not allocate CPU core 0. Host operating system performance may be affected if this core is assigned to the VM.
- When possible, allocate cores on one CPU. This will enhance performance by reducing CPU-to-CPU communication times.

- Do not use processor oversubscription; maintain a 2:1 ratio of virtual CPU to physical CPU. For example, a system with 8 physical cores can support up to 16 virtual processors divided up into any combination among the VMs running on that host.
- When you are using Hyper-V, Polycom recommends disabling the Virtual Machine Queue of the Network Interface Card (NIC). For more information, see `https://support.microsoft.com/en-us/kb/2902166`

Note: CPU reservations can only be done after shutting down the VM.

Memory Allocation

In a Microsoft Hyper-V environment, you must not overprovision memory at the hypervisor layer. Dynamic memory for VMs is not supported.

Disk

Hypervisors add overhead to disk operations. For best performance, ensure that the VM is able to achieve the recommended IOPS listed in the following table.

Disk Requirements

	Lab Environment	Production Environment
Disk Performance	170 Random IOPS (write) 170 Random IOPS (read)	230 Random IOPS (write) 450 Random IOPS (read)
Network	1GB Shared	1GB Dedicated 10GB Shared

Capacity information such as storage space and memory varies according to Virtual Edition. Please see the release notes for your RealPresence Virtual Edition software for the minimum capacity requirements for your product.

Install the Virtual Edition Software

You can install your RealPresence DMA Virtual Edition software with your native virtual environment tools.

After you install the Virtual Edition software package, you need to use the Polycom RealPresence Resource Manager system, version 10.0 or later, to add an instance of the RealPresence DMA system and manage the licenses.

Procedure

1. Refer to the documentation for your virtual environment tools for instructions on installing a virtual instance.
2. Install an instance of the RealPresence DMA system, Virtual Edition.
3. Assign a static IP address to the instance using the console if your VM environment does not use DHCP.

Assign a Static IP Address

The RealPresence DMA system requires a static IP address. If your VM environment has a DHCP server, it will assign an IP address to the instance. You can then assign a static IP address using the thinshell interface, the RealPresence DMA system's Network Configuration Utility, or the system's management user interface. The following procedure provides instructions for using the thinshell user interface.

Procedure

1. Power on the newly-installed VM.
2. Click in the console window of your virtual environment tool and press **Enter**, if necessary to see the login prompt.

   The thinshell interface displays.
3. Log in with username `polycom` and password `polycom`.
4. When prompted, enter a new password and click **OK**.
5. Click **Yes** to continue past the warning.
6. Select **Change Host Name** and click **OK**.
7. Enter the FQDN of the system and click **OK**.
8. Select **Network Settings** and click **OK**.
9. Select **eth0** and click **OK**.

   You can only configure eth0 in the thinshell interface, even if other network interfaces are active.
10. Select **Static address setup** and assign a static **IP address**, **Subnet Mask**, and **Default Gateway IP**.
11. Click **OK**.

    The network service restarts and the **Current Network Setup** screen displays.
12. Click **OK**.
13. Select **DNS Configuration** and click **OK**.

    The primary **Domain** is pre-populated from the host name (FQDN) you entered previously.
14. Enter **Search Domains** if you have more than one, using a space as a delimiter between each domain.
15. Enter **Name Server 1**.
16. Enter **Name Server 2** and **Name Server 3** (optional).
17. Click **OK**.
18. Select **Reboot Server** to enable the settings to take effect.
19. Click **Yes** to confirm the reboot.

Appliance Edition Installation

If you purchased an Appliance Edition, you need to install the server. You can download the software from the Polycom Support site and create a DVD to install the software on your server.

Before beginning your installation, review the most recent *Polycom RealPresence DMA Release Notes*.

Shipment Contents

Polycom Rack Server shipments include the server and other contents. Licensing information and other items may be shipped separately. Verify the type of server and other contents of your shipment when you unpack the system.

The following table describes shipment contents based on the type of server you purchased. **Note that licensing information and other items may be shipped separately**.

Shipment Contents

Item	R630	R640	R220/R230
1 Polycom Rack Server	X	X	X
1 blank USB flash drive	X	X	X
Power cord(s)	May be shipped separately	May be shipped separately	May be shipped separately
Rail kit	Slide rails with cable management arm	Slide rails with cable management arm	Static rails
Bezel with Polycom badge	X	X	X
Polycom warranty letter	X	X	X
Product Information Guide for R220, R630 *Enterprise Products Safety, Environmental, and Regulatory Information* for R230, R640	X	X	X

Unpack and Install the Hardware

The RealPresence DMA system, Appliance Edition, can be installed on the following servers:

- Polycom Rack Server 640 (R640)
- Polycom Rack Server 630 (R630)
- Polycom Rack Server 230 (R230)
- Polycom Rack Server 220 (R220)

You should verify the type of server and other contents of your shipment when you unpack the system.

Caution: Do not power off a Polycom Rack Server by unplugging it or otherwise removing power, especially if the system will remain turned off for some time. If a server loses power without being properly shut down, the battery is eventually depleted. If this happens, the server cannot be restarted without user input, requiring a keyboard and monitor.

Procedure

1. Examine the shipping container for damage.

   If you find damage, file a claim with the delivery carrier. Polycom is not responsible for damage sustained during shipment of this product.

2. Open and review the container packing slips.

3. Open the container and examine the contents for damage.

   If you find damage, file a claim with the delivery carrier. Keep all shipping materials in case you need them later.

4. Unpack your system and identify each item.

5. Assemble the rails and install the server in the rack.

To rack-mount a server, see the following instructions:

- Polycom Rack Server 640 (R640):

  https://www.dell.com/support/home/us/en/04/product-support/product/poweredge-r640/docs

- Polycom Rack Server 630 (R630):

  http://www.dell.com/support/home/us/en/04/product-support/product/poweredge-r630/docs

- Polycom Rack Server 230 (R230):

  http://www.dell.com/support/home/sg/en/sgbsdt1/product-support/product/poweredge-r230/docs

- Polycom Rack Server 220 (R220):

  https://www.dell.com/support/home/us/en/04/product-support/product/poweredge-r220/docs

6. Connect the server's power cable(s) to the server and connect a VGA cable from the server to the console monitor.
7. Connect all power cables into a grounded electrical outlet or separate power source, such as an uninterrupted power supply (UPS) or power distribution unit (PDU).
8. Connect a keyboard to the server.
9. Press the **power** button on the server and on the monitor.

   The power indicators should light.
10. Create one access password for the system BIOS.
11. Set the correct system time in the system BIOS.
12. Install the bezel (optional).
13. Connect the Ethernet port associated with eth0 to the enterprise network as follows:

    - On Polycom R640 servers, the port that's the furthest to the left of the four consecutive Ethernet ports is the eth0 network interface.
    - On Polycom R220, R230, and R630 servers, go to the system BIOS Setup menu (F2) and view the Device settings to determine which port is associated with the eth0 interface.

Create a DVD for the System Software

To install the RealPresence DMA system software, you need to download the software ISO image from the Polycom Support site, burn it onto a blank DVD, then use the DVD to install the software onto the RealPresence DMA server.

Procedure

1. Download the RealPresence DMA software ISO image from Polycom Support to your Windows client system.
2. Insert a blank, recordable DVD into your DVD-RW drive.
3. Using your DVD recording software, burn the ISO image onto the DVD.
4. Verify that the ISO image burned successfully to the DVD, then remove it from your client system.

Install the System Software

You can install the system software using the RealPresence DMA DVD you created.

Procedure

1. Turn on the system server and insert the DVD.
2. Restart the system server.

The server boots from the DVD and the installation starts. Installation takes approximately 20-30 minutes, after which the DVD ejects and the server restarts twice. For Polycom Rack Server 630 systems, **DMA Installed** displays on the front panel LCD when installation is complete. This indicates that the system software is installed but its network and time settings are not configured.

3. Remove the DVD from the server's DVD drive.
4. If you are installing a second system, repeat these steps for the second server.

Initial Configuration

Topics:

RealPresence DMA System Configurations

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 is recommended if the system(s) is deployed inside your network environment.
- An edge configuration provides additional security features and is recommended if you deploy the system in the DMZ and it communicates with one or more core-configured systems inside your enterprise network.
- A combination system is one of the following:
    - An edge-configured system that resides in the DMZ and doesn't communicate with any core-configured system. The system can handle registrations, calls, firewall/NAT traversal, and conferences with virtual meeting rooms.
    - An edge-configured system inside the enterprise that is part of a VPN tunnel and doesn't communicate with any core-configured system. The system can handle registrations, calls, and conferences with virtual meeting rooms.

Configure Initial Settings for the Virtual Edition

After you install a Virtual Edition instance, you need to configure the initial system settings.

Procedure

1. Open a web browser and enter the URL of the system in the address bar (ignore any security certificate warning that may appear):

   `https://<IP address>:8443/dma/`

2. Enter the factory default administrator credentials:

   Username: `admin`

Password: `Polycom12#$`

3. Click **Log In**.

   The End User License Agreement (EULA) displays.

4. Select **Automatically send usage data**.

   This step is optional but recommended. When selected, you agree to send usage data to Polycom to help improve the product. See the *Polycom RealPresence DMA Administrator Guide* for more information about automatic data collection.

5. Select **I accept the terms of this license agreement** and click **Accept**.

6. On the **First Time Setup** screen, click **Download Network Program**.

7. Extract the .zip file.

8. Do one of the following:

   ▪ From a client system running Microsoft Windows, launch the *dma7000-usb-gui.exe* file.

   ▪ From a client system running a Unix-based OS (including Mac) run the *runUsbGui.sh* file.

   The Network Configuration Assistant displays.

9. Select **Configure the System Parameters**.

10. Click **Edit** next to **Node_1**.

11. Select the system configuration as follows:

    ▪ Select Core Configuration if this is the first RealPresence DMA system that you are installing.

    ▪ Select Edge Configuration if you have already configured a core system or if you have only one system that you're configuring as an edge combination system.

12. Click **Next**.

13. On the **Network** tab, enter the **Host name**, **Domain**, **DNS Search domains**, and **DNS 1**.

14. Select the **System IP type**.

15. Under **Network Interface Settings**, click **Add eth0**.

16. Under **IP Configuration**, select the **Mode** and enter the IP information for the **System IP type** you chose.

17. Configure the **Link Settings** and **LAN Security Settings** as needed.

18. Click **Done**.

19. Click **Next** to display the **Services** tab.

20. Select the **Interface** for **Management service**.

21. Select the **Private (LAN)** and **Public (WAN)** interfaces for the different **System Services**.

22. Click **Next** to display the **Routing** tab and add routes if necessary.

23. Click **Next** to display the **NTP** tab.

24. Select the correct **System time zone** for your location.

    Polycom recommends that you select the best location-specific setting, not one of the generic GMT offset settings. The location-specific settings automatically include the correct daylight saving time adjustments (if any) for that location and will be updated as locales change their time policies in the future.

25. Under **NTP servers**, enter the IP addresses (or domain names) for the time servers.

    Polycom recommends specifying at least one and preferably two time servers. At least one time server must be specified before creating or joining a supercluster.

26. Click **Done** to return to the initial Network Configuration Assistant menu and close the window.

    The Network Configuration Assistant creates a local **dma** folder that contains all configuration files.

27. Return to the **First Time Setup** screen and select **Upload and Apply Network Config.**
28. Go to the **dma** folder and select the .zip file.
29. Click **Open**.
30. Click **Yes** to confirm you want to open the .zip file.

    The system reboots and the login screen displays.
31. Log into the system with the following credentials:

    Username: `admin`

    Password: `Polycom12#$`

    The RealPresence DMA system's dashboard displays. The tasks required to complete the system configuration are described in the online help and the *Polycom RealPresence DMA Administrator Guide*.

Configure Initial Settings for the Appliance Edition

You can configure the RealPresence DMA Appliance Edition server(s) using the USB flash drive on which you saved the system settings you configured with the Network Configuration Utility.

If you haven't prepared the USB flash drive with the required settings, see Prepare the USB Flash Drive (Appliance Edition Only) on page 5.

Procedure

1. Power off the server.

   The server must be powered off before you insert the USB flash drive.
2. Insert the USB flash drive into a USB port.
3. Power on the server.

   After it boots, the server reads its network and system parameters from the USB flash drive and reboots at least one time.
4. If you have a Polycom Rack Server R630, wait for the front panel LCD to display **DMA Ready**.

   Caution: If **DMA Installed** displays on the LCD, the system software is installed but not configured. Make sure the USB flash drive is set to apply system parameters and inserted into a functioning USB port, then restart the server.

5. Remove the USB flash drive from the server.
6. On a client system with network access to the RealPresence DMA system, point your browser to the system's host name or IP address.
7. Log in with username `admin` and password `Polycom12#$`.

   The End User License Agreement (EULA) displays.
8. Select **Automatically send usage data**.

   This step is optional but recommended. When selected, you agree to send usage data to Polycom to help improve the product. See the *Polycom RealPresence DMA Administrator Guide* for more information about automatic data collection.
9. Select **I accept the terms of this license agreement** and click **Accept**.

   The RealPresence DMA system's dashboard displays. The tasks required to complete the system configuration are described in the online help and the *Polycom RealPresence DMA Administrator Guide*.

Configure Initial Settings Without the USB Flash Drive

If you don't use the Network Configuration Utility on the USB flash drive, you can complete the initial setup of your RealPresence DMA system using a laptop PC and an Ethernet cable.

The RealPresence DMA system servers are shipped with the following default network settings that you can use to connect to the system:

IP address: `192.168.200.10`

Subnet mask: `255.255.255.0`

Default gateway: `192.168.200.1`

Procedure

1. Ensure that the server is **not** connected to the enterprise network.
2. Configure the network settings on your laptop to connect it to the same network segment as the RealPresence DMA server.
   Example settings:
   - IP address: 192.168.200.20
   - Subnet mask: 255.255.255.0
   - Default gateway: 192.168.200.1
3. Connect an Ethernet cable between your laptop and the server as follows:
   a. If you have a Polycom Rack Server R630, connect to the **GB 1** interface of the server.
   b. If you have a Polycom Rack Server R640, connect to the port that's the furthest on the left of the four consecutive Ethernet ports.
   c. If you have a Polycom Rack Server R230 or R220, connect to the **Port 0** interface of the server.
4. Power on the server.

   The server starts, which takes several minutes. If you are using a Polycom Rack Server R630, after the server starts, **DMA Installed** displays on the front panel LCD. This indicates that the system software is installed but its network and time settings are not configured.

   Caution: If you are using a Polycom Rack Server R630 and **DMA Installed** does not display on the LCD, stop. Contact Polycom Global Services for assistance.

5. On the laptop, point your browser to `http://192.168.200.10` (ignore any security certificate warning that may appear).
6. Log in with username `admin` and password `Polycom12#$`.

   The End User License Agreement (EULA) displays with a check box to accept or decline the Agreement. You can also agree or disagree to send usage data to Polycom to help improve the product. See the *Polycom RealPresence DMA Administrator Guide* for more information about automatic data collection.
7. Select **Automatically send usage data**.

   This step is optional but highly recommended.
8. Select **I accept the terms of this license agreement** and click **Accept**.
9. Select **Core Configuration** or **Edge Configuration**.

   The dashboard of the RealPresence DMA system's user interface displays. Using its menus, you can complete your system setup.
10. Go to **Admin** > **Server** > **Network Settings**.

11. Enter the **Host name**, **Domain**, **DNS Search domains**, and **DNS 1**.

12. If you need to set up a special network routing rule or rules, click **Routing Configuration**, create the rule(s), and click **OK**.

13. Select **Update**.

14. When asked to confirm restarting the system, click **Yes**.

15. While the server is restarting, do the following:

    a. Disconnect the Ethernet cable from the laptop.

    b. Connect the Ethernet port associated with eth0 to the enterprise network.

       On Polycom R640 servers, the port that's the furthest to the left of the four consecutive Ethernet ports is the eth0 network interface. On Polycom R220, R230, and R630 servers, go to the system BIOS Setup menu (F2) and view the Device settings to determine which port is associated with the eth0 interface.

    The restart process takes several minutes. If you are using a Polycom Rack Server R630, after the server starts, **DMA Ready** displays on the front panel LCD.

16. From a PC with network access to the RealPresence DMA system, point your browser to your system's host name or IP address.

17. Log in with username `admin` and password `Polycom12#$`.

18. Go to **Admin** > **Server** > **Time Settings** and select the correct **System time zone** for your location.

    Polycom recommends selecting the best location-specific setting, not one of the generic GMT offset settings.

19. Under **NTP servers**, enter the IP addresses or domain names for the time servers.

    Polycom recommends specifying at least one and preferably three time servers. At least one time server must be specified before creating or joining a supercluster.

20. Select **Update**.

    The system restarts.

    Note: If you are using a Polycom Rack Server R630, after the server starts, **DMA Ready** displays on the front panel LCD.

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21. Select **Yes** to confirm the system restart.

22. Log back into the system from your browser and complete your system setup.

Configure the Call Server and Optionally Create a Supercluster

You can configure the RealPresence DMA system's call server function and also create a supercluster if needed.

Procedure

1. Integrate with a RealPresence Resource Manager system or enter site topology information.

2. If deploying a supercluster of multiple geographically distributed RealPresence DMA clusters:

    a. Set the security options in **Security Settings** before superclustering, but wait until after superclustering to complete the remaining security setup tasks.

    b. Depending on security settings, you may need to install certificates before superclustering.

      c. Create a supercluster and configure supercluster options.

3. Create territories and assign sites to them (if you integrated with a RealPresence Resource Manager system, this must be done on that system).

4. Assign the primary and backup cluster responsible for each territory, and designate which territories can host conference rooms.

5. Add any external devices, such as a neighbor gatekeeper or SIP peer.

6. Configure the dial plans.

Set Up Security

The first step in securing your RealPresence DMA system is to locate it in a secure data center with controlled access.

Then configure the security settings for your system.

Some of these steps assume that you're integrating with Active Directory and some overlap with other initial setup topics.

Procedure

1. As the default local administrative user (**admin**), create a local user account for yourself with the Administrator role, log in using that account, and delete the **admin** user account.

2. Create the Active Directory service account (read-only user account) that the RealPresence DMA system will use to read and integrate with Active Directory.

3. Assign the Administrator role to your named enterprise account, and remove the RealPresence DMA system's user roles from the service account used to integrate with Active Directory.

4. Log out and log back in using your enterprise user ID and password.

5. Verify that the expected enterprise users are available in the RealPresence DMA system and that conference room IDs were successfully created for them.

   If necessary, adjust integration settings and correct errors.

6. Obtain and install a security certificate from a trusted certificate authority.

7. Configure various login policy settings as needed and optionally, a management access whitelist.

8. Document your current configuration by saving screen captures of all the configuration pages.

9. Manually create a backup, download it, and store it in a safe place.

Set Up MCUs

The RealPresence DMA system can interact with MCUs, or media servers, in either or both of the following ways:

▪ MCUs may be made available to the RealPresence DMA system's conference manager to manage for multipoint conferencing (hosting VMRs).

▪ MCUs may be registered with the RealPresence DMA system's call server as standalone MCUs and/or gateways.

This configuration summary assumes that you want to do both.

▪ Ensure that your MCUs are configured to accept encrypted (HTTPS) management connections (required for maximum or high security mode).

▪ Ensure that each MCU is in a site belonging to a territory for which the RealPresence DMA system is responsible. If you're deploying a supercluster, make sure that each territory has a primary and

backup cluster assigned to it. If the primary cluster becomes unavailable, the MCUs registered to it can re-register to the backup.

▪ If you're deploying a supercluster, verify that you've enabled the hosting of conference rooms in the right territories and assigned clusters to those territories.

▪ Standalone MCUs can register themselves to the RealPresence DMA system's call server. To make an MCU available as a conferencing resource, either add it to the appropriate RealPresence DMA cluster's conference manager manually or, if it's already registered with the call server, edit its entry to enable it for conference rooms and provide the additional configuration information required.

▪ You must organize MCUs configured as conferencing resources into one or more MCU pools (logical groupings of media servers). Then, you can define one or more MCU pool orders that specify the order of preference in which MCU pools are used.

▪ If you have a RealPresence Resource Manager system that's going to use the RealPresence DMA system API to schedule conferences on the RealPresence DMA system's conferencing resources (MCU pools), you must create MCU pools and pool orders specifically for the use of the RealPresence Resource Manager system. The pool orders should be named in such a way that:

◦ They appear at the top of the pool order list presented in the RealPresence Resource Manager system.

◦ Users of that system will understand that they should choose one of those pool orders.

When adding an MCU for use by a RealPresence Resource Manager system, don't select the option **Enable for conference rooms** when you configure the MCU's settings.

▪ Every conference room (VMR) is associated with an MCU pool order. The pool(s) to which an MCU belongs, and the pool order(s) to which a pool belongs, are used to determine which MCU is used to host a conference.

The RealPresence DMA system uses conference templates to define the conferencing experience associated with a conference room or enterprise group. You can create standalone templates (recommended) to set the conferencing parameters directly in the RealPresence DMA system, or link templates to RealPresence Collaboration Server or RMX MCU conference profiles.

If you want to create RealPresence DMA system templates linked to conference profiles on the RealPresence Collaboration Server or RMX MCUs, make sure the profiles used by the RealPresence DMA system exist on all the MCUs and are defined the same on all of them.

Connect to Microsoft Active Directory

Connecting to Microsoft Active Directory simplifies the task of deploying conferencing to a large organization.

All RealPresence DMA system access to the Active Directory server is read-only and minimally impacts the directory performance.

Note: If you are not knowledgeable about enterprise directories in general and your specific implementation in particular, consult with your Active Directory system administrator.

Active Directory integration automatically makes the enterprise users (directory members) Conferencing Users in the RealPresence DMA system, and can assign each of them a conference room (virtual meeting room, or VMR). The conference room IDs are typically generated from the enterprise users' phone numbers. Creating conference rooms for enterprise users is optional. You can integrate with Active Directory to load user and group information into the RealPresence DMA system without giving all users the ability to host conferences. You can manually add conference rooms for selected users at any time.

You can assign RealPresence DMA system roles to an enterprise group, applying the roles to all members of the group and enabling them to log into the RealPresence DMA system's management interface with their standard network user names and passwords.

Enterprise groups can have their own conference templates that provide a custom conferencing experience. They can also have their own MCU pool order, which preferentially routes conferences to certain MCUs.

Before integrating with Active Directory, be sure to specify one or more DNS servers.

If you're deploying a supercluster of multiple geographically distributed RealPresence DMA clusters, verify that you have assigned clusters to the territories in your site topology and decide which cluster will be responsible for Active Directory integration.

Once the RealPresence DMA system is integrated with Active Directory, it reads the directory information nightly, so that user and group information is updated automatically as people join and leave the organization. The system caches certain data from Active Directory. In a superclustered system, one cluster is responsible for updating the cache, which is shared with all the clusters.

Between updates, clusters access the directory only to authenticate passwords (for instance, for the management interface login); all other user information (such as user search results) comes from the cache. You can manually update the cache at any time.

Set Up Conference Templates

The RealPresence DMA system uses conference templates and global conference settings to manage system and conference behavior, and it has a default conference template and default global conference settings.

Templates allow you to specify most conference parameters:

- General information such as line rate, encryption, auto termination, and H.239 settings
- Video settings such as mode (presentation or lecture) and layout
- IVR settings
- Conference recording settings

After you have added MCUs to the system, you may want to change the global conference settings or create additional templates that specify different conference properties.

If you integrate with Active Directory, you can use templates to provide customized conferencing experiences for various enterprise groups.

When you add a custom conference room to a user (either local or enterprise), you can choose which template that conference room uses.

Test the System

You can test your RealPresence DMA system in various ways.

Procedure

1. On the **SIP Settings** and **H.323 Settings** pages, verify that:
   - If you enabled H.323, the **Status** field in the **H.323 Settings** section indicates that the signaling status is **Active** and the port assignments are correct.

- If you enabled SIP, the **SIP Settings** section shows that the correct protocols and listening ports are enabled.

2. Have some endpoints register with the RealPresence DMA system and make point-to-point calls to each other.

3. On the **Dashboard**, verify that:

    - The information in the **Cluster Info** pane looks correct, including the time, network settings, and system resource information.

    - The **Supercluster Status** pane shows the correct number of servers and clusters, and the network interfaces that should be working (depending on your IP type and split network settings) are up.

    - The **Call Server Registrations** pane shows that the endpoints that attempted to register did so successfully.

    - The **Call Server Active Calls** pane shows that the endpoints that made calls did so successfully, and the call limits per cluster and total are correct for your licenses.

    - The **Conference Manager MCUs** pane shows that the MCUs you added are connected and in service.

    - The information on the **Active Directory Integration** pane looks correct, including the status, cache refresh data, and enterprise conference room count.

4. Set up some multipoint conferences by having endpoints dial into enterprise users' conference rooms (preferably including a custom conference room).

    Verify that conferencing works satisfactorily, that the system status is good, and that the **Conference Manager Usage** pane accurately presents the status.

When you're satisfied that the RealPresence DMA system is configured and working properly, manually create a backup, download it, and store it in a safe place.

Additional Configuration

See the *Polycom RealPresence DMA Administrator Guide* for additional configuration tasks.

Licenses

Topics:

The licensing process for the RealPresence DMA system depends on whether you use the RealPresence Resource Manager system (licensing server), or a license file and activation key code to license your product.

Within the RealPresence DMA system web interface, you can license your product by specifying a licensing server or by using activation keys.

- If you're a Polycom RealPresence Clariti customer, you must use the RealPresence Resource Manager system to license your product (the system acts as a license server).
- If you're not a RealPresence Clariti customer, you must use a license file to obtain an activation key code to license your product. You can switch from using a license with an activation key to using a license server. Note that if you do so, you can't switch back to using a license that requires an activation key.

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

Note: RealPresence Clariti licensing doesn't support calls through a RealPresence DMA system to a RealPresence Collaboration Server Meeting Room that's SIP registered to the RealPresence DMA system.

If you have a Polycom RealPresence One license, you need to migrate the license to RealPresence Clariti before the license expires. Version 10.x of the RealPresence DMA system doesn't support RealPresence One licenses.

If you have a stand-alone license for the RealPresence DMA system or other RealPresence infrastructure products, you can optionally migrate the license to RealPresence Clariti before the license expires.

Contact your partner or sales representative for help with license migration.

Licensing the RealPresence DMA System

The RealPresence DMA system supports the following types of licenses:

- Concurrent calls
- Concurrent virtual meeting rooms (VMRs)

Concurrent VMR licenses are required to make VMR calls. To use a concurrent VMR license, you must be a RealPresence Clariti customer running a RealPresence Resource Manager system, version 10.4 or later. Each concurrent VMR license includes 25 concurrent calls.

In a supercluster configuration, note the following:

- A single call may touch more than one system but the call consumes only one license.
- Each system may be licensed for a different number of calls.
- License pooling is available across a supercluster or High Availability pair. Any system can share all licenses on all servers in all clusters.
- To ensure continued service, distribute licenses across a supercluster or High Availability pair. If one system goes offline for more than 14 days, another system will still have licenses to continue operation.

License Counting

RealPresence DMA systems 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.

Calls can be counted on a local RealPresence DMA core-configured system, or on an external SIP peer or external gatekeeper, if configured. You can specify if an external SIP peer or external gatekeeper is type **DMA Licensed** (the configured peer will count licenses) or type **DMA Subordinate** (the configured peer will not count licenses).

The way in which a call is resolved determines whether a license should be counted on a RealPresence DMA system:

- If a RealPresence DMA system has an external SIP peer and/or external gatekeeper configured AND a call is resolved to one of these, the type of the configured peer (**DMA Licensed** or **DMA Subordinate**) determines if a license is counted.
- Otherwise, if a call crosses more than one RealPresence DMA system, the first system in the call path will count a license.

When one RealPresence DMA system points to a second system configured as a **SIP-aware SBC or ALG** or **H323-aware SBC or ALG**, the second system is considered type **DMA Subordinate** and does not count licenses.

A RealPresence DMA system does not specifically configure its own license counting role; its role is determined by the relationship with its peer. If a RealPresence DMA system has more than one peer configured, calls arriving at the system may or may not be counted against a license depending on the type of the peer to which the call is resolved.

Typically, only systems with a core configuration will count licenses. RealPresence DMA systems with an edge configuration do not require licenses for calls that traverse them.

For Microsoft Skype for Business conferences, the RealPresence DMA system counts one license for the 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.

View License Information

The licensing information that you can view for your system varies slightly based on whether you have a RealPresence DMA Appliance Edition or Virtual Edition.

Procedure

1. Go to **Admin** > **Server** > **Licenses**.
2. View the fields on the **Licenses** page as described in the following table:

Activation Keys

Field	Description
Primary key	The activation key for an Appliance Edition server. The unique key for each server is based on the server's serial number.
DMA system serial number	The serial number of the RealPresence DMA system server or the unique identifier of a Virtual Edition instance.

Licensing Server

Field	Description
License server address and port	The IP address of the primary licensing server. Default port: 3333 This field is automatically provisioned by the RealPresence Resource Manager system when you create an instance of the RealPresence DMA system.
Last successful connection	The licensing server that the system last communicated with, followed by the date and time of the last communication.
DMA host ID	The RealPresence DMA system host ID to be used with the license server for this instance.

Active License

Field	Description
Licensed calls	If your system is licensed for concurrent calls, this is the maximum number of concurrent calls that the license enables. If your system is also licensed for concurrent VMRs, the maximum number includes any calls that came with the concurrent VMR licenses.

Field	Description
Licensed concurrent VMRs	If your system is licensed for concurrent VMRs, this is the maximum number of concurrent VMRs that the license enables. Each concurrent VMR license includes 25 concurrent calls.
	To use concurrent VMR licenses, you must be a RealPresence Clariti customer running a RealPresence Resource Manager system, version 10.4 or later.

End User License Agreement

Field	Description
Status	The state of acceptance of the EULA; if not accepted, this system is unable to make calls.
Date accepted	The GMT date and time of EULA acceptance.
User	The user who accepted the EULA and the IP address from which it was accepted.
Automatically send usage data	Select the check box to help improve this product by sending anonymous usage data to Polycom.

Adding Licenses

You can add licenses to both Appliance Edition and Virtual Edition systems.

- If you are a Polycom RealPresence Clariti customer, you must use the Polycom RealPresence Resource Manager system, version 10.0 or later, to license your product.
- If you are not a RealPresence Clariti customer, you must use a license file and activation key code to license your product.

Adding a License to the RealPresence DMA System Using the RealPresence Resource Manager System

If you are a Polycom RealPresence Clariti customer, you need to license your RealPresence DMA Appliance Edition or Virtual Edition through the RealPresence Resource Manager system.

After you install the RealPresence DMA system, add the instance to the RealPresence Resource Manager system (version 10.0 or higher) to license your product.

Adding a License to the RealPresence DMA System Using an Activation Key Code

If you are not a Polycom RealPresence Clariti customer, you need to license your RealPresence DMA system by using an activation key code.

Complete the following two-step process to license your system:

- Request a software activation key code for the server.

▪ Enter the activation key code into the system's web interface.

Request a Software Activation Key Code for the RealPresence DMA System

If you are not a RealPresence Clariti customer, you need to request an activation key code for the RealPresence DMA system you need to license.

Caution: An activation key is linked to a specific server's serial number. For a two-server cluster, you must generate an activation key for each server. Licensing will fail if you generate both activation keys from the same server's serial number.

Procedure

1. Log into the RealPresence DMA system as an administrator and go to **Admin** > **Server** > **Licenses**.
2. Record the serial number of the RealPresence DMA server.
3. Go to http://support.polycom.com.
4. If you don't already have one, register for an account and log in.
5. Select **Licensing & Product Registration** > **Activation/Upgrade**.

    A product selection window displays.

6. Select **All other Polycom Products**.
7. Select **SITE & Single Activation / Upgrade**.
8. In the **Serial Number** field, enter the server's serial number.
9. In the **License Number** field, enter the software license number listed on the server's License Certificate (shipped with the product).
10. Select **Generate**.
11. Record the activation key for the server.
12. If you have a two-server cluster, repeat steps 8-11, this time entering the second license number you received and the second server's serial number.

Enter a License Activation Key Code

After you obtain an activation key code, you need to enter it in the RealPresence DMA system web interface.

Procedure

1. Go to **Admin** > **Server** > **Licenses**.
2. In the **Primary key** field, enter the activation key code that was generated for the server's serial number.
3. Select **Update**.

    The license is updated.

4. Select **OK**.