

VT Advantage: Troubleshoot IP Phone Connection Issues

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Introduction

Prerequisites

- Requirements
- Components Used
- Conventions

Possible Causes of Remote Video Loss

- Does Your PC Ethernet Cable Connect to the Phone?
- Is Your Phone Reachable when TCP/IP is Used? Is there a Firewall in Place?
- Is Your Phone Video Enabled?
- Is Your Cisco CallManager Version 4.0(1)SR1 or Later?
- Does Your IP Phone Reject the Sent Packets from VT Advantage?
- The Remote End is Video Enabled, but Maybe You Do Not Have a Compatible Set of Codecs?
- The Remote End is Video Enabled, but Maybe You Do Not Have Conference Resources Available?
- Still Having Problems?

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Related Information

Introduction

This document explains how to troubleshoot these issues:

- You have a yellow question mark on your system tray icon.
- The graphic in the Cisco Video Telephony (VT) Advantage main window shows a red X on the connection between the PC and the phone.
- You have local video.

This document provides information on potential problems between the Cisco IP phone and Cisco CallManager.

Prerequisites

Requirements

Ensure that you meet these requirements:

- Cisco CallManager Release 4.0(1) Service Release (SR) 1a or later
- Cisco IP Phone 7940G that runs firmware 6.0.2(1) or later
- Cisco IP Phone 7960G that runs firmware 6.0.2(1) or later
- Cisco IP Phone 7970G that runs firmware TERM70.6-0-1-0.sbn01 or later
- PC with 1GHZ or higher Pentium III, or a compatible processor
- Microsoft Windows 2000 Professional (Service Pack [SP]3 or later) or Windows XP Professional (SP1 or later)
- 256 MB RAM minimum

- 40 MB free disk space
- Video capable graphics card at 800x600x16 bit or later
- One free Universal Serial Bus (USB) 1.1 or 2.0 connection
- One free 10/100 Base-T Ethernet interface
- 256 kbps minimum bandwidth connectivity

Note:

- Cisco Unified Video Advantage, Release 2.1 supports 32-bit versions of Windows Vista with 32-bit (x86) processors.
- For Cisco Unified Video Advantage that operates with Cisco IP Communicator or with a Cisco Unified IP Phone, Cisco Unified Communications Manager Version 4.1(3), Service Release 2 or later is required.

Components Used

The information in this document is based on Cisco VT Advantage installed on Windows 2000 or Window XP.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

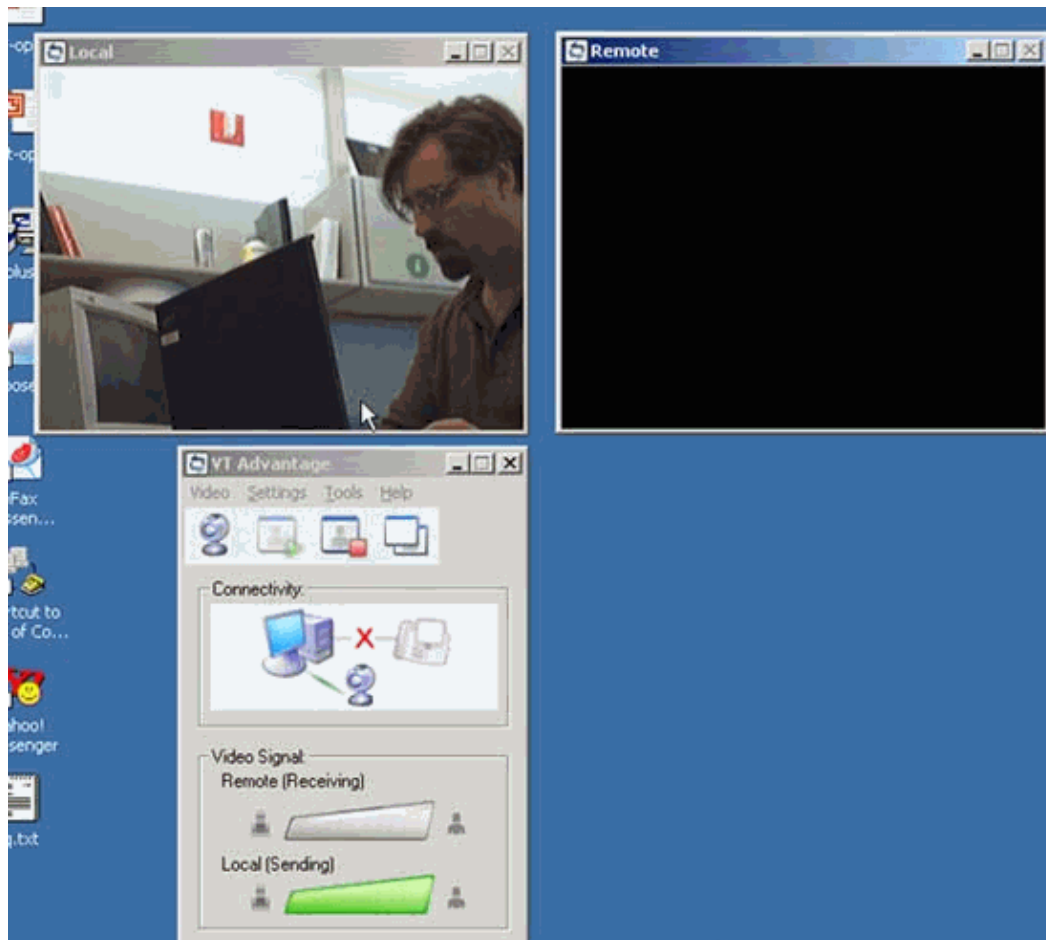
Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Possible Causes of Remote Video Loss

This section provides possible causes of remote video loss and explains how to troubleshoot these issues.

In this picture, the local video works correctly, but the remote is black with a red X through the connectivity diagram in the application.



Does Your PC Ethernet Cable Connect to the Phone?

VT Advantage requires that your PC receives Ethernet feed directly from the switched output port on the back of your phone the one labeled **10/100 PC**. Trace the Ethernet cable by hand to ensure that your PC is properly connected to the back of the IP phone.

Is Your Phone Reachable when TCP/IP is Used? Is there a Firewall in Place?

Typically, phones are configured on a separate VLAN from computers. If these two VLANs have a firewall between them, the phone can be prevented from talking to the PC. The CAST protocol is used to operate between VT Advantage and the IP phone. The PC must be able to reach the IP phone over TCP/IP. Try to reach your phone with a browser in order to determine if this is case. Enter **http://xxx.yyy.zzz**, where the cryptic part of the URL is the IP address of your phone. Unless your network administrator has disabled browsing to the phone, you should browse to the web page of the phone.

The network administrator must allow for the CAST protocol by configuring the access lists and firewalls to allow for the PC to send CAST messages to the IP phone over TCP port number 4224. The PC initiates the TCP connection on TCP port 4224 and the IP phone sends acknowledgement messages back to the PC on the same port number. Therefore, bidirectional communication on this port number is required.

Note: The video camera cannot make a connection with the IP phone if the PC to which the camera is connected uses dual NICs with dual IP address assignment, or if two IP addresses in different subnets are binded to a single NIC card.

Is Your Phone Video Enabled?

VT Advantage only works with Cisco 7940, 7960, or 7970 IP Phones that have both a video-capable firmware load and video enabled by Cisco CallManager. You can verify this by the presence of a camera icon in the lower right corner of your IP phone screen. If there is no camera icon, you will not receive video.



If your phone does not have the video camera icon, ask your network administrator to make sure you have the proper phone load and that video enabled is checked on the device configuration page for your IP phone on the Cisco CallManager Administration page. Complete these steps in order to confirm the phone load:

- Complete these steps for Cisco 7970 IP Phones:

1. Press **Settings**.
2. Press **5** for Model Information.
3. Option 3 has the specific load file.

- Complete these steps for Cisco 7940/7960 IP Phones:

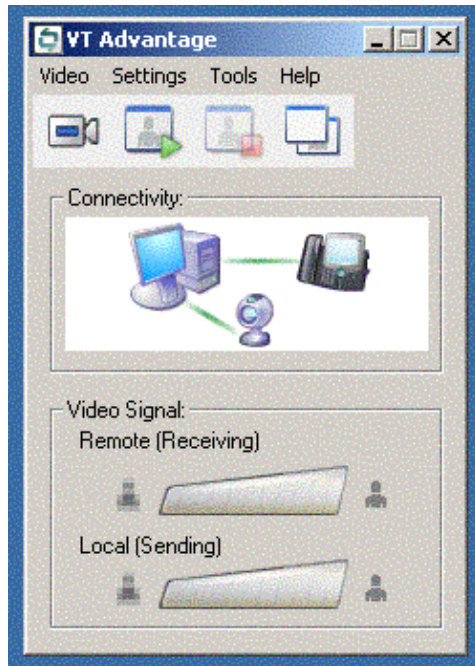
1. Press **Settings**.
2. Press **5** for status.
3. Press **3** for Firmware Versions.
4. Line 1 is the Application Load. This is the load ID you need to verify. It should be at least P00306000300.

Is Your Cisco CallManager Version 4.0(1)SR1 or Later?

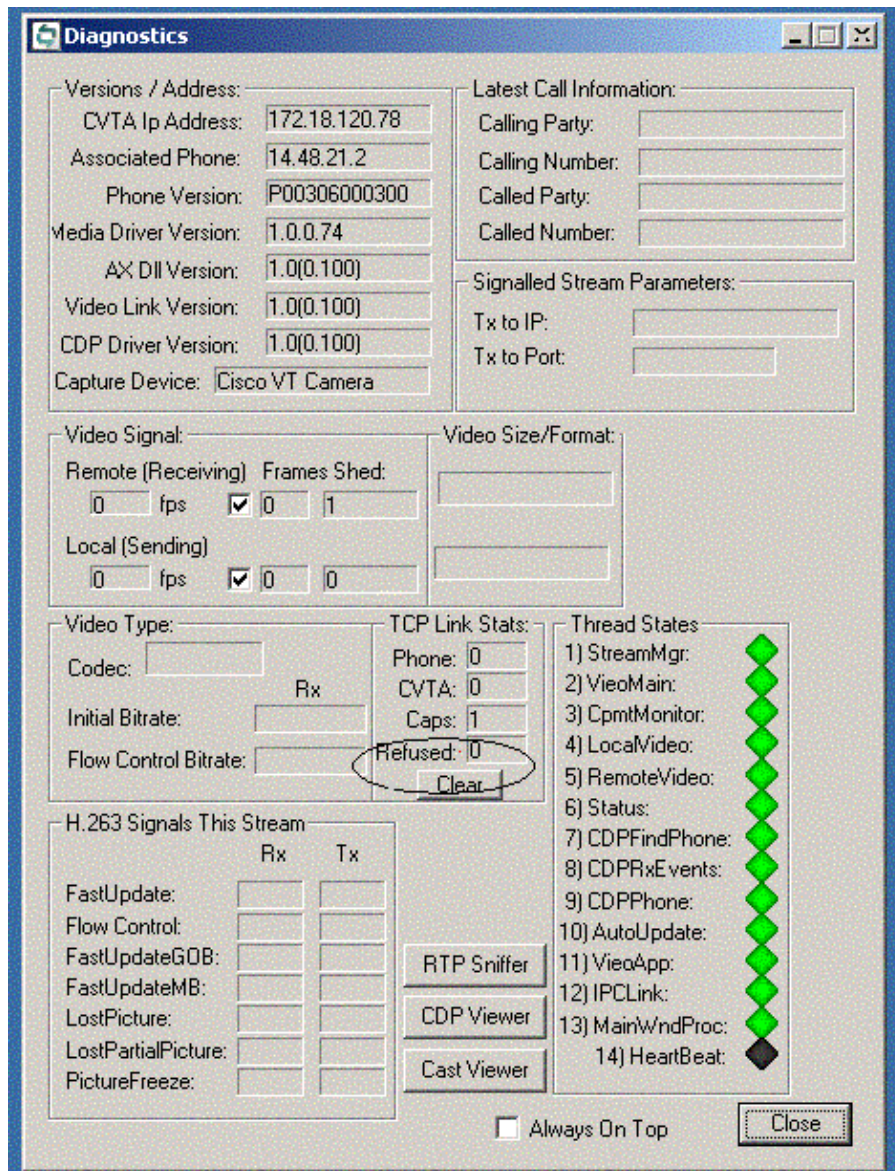
VT Advantage is only supported by this and later versions of Cisco CallManager. Unfortunately, there are no patches available for earlier versions of Cisco CallManager.

Does Your IP Phone Reject the Sent Packets from VT Advantage?

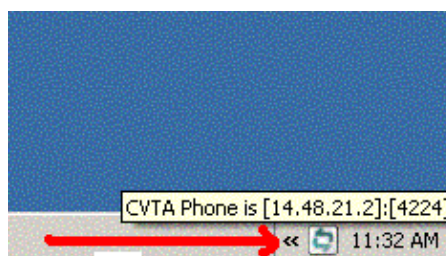
Right-click twice on either of the quality bars in the main window in order to bring up the VT Advantage diagnostic window.



There is a section in the middle of the window labeled TCP Link Stats.



If the Refused field has a number greater than 1 or 2, and particularly if it continues to increment, your phone rejects the sent packets of VT Advantage. Sometimes cycling power on the phone corrects this problem, especially if everything is configured correctly and has worked in the past. Highlight the **Cisco VT Advantage** icon on the bottom right tool tray in order to verify that VT Advantage recognizes the phone.



The Remote End is Video Enabled, but Maybe You Do Not Have a Compatible Set of Codecs?

VT Advantage uses either of these compression formats (codecs) in order to transmit and receive video. The bit rate of the call depends on the codec that is used.

- International Telecommunications Union (ITU) H.263: 128 kbps to 2 Mbps.
- Wideband codec: 7 Mbps.

The codec and bit rate that is used for the call is controlled through the use of Regions in Cisco CallManager Administration. VT Advantage does not present the user with an option to choose the codec or the bit rate of the call. It is completely controlled by Cisco CallManager. Cisco CallManager negotiates a common codec and speed between the endpoints on a call-by-call basis, and instructs the endpoints to open video channels.

The speed at which a VT Advantage client can encode or decode video is also dependent on the speed of the CPU and the amount of available memory.

The Remote End is Video Enabled, but Maybe You Do Not Have Conference Resources Available?

You need to configure a Media Control Unit (MCU) in order to video conference three or more video calls.

Next, the administrator can define what MCU is used to host multiparty conferences when the user presses the **Conf** softkey on their IP phone. This is done by configuring Media Resource Groups (MRGs)/Media Resource Group Lists (MRGLs) in Cisco CallManager Administration.

The MCU is first added to a MRG. The MRG is then added to a MRGL, and then the MRGL is assigned to the endpoint. When the user presses the **Conf** softkey, Cisco CallManager looks for an available MCU resource within that IP phone MRGL. Screen shots are not provided because this is a multi-step configuration process.

Note: Cisco CallManager always uses the first MCU resource found in the phone MRGL. If an audio-only conference bridge is placed at the top of the list, Cisco CallManager always uses that conference resource first, even if the call requires video. Therefore, the administrator must configure the IP/VC MCU as the first conference resource in the MRG, and make sure that the MRG contains the MCU listed first in the MRGL.

Still Having Problems?

If you still have problems, you need to further troubleshoot the issue. Refer to Understand Media Resource Groups and Group Lists for more information.

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Voice & Video: IP Telephony
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Voice & Video: Unified Communications
Voice & Video: IP Phone Services for Developers
Voice & Video: General

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- **Voice Technology Support**
 - **Voice and Unified Communications Product Support**
 - **Recommended Reading: Troubleshooting Cisco IP Telephony**
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