



Cisco Remote Expert Smart Solution 1.8 Architectural Overview

August 21, 2013

What You Will Learn

In market segments such as financial services and retail, today's customers require a portfolio of complex products and services, accessible anytime, anywhere. When making critical decisions about these products and services, customers want to interact with experts to ask questions or seek advice. Whether this interaction takes place in a store, online, via mobile device, or through a call to the campus contact center, customers increasingly desire a personalized consultation with an expert.

The cost of providing personalized expert-based services across multiple delivery channels presents a significant challenge to enterprises focusing on efficiency ratios and profitability. It is expensive to staff specialists at every store, let alone each delivery channel. Yet, the inability to respond to customer sales opportunities across delivery channels anytime, anywhere can result in revenue leakage, lost opportunities, and customer dissatisfaction.

The Cisco® Remote Expert Smart Solution connects customers with subject matter experts regardless of their respective physical locations. Cisco Remote Expert allows specialized experts to cover larger territories, meet with more prospects, generate more business and forge better relationships by meeting at the customer's convenience, while still providing a just-in-time expert utilization model.

This document describes the building blocks and services of the Cisco Remote Expert Smart Solution. Enterprises evaluating innovative, multi-channel approaches to customer service and engagement can use this reference architecture to identify the critical products and technologies needed to deploy a successful Remote Expert Smart Solution system. This reference architecture is a companion to the Cisco Validated Design (CVD) Guide for the Cisco Remote Expert Smart Solution, and provides a foundation for understanding the best practices and design techniques described in that document. Information contained in these documents is derived from extensive end-to-end testing of the Cisco Remote Expert Smart Solution.



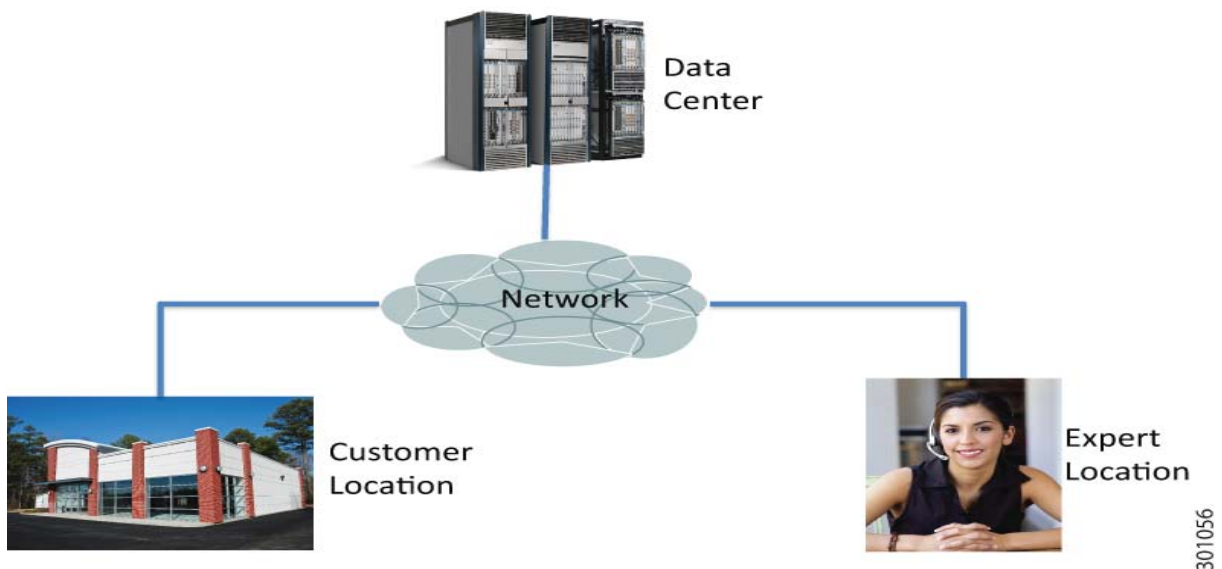
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The Cisco Remote Expert Smart Solution

The Cisco Remote Expert Smart Solution provides customers a face-to-face consultative experience with subject matter experts regardless of their respective physical locations. The solution uses Cisco Telepresence technology, which delivers two-way HD video at resolutions up to 1080p, along with desktop sharing, credit card readers, printers and touch screen controls to provide a simplified yet enhanced Customer experience. The Remote Expert Smart Solution enables organizations to dramatically enhance customer satisfaction while minimizing the costs associated with most high-touch service models (Figure 1).

Figure 1 Remote Expert Smart Solution Deployment Model



Remote Expert Smart Solution Components

Several systems are needed to create the Cisco Remote Expert Solution. The Cisco Remote Expert Solution is conceptually broken down into several functional groups based on the capabilities they bring to the solution. Each component of the solution and its function is briefly described in this document.

1. Cisco Unified Communications Manager (UCM)
 - a. CTS 500-32 (can be used at either the expert or branch side)
 - b. EX 60 (can be used at either the expert or branch side)
 - c. EX90 (can be used at either the expert or branch side))
2. Cisco Contact Center Enterprise (UCCE) plus Customer Voice Portal (CVP)
 - a. Cisco Agent Desktop (CAD) Premium
3. Remote Expert Manager
 - a. Remote Expert Session Controller (RESC) Application consisting of
 - i. JTAPI Adapter
 - ii. Apache/Tomcat

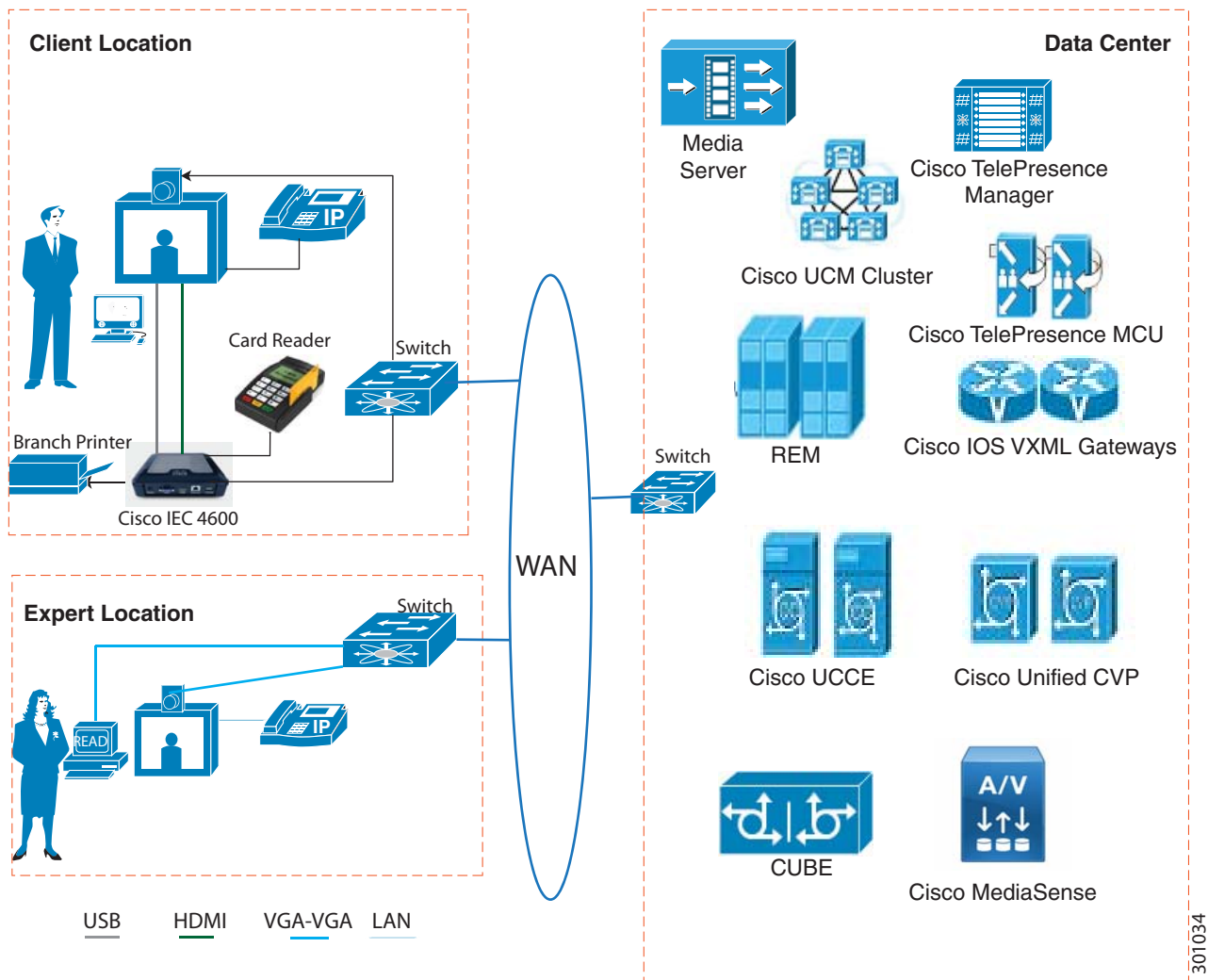
- iii. Post GRE-SQL
 - b. Remote Expert Interactive Collaboration (REIC) application
 - c. Remote Expert Agent Desktop (READ) application integrated with CAD Premium
- 4. Direct Connect Application installed on the expert's workstation
- 5. Media server installed on the same REM virtual machine or separately
- 6. Interactive Experience Manager (IEM)
 - a. Interactive Experience Client (IEC) with peripherals such as
 - i. Printer connected to the IEC
 - ii. Touchscreen connected to the IEC
- 7. CAD Server
- 8. Cisco Unified Border Element (CUBE)
- 9. Cisco MediaSense

Remote Expert Smart Solution Functional Architecture

The Remote Expert solution comprises products from several areas of Cisco's Unified Communications, Interactive Services, and Networking product lines, as well as third-party products. These products are deployed in an end-to-end architecture that comprises four major elements (see [Figure 2](#)):

- Customer Locations
- Expert Locations
- Enterprise Data Center
- Wide Area Network

Figure 2 *Remote Expert Smart Solution Functional Architecture*



Customer Locations

The customer-facing components of the solution are located in the enterprise's remote customer locations. Cisco Telepresence creates an immersive virtual face-to-face communication, while customers can interact with experts by means of a convenient collaboration monitor. The Cisco Interactive Experience Client 4600 (IEC-4600) orchestrates the session while also integrating a local printer, card reader, or other human interface devices that enhance the customer experience (see [Figure 3](#)).

Cisco Telepresence

For Remote Expert Smart Solution version 1.8, customers have the choice of using any supported Cisco Telepresence endpoint (CTS-500, EX60 or EX90) in any combination between the Customer Location and Expert Locations.

Cisco IEC-4600 and Associated Peripherals

While the Cisco Telepresence endpoints provide the immersive face-to-face collaboration experience between the customer and the expert, the Cisco IEC-4600 acts as the customer pod controller. The IEC-4600 integrates the entire customer experience through interactive application sharing, media streaming, and interfacing with printers and human interface devices (HIDs) such as card readers and signature capture pads.

Figure 3 **Customer Location**



Expert Locations

The Expert Locations incorporate the agent-facing components of the solution. In addition to creating a compelling customer experience with a high-definition Cisco Telepresence session, agents can enhance customer engagement through seamless desktop application sharing, multimedia streaming, and interfacing with remote peripherals at Customer Locations to create an “in-person” collaborative experience (see [Figure 4](#)).

Cisco Telepresence

For the Remote Expert Smart Solution 1.8, customers have the choice of using any supported Cisco Telepresence endpoint (CTS-500, EX60 or EX90) in any combination between the Customer Locations and Expert Locations.

Remote Expert Agent Desktop

Cisco Agent Desktop (CAD) is a computer telephony integration (CTI) solution for IP-based contact centers that allows contact center agents to use powerful tools that help increase agent and supervisor productivity, improve customer satisfaction, and reduce costs. In addition to traditional agent application support, the Premium version of the CAD application supports an integrated browser.

The Cisco Remote Expert Agent Desktop (READ) is a browser-based application for contact center agents, and it is provided through CAD application's integrated browser. READ allows contact center agents to use powerful tools that help increase agent and supervisor productivity, improve customer satisfaction, and reduce costs. With READ, experts can:

- Selectively push videos to the customer
- Remotely print at branch site
- Share data (peer-to-peer) in conjunction with Direct Connect application
- Take notes (both private, visible only to the expert, and public, also visible to the customer)

An intuitive GUI decreases IT dependency and simplifies customization, maintenance, and change management.

Figure 4 *Expert Location*



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DirectConnect

Direct Connect is a software application installed on the expert's workstation and provided as part of the Remote Expert Smart Solution. Direct Connect allows real-time collaboration between experts and customers using any enterprise application on the expert's workstation. These applications can be natively shared and controlled by either the customer or the expert without the latency, complexity or cost of third-party conferencing or collaboration tools.

Enterprise Data Center

The data center contains the unified communications management, storage and core applications of the Remote Expert Smart Solution.

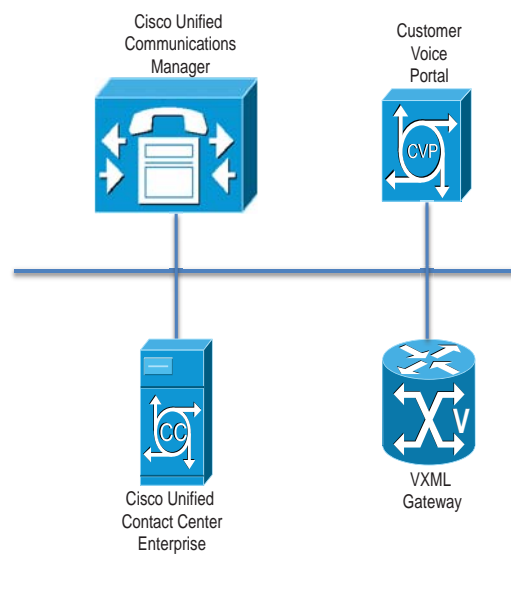
Unified Communications Management

The most compelling aspect of the Remote Expert experience is the immersive Telepresence interaction between the customer and the expert. The enterprise's unified communications management environment and underlying network must be optimized for the highest possible quality Telepresence calls at the required scale, without affecting other critical business functions.

In addition, the Remote Expert Smart Solution leverages advance unified communications features for skills-based call routing and media sharing to complete the Remote Expert experience:

- Call Control
 - Cisco Unified Communications Manager provides basic Unified Communications functions such as call control, dial plan, and call admission control.
- Contact Center
- Cisco Customer Voice Portal (CVP) and Voice XML (VXML) Gateway provide inbound call queuing and interactive Voice Response (IVR) services. In conjunction with CVP and VXML Gateway, Cisco Unified Contact Center Enterprise provides skills-based call forwarding to an available expert based on the Customer's selected need.

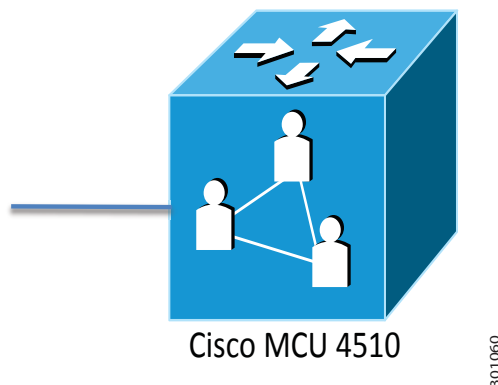
Figure 5 **Unified Communications Components**



Multipoint Video Conferencing

Complex customer queries may require the assistance of multiple experts. The Remote Expert Smart Solution provides the ability for an expert to conference-in other experts when necessary. The Cisco 4500 and 5300 Series Media Control Units (MCU), or the Cisco TelePresence Server 7010 perform the conferencing function between a customer and up to two agents.

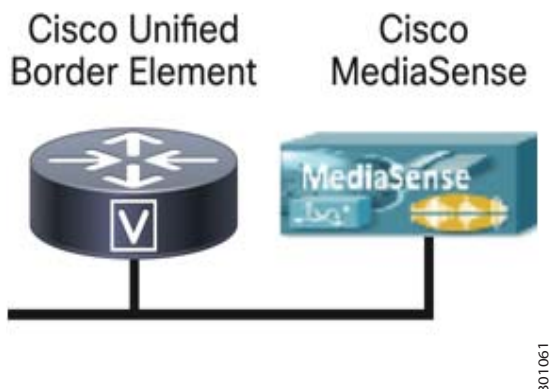
Figure 6 *Multipoint Video Conferencing*



Audio Recording

The Cisco Unified Border Element (CUBE) and Cisco MediaSense handle audio session capture between a Customer and the Expert(s). CUBE, acting as a Session Initiation Protocol (SIP) back-to-back user agent (B2BUA), is responsible for intercepting and forking the synchronized two-way conversation to MediaSense. MediaSense is a SIP-based media server that provides the actual recording services.

Figure 7 *Audio Recording*



Media Server

A media server is used in Remote Expert Smart Solution for streaming video to the customer for the following purposes:

- While the customer is in queue waiting for an expert
- While the expert puts the customer on hold
- Initiated by the expert during a session

Interactive Experience Manager

The Interactive Experience Manager (IEM) allows configuration, control, and support of Interactive Experience Clients (IEC) 4600 series. Using the IEM, the system administrator can enable peripherals, apply policy on sessions, and generate logs and reports from the IEC.

Remote Expert Manager

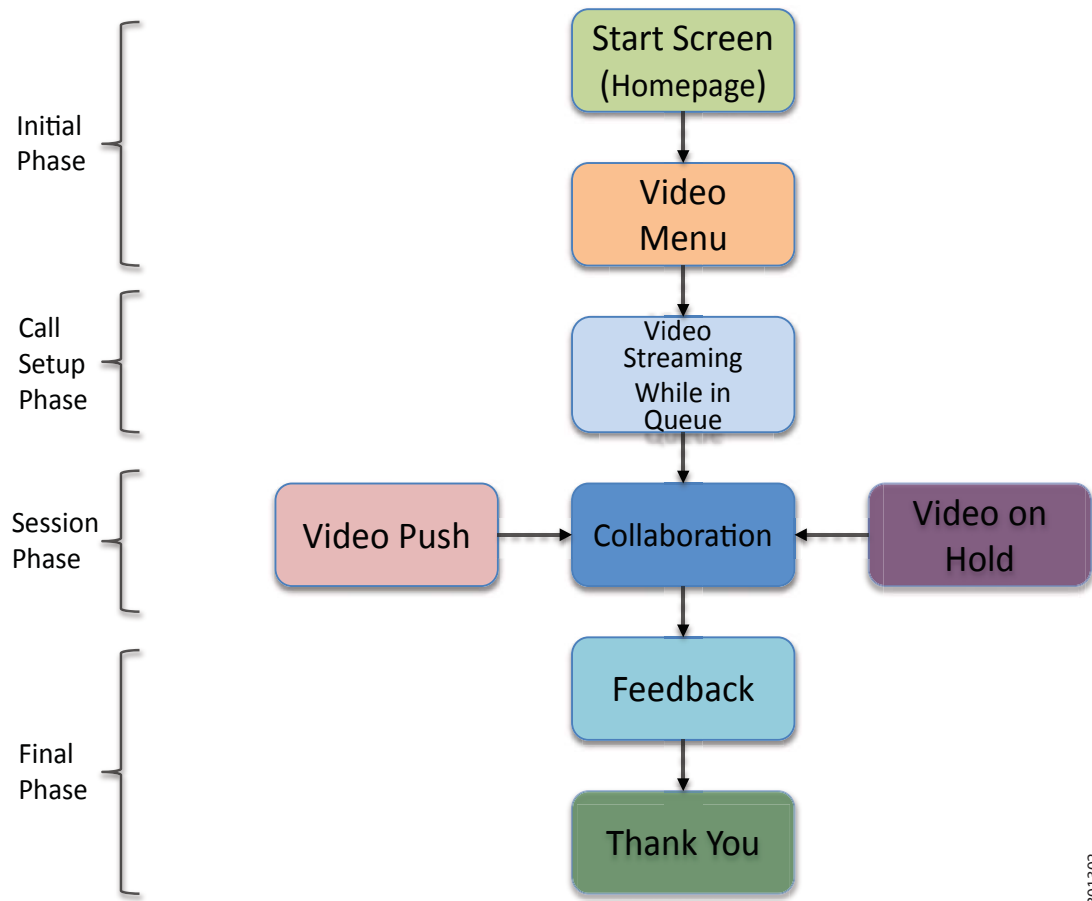
Remote Expert Manager (REM) is the core control system of the Remote Expert Smart Solution, providing the collaboration features that make customer interactions with the expert simple and effective.

REM implements the following administrative, control, and messaging functions:

- RE Administrator Console (REAC) - Web-based management interface to add, verify and update all necessary configurations that are needed for normal operation of REM platform
- RE Agent Desktop (READ) - Web-based Expert desktop environment provides CRM, note taking, video streaming, application sharing and printing capabilities between the Expert and the Customer
- RE Interactive Applications Controller (REIC) - Renders graphics, fonts and video on the touch screen located in the customer pod, renders desktop applications shared by the expert, relays Customer touch inputs and facilitates customer control of the expert's shared application
- RE Session Controller (RESC) – Provides session management to initiate and terminate RE video sessions, data sharing sessions, trigger Customer-side printing and control video streaming

A high-level view of the video collaboration interaction is shown in [Figure 8](#)

Figure 8 Video Collaboration Interaction Functions of REM

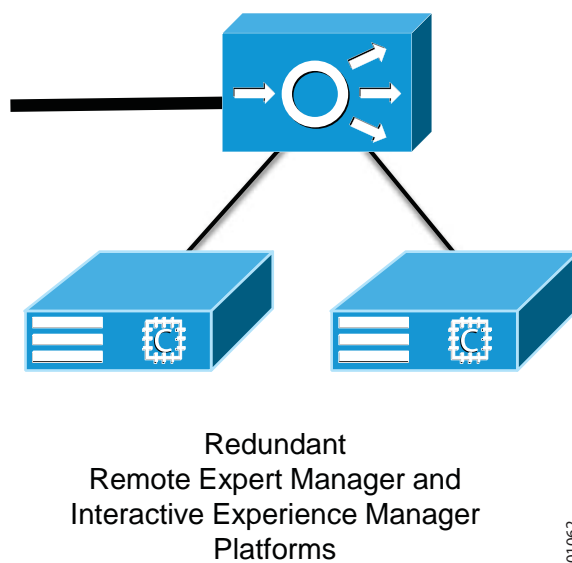


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The REM relies on the following components for its functions as shown in [Figure 9](#):

- Interactive Experience Manager (IEM)
- Interactive Experience Client (IEC)
- Media Server

Figure 9 Remote Expert Manager



Wide Area Network

The Remote Expert Smart Solution leverages Cisco's rich portfolio of routers, switches, and network services so that organizations can deploy the infrastructure best suited to their needs (see [Figure 9](#)). Remote Expert solutions can be delivered over private WANs, MPLS VPNs, or Metro Ethernet networks. Cisco Powered WAN/VPN service provider networks maintain the high levels of network quality required for an immersive Remote Expert Smart Solution experience.

Conclusion

The Cisco Remote Expert Smart Solution is a fully integrated, enterprise-class, customer service system, delivering a superior collaborative and rich media experience with best-in-class Return on Investment. The Cisco Remote Expert Smart Solution enables organizations to target expertise at the point-of-need through immersive Telepresence. Enterprises can centralize specialist pools to provide maximum coverage, and still support "carbon neutral" environmental imperatives. With the Cisco Remote Expert Smart Solution, enterprises can deliver a differentiated and compelling customer experience while reducing revenue leakage and travel expenses. The result is increased customer confidence and loyalty, and improved utilization of trained, valuable business specialists.

References

Please refer to following supporting documents for more detailed information.

Cisco Unified Communications Manager design documentation: <http://www.cisco.com/go/ucsrnd>

Cisco Unified Contact Center Enterprise: <http://www.cisco.com/go/ucsrnd>

Cisco Telepresence: <http://www.cisco.com/go/telepresence>

Cisco Agent Desktop: <http://www.cisco.com/en/US/products/sw/custcosw/ps427/index.html>

Cisco Interactive Experience Client 4600 Series User Guide:

http://www.cisco.com/en/US/products/ps12435/tsd_products_support_maintain_and_operate.html

Cisco Remote Expert Manager Home Page:

http://www.cisco.com/en/US/products/ps12838/tsd_products_support_series_home.html

Cisco Remote Expert Manager 1.8 Installation Guide:

http://www.cisco.com/en/US/docs/solutions/Enterprise/collaboration/Remote_Expert/REM_1.8/re_ig.pdf

Cisco Remote Expert Manager 1.8 Administration Guide:

http://www.cisco.com/en/US/docs/solutions/Enterprise/collaboration/Remote_Expert/REM_1.8/re_ag.pdf

Cisco Remote Expert Manager 1.8 Agent Desktop User Guide:

http://www.cisco.com/en/US/docs/solutions/Enterprise/collaboration/Remote_Expert/REM_1.8/re_ug.pdf

Cisco Remote Expert Manager 1.8 Troubleshooting Guide:

http://www.cisco.com/en/US/docs/solutions/Enterprise/collaboration/Remote_Expert/REM_1.8/re_tg.pdf

Cisco Remote Expert Manager 1.8 Release Notes:

http://www.cisco.com/en/US/docs/solutions/Enterprise/collaboration/Remote_Expert/REM_1.8/re_rn.pdf

For More Information

Cisco Remote Expert Smart Solution Design Zone:

http://www.cisco.com/en/US/customer/solutions/ns340/ns414/ns742/remote_expert.html

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