



**SOLUTION GUIDE**

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# Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay for Amazon AWS Cloud Environments

## **GETTING HELP**

For more information about installing, configuring, and administering Poly/Polycom products or services, go to the [Poly Online Support Center](#).

Plantronics, Inc.  
345 Encinal Street  
Santa Cruz, California  
95060

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# Before You Begin

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The Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay system is a reliable and scalable video collaboration infrastructure solution you can deploy on-premises or in a cloud environment in edge, core, or combination configurations.

## Audience, Purpose, and Required Skills

The primary audience for this guide is system administrators and network engineers who configure, maintain, and support the telecommunications infrastructure and video conferencing environment.

We assume that you're very familiar with and trained in Amazon AWS. For more information about Amazon AWS, see the [Amazon AWS website](#).

To perform some of the implementation and maintenance tasks described in this guide, you must have basic technical knowledge and skills in the following disciplines:

- Current telecommunications practices, protocols, and principles
- Telecommunication basics and video teleconferencing
- Networking, security certificates, and software configuration

## Privacy Policy

Poly products and services process customer data in a manner consistent with the [Poly Privacy Policy](#). Please direct comments or questions to [privacy@poly.com](mailto:privacy@poly.com).

## Related Poly and Partner Resources

See the following sites for information related to this product.

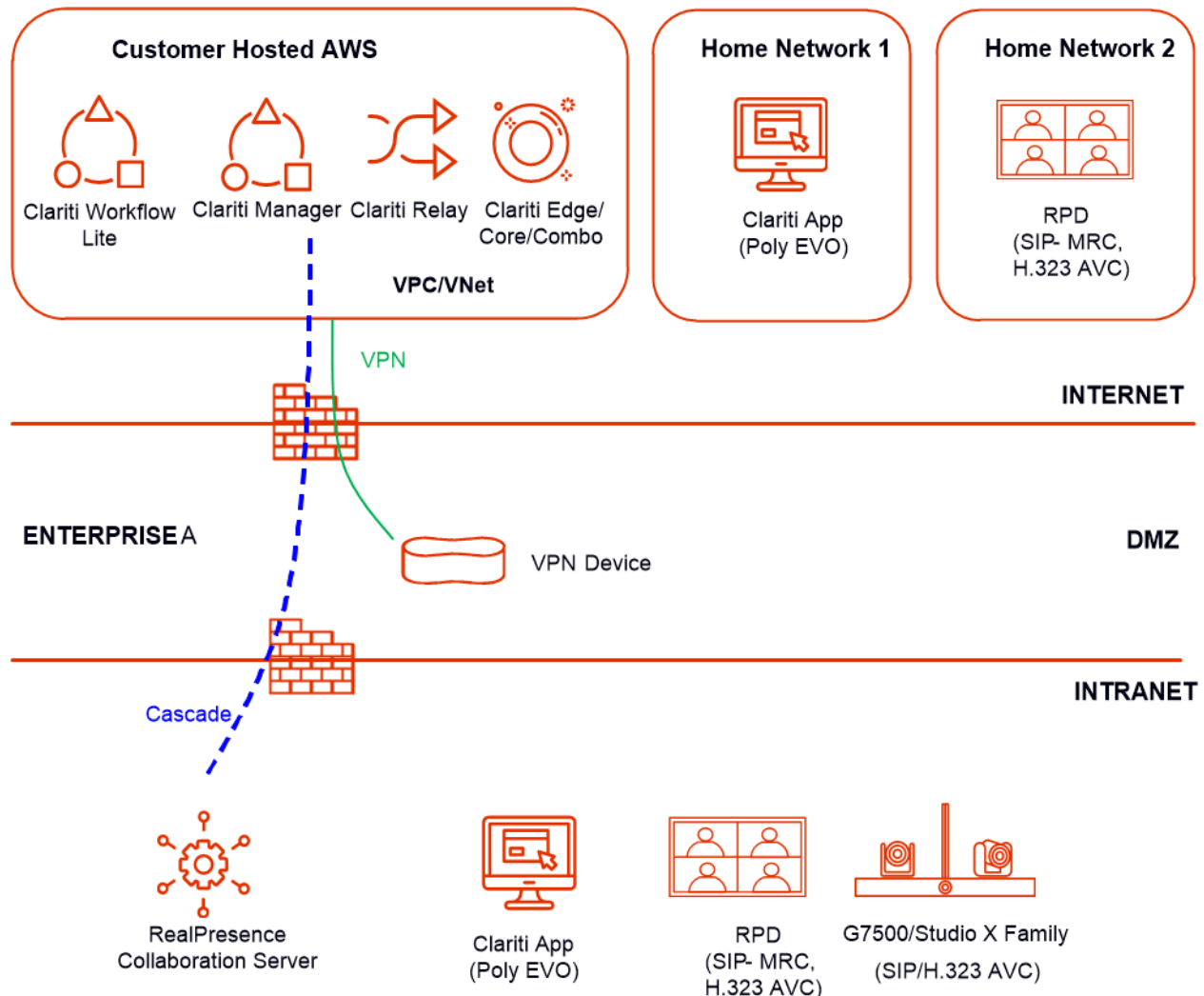
- The [Poly Online Support Center](#) is the entry point to online product, service, and solution support information including Video Tutorials, Documents & Software, Knowledge Base, Community Discussions, Poly University, and additional services.
- The [Poly Document Library](#) provides support documentation 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 [Poly 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 [Poly Partner Network](#) is a program where resellers, distributors, solutions providers, and unified communications providers deliver high-value business solutions that meet critical customer needs, making it easy for you to communicate face-to-face using the applications and devices you use every day.
- The [Poly Services](#) help your business succeed and get the most out of your investment through the benefits of collaboration.

# Configuration Options

There are several released Amazon AWS configurations for Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay. The configuration option you use depends on the type of licensing you want to use and the type of connection your deployment uses.

## Poly Clariti Deployment – Private Cloud

### Poly Clariti Deployment for Private Cloud



The following configuration is for Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay systems deploying in the private cloud. Poly Clariti APP (Poly EVO), G7500/X30/X50 SIP or H.323 AVC, RealPresence Desktop SIP MRC, RealPresence Desktop H.323 AVC, GS SIP MRC, or GS H.323 AVC call to Poly Clariti Edge/Core/Combo to dial into Poly Clariti Meeting. System establishes SVC Cascade between RealPresence Collaboration Server and Poly Clariti Relay for AVC endpoints. Route traffic through VPN and/or over internet.

# Poly Clariti Deployment Requirements

The following tables provide Poly Clariti deployment requirements for your installation. Before you start, choose the correct size of the VM instance based on your Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay capacity needs.

## Small Deployments

The following tables provide recommended component requirements and maximum capacity information for small deployments using Poly Clariti in an AWS environment.

### Poly Clariti Recommended VM Host Deployment Settings for Small Deployments

Component	Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay	Poly Clariti Workflow Lite
Type	t2.2xlarge	t2.2xlarge
vCPUs / virtual cores	6	2
Memory (GB)	16	8
Minimum CPU speed (GHz)	2.4	2.4
Total required (GHz)	14.4	4.8
Minimum CPU family	Haswell	Haswell
Hard disk (GB)	146	60
Random IOPS	110	110
Capacities	200 Poly EVO calls	Up to 500 devices

### Recommended Amazon EC2 Instance Types for Small Deployments

Component	Value
Family	General purpose
Type	a1.2xlarge
vCPUs	8
Memory (GiB)	16
Instance storage (GB)	EBS only

Component	Value
EBS-optimized available	Yes
Network performance	Up to 10 gigabits
IPv6 support	Yes

#### Poly Clariti Core and Poly Clariti Edge Maximum Capabilities for Small Deployments

Maximum Capability	Poly Clariti Edge	Poly Clariti Core and Poly Clariti Edge	Poly Clariti Core
Concurrent Registrations per cluster	1600	1600	1600
HTTPS tunnel calls (RealPresence Web Suite SIP calls)	200	200	N/A
Number of clusters enabled for conference rooms	N/A	N/A	3
Number of concurrent SIP<->H.323 gateway calls	200	200	200
Number of contacts registered to a Skype for Business server per cluster	N/A	25,000	25,000
Number of MCUs enabled for conference rooms	N/A	5	5
Number of network usage data points retained per cluster	8,000,000	8,000,000	8,000,000
Number of Poly Clariti Core and Poly Clariti Edge clusters in a supercluster	N/A Superclustering not supported	N/A Superclustering not supported	3
Number of sites	N/A	100	100
Number of subnets	N/A	1000	1000
Size of Active Directory supported	N/A	<ul style="list-style-type: none"> <li>• 1,000,000 users</li> <li>• 1,000,000 groups</li> <li>• You can import up to 10,000 groups</li> </ul>	<ul style="list-style-type: none"> <li>• 1,000,000 users</li> <li>• 1,000,000 groups</li> <li>• You can import up to 10,000 groups</li> </ul>
Throughput (Mbps)	700	700	N/A

Maximum Capability	Poly Clariti Edge	Poly Clariti Core and Poly Clariti Edge	Poly Clariti Core
Total concurrent conference room (VMR) calls for a supercluster	N/A Superclustering not supported	N/A Superclustering not supported	600
Total concurrent conference room (VMR) calls per cluster	200	200	200
Total point-to-point concurrent calls for a supercluster	N/A Superclustering not supported	N/A Superclustering not supported	600
Total point-to-point concurrent calls for a cluster	200	200	200

## Medium-Large Deployments

The following tables provide recommended component requirements and maximum capacity information for medium-large deployments using Poly Clariti in an AWS environment.

### Poly Clariti Recommended VM Host Deployment Settings for Medium-Large Deployments

Component	Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay	Poly Clariti Workflow Lite
Type	c4.4xlarge	t2.2xlarge
vCPUs / virtual cores	12	4
Memory (GB)	16	16
Minimum CPU speed (GHz)	2.4	2.4
Total required (GHz)	28.8	9.6
Minimum CPU family	Haswell	Haswell
Hard disk (GB)	146	60
Random IOPS	210	110
Capacities	<ul style="list-style-type: none"> <li>• Poly Clariti Core - 5000 Poly EVO calls</li> <li>• Poly Clariti Edge or combo -1000 Poly EVO Calls</li> <li>• Poly Clarity Relay - 1000 Poly EVO calls</li> </ul>	Up to 1000 devices

### Recommended Amazon EC2 Instance Types for Medium-Large Deployments

Component	Value
Family	General purpose
Type	a1.4xlarge
vCPUs	16
Memory (GiB)	32
Instance storage (GB)	EBS only
EBS-optimized available	Yes
Network performance	Up to 10 gigabits
IPv6 support	Yes

### Poly Clariti Core and Poly Clariti Edge Maximum Capabilities for Medium-Large Deployments

Maximum Capability	Poly Clariti Edge	Poly Clariti Core and Poly Clariti Edge	Poly Clariti Core
Concurrent Registrations per cluster	5000	5000	1500
HTTPS tunnel calls (RealPresence Web Suite SIP calls)	200	200	N/A
Number of clusters enabled for conference rooms	N/A	N/A	3
Number of concurrent SIP<->H.323 gateway calls	500	500	500
Number of contacts registered to a Skype for Business server per cluster	N/A	25,000	25,000
Number of MCUs enabled for conference rooms	N/A	64	64
Number of network usage data points retained per cluster	8,000,000	8,000,000	8,000,000
Number of Poly Clariti Core and Poly Clariti Edge clusters in a supercluster	N/A Superclustering not supported	N/A Superclustering not supported	10



Maximum Capability	Poly Clariti Edge	Poly Clariti Core and Poly Clariti Edge	Poly Clariti Core
Number of sites	N/A	500	500
Number of subnets	N/A	5000	5000
Size of Active Directory supported	N/A	<ul style="list-style-type: none"> <li>• 1,000,000 users</li> <li>• 1,000,000 groups</li> </ul> You can import up to 10,000 groups	<ul style="list-style-type: none"> <li>• 1,000,000 users</li> <li>• 1,000,000 groups</li> </ul> You can import up to 10,000 groups
Throughput (Mbps)	700	700	N/A
Total concurrent conference room (VMR) calls for a supercluster	N/A Superclustering not supported	N/A Superclustering not supported	<ul style="list-style-type: none"> <li>• 3600 H.323 only</li> <li>• 10,800 SIP only</li> </ul> To support 3600 H.323 or 10,800 SIP calls, the supercluster must contain at least three clusters
Total concurrent conference room (VMR) calls per cluster	1000	1000	<ul style="list-style-type: none"> <li>• 1200 H.323 only</li> <li>• 3600 SIP only</li> </ul>
Total point-to-point concurrent calls for a supercluster	N/A Superclustering not supported	N/A Superclustering not supported	50,000
Total point-to-point concurrent calls for a cluster	1000	1000	5000

# Installation

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Use the following instructions to install Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in an Amazon AWS environment. Once you create your VM instances, they're autonomous machine instances that operate per normal Poly product documentation.

Note the following:

- We assume that any AWS-specific configuration like VPC is already available in your environment.
- In-place product upgrades aren't supported for cloud environments. If you need to upgrade, use your system's backup and restore mechanism to restore the configuration to a new instance.
- Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay don't support a High Availability (HA) configuration for AWS deployments.

## Create an Installation Image

Create a base image for all your VM instances.

**To create an installation image:**

- 1 Obtain the AWS-specific VM `.ova` image for Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay. If your image file is compressed (`.zip` or `.gzip`), expand to an `.ova` file.
- 2 Upload the `.ova` file to a bucket in your S3 storage (for example, `vm-images`).
- 3 Convert the `.ova` file in your S3 storage to an AMI using AWS tools. The `aws ec3 import-image` command initiates the conversion and eventually places an AMI image in your EC2 service.

For more information, see [Importing a VM as an image using VM Import/Export](#).

## Create a Single VM Instance

Deploy Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in a single NIC configuration using DHCP.

Make sure you choose the correct size of the VM instance based on your Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay capacity needs. For more information, see [Poly Clariti Deployment Requirements](#).

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**Important:** The VM instance's security settings must allow access to your VM from network locations required by the products and services you're deploying. For a list of ports you must open on your internal and external firewalls, see the Ports Summary section of the [Poly Clariti Core and Poly Clariti Edge Security and Privacy Guide](#).

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**To create a single VM instance:**

- 1 Launch your AMI image.
- 2 Configure the DNS and NTP settings in the AWS environment to ensure proper network communication and discovery of host names.

- 3 Optional:** If the Poly Clariti Core and Poly Clariti Edge configuration has a public and private IP assigned by default, go to **Network Settings > IPv4** and add the public IP address to the **NAT** field. Poly recommends that you purchase a public static IP address to use a public IP address in your deployment. Otherwise, if your public IP address changes, you must update the NAT address configuration on the Poly Clariti Core and Poly Clariti Edge local interface, which requires a system reboot.

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**Note:** There is no public IP for Poly Clariti Relay.

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- 4** Start your Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay instance. The instance displays on the **Network Settings** page.
- 5** Log in to the Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay system web interface using the default login (`admin`) and password (`Polycom12#$`), and you are required to change your system's default password.

Once you create the VM instance, configure Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in your Amazon AWS environment.

## Create Multiple VM Instances

Deploy Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in a four-NIC configuration to segregate WAN-side and LAN-side traffic.

Make sure you choose the correct size of the VM instance based on your Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay capacity needs. For more information, see [Poly Clariti Deployment Requirements](#).

Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay don't support DHCP when configuring multiple network interfaces. You must reserve static IP addresses in AWS for a multiple network interface configuration.

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**Important:** The VM instance's security settings must allow access to your VM from network locations required by the products and services you're deploying. For a list of ports you must open on your internal and external firewalls, see the Ports Summary section of the [Poly Clariti Core and Poly Clariti Edge Security and Privacy Guide](#).

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### To create multiple VM instances:

- 1** Launch your AMI image.
- 2** Configure the DNS and NTP settings in the AWS environment to ensure proper network communication and discovery of host names.
- 3 Optional:** If the Poly Clariti Core and Poly Clariti Edge configuration has a public and private IP assigned by default, go to **Network Settings > IPv4** and add the public IP address to the **NAT** field. Poly recommends that you purchase a public static IP address to use a public IP address in your deployment. Otherwise, if your public IP address changes, you must update the NAT address configuration on the Poly Clariti Core and Poly Clariti Edge local interface, which requires a system reboot.
- 4** Configure the multiple network interfaces.

- a Shut down the Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay instance.
  - b In AWS, go to **Network & Security > Network Interfaces > Create Network Interface**.
  - c Assign the appropriate subnet, IP address, and network security groups.
  - d Go to **Instances** and select your Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay instance.
  - e Select **Actions > Networking > Attach Network Interface** and select the interface you created to associate it with your instance.
  - f Repeat the previous steps to create and attach additional interfaces.
- 5 Start your Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay instance. The instances display on the **Network Settings** page.
  - 6 Log in to the Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay system web interface using the default login (`admin`) and password (`Polycom12#$`), and you are required to change your system's default password.

Once you create the VM instance, configure Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in your Amazon AWS environment.

# Configuring Your System

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For more information on configuration options and how to deploy and configure Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in your Amazon AWS environment, see the [Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay Administrator Guide](#).

## Using the Deployment Wizard

After you install Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay in the AWS cloud, use the [Poly Clariti Core and Poly Clariti Edge Deployment Wizard](#) to configure your system.

The wizard asks questions about your network and unified communications environment, then it produces a backup file you can upload onto the Poly Clariti Edge server. It also produces a `.csv` file or HTML page that contains a list of IP addresses and ports that you must open on your firewall.

## Security Considerations

Due to the lack of console access in AWS, a special `ec2-user` login has been added in Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay that you use to connect to Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay via SSH. This user is a restricted shell user like the Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay system's `dmaremote` login. The default password for both the `ec2-user` and `dmaremote` logins is: `!/useResponsibly/!`

You can't disable the `ec2-user` login by the system's normal security settings, as it's the only way to access the instance in the event of a problem. You are required to change the default password or general SSH access to the instance using AWS security configurations.

## Licenses

Poly Clariti Core, Poly Clariti Edge, and Poly Clariti Relay support both stand-alone licensing (using a CFS key) and licensing through the Poly License Center.