



## Introduction

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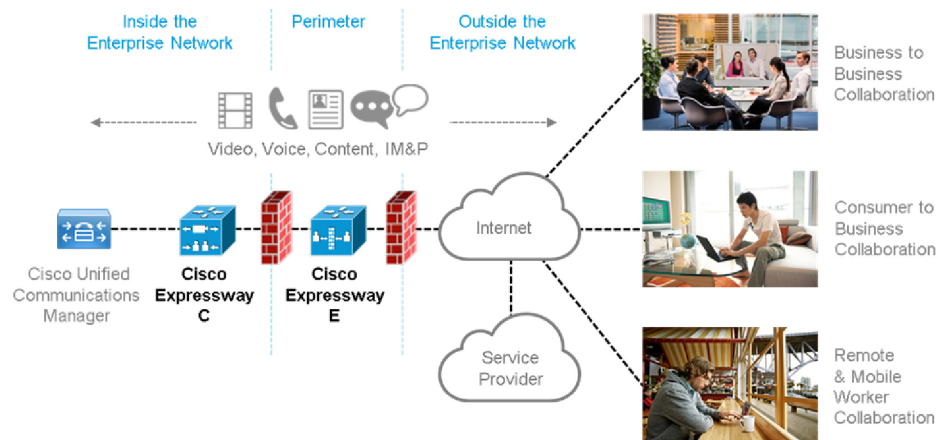
## About the Expressway

Cisco Expressway Series (Expressway) is designed specifically for comprehensive collaboration services. It features established firewall-traversal technology and helps to redefine traditional enterprise collaboration boundaries, to support our Cisco vision of any-to-any collaboration.

Expressway offers the following primary features and benefits:

- Provides proven, highly secure, firewall-traversal technology.
- Facilitates connections for business-to-business, business-to-consumer, and business-to-cloud-service-provider.
- Facilitates session-based access to collaboration services for remote workers, with no need for a separate VPN client.
- Supports a wide range of devices, including Cisco Jabber for smartphones, tablets, and desktops.
- Complements bring-your-own-device strategies and policies for remote and mobile workers.

A typical Expressway system is deployed as a pair: an Expressway-C with a trunk and line-side connection to Unified CM, and an Expressway-E deployed in the DMZ and configured with a traversal zone to an Expressway-C.



Expressway is available on a dedicated physical appliance such as a CE12100, or as a virtual machine (VM) on a Cisco UCS server.

## Expressway Types

Each Expressway can be configured as one of two types, which offer different capabilities.

### Expressway-C

Expressway-C delivers any-to-any enterprise wide conference and session management and interworking capabilities. It extends the reach of telepresence conferences by enabling interworking between Session Initiation Protocol (SIP)- and H.323-compliant endpoints, interworking with third-party endpoints; it integrates with Unified CM and supports third-party IP private branch exchange (IP PBX) solutions. Expressway-C implements the tools required for creative session management, including definition of aspects such as routing, dial plans, and bandwidth usage, while allowing organizations to define call-management applications, customized to their requirements.

### Expressway-E

The Expressway-E deployed with the Expressway-C enables smooth video communications easily and securely outside the enterprise. It enables business-to-business video collaboration, improves the productivity of remote and home-based workers, and enables service providers to provide video communications to customers. The application performs securely through standards-based and secure firewall traversal for all SIP and H.323 devices. As a result, organizations benefit from increased employee productivity and enhanced communication with partners and customers.

It uses an intelligent framework that allows endpoints behind firewalls to discover paths through which they can pass media, verify peer-to-peer connectivity through each of these paths, and then select the optimum media connection path, eliminating the need to reconfigure enterprise firewalls.

The Expressway-E is built for high reliability and scalability, supporting multivendor firewalls, and it can traverse any number of firewalls regardless of SIP or H.323 protocol.

## Standard Features

Standard features on Expressway include the following:

- Secure firewall traversal and session-based access to Cisco Unified Communications Manager for remote workers, without the need for a separate VPN client
- Endpoint registration support.
- SIP Registrar (requires Room or Desktop SIP Proxy. Note that SIP and H.323 protocols are disabled by default on new installs, and can be enabled from **Configuration > Protocols** Registration licenses.)
- SIP and H.323 support, including SIP / H.323 interworking
- IPv4 and IPv6 support, including IPv4 / IPv6 interworking
- TURN relay licenses
- Advanced networking
- Device provisioning and FindMe services
- H.323 gatekeeper
- QoS tagging
- Bandwidth management on both a per-call and a total usage basis, configurable separately for calls within the local subzones and to external systems and zones
- Automatic downspeeding option for calls that exceed the available bandwidth
- URI and ENUM dialing via DNS, enabling global connectivity
- Rich media session (RMS) support
- 1000 external zones with up to 2000 matches
- 1000 subzones and supporting up to 3000 membership rules
- Flexible zone configuration with prefix, suffix and regex support
- Can function as a standalone Expressway, or be neighbored with other systems such as other Expressways, gatekeepers and SIP proxies
- Can be clustered with up to 6 Expressways to provide n+1 redundancy, and up to 4 x individual capacity.
- Intelligent Route Director for single number dialing and network failover facilities
- Optional endpoint authentication
- Control over which endpoints are allowed to register
- Call Policy (also known as Administrator Policy) including support for CPL
- Support for external policy servers
- Can be managed with Cisco TelePresence Management Suite 13.2 or later
- Active Directory authentication

- Pre-configured neighbor zone defaults for Cisco Unified Communications Manager and for Nortel Communication Server
- Embedded setup wizard using a serial port for initial configuration
- System administration using a web interface or SSH, or via the CIMC port for a CE $n$  physical appliance
- Intrusion protection

## Do Not Install Other Cisco or Third-Party Software onto Expressway

Cisco does not support the installation of any additional Cisco or third-party software, applications, or agents on Expressway (VMs or physical appliances), unless we state explicitly otherwise. Non-Expressway products may corrupt the Expressway code and must not be installed.

## Hardware Appliance and Virtual Machine Options

Expressway supports on-premises and cloud applications and is available as a dedicated appliance or as a virtualized application on VMware, with additional support for Cisco Unified Computing System (Cisco UCS) platforms.

### Virtual Machine Options

Expressway has these virtualized application deployment types:

- Small (for Cisco Business Edition 6000 or supported VMware ESXi platforms, subject to the required minimum hardware specification)
- Medium (standard installation)
- Large (extra performance and scalability capabilities)

See *Cisco Expressway Virtual Machine Installation Guide* on the [Expressway Installation Guides](#) page.

### Hardware CE Series Appliances

The Expressway is also available as a dedicated CE Series appliance based on UCS hardware. For example, the CE1200 appliance based on a UCS C220 M5L, operates as a medium capacity or large capacity Expressway.



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**Note** The Cisco VCS series is not supported on CE1200 appliances.

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### Changing the default system size

For appliances deployed as Expressway-E you can manually change the default system size of appliances from Large to Medium, or the other way round. This capability was introduced to mitigate an issue with demultiplexing ports for media traversal on appliances with a 1 Gbps NIC (SFP module) that are configured as Medium systems.

To change the size of the appliance, go to **System > Administration** settings page and select the required size from the **Deployment Configuration** list.

### Installation information

See *Cisco Expressway CE1200 Appliance Installation Guide* on the [Expressway Installation Guides](#) page.

## About This Guide

This guide describes the various features, services, and capabilities of Expressway. It assumes a fully equipped version of Expressway, so your deployment may not support all of the items described.

The guide only applies to the Cisco Expressway Series product. For information about Cisco VCS, please refer to the *X12.5.x Cisco VCS Administrator Guide* on the [Cisco TelePresence Video Communication Server Maintain and Operate Guides](#) page.

Most configuration tasks on Expressway can be done through the web user interface or the command line interface (CLI). The guide mainly describes how to use the web user interface. Some features are only available through the CLI, and these are described where relevant.

Web user interface directions are shown in the format **Menu** > **Submenu** followed by the **Name** of the page that you will be taken to.

CLI commands where provided, are shown in the format:

```
xConfiguration <Element> <SubElement>  
xCommand <Command>
```

## Training

Training is available online and at our training locations. For more information on all the training we provide and where our training offices are located, visit [www.cisco.com/go/telepresencetraining](http://www.cisco.com/go/telepresencetraining).

## Glossary

A glossary of TelePresence terms is available at: <https://tp-tools-web01.cisco.com/start/glossary/>.

## Accessibility Notice

Cisco is committed to designing and delivering accessible products and technologies.

The Voluntary Product Accessibility Template (VPAT) for Cisco Expressway is available here:

[http://www.cisco.com/web/about/responsibility/accessibility/legal\\_regulatory/vpats.html#telepresence](http://www.cisco.com/web/about/responsibility/accessibility/legal_regulatory/vpats.html#telepresence)

You can find more information about accessibility here:

<http://www.cisco.com/web/about/responsibility/accessibility/index.html>

## Related Documentation

**Table 1: Links to Related Documents and Videos**

Support videos	Videos provided by Cisco TAC engineers about certain common Expressway configuration procedures are available on the <a href="#">Expressway/VCS Screencast Video List</a> page (search for “Expressway videos”)
Installation - virtual machines	<i>Cisco Expressway Virtual Machine Installation Guide</i> on the <a href="#">Expressway Installation Guides</a> page
Installation - physical appliances	<i>Cisco Expressway CE1200 Appliance Installation Guide</i> on the <a href="#">Expressway Installation Guides</a> page.
Basic configuration for single-box systems	<i>Cisco Expressway Registrar Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page
Basic configuration for paired-box systems (firewall traversal)	<i>Cisco Expressway-E and Expressway-C Basic Configuration Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page
Administration and maintenance	<i>Cisco Expressway Administrator Guide</i> on the <a href="#">Expressway Maintain and Operate Guides</a> page (includes Serviceability information)
Clustering	<i>Cisco Expressway Cluster Creation and Maintenance Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page
Certificates	<i>Cisco Expressway Certificate Creation and Use Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page
Ports	<i>Cisco Expressway IP Port Usage Configuration Guide</i> on the <a href="#">Expressway Configuration Guides</a> page
Unified Communications	<i>Mobile and Remote Access Through Cisco Expressway</i> on the <a href="#">Expressway configuration guides</a> page
Cisco Meeting Server	<i>Cisco Meeting Server with Cisco Expressway Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page  <i>Cisco Meeting Server API Reference Guide</i> on the <a href="#">Cisco Meeting Server Programming Guides</a> page  Other Cisco Meeting Server guides are available on the <a href="#">Cisco Meeting Server Configuration Guides</a> page
Cisco Webex Hybrid Services	<a href="#">Hybrid services knowledge base</a>
Cisco Hosted Collaboration Solution (HCS)	<a href="#">HCS customer documentation</a>

Microsoft infrastructure	<i>Cisco Expressway with Microsoft Infrastructure Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page  <i>Cisco Jabber and Microsoft Skype for Business Infrastructure Configuration Cheatsheet</i> on the <a href="#">Expressway configuration guides</a> page
Rest API	<i>Cisco Expressway REST API Summary Guide</i> on the <a href="#">Expressway Configuration Guides</a> page (high-level information only as the API is self-documented)
Multiway Conferencing	<i>Cisco TelePresence Multiway Deployment Guide</i> on the <a href="#">Expressway Configuration Guides</a> page

## About the Service Setup Wizard (Service Selection Page)

The Service Setup Wizard makes it easier to configure Expressway for its chosen purpose in your environment, and simplifies the web user interface. As well as running the wizard for initial configuration you can subsequently access its service selection page at any time (**Status > Overview**). For more details about using the wizard, see the *Cisco Expressway-E and Expressway-C - Basic Configuration guide* on the [Expressway Configuration Guides](#) page.

**Figure 1: Service Setup Wizard - Example Service Selection Page**

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**Note** If you use Smart Licensing, you cannot change the **Series** setting from the Service Selection page/wizard (to convert an Expressway to a VCS product). Instead this process must start with a factory reset (to disable Smart Licensing because it's not supported on VCS). Some of the other settings shown in this example are unnecessary with Smart Licensing and do not appear in the wizard on Expressways that use Smart Licensing.

## Services that can be Hosted Together

Some services are incompatible and cannot be selected together. The following table provides a matrix of compatible services. The matrix specifies which services you can use together on the same system or cluster.

Table 2: Services That Can be Hosted Together

	Cisco Webex Hybrid Services (Connectors)	Mobile and Remote Access	Jabber	Microsoft gateway server	Registrar	CMR Cloud	Business to Business calling (includes Hybrid Call Service)
Cisco Webex Hybrid Services (Connectors)	Y	N	N	N	N	Y	Y
Mobile and Remote Access and/or (from X8.9) Meeting Server Web Proxy	N	Y	N	N	Y	Y	Y*
Jabber Guest Services	N	N	Y	N	Y	Y	Y
Microsoft gateway service	N	N	N	Y	N	N	N
Registrar	N	Y	Y	N	Y	Y	Y
CMR Cloud	Y	Y	Y	N	Y	Y	Y
Business to Business calling (includes Hybrid Call Service)	Y	Y*	Y	N	Y	Y	Y

**Key to Table**

Y: Yes, these services can be hosted on the same system or cluster

N: No, these services may not be hosted on the same system or cluster

**Rules**

- Hybrid Services connectors may co-reside with the Expressway-C of a traversal pair used for Call Service, subject to user number limitations.
  - \* If your Hybrid Call Service (or B2B) traversal pair is also used for MRA, then the Hybrid Services connectors must be on a separate Expressway-C. This is because we do not support the connectors being hosted on the Expressway-C that is used for MRA.
- Microsoft gateway service requires a dedicated VCS Control or Expressway-C (called “Gateway VCS” or “Gateway Expressway” in the help and documentation)
- Jabber Guest cannot work with MRA (technical limitation)
- MRA is currently not supported in IPv6 only mode. If you want IPv6 B2B calling to co-reside with IPv4 MRA on the same Expressway traversal pair, the Expressway-E and Expressway-C must both be in dual stack mode.