Cisco VT Advantage Administration Guide

For Cisco CallManager

Version 1.0

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Cisco VT Advantage Administration Guide

CONTENTS

Preface

Overview

The Cisco VT Advantage Administration Guide provides you with the information you need to install and administer Cisco VT Advantage.

Audience

The Cisco VT Advantage Administration Guide is written for network and telephony administrators who will be administering Cisco VT Advantage for end users.

Objectives

This guides provides installation and administration information to configure Cisco VT Advantage on your network with Cisco CallManager and Cisco IP Phones.

How To Use This Guide

Locate the task you want to perform and then refer to the corresponding chapter in this guide.

To do this	See
Find an overview Cisco VT Advantage	"Overview of Cisco VT Advantage"
Prepare your network for Cisco VT Advantage	"Preparing Your Network for Cisco VT Advantage"
Install Cisco VT Advantage	"Deploying and Installing Cisco VT Advantage"
Troubleshoot Cisco VT Advantage	"Troubleshooting Cisco VT Advantage"
Provide information about Cisco VT Advantage to end users	"Providing Information to End Users"
Review technical specifications for Cisco VT Advantage	"Technical Specifications"
Review regulatory compliance and safety information for Cisco VT Advantage	Regulatory Compliance and Safety Information

Related Documentation

For more information about Cisco VT Advantage, Cisco IP Phones, or Cisco CallManager, refer to these publications:

Document Name	Location
Cisco VT Advantage Administration Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm
Cisco VT Advantage User Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm
Cisco VT Advantage Quick Start Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm
Release Notes for Cisco VT Advantage	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm
Cisco IP Phone Administration Guide for Cisco CallManager, Cisco IP Phone Models 7960G and 7940G	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm

Document Name	Location
Cisco IP Phone 7970 Administration Guide for Cisco CallManager	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm
Cisco IP Phone guides	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm
Solution Reference Design Guides	http://www.cisco.com/warp/public/779/largeent/it/ese/srnd.html
Cisco CallManager Administration Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco CallManager System Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco CallManager Serviceability Administration Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco CallManager Serviceability System Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco CallManager Troubleshooting Guide	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Bulk Administration Tool User Guide for Cisco CallManager	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm
Cisco CallManager Compatibility Matrix	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/ccmcomp.htm

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

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  http://www.cisco.com/en/US/partner/ordering/index.shtml

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Documentation Feedback

You can submit e-mail comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

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Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

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Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

http://www.cisco.com/tac

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

http://tools.cisco.com/RPF/register/register.do

Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the

TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

http://www.cisco.com/tac/caseopen

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Go to this URL to visit the company store:

  http://www.cisco.com/go/marketplace/

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/en/US/learning/index.html

CHAPTER 1

Overview of Cisco VT Advantage

This section provides an overview of Cisco VT Advantage and includes the following topics:

Overview of Cisco VT Advantage

Cisco VT Advantage brings video telephony functionality to Cisco IP Phones 7940G, 7960G, and 7970G. The Cisco VT Advantage application software coupled with the Cisco VT Camera, a Universal Serial Bus (USB) camera, allows a personal computer (PC) connected to a Cisco IP Phone to add video to phone calls without requiring any extra button-pushing or mouse-clicking. When registered to Cisco CallManager, the Cisco VT Advantage-enabled Cisco IP Phone has the features and functionality of a full-featured IP videophone. Call features like call forward, transfer, conference, hold, and mute are available with video — and are all initiated through the Cisco IP Phone. Cisco VT Advantage is intended for desktop–to–desktop IP video telephony environments, not as a general purpose video conferencing solution for use in conference rooms.

How Calls Work with Cisco VT Advantage

You can use your Cisco IP Phone as you normally do. The Cisco VT Advantage application is controlled from the personal computer (PC) connected directly to the Access port labelled "10/100 PC" on the back of a Cisco IP Phone.

Here is a brief overview of how placing and answering calls works with Cisco VT Advantage.

Note For more information about the *Cisco VT Advantage* application, refer to the *Cisco VT Advantage User Guide*, which is available from the Cisco VT Advantage link online: http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm

Placing Calls

If...	Then...
Cisco VT Advantage is running on your PC and on the PC of the person you are calling	When you place or answer a call, two video windows open on your PC. You will see yourself in the Local Video window and you will see the person you are calling in the Remote Video window.
Cisco VT Advantage is set to Receive-Only mode on your PC	When you place a call, you will see the person you are calling in the Remote Video window. The Local Video window does not display.
The person you are calling has set Cisco VT Advantage to Receive-Only mode	When you place a call, you will see yourself in the Local Video window and you will see a blank image in the Remote Video window.

Answering Calls

If...	Then...
Cisco VT Advantage is running on your PC and on the PC of the person whose call you are answering	When you answer a call, two video windows open on your PC. You will see yourself in the Local video window and you will see the caller in the Remote Video window.
Cisco VT Advantage is set to Receive-Only mode on your PC	When you answer a call, you will see the caller in the Remote Video window. The Local Video window does not display.
The person whose call you are answering has set Cisco VT Advantage to Receive-Only mode	When you answer a call, you will see yourself in the Local Video window and you will see a blank image in the Remote Video window.

Note When Cisco VT Advantage is not running on your PC or on the PC of the remote caller, then the call functions like a regular phone call without video.

Cisco VT Advantage Application Components

The Cisco VT Advantage application includes the following major components.

Component	Description
Cisco Discovery Protocol (CDP) Driver	The CDP driver transmits and receives device information so that the Cisco VT Advantage application can determine the IP address of the Cisco IP Phone to which it is connected and associate to that phone.
Cisco IP Phone firmware	Firmware release that supports video on the Cisco IP Phone 7940G, 7960G, and 7970G models.

Component	Description
Cisco Media Termination Driver	The Cisco Media Termination Driver is a Windows kernel mode driver that is responsible for timely processing of media packets – both video and audio. It does this in real time so that voice and video are properly rendered. The Cisco Media Termination driver is used by the Cisco VT Advantage application to perform several tasks, including: • Interfacing to the USB capture devices (when available) • Transmitting and receiving video RTP packets • Routing video stream data to the appropriate software video frame decoders
Cisco VT Advantage Win32 Application	This application performs the following functions: • Enables and manages the video window display • Communicates with the Cisco Media Termination and Cisco Discovery Protocol (CDP) drivers • Communicates with the Cisco CallManager using a Cisco IP Phone as an Skinny Client Control Protocol (SCCP) proxy • Discovers the associated Cisco IP Phone using CDP • Connects to the Cisco IP Phone using the Cisco Audio Session Tunnel (CAST) protocol • Indirectly communicates with Cisco CallManager and remote endpoints via CAST messages sent to the Cisco IP Phone • Responds to events from a Cisco IP Phone • Creates and manages system tray icons • Creates and displays the system tray popup messages for status feedback to the user
Software Video Decoders and Encoders	Includes: H.263 and Cisco VT Camera wideband

Cisco VT Advantage Hardware and Software Requirements

This section details the hardware and software requirements for Cisco VT Advantage.

Hardware Requirements

Cisco VT Advantage requires the following hardware:

- Cisco VT Camera
- Personal Computer (PC)
- Cisco IP Phones 7940G, 7960G, 7970G

Cisco VT Camera

Must be installed and connected to the PC on which the Cisco VT Advantage application is installed. For more information about setting up the Cisco VT Camera, see the "Setting Up the Cisco VT Camera" section on page 3-8.

Personal Computer (PC) on which the Cisco VT Advantage Application is Installed.

Must meet these specifications:

PC Feature	Requirement
Operating system	• Windows 2000 Professional with service pack 3.0 or later • Windows XP Professional with service pack 1.0 or later
CPU	• 1.0 GHz or higher Pentium III or compatible processor (Streaming SIMD Extensions support required) • 1.4 GHz or higher compatible processor recommended
System memory	• 256 MB minimum
Free disk space	• 40 MB
USB port	• At least 1 free USB (1.1 or 2.0) port
Video display	• Video capable graphics card at 800 x 600 x 16 bit or better
Network	• 10/100 Mbit Ethernet NIC

Cisco IP Phones 7940G, 7960G, and 7970G

Cisco VT Advantage is supported on the Cisco IP Phone 7940G, 7960G, and 7970G models. For more information about configuring the phones for Cisco VT Advantage, see the "Configuring Cisco IP Phones for Cisco VT Advantage" section on page 2-8.

Software Requirements

Cisco VT Advantage requires the following software:

- Cisco VT Advantage application
- Cisco CallManager Release 4.0(1), Service Release 2 or higher

Cisco VT Advantage Application

Must be installed on the PC connected directly to the Cisco IP Phone. For more information about installing Cisco VT Advantage, see the "Installing the Cisco VT Advantage Application" section on page 3-11.

Cisco CallManager Release 4.0(1), Service Release 2 or higher

Cisco VT Advantage requires Cisco CallManager to handle video call processing on the Cisco IP Phones. For more information about configuring Cisco CallManager for Cisco VT Advantage, see the "Configuring Cisco CallManager for Cisco VT Advantage" section on page 2-5.

CHAPTER 2

Preparing Your Network for Cisco VT Advantage

This section provides information about preparing your network and configuring Cisco CallManager and Cisco IP Phones for Cisco VT Advantage. It includes the following topics:

Cisco VT Advantage Network Requirements

For Cisco VT Advantage to successfully operate as a video endpoint in your network, your network must meet the following requirements:

- Working VoIP Network
  - Voice over IP (VoIP) configured on your Cisco routers and gateways
  - Cisco CallManager Release 4.0(1) Service Release 2 or higher installed on your network and configured to handle call processing
- IP network that supports DHCP or manual assignment of IP address, gateway, and subnet mask in Cisco CallManager 4.0(1) Service Release 2 or higher.

- IP telephony networks with access control lists and/or firewalls between voice VLANs and data VLANs must be configured so that the access control lists and/or firewalls allow the Cisco Audio Session Tunnel (CAST) protocol to communicate with the Cisco IP Phone and the PC (Cisco VT Advantage) over TCP/IP using TCP port 4224. Bi-directional communication on TCP port 4224 is required.
- Cisco IP Phone 7940G, 7960G, and 7970G models are installed and configured on your IP network with phone loads that support video.
- Quality of Service is properly configured on your network to provide prioritized treatment of the audio and video streams.

  For more information about quality of service, refer to the Quality of Service Design Guide, which is available at this URL:
  http://www.cisco.com/warp/public/779/largeent/it/ese/srnd.html
- If multi-party video conferences are desired, a Cisco IP/VC 3511 or Cisco IP/VC 3540 MCU (with IP/VC Version 3.2 Plus software) is required.

  For more information about setting up Cisco CallManager and a Cisco IP/VC MCU 3511 or 3540 to provide video conferences, refer to the *Cisco IP/VC 3511 MCU and Cisco IP/VC 3540 MCU Module Administrator Guide (Version 3.2)*, which is available at this URL:
  http://www.cisco.com/univercd/cc/td/doc/product/ipvc/index.htm
- If Public Switched Telephone Network (PSTN) connectivity for video calls is required, a Cisco IP/VC 3521 BRI, Cisco IP/VC 3526, or Cisco IP/VC 3540 PRI Gateway is required.

  For more information about setting up Cisco CallManager to use a Cisco IP/VC 3526 or 3540 PRI Gateway, refer to the *Cisco IP/VC 3526 PRI Gateway and Cisco IP/VC 3540 PRI Gateway Module Administrator Guide, 2.0*, which is available at this URL:
  http://www.cisco.com/univercd/cc/td/doc/product/ipvc/ipvc3540/gateway/index.htm

Supported Protocols on Cisco VT Advantage

Cisco VT Advantage supports several industry-standard and Cisco networking protocols required for video communication. See the following table for an overview of the supported networking protocols.

Networking Protocol	Purpose	Usage Notes
Cisco Audio Session Tunnel (CAST)	The CAST protocol allows Cisco IP Phones and associated applications behind the phone to discover and communicate with the remote endpoints without requiring changes to the traditional signaling components like Cisco CallManager and gateways.	CAST works: • Between Cisco VT Advantage and the Cisco IP Phone to exchange capabilities • Between Cisco VT Advantage and Cisco CallManager, with the Cisco IP Phone as an SCCP proxy. CAST triggers Cisco VT Advantage call events such as: call video stream start and stop; speaker on/speaker off; audio mute on/audio mute off; call hold/call resume. CAST allows Cisco VT Advantage to discover remote Cisco VT Advantage-capable endpoints.
Cisco Discovery Protocol (CDP)	CDP is a device-discovery protocol that runs on all Cisco-manufactured equipment. Using CDP, a device can advertise its existence to other devices and receive information about other devices in the network.	Cisco VT Advantage uses the CDP protocol to communicate configuration information to the Cisco IP Phone, and the Cisco IP Phone uses CDP to communicate to Cisco VT Advantage. With CDP, each device sends periodic messages to a multicast address and in turn listens to the periodic messages sent by other devices. This allows devices on the network to discover one another and learn information such as protocols used, protocol addresses, and so on.
Internet Protocol (IP)	IP is a networking protocol that addresses and sends packets across the network.	To communicate using IP, network devices must have an assigned IP address, subnet, and gateway.

Networking Protocol	Purpose	Usage Notes
Real-Time Transport Protocol (RTP)	RTP is a standard for using UDP to transport real-time data, such as interactive voice and video, over data networks.	The RTP protocol is used to encapsulate and stream the audio and video between endpoints and Cisco VT Advantage.
Skinny Client Control Protocol (SCCP)	A Cisco protocol using low-bandwidth messages that allows communication between IP devices and the Cisco CallManager.	If a Skinny Client Control Protocol Cisco IP Phone reports video capabilities, Cisco CallManager automatically opens a video channel if the other end supports video. For Skinny Client Control Protocol video calls, the system determines video call bandwidth by using regions.
Transmission Control Protocol (TCP)	TCP is a connection-oriented transport protocol in the IP family.	Cisco VT Advantage uses TCP to connect to Cisco CallManager and to communicate to a Cisco IP Phone.

Supported Video Codecs on Cisco VT Advantage

These video codecs are supported in Cisco VT Advantage.

- H.263 (128 Kbps – 1.5 Mbps)
- Cisco VT Camera wideband video codec (7 Mbps)

Configuring Cisco CallManager for Cisco VT Advantage

Cisco VT Advantage requires Cisco CallManager to handle video call processing on the Cisco IP Phones. The Cisco CallManager documentation provides detailed information about video call processing. Specifically, the following reference guides provide more details:

- *Cisco CallManager System Guide*, section "Understanding Video Telephony"
- *Cisco CallManager Administration Guide*.

  These guides are available at this URL:
  http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

The following table provides information about particular feature settings that need to be properly configured on Cisco CallManager to support Cisco VT Advantage.

CCM Feature	Description	Configuration Reference
Alternate routing	You can use route/hunt lists or Automated Alternate Routing (AAR) groups to try different paths for video calls if you do not want the default behavior specified by the Retry Video Call as Audio setting (see below in this table).	*Cisco CallManager Administration Guide*, Route/Hunt List Configuration and Automated Alternate Routing Group Configuration sections
Differentiated Service Code Point (DSCP)	DSCP packet marking can be changed using these QOS service parameters: • DSCPForAudioCalls • DSCPForVideoCalls	*Cisco CallManager System Guide*, Bandwidth Managment section
Locations	Locations in Cisco CallManager Administration specify how much audio and video bandwidth is allowed for all calls in a specific location. Parameters include: • Location audio bandwidth • Location video bandwidth	*Cisco CallManager Administration Guide*, Location Configuration section
Media Resource Group List (MRGL)	A Media Resource Group List in Cisco CallManager specifies a prioritized list of Media Resource Groups (MRG). For video conference calls, make sure that a video conference bridge is configured in a Media Resource Group as the first conference bridge resource, and that this MRG is the first entry in the MRGL assigned to a video endpoint.	*Cisco CallManager Administration Guide*, Media Resource Group List Configuration section *Cisco CallManager System Guide*, Media Resource Management section

CCM Feature	Description	Configuration Reference
Regions	Regions in Cisco CallManager Administation specify the maximum audio codec and video call bandwidth that are used within and between regions for each video call. Parameters include: • Region audio codec • Region video call bandwidth	*Cisco CallManager Administration Guide*, Region Configuration section
Retry Video Call as Audio	When an endpoint (phone, gateway, trunk) cannot obtain the bandwidth that it needs for a video call, call control retries the call as an audio call.	*Cisco CallManager Administration Guide*, Phone Configuration Settings section

Configuring Cisco IP Phones for Cisco VT Advantage

Cisco VT Advantage is supported on the following Cisco IP Phone models:

- Cisco IP Phone 7940G
- Cisco IP Phone 7960G
- Cisco IP Phone 7970G

The PC on which Cisco VT Advantage is installed must be directly connected to the Access port labelled 10/100 PC on the back of the Cisco IP Phone. The Cisco IP Phone requires Cisco CallManager to handle call processing and the appropriate phone load that enables video on the phone. (A phone enabled for video will display a video icon in the lower righthand corner of the LCD screen.)

Refer to the appropriate Cisco IP Phone administration guides for Cisco CallManager to ensure that the Cisco IP Phones are properly set up and configured:

- *Cisco IP Phone Administration Guide for Cisco CallManager, Cisco IP Phone Models 7960G and 7940G*
- *Cisco IP Phone 7970 Administration Guide for Cisco CallManager*

  These guides are available at this URL: http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/index.htm

The following table provides information about particular feature settings that need to be properly configured on Cisco CallManager to support Cisco VT Advantage on Cisco IP Phones.

CCM Feature	Description	Configuration Reference
PC Port	Indicates whether the PC port on the Cisco IP Phone is enabled or disabled. The port labelled "10/100 PC" on the back of the phone connects a PC or workstation to the phone so they can share a single network connection.	Make sure this feature is enabled on Cisco IP Phones that operate with Cisco VT Advantage. *Cisco CallManager Administration Online Help > Device > Phone > Phone Configuration*
Phone load	Indicates the phone load that supports video.	Make sure that the phone load that supports video is loaded on each Cisco IP Phone. *Cisco CallManager Administration Online Help > Device > Phone > Phone Configuration*
Video Capabilities	Indicates that the phone will participate in video calls when connected to an appropriately equipped PC.	Make sure this feature is enabled on Cisco IP Phones that operate with Cisco VT Advantage. *Cisco CallManager Administration Online Help > Device > Phone > Phone Configuration*

Using the Bulk Administration Tool (BAT) to Update Cisco IP Phones for Video Support

You can use the Cisco CallManager Bulk Administration Tool (BAT) to update a large number of phones on your network for video support. You can use BAT to set these video settings on the phones: PC Port and Video Capabilities. For more information about this tool, refer to the *Bulk Administration Tool (BAT) User Guide*, which is available at this URL:
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

Deploying and Installing Cisco VT Advantage

This section provides deployment and installation information for the Cisco VT Advantage application and the Cisco VT Camera. It includes the following topics:

Deploying Cisco VT Advantage

You will need to make the Cisco VT Advantage application available to your technicians to install on users' PCs, or to users to install Cisco VT Advantage on their own PCs. The Cisco VT Advantage Deployment Tool can be used for this purpose.

Using the Cisco VT Advantage Deployment Tool

Through the Cisco VT Advantage Deployment Tool, you can make the Cisco VT Advantage Installer program available on a Cisco CallManager Publisher Server. The installer program resides in the CCMPluginsClient web site, which is mapped to the C:\CiscoPlugins\Client directory. This web site is set

up with the correct permissions to allow anonymous access to the Cisco VT Advantage Installer executable file. This will facilitate installation for your technicians and users.

The Cisco VT Advantage Deployment Tool lets you set the following options for the installation:

- AutoUpdate—Lets you set the autoupdate option so that users are notified automatically about updates to Cisco VT Advantage.
- Proxy—Lets you set proxy server information if your users need to use a proxy server to reach your Cisco CallManager Publisher Server.
- Error Reporting Tool—Lets you set the email and/or FTP address(es) to which users send reports generated by the Error Reporting Tool.

Procedure

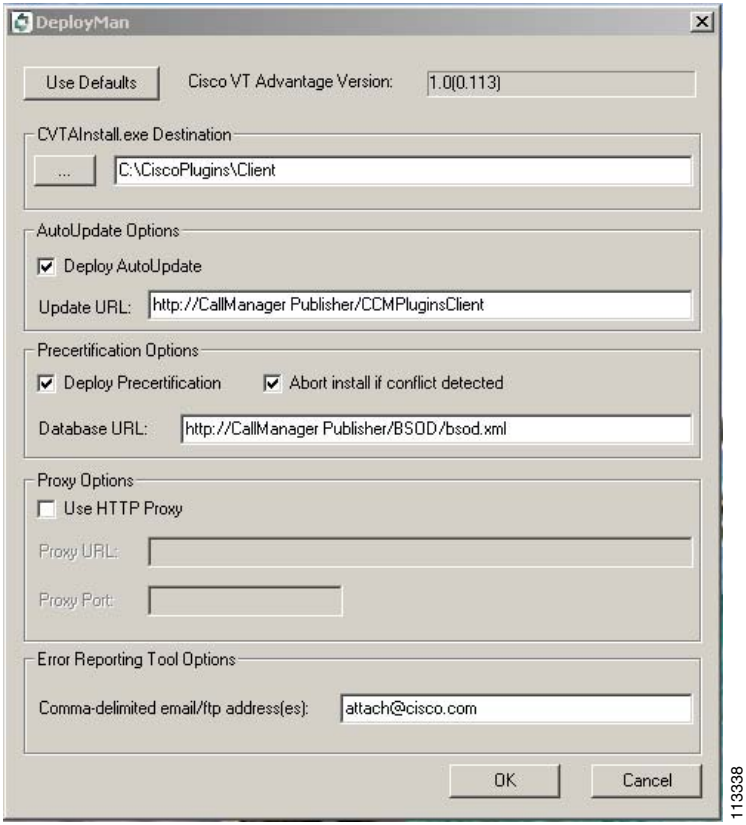
To make the Cisco VT Advantage Installer program available on a Cisco CallManager Publisher Server, follow these steps:

Step 1 Download the latest available Cisco VT Advantage Deployment Tool from the following web site:

http://www.cisco.com/cgi-bin/tablebuild.pl/cvta

Step 2 Run the DeployMain.exe file to set up the deployment of Cisco VT Advantage.

The DeployMan main window displays.


DeployMan
Use Defaults
Cisco VT Advantage Version:
1.0(0.113)
CVTAInstall.exe Destination
...
C:\CiscoPlugins\Client
AutoUpdate Options
Deploy AutoUpdate
Update URL:
http://CallManager Publisher/CCMPluginsClient
Precertification Options
Deploy Precertification
Abort install if conflict detected
Database URL:
http://CallManager Publisher/BSOD/bsod.xml
Proxy Options
Use HTTP Proxy
Proxy URL:
Proxy Port:
Error Reporting Tool Options
Comma-delimited email/ftp address(es):
attach@cisco.com
OK
Cancel
113338

a. In the DeployMan main window, click **Use Defaults**.

   The default settings assume that the Deployment Tool is running on the Cisco CallManager Publisher Server. If this is not the case, you need to change the path in the CVTAInstall.exe Destination field.

   The Choose Host Name dialog displays. Enter the name (or IP address) of the Cisco CallManager Publisher Server. This value populates the Update URL field for the AutoUpdate feature.

   The following fields are automatically filled in with default values:

   - Cisco VT Advantage Version
   - CVTAInstall.exe Destination
   - Update URL
   - Comma-delimited email/ftp address(es)

b. Under AutoUpdate Options:

   - Make sure that the Update URL field contains the the name (or IP address) of the Cisco CallManager Publisher Server.
   - If you do not want to use AutoUpdate, clear the Deploy AutoUpdate check box.

c. Under Precertification Options:

   Note This option is not enabled for Cisco VT Advantage version 1.0.

d. Under Proxy Options:

   - If your users need to use a proxy server to reach your Cisco CallManager Publisher Server, select the Use HTTP Proxy check box and fill in the Proxy URL and Proxy Port fields with the appropriate values.

e. Under Error Reporting Tool Options:

   – In the Comma-delimited email/ftp address(es) field, enter the email and/or FTP address(es) to which error reports generated by users can be sent. You can enter multiple addresses separated by a comma (,). The default email address is attach@cisco.com—this is the email used by the Cisco Technical Assistance Center (TAC) to pick up files sent by customers.

Step 3 Click **OK**.

The Cisco VT Advantage Installer program is deployed to your Cisco CallManager Publisher Server. Your technicians and users can access the plugins web page by typing this URL in a Web browser window:

http://<*CCM Publisher Server name or IP address*>/CCMUser/downloads.asp

This URL is found on the Services Help screen on the Cisco IP Phone models that support Cisco VT Advantage.

Other Deployment Options

If you do not want to make the Cisco VT Advantage Installer program available on a Cisco CallManager Publisher Server, you can deploy this program on any HTTP 1.1-compliant Web server.

Follow the procedure detailed in the "Procedure" section on page 3-2, and change the following:

- CVTAInstall.exe Destination
- AutoUpdate options
- Error Reporting Tool options

Then notify your technicians and users of the URL where they can download the Cisco VT Advantage Installer program.

Updating Cisco VT Advantage

When you are notified of an updated release of Cisco VT Advantage that you want to deploy to your users, download the latest available Cisco VT Advantage Deployment Tool to your Cisco CallManager Publisher Server from the following web site:

http://www.cisco.com/cgi-bin/tablebuild.pl/cvta

Using AutoUpdate

To automatically update Cisco VT Advantage for users:

- After the updated Deployment Tool has been downloaded, re-run the Deployment Tool. (See the "Using the Cisco VT Advantage Deployment Tool" section on page 3-1.)

  The tool uses the previous field values and automatically deploys the updated application.

Once the update has been deployed, users are automatically notified about an update to Cisco VT Advantage. An AutoUpdate Service runs on the user's local PC and polls the server about every two minutes to check for an update. When an update is detected, a PC on a corporate LAN should receive the update notice within a few minutes. However, depending on the network, there might be a longer interval before PCs receive the update notice. See the "Using the Troubleshooting Tools in Cisco VT Advantage" section on page 4-15 for information about the AutoUpdate Status viewer.

Installing Cisco VT Advantage

This section provides instructions for installing Cisco VT Advantage.

Before You Begin

Verify the following *before* you begin installing Cisco VT Advantage and the Cisco VT Camera:

- Ensure that the Cisco IP Phone 7940G, 7960G, or 7970G is connected to the corporate telephony network. If the Cisco IP Phone is powered on and you can make voice calls, then it is properly connected.
- Ensure that the Cisco IP Phone 7940G, 7960G, or 7970G is video enabled. If the LCD screen on the Cisco IP Phone displays this video icon on the status line, then the phone is video enabled.

Note If you do not see a video icon on the Cisco IP Phone, check the phone load (**Settings > Model Information > App Load ID**). The phone load must be one that supports video.

- Ensure that a standard Ethernet cable is connected from the personal computer's (PC) Ethernet input to the Access Port labelled "10/100 PC" on the back of the Cisco IP Phone. On most PCs, you can verify that this connection is working by the presence of a lit green LED at the point where the Ethernet cable plugs into the PC.
- Ensure that the PC meets the specifications provided in the "Cisco VT Advantage Hardware and Software Requirements" section on page 1-5.

Note Cisco VT Advantage Version 1.0 only supports the Cisco VT Camera.

Installation Sequence

You must follow this sequence when installing Cisco VT Advantage:

1. First, remove the Cisco VT Camera parts from the packaging and set up the camera. See the "Setting Up the Cisco VT Camera" section on page 3-8.
2. Second, install the Cisco VT Advantage application. See the"Installing the Cisco VT Advantage Application" section on page 3-11.

Caution Do not connect the camera to your PC until prompted to do so during the installation of the Cisco VT Advantage software.

Setting Up the Cisco VT Camera

This section provides information about how to set up the Cisco VT Camera.

Procedure

Follow these steps to set up the Cisco VT Camera. Refer to Figure 3-1 when you are setting up the Cisco VT Camera.

Step 1 Remove the camera, privacy shade, and the flexible camera base from the packaging.

Step 2 Mount the camera on the flexible camera base:

a. Insert the protruding black screw on the bottom of the camera into the small opening in the flexible camera base, by aligning the crescent shaped slot on the camera with the crescent shaped tab on the flexible camera base.

b. Snap the camera into place.

The camera will then be firmly connected to the flexible camera base.

Note If the camera is wobbly or not secure, take it out of the base. Make sure that the protruding black screw on the camera is tight. Then re-mount the camera on the base.

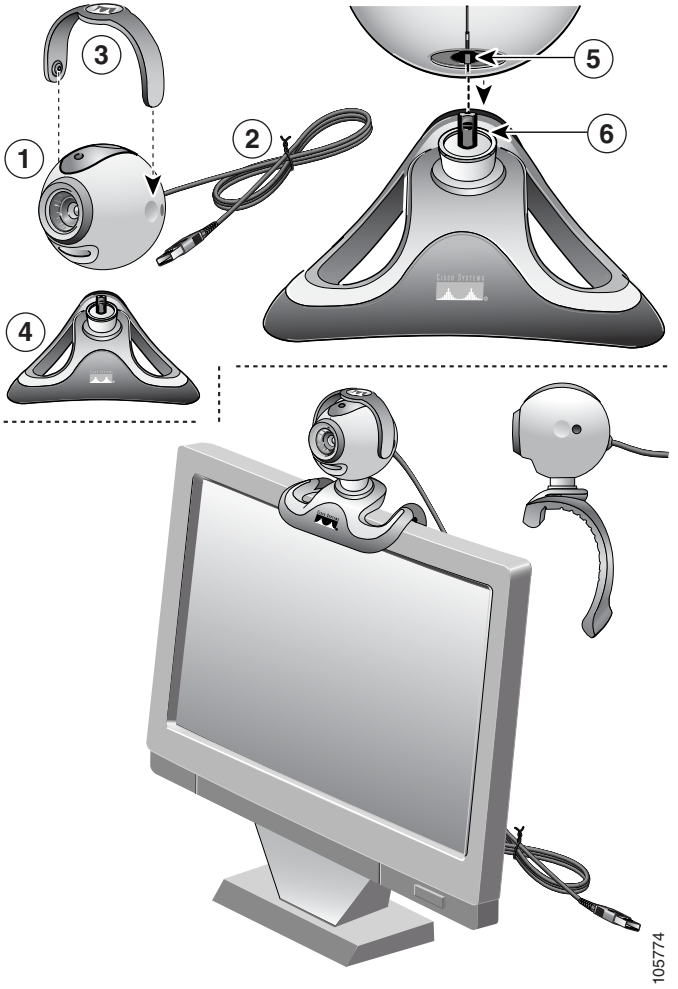
Step 3 Attach the privacy shade to the camera.

Step 4 Position the camera on top of your PC monitor or flat panel screen, adjusting the flexible camera base as necessary.

Note DO NOT CONNECT THE CAMERA TO THE PC.

Step 5 Now go to the "Installing the Cisco VT Advantage Application" section on page 3-11.

Figure 3-1 Cisco USB Camera Components



1	Cisco VT Camera	**4**	Flexible camera base
2	USB cable and connector	**5**	Screw + slot on camera (snaps into the tab on the flat panel clip)
3	Privacy shade (attaches to the camera)	**6**	Tab on the flat panel clip (connects with the slot on the camera)

Installing the Cisco VT Advantage Application

Note You must be logged into Windows with Administrator authority to install Cisco VT Advantage.

Procedure

Step 1 **Close** and **Exit** any open applications.

Step 2 To find the URL to download the Cisco VT Advantage Installer, follow the appropriate steps for your phone model:

On a Cisco IP Phone 7940G or 7960G :

a. Press the **"?"** or **"i" Help** button and then press the **Services** button.

b. Use the **Navigation** button to scroll down to the end of the help text.

Instructions provide the URL for downloading software.

c. Write down the URL displayed and then exit the phone help display.

Note If you do not see a URL displayed, verify that the settings in the Deployment Tool are correct. See the "Using the Cisco VT Advantage Deployment Tool" section on page 3-1.

On a Cisco IP Phone 7970G:

a. Press the **"?" Help** button and then quickly press the **Services** button.

b. After the Services Topics screen displays, press the PC Client Software Plugins menu item on the touchscreen.

Instructions provide the URL for downloading software.

c. Write down the URL displayed and then exit the phone help display.

Note If you do not see a URL displayed, verify that the settings in the Deployment Tool are correct. See the "Using the Cisco VT Advantage Deployment Tool" section on page 3-1.

Step 3 Open your Web browser and type the URL in the address field. Then press **Enter**.

Step 4 On the Cisco CallManager Client Install Plugins page, click the Cisco VT Advantage Installer plugin icon.

Step 5 After the Cisco VT Advantage Installer program starts, follow the instructions presented in the dialog boxes to complete the installation of Cisco VT Advantage.

a. On the Welcome screen, click **Next**.

b. On the License Agreement screen, read the full License Agreement. Then, select **I Accept the terms in the license agreement** and click **Next**.

c. On the Customer Information screen, enter the user information, select the desired option, and then click **Next**.

d. On the Destination Folder screen, accept the default installation folder path, or click **Change** to enter a different installation folder path.

e. On the Ready to Install screen, click **Install**.

- Depending on the setup of your PC, you might see messages for the installation of the Cisco Media Termination Driver and the Cisco VT Camera software.
- Windows 2000: If a Digital Signal Not Found dialog displays, just click **Yes**.
- Windows XP: If a Hardware Installation dialog displays, just click **Continue Anyway**.

f. When prompted to plug in the Cisco VT Camera, remove the protective cap (and instruction label) from the end of the camera USB cable connector, and insert the connector into an available USB port on the PC.

g. On the Shortcut Options screen, review and select the desired options, and then click Next.

h. On the InstallShield Wizard Complete screen, click **Finish**.

Step 6 If prompted to restart the PC, click **Yes** to restart the PC.

For more information about using the Cisco VT Camera, see the "Tips for Setting Up and Using the Cisco VT Camera" section on page 3-13. For more information about using Cisco VT Advantage, refer to the *Cisco VT Advantage User Guide*.

Tips for Setting Up and Using the Cisco VT Camera

The camera is designed for optimal eye contact when placed on top of a PC monitor or flat panel screen. You might want to try out several different positions.

Tips for Positioning the Cisco VT Camera

- Place the camera in the middle of the PC monitor or flat panel screen, or on a table top, for optimal eye contact and lift up the privacy shade.
- Rotate the focus ring (the black ring around the camera lens) to get a sharp image.
- View live video to guide your focus adjustments.
- Pivot the camera up or down, left or right, for the best position.

Note If the camera is wobbly or not secure, take it out of the base. Make sure that the protruding black screw on the bottom of the camera is tight. Then re-mount the camera on the base.

Tips for Adjusting Cisco VT Camera Settings

You can adjust various settings for the Cisco VT Camera such as, brightness and contrast. For more information, refer to the *Cisco VT Advantage User Guide*, section “Adjusting Cisco VT Advantage Settings”.

Note If the Cisco VT Camera is not connected to the PC, Cisco VT Advantage will run in Receive-Only mode. For more information, refer to the *Cisco VT Advantage User Guide*, which is available from the Cisco VT Advantage link online: http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm

CHAPTER 4

Troubleshooting Cisco VT Advantage

This chapter provides information for troubleshooting Cisco VT Advantage and includes the following topics:

- General Troubleshooting
- Checking the Connections and the Video Signal Quality
- Using the Troubleshooting Tools in Cisco VT Advantage

General Troubleshooting

This section provides information for troubleshooting possible problems with Cisco VT Advantage, and includes the following topics:

General Problems and Solutions

This section describes some general problems that you might encounter with Cisco VT Advantage, and provides some suggested solutions. It includes these topics:

Video Problems

Table 4-1 Video Problems

Symptom	Solution
No video on multi-party conferences	In Cisco CallManager, check that the Media Resource Groups and Media Resource Group Lists include an MCU. Make sure that a video conference bridge has been allocated and not an audio conference bridge. Reference these guides for additional information: • *Cisco CallManager Administration Guide*, Media Resource Group List Configuration Settings section • *Cisco CallManager System Guide*, Media Resources section
Poor audio/video lip sync	Can be due to, but not limited to, the following conditions: • Quality of Service issues. Verify that Quality of Service is properly configured throughout the network (Refer to the Quality of Service design guide available at this URL: http://www.cisco.com/warp/public/779/largeent/it/ese/srnd.html) • High CPU utilization on the PC. A user might need to close some applications during a video call. • Network congestion

Symptom	Solution
Regions	Regions define what audio codec and video bandwidth will be used by Cisco CallManager-controlled devices on a per call basis. The video bandwidth setting can be set to None, or to some speed (in kbps) that is divisible by 64 (that is, 128kbps, 384kbps, 768kbps). See the Configuring Cisco CallManager for Cisco VT Advantage, page 2-5.
Locations	Locations define the aggregate amount of audio and video bandwidth allowed by Cisco CallManager per location for calls going out of that location. The video bandwidth setting can be set to None, Unlimited, or to some limit (in kbps) that is divisible by 64 (that is, 128kbps, 384kbps, 768kbps). See the Configuring Cisco CallManager for Cisco VT Advantage, page 2-5.

Symptom	Solution
No video in the video windows	• Make sure that Cisco VT Advantage is running. Look for the Cisco VT Advantage icon in the system tray. • Open the Cisco VT Advantage main window: – Check the connectivity status of the phone and camera, as well as the video signal quality. (See the "Checking the Connections and the Video Signal Quality" section on page 4-13.) – Check that the video is not muted. – Perform a Video Check by selecting **Start Video Check**. The Local and Remote Video Windows should display, and a green light should be lit on the camera (on top, above the camera lens). When finished, select **Stop Video Check**. • Check that the Cisco VT Camera USB cable is properly connected to the USB port on the PC. • Check that the PC is directly connected to the Access port labelled "10/100 PC" on the back of the Cisco IP Phone. • Check to see if the Cisco IP Phone is video enabled. Look for the video icon on the LCD screen of the Cisco IP Phone. • Make sure that Regions have been configured correctly for video. (See the "Configuring Cisco CallManager for Cisco VT Advantage" section on page 2-5.) • Make sure that Locations have sufficient video bandwidth. (See the "Configuring Cisco CallManager for Cisco VT Advantage" section on page 2-5.) • Make sure that a Media Termination Point (MTP) or Transcoder has not been allocated for video calls, as they do not support video capabilities.
"Video bandwidth unavailable" displays on the Cisco IP Phone LCD screen	There is not enough bandwidth available to make a video call. See the "Configuring Cisco CallManager for Cisco VT Advantage" section on page 2-5 and refer to the *Cisco CallManager Administration Guide*, Location Configuration section. **Note** In this situation, the Cisco IP Phone falls back to an audio-only call.

Symptom	Solution
Low frame rate; signal quality bars show a low signal rate	This can be due to low light conditions. The Cisco VT Camera is normally set for auto exposure. When light conditions are low, it has to expose each frame for a longer period of time, resulting in a lower frame rate. To test this, follow these steps: 1. Open the Cisco VT Advantage main window and click **Start Video Test**. Both the Local and Remote video windows display. 2. Next, double right-click the signal quality bars. The Diagnostics window displays. The Video Signal section on the left side of the window contains a few fields showing the current number of frames per second (fps) being processed. At this point, all the data is coming from the camera, so if you are receiving less than 15 frames per second, it is most likely because of the lighting conditions. 3. Try to increase the lighting and see if that makes a difference in the number of frames per second being received and transmitted. 4. When finished, click **Stop Video Test**. **Note** You might also try stopping and then re-starting Cisco VT Advantage.
This icon appears in the system tray on the PC 	• There might be a problem with the video connection. See the "Checking the Connections and the Video Signal Quality" section on page 4-13. • Low frame rate (see above)
Blurry or grainy image in Local or Remote Video window	• Adjust the focus ring (the black ring around the camera lens) to get a sharper image.

Audio Problems

Table 4-2 Audio Problems

Symptom	Solution
No audio	• Check that the audio is not muted on the Cisco IP Phone.

Other Problems

Table 4-3 Other Problems

Symptom	Solution
No icon displays on the Cisco IP Phone LCD screen Cisco VT Advantage is not associating with the Cisco IP Phone.	• Verify the version of Cisco IP Phone firmware; the firmware version must support video. • Verify that the Cisco IP Phone model is supported (7940G, 7960G, 7970G are the supported models). • Verify that these parameters are properly set in Cisco CallManager for the phones: – Video Capabilities is enabled – PC Port is enabled See the "Configuring Cisco IP Phones for Cisco VT Advantage" section on page 2-8. • Verify that you can ping between the PC and the Cisco IP Phone.

Bandwidth capacity	In most cases when working over a Local Area Network (LAN), users will not need to adjust the bandwidth setting. If you have mobile workers or telecommuters, they may need to cap their bandwidth settings at a maximum rate. The Bandwidth Override dialog (Cisco VT Advantage main window, **Settings > Advanced >Bandwidth Override**) lets a user cap the bandwidth depending on the Internet connection uplink speed. Users can contact their respective Internet service providers, or if they are advanced users, they can use the DSL Reports internet site (http://www.dslreports.com/stest) and follow the instructions for obtaining upload and download speeds. Selecting a bandwidth is usually a factor of the uplink speed, which can range from a low of 128 Kbps up to perhaps 768 Kbps. After the uplink speed is determined, you need to leave some headroom between the selected bandwidth setting and the capacity of the channel. (See the "Configuring Cisco CallManager for Cisco VT Advantage" section on page 2-5 for information about Location and Region settings.) **Note** If users are limited to a low rate, for example 128 Kbps, they might not be able to participate in video conferences.

Disconnected calls on H.323 endpoints	When an H.323 endpoint is placed on hold by a Cisco IP Phone, Cisco CallManager utilizes a procedure referred to as the Empty Capabilities Set (ECS), sometimes also referred to as the Null Capabilities Set or TCS=0. H.323 endpoints must support ECS in order to respond properly when placed on hold. If they do not, the call will be disconnected when it is placed on hold, because the H.323 endpoint will not understand the ECS message from Cisco CallManager and will therefore disconnect the call. Transfer, conference, and park operations also exhibit this behavior because there is an implicit hold operation that takes place in these scenarios as well (for example, when a call is transferred, the call is first placed on hold by Cisco CallManager prior to completing the transfer). • Verify that the H.323 endpoint you are using supports ECS. **Note** Some ECS implementations do not allow audio calls to become video calls after a transfer, conference, or park operation. • If an endpoint does not support ECS: – A Media Termination Point (MTP) can be added to provide supplementary support so that hold, transfer, conference, and park are available, ensuring that calls are not dropped. In this case, video is not supported for these calls. – To preserve video over the features (hold, transfer, conference, and park), configure the H.323 endpoint to require an MTP. But, make sure that the Media Resource Group List (MRGL) and the default MRGL do not include MTPs or Transcoders. Then hold, transfer, conference, and park will be disabled when calling this device, and the Cisco CallManager will understand that the H.323 endpoint does not support these features

PC CPU utilization at 100 %	Minimum CPU for Cisco VT Advantage is 1.0 GHz or higher Pentium III or compatible processor; 1.4 GHz or higher Pentium III or compatible processor is recommended. (See the "Cisco VT Advantage Hardware and Software Requirements" section on page 1-5.) • On a lower CPU, note the following: Cisco VT Advantage uses a frame-shedding algorithm, which means it will drop frames and allow the PC to continue running while video calls are in progress. – Either minimize the local video window, or reduce it to postage stamp size. This will help quite a bit – as the CPU will not be as busy rendering the image in the local video window. – Keep the remote video window at 320 x 240. (In the current release, more CPU power is used if you increase the window size.) • Close any applications that are not being used while on a video call in order to free up some PC CPU resources. • Consider using a 4.5Mbps video stream for offloading the PC CPU utilization. This bandwidth should only be considered for calls made within switched LAN environments (for Locations/Regions-based configurations).
Camera is wobbly	• If the camera is wobbly or not secure, take it out of the base. Make sure that the protruding black screw on the bottom of the camera is tight. Then re-mount the camera on the base.

AutoUpdate does not work	When Cisco VT Advantage is deployed with the auto-update option, the Cisco VT Advantage installation program creates an AutoUpdate service. This service runs in the background and then notifies the user when an update is available. To verify that the AutoUpdate service is properly installed on the PC, follow these steps: 1. From the Windows desktop, right-click on the My Computer icon and then select **Manage**. 2. In the Computer Management window, click the **+** (plus) sign next to Services and Applications to expand the view. Then click **Services**. 3. In the right pane of the window, look for a service called AutoUpdate: Cisco Apps. The Status should be set to Started, and the Startup Type should be set to Automatic. If this is not the case, or the service is missing, the PC is not properly configured for AutoUpdate. Perform the following: – Verify that the Cisco VT Advantage application was installed on the PC using the Deployment Tool (see the "Using the Cisco VT Advantage Deployment Tool" section on page 3-1.) – If necessary, re-install the Cisco VT Advantage application on the PC. 4. In the Computer Management window, click the **+** (plus) sign next to Event Viewer to expand the view. Then click **Application**. The event log for applications is displayed in the right pane of the window. 5. Click the **Source** column header. This sorts the listing in alphabetical order. You can then quickly locate the AutoUpdate messages for Cisco VT Advantage, which are listed as AutoUpdate-CVTAInstaller. 6. Double-click any of the lines in the event log to view the actual detail of the messages, which includes the following information: – Service starting and stopping – Download of the manifest file from the server – Download of updates from the server – Notification of the application

Using Cisco CallManager Serviceability Troubleshooting Traces

You can use the Serviceability TroubleShooting Trace Setting web pages that are available on Cisco CallManager. From the Cisco CallManager Administration application, you can access the Serviceability TroubleShooting Trace Setting pages by going to **Application > Cisco CallManager Serviceability > Trace > TroubleShooting Trace Setting**.

For more information about setting up and using Cisco CallManager Serviceability Traces, refer to the following guides:

- *Cisco CallManager Serviceability System Guide (4.0(1))*, "Trace" section.
- *Cisco CallManager Serviceability Administration Guide (4.0(1))*, "Troubleshooting Trace Setting Configuration" section.

These guides are available at this URL:
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

Using the Cisco CallManager Real-Time Monitoring Tool (RTMT)

You can use the Cisco CallManager Real-Time Monitoring Tool to monitor real-time information (video active calls, video completed calls, and so on).

For more information about setting up and using this tool, refer to the following guides:

- *Cisco CallManager Serviceability System Guide (4.0(1))*, "Real-Time Monitoring Tool" section.
- *Cisco CallManager Serviceability Administration Guide (4.0(1))*, "Real-Time Monitoring Configuration" section.

These guides are available at this URL:
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

Using Cisco CallManager CDR Analysis and Reporting (CAR)

You can use CAR to view Call Details Records and generate reports on video conference bridge information.

For more information about setting up and using this tool, refer to the following guides:

- *Cisco CallManager Serviceability System Guide (4.0(1))*, "CDR Analysis and Reporting" section.
- *Cisco CallManager Serviceability Administration Guide (4.0(1))*.

These guides are available at this URL:
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

Checking the Connections and the Video Signal Quality

From the Cisco VT Advantage main window, you can check the connections from the PC to the Cisco IP Phone and the Cisco VT Camera, as well as the video signal quality.

If you want to...	Then...
Check the connection indicators  	Open the Cisco VT Advantage main window. If the connections are working, in the main window you see a PC with green connecting lines to a phone and a camera. If a connection to the Cisco IP Phone and/or to the Cisco VT Camera is not working, you see a red "X" through the connecting line. • Check that the Ethernet cable from the PC is connected directly to the port labelled "10/100PC" on the back of the Cisco IP Phone. • Make sure that the Cisco IP Phone is enabled for video. (See the "Before You Begin" section on page 3-7.) **Note** After the Cisco VT Advantage application is started, you need to wait about 1 minute to 1 1/2 minutes for the application to be active and communicating with Cisco CallManger before you place a call.

If you want to...	Then...
Check the video signal quality indicator	Open the Cisco VT Advantage main window. In the main window you see two video signal quality indicators, one for local video and one for remote video. (You can think of these video signal quality indicators as similar to the signal strength indicator on a cell phone.) The strongest possible signal quality is shown when the bar is solid green. The poorest signal quality is shown when the bar is solid grey. Video signal quality is affected by both the state of the network and the state of the PC, and fluctuates over time. If the indicator stays in the mostly green range, you can expect higher quality video. If the indicator is mostly grey, you will notice poorer video quality. **Note** Make sure that the Cisco VT Camera is being used in a well-lit space, as low light conditions might affect the video frame rate on the camera. See the "Using the Troubleshooting Tools in Cisco VT Advantage" section on page 4-15 for more troubleshooting information.

Using the Troubleshooting Tools in Cisco VT Advantage

This section describes some tools in Cisco VT Advantage that can help you to troubleshoot video call problems. These include:

Diagnostics Tool

The Diagnostics Tool provides some technical details about the current state of the Cisco VT Advantage application that is running on the PC.

To use the Diagnotics Tool, which is hidden:

- Open the Cisco VT Advantage main window and double right-click the video signal quality bars. A Diagnostics dialog displays.

When troubleshooting some Cisco VT Advantage problems with the assistance of the Cisco Technical Assistance Center (TAC), TAC representatives might ask you to provide them with the information displayed in the Diagnostics dialog.

AutoUpdate Status Viewer

The AutoUpdate Status viewer provides information about AutoUpdate on a user's PC and can be used to monitor the status of autoupdates.

To use the AutoUpdate Status viewer:

- Open the Cisco VT Advantage main window and double right-click the video signal quality bars. In the Diagnostics dialog, click **Update Status**. An AutoUpdate Status viewer dialog displays.

When troubleshooting some Cisco VT Advantage problems with the assistance of the Cisco Technical Assistance Center (TAC), TAC representatives might ask you to provide them with the information displayed in the AutoUpdate Status viewer dialog.

CAST Viewer

The CAST viewer provides some technical details about the current call that can help diagnose video call problems. You can bring up the CAST viewer at any time, and it will show you a trace of the CAST messages that were sent during a call. You can also save the contents of the message buffer to a file for later analysis.

To use the CAST viewer:

- Open the Cisco VT Advantage main window and double right-click the video signal quality bars. In the Diagnostics dialog, click **CAST**. A CAST viewer dialog displays.

When troubleshooting some Cisco VT Advantage problems with the assistance of the Cisco Technical Assistance Center (TAC), TAC representatives might ask you to provide them with the information displayed in the CAST viewer dialog.

CDP Viewer

The CDP viewer provides some technical details about the current state of a call that can help to diagnose connection problems between the PC and the Cisco IP Phone. CDP is the protocol that the PC and the Cisco IP Phone use to communicate with each other. You want to see that the PC is sending out CDP packets on every wired Network Interface Card (NIC), and is receiving CDP packets from the Cisco IP Phone attached to one of those NICs. When there are problems in either of these two areas, Cisco VT Advantage might be having trouble communicating with the Cisco IP Phone.

To use the CDP viewer:

- Open the Cisco VT Advantage main window and double right-click the video signal quality bars. In the Diagnostics dialog, click **CDP**. A CDP viewer dialog displays.

When troubleshooting some Cisco VT Advantage problems with the assistance of the Cisco Technical Assistance Center (TAC), TAC representatives might ask you to provide them with the information displayed in the CDP viewer dialog.

Trace Tool

The Trace Tool in Cisco VT Advantage provides some trace reporting options.

To use the Trace Tool:

- Open the Cisco VT Advantage main window and select **Tools > Trace**.

The Trace Control window includes the following options.

Option	Description
Reporting	The default setting is on. You can toggle reporting on or off. You can also set the type and level of information to be reported by selecting one of the following options: Error, Special, Entry - Exit, Detailed.
Logging	The default setting is on. You can toggle reporting on or off. You can also set the type and level of information to be logged by selecting one of the following options: Error, Special, Entry - Exit, Detailed.

When troubleshooting some Cisco VT Advantage problems with the assistance of the Cisco Technical Assistance Center (TAC), TAC representatives might ask you to adjust these options and then provide them with the trace information you obtain through the reporting and logging options. The log files are stored in the ...\Program Files\Cisco Systems\Cisco VT Advantage\Logs folder.

Error Reporting Tool

The Cisco VT Advantage Error Reporting Tool auto-collects different types of information from a user's PC, depending on the problem encountered. You can use this information to troubleshoot problems.

To generate a report, users select **Start > Programs > Cisco VT Advantage > Cisco VT Advantage Error Reporting Tool**. A dialog box displays with choices for reporting application, installation, and video problems. A user selects the appropriate choice and clicks **Collect**. A user can email the report to you or another support contact. The generated report is saved to a folder on the user's Window's desktop.

Advise users to generate an error report whenever they run into problems using Cisco VT Advantage. When troubleshooting some Cisco VT Advantage problems with the assistance of the Cisco Technical Assistance Center (TAC), TAC representatives might ask you to provide one or more of these reports.

CHAPTER 5

Providing Information to End Users

If you are a system administrator, you are likely the primary source of information for Cisco VT Advantage users in your network or company. It is important to provide current and thorough information to end users.

Cisco recommends that you create a web page on your internal support site that provides end users with important information about Cisco VT Advantage.

Consider including the following types of information on this site:

- How Users Install Cisco VT Advantage
- How Users Obtain Support for Cisco VT Advantage
- How Users Provide Troubleshooting Information
- How Users Get Copies of Cisco VT Advantage Manuals

How Users Install Cisco VT Advantage

If users need to install Cisco VT Advantage on their own PCs, then they must receive instructions from you or your network support team. Be sure to provide the following information:

- for users: a copy of the *Cisco VT Advantage Quick Start Guide* provided with the Cisco VT Camera.
- for your network support team: the instructions in this guide in the "Installing Cisco VT Advantage" section on page 3-7.

How Users Obtain Support for Cisco VT Advantage

To successfully use some of features of Cisco VT Advantage, users must receive information from you or your network support team or be able to contact you for assistance.

How Users Provide Troubleshooting Information

To assist you with troubleshooting user problems with Cisco VT Advantage, users can provide you with the Cisco VT Advantage Log files and the data generated from the Cisco VT Advantage Error Reporting Tool. Advise users on the best way to provide you with this information.

How Users Get Copies of Cisco VT Advantage Manuals

You should provide end users with access to user documentation for Cisco VT Advantage and the Cisco IP Phones. Cisco VT Advantage end-user guides provide information about setting up and using the Cisco VT Camera and the Cisco VT Advantage application. Cisco IP Phone user guides include detailed user instructions for key phone features.

Cisco VT Advantage is supported on the Cisco IP Phone 7940G, 7960G, and 7970G models. To assist users in finding the appropriate documentation on the Cisco website, we recommend that you provide links to the current documentation. If you do not want to or cannot send users to the Cisco website, Cisco suggests that you download the PDF files and provide them to end users on your website.

Documentation is also available on the CD-ROM titled *Cisco CallManager and IP Phones and Services Documentation*, which is distributed with Cisco CallManager releases.

For a list of available documentation for Cisco VT Advantage and Cisco IP Phones, go to this URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm

For a list of available documentation for Cisco CallManager, go to this URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

For more information about viewing or ordering documentation, see the "Obtaining Documentation" section on page vii.

APPENDIX A

Technical Specifications

The followig section describe the technical specifications for the Cisco VT Camera.

Physical and Operating Environment Specifications

Table A-1 shows the physical and operating environment specifications for the Cisco VT Camera.

Table A-1

Specification	Value or Range
Operating temperature and relative humidity	0 to 40°C (32° to 104°F) 10% to 90% RH (non-condensing)
Storage temperature and relative humidity	-10 to 60°C (14° to 140°F) 10% to 90% RH (non-condensing)
Weight	< 200g, including the camera's flexible base
USB Cable and connector	• Shielded • UL recognized • 3.9mm diameter • 9 ft. long

APPENDIX B

Regulatory Compliance and Safety Information

This section describes the regulatory compliance and safety information for the Cisco VT Camera.

Regulatory Compliance

The Cisco VT Camera meets the following regulatory compliance and safety standards:

Specification	Description
Regulatory Compliance	Products shall bear CE Marking indicating compliance with the 89/366/EEC and 73/23/EEC directives, which includes the following safety and EMC standards.
Safety	UL 60950 CAN/CSA-C22.2 No. 60950 EN 60950 IEC 60950

Specification	Description
EMC	FCC Part 15 (CFR 47) Class B
	ICES-003 Class B
	EN55022 Class B
	CISPR22 Class B
	AS/NZS 3548 Class B
	VCCI Class B
	CNS 13438
	EN55024
	EN50082-1
	EN61000-6-1
	EN6000-3-2
	EN6000-3-3

FCC Class B Compliance

This equipment has been tested and found to comply with the limits for a Class B Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generated, uses and can radiate radio frequency and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

[cfr reference 15.105]

Canada Class B Notice

This Class 'B' digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe 'B' est conforme à la norme NMB-003 du Canada.

Korea Class B Notice

Warning **This is a Class B Device and is registered for EMC requirements for residential use. This device can be used not only in residential areas but in all other areas.**

Declaration of Conformity for the European Community, Switzerland, Norway, Iceland, Romania, and Liechtenstein

With regard to Directives 73/23/EEC and 89/336/EEC, as amended by Directive 93/68/EEC

English: **This equipment is in compliance with the essential requirements and other provisions of Directives 73/23/EEC and 89/336/EEC as amended by Directive 93/68/EEC.**

Dansk: **Dette udstyr er i overensstemmelse med de ufravigelige hensyn og andre bestemmelser i direktiv 73/23/EEC og 89/336/EEC som ændred i direktiv 93/68/EEC.**

Deutsch: **Dieses Gerät entspricht den wesentlichen Anforderungen und weiteren Bestimmungen der Richtlinien 73/23/EWG und 89/336/EWG mit der Ergänzung durch Richtlinie 93/68/EWG.**

Español: **Este equipo cumple con los requisitos esenciales y otras disposiciones de las Directrices 73/23/EEC y 89/336/EEC de acuerdo a las modificaciones de la Directriz 93/68/EEC.**

Français: **Cet appareil remplit les principales conditions requises et autres dispositions des Directives 73/23/EEC et 89/336/EEC, modifiées par la Directive 93/68/EEC.**

Íslenska: **Þessir búnaður samrýmist lögboðnum kröfum og öðrum ákvæðum tilskipana 73/23/EBE og 89/336/EBE, með breytingum skv. tilskipun 93/68/EBE.**

Italiano: **Questa apparecchiatura è conforme ai requisiti essenziali e altre disposizioni delle Direttive 73/23/EEC e 89/336/EEC modificate con la Direttiva 93/68/EEC.**

Nederlands: **Deze apparatuur voldoet aan de belangrijkste eisen en andere voorzieningen van richtlijnen 73/23/EEC en 89/336/EEC zoals gewijzigd door richtlijn 93/68/EEC.**

Norsk: **Dette utstyret samsvarer med de vesentligste kravene og andre regler i direktivene 73/23/EEC og 89/336/EEC samt i tilleggsdirektiv 93/68/EEC.**

Português: **Este equipamento satisfaz os requisitos essenciais e outras provisões das Directivas 73/23/EEC e 89/336/EEC, conforme amendados pela Directiva 93/68/EEC.**

Cisco VT Camera

Suomalainen: **Tämä laite on direktiivien 73/23/ETY ja 89/336/ETY (kuten muutettu direktiivissä 93/68/ETY) keskeisten vaatimusten ja määräysten mukainen.**

Svenska: **Denna utrustning uppfyller de väsentliga kraven och andra villkor i direktiven 73/23/EEC och 89/336/EEC enligt ändringarna i direktiv 93/68/EEC.**

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