Platform Overview and System Requirements

This chapter includes the following major topics:

Overview of the Cisco Extended Care Platform

Cisco Extended Care is much more than a telehealth solution; it is a healthcare collaboration platform that transforms the clinician experience. It helps unify the communication infrastructure components and devices, helps simplify workflows, and helps enable high-quality interactive visual communications and collaboration. Healthcare organizations can use their existing Cisco video devices or use telehealth capabilities built in to their provider portals and applications for a unified visual experience.

As opposed to being merely a video endpoint, Cisco Extended Care is a solution that helps eliminate disjointed platforms and cobbling together of code with questionable levels of reliability, security, and scalability. It is agnostic to electronic medical records (EMR), video endpoint, and applications.

This solution helps increase clinician efficiency and productivity by unifying communication infrastructure components.

Cisco Extended Care Architecture

The Cisco Extended Care architecture is built using a layered approach to help enable the patient-provider interaction.

- Figure 1-1 illustrates the layered architecture of Cisco Extended Care.
- Figure 1-2 illustrates an overview of the components in Cisco Extended Care with VCS Expressway Integration.
- Figure 1-3 illustrates an overview of the components in Cisco Extended Care with REM Integration and UC setup.
- Figure 1-3 illustrates an overview of the components in Cisco Extended Care with REM Integration.

Figure 1-1 Cisco Extended Care Layered Architecture and Supported Cisco Video and Infrastructure Equipment

Figure 1-2 Cisco Extended Care Architecture

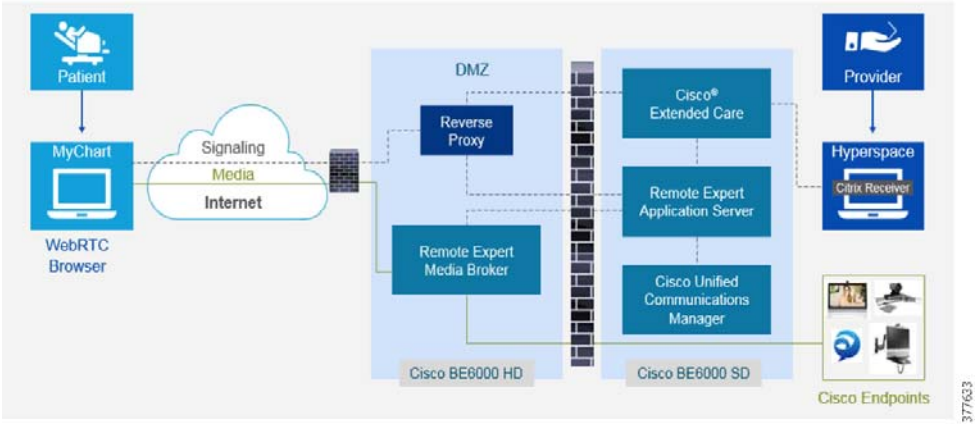
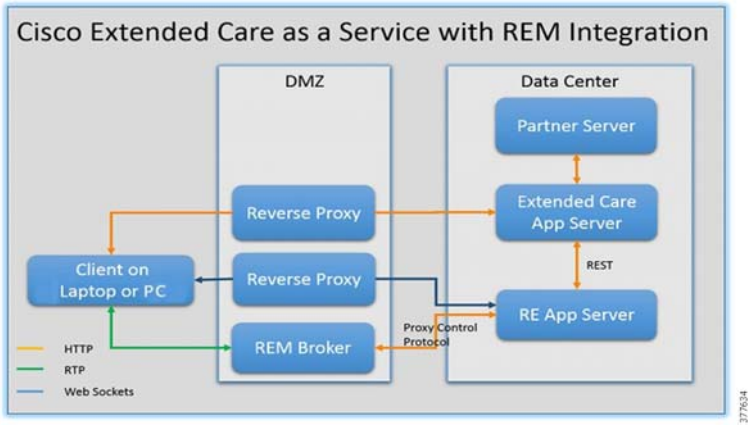


Figure 1-3 Cisco Extended Care Architecture - REM



Proxy Server

The proxy server (see Figure 1-2) is the software that helps enable the provider and the patient to connect to the Cisco Extended Care application from outside the enterprise network.

Cisco Extended Care Application Server

The Cisco Extended Care application server (see Figure 1-2) is the data center software that manages all of the connectivity and provides services to the end users. This server ties together all the components of Cisco Extended Care.

Cisco Remote Expert Mobile (REM)

Cisco Remote Expert Mobile (see Figure 1-3) is a Cisco software product that helps enable patients and care team members to connect with Extended Care in order to participate in live video appointments and also perform other collaboration activities by using an internet viewer from their computer, tablet, mobile phone or other internet-connected device. Cisco REM provides secure, two-way calling capabilities via an Internet web page address (URL) that is provided by the care team contact.

Cisco REM is a software solution that helps enable consumer communication devices to use their browser-based or mobile applications to make IP-based calls to traditional enterprise devices - without using plugins or clients.

Users can conduct their business through their smart phones, tablets, laptops, and PCs. They can make and receive voice and video calls, send and receive instant messages, communicate presence status, and share application events in real-time.

Cisco REM can also provide a WebRTC-to-SIP gateway that helps enable access through the enterprise firewall from the outside. Cisco REM works with Cisco Collaboration infrastructure to integrate with enterprise customer relations management and other line-of-business applications.

For details about Cisco Remote Expert Mobile, refer to the following URL:

- http://www.cisco.com/c/en/us/products/customer-collaboration/remote-expert-mobile/index.html

Cisco Extended Care Data Center Components

Cisco Extended Care requires software and data center hardware in an enterprise data center. The required components can vary, depending on the features and video components selected. This section briefly describes the required components.

Data Center Software Requirements

Cisco Extended Care software is the core of the solution that leverages Cisco unified communications technologies to help achieve the telehealth use case. Cisco Extended Care offers the following to the core of the server:

- **Application Server**—Provides the user interface for the administrator for provision video endpoints and integrates Cisco unified communication servers.
- **Web Services**—Used by the software to interface with the partner applications.

Data Center Hardware Requirements

Cisco UCS Server

The Cisco UCS server is best suited to install the Cisco Extended Care application software. The UCS server supports installation of the Cisco Extended Care application as a VM installation. The following is the recommended configuration for the VM installation:

- Virtual Machine:
  - Virtual Machine Version 7 or 8
  - Guest OS: RHEL 6 64 Bit
  - Virtual Processor
  - Number of Virtual Sockets: 2
  - Number of cores per virtual Socket: 2
  - Memory: 16 GB
  - Hard Disk: 100 GB
  - Virtual Network Interface Cards: 1 Adapter: E1000
- Additional components required if implementing the high availability design option:
  - An additional physical server that is identical to the first one.
  - VMware vSphere Hypervisor (ESXi) 5.0 or higher.
  - Vsphere Client 5.0 or higher. This runs on a Windows platform.
  - Network File System1.
  - Center Server 5.1. This runs on a 64 bit Windows platform.

Reverse Proxy Server

A separate server is required to act as the Reverse Proxy server, similarly configured as the enterprise server, if accessing Cisco Extended Care from outside the enterprise network.

For the recommended TRC of UCS Server, refer to the Business Edition 6000M and Business Edition 6000H server configuration at the following URL:

- http://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/collaboration-virtualization-hardware.html#smallTRC

Video Conferencing Data Center Components

Cisco Extended Care supports a variety of servers and multi-point bridges that typically reside in a data center.

Servers

Cisco Extended Care supports the following servers:

- Cisco Unified Communication Manager (CUCM), Version 10.5.2
- Cisco Remote Expert Application Mobile Server, Version 11.5 - SU1 (ES3)

With Cisco Extended Care, the application can support interoperability between diverse video endpoints in a point-to-point configuration, greatly reducing the cost of deployment.

Video Endpoints

The video endpoint facilitates video conferencing for two or more locations. Supporting a variety of video endpoints gives enterprises a choice in video quality, size/form factors, required bandwidth, and cost.

Cisco Extended Care is compatible with an SIP standards-based video conferencing system, and the compatibility falls into one of three categories:

- **Fully Integrated**—One click Join and Leave on the Cisco Extended Care window.
- **Partially Integrated**—One click Join on the Cisco Extended Care window, but ending the teleconference is handled outside of Cisco Extended Care.
- **Compatible but not Integrated**—Manual dial is required.

Cisco Extended Care helps facilitate video conferencing with the following video endpoints:

Hard Endpoints

- Cisco DX Series (DX80 - 10.2, DX70)
- Cisco TelePresence System EX Series (EX90 - 7.3.4)
- TelePresence SX Quick Set (SX20 - 7.1.4, SX10)
- Cisco Telepresence Integrator C Series, Version 5.1.0

Soft Endpoints

- Cisco Remote Expert Mobile 11.5 - SU1 (ES3)
- Jabber Client 11.5 (Windows 7, 8.1, 10; Mac 10.8.1, 10.9, 10.10)

Soft Client Browser Requirements

- On platforms that support WebRTC [Remote Expert Mobile 11.5 - SU1 (ES3)]
- Windows 7 (32/64-bit), Windows 8.1 (32/64-bit), or Mac OS-X 10.8, or later

- Plugin-Less Video (WebRTC)
- Chrome: Version > 47
- Firefox (Windows): Version > 44
- Firefox (Macintosh): Version > 44
- Chrome (Macintosh): Version > 23

Before You Begin Installation

For proper operation of the Cisco Extended Care application server, perform the following steps before performing the Cisco Extended Care application server software installation and configuration procedures.

Step 1 Acquire the following values needed for installation:

- The Fully Qualified Domain Name (FQDN) (for example, hostname.subdomain.domain.tld) of every server and endpoint in the installation
- IP Address of the Cisco Extended Care Application Server
- Server Subnet Mask
- Server Gateway Address
- Domain Name System (DNS) Server 1 Address
- DNS Server 2 Address
- Domain Suffix
- Network Time Protocol (NTP) Server 1 and Server 2 addresses local to the network

Step 2 Acquire the appropriate licenses for your installation.

Step 3 Install and configure the applicable call management software. Configure the video endpoints. For information on how to install and configure these components, see “Appendix A, “Assorted Tasks.””.