Avaya CallPilot® Troubleshooting Reference Guide

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Avaya provides a telephone number for you to use to report problems or to ask questions about your Product. The support telephone number is 1-800-242-2121 in the United States. For additional support telephone numbers, see the Avaya Web site: http://support.avaya.com.

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Chapter 1: New in this release

The following sections detail what's new in Avaya CallPilot® Troubleshooting Reference Guide for Service Update 9 of Release 5.0.

Navigation

Features on page 7

Features

Service Update 9 of the CallPilot 5.0 release includes the addition of the Flight Recorder feature. The following sections have been added for this feature:

- Enabling Flight Recorder traces on page 157
- Archiving Flight Recorder information on page 159
- Viewing Flight Recorder archive statistics on page 159
- Downloading Flight Recorder archives on page 160
- Deleting Flight Recorder archives on page 160

Chapter 2: Customer service

Visit the Avaya Web site to access the complete range of services and support that Avaya provides. Go to www.avaya.com or go to one of the pages listed in the following sections.

Navigation

- Getting technical documentation on page 9
- Getting product training on page 9
- Getting help from a distributor or reseller on page 9
- Getting technical support from the Avaya Web site on page 10

Getting technical documentation

To download and print selected technical publications and release notes directly from the Internet, go to www.avaya.com/support.

Getting product training

Ongoing product training is available. For more information or to register, you can access the Web site at www.avaya.com/support. From this Web site, you can locate the Training contacts link on the left-hand navigation pane.

Getting help from a distributor or reseller

If you purchased a service contract for your Avaya product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Getting technical support from the Avaya Web site

The easiest and most effective way to get technical support for Avaya products is from the Avaya Technical Support Web site at www.avaya.com/support.

Chapter 3: Overview

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General

This troubleshooting reference guide describes symptoms that can appear on all Avaya CallPilot® server platforms, and provides step-by-step troubleshooting procedures. The troubleshooting procedures can be slightly different for different Avaya CallPilot releases.

Each troubleshooting area contains symptom tables outlining basic checks that include diagnostics and resolutions for each check. This guide is applicable to all CallPilot servers. The exceptions are noted for each server, where necessary, in the heading for each symptom or check.

This document provides only basic troubleshooting procedures. You can find additional troubleshooting information in the CallPilot documents that are referenced throughout this document.

Note:
To comply with the Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC, some of the part numbers now contain an E5 or E6 suffix. For example, part number NTRH2014 is now NTRH2014E6. The part numbers in this guide do not contain the suffix.

Reference documents

Table 1: Call Pilot Customer Documentation Map

Fundamentals

- Fundamentals Guide (NN44200-100)
- Library Listing (NN44200-117)

Planning and Engineering

- Planning and Engineering Guide (NN44200-200)
- Network Planning Guide (NN44200-201)
- Converging the Data Network with VoIP Guide (NN43001-260)
- Solution Integration Guide for Communication Server 1000/Call Pilot/Contact Center/Telephony Manager (NN49000-300)

Installation and Configuration

- Upgrade and Platform Migration Guide (NN44200-400)
- High Availability: Installation and Configuration (NN44200-311)
- Installation and Configuration Task List Guide (NN44200-306)
- Quickstart Guide (NN44200-313)
- Installer Roadmap (NN44200-314)
- Server Installation Guides
  - 201i Server Hardware Installation Guide (NN44200-301)
  - 202i Server Hardware Installation Guide (NN44200-317)
  - 202i Installer Roadmap (NN44200-319)
  - 703t Server Hardware Installation Guide (NN44200-304)
  - 1002rp Server Hardware Installation Guide (NN44200-300)
  - 1002rp System Evaluation (NN44200-318)
  - 1005r Server Hardware Installation Guide (NN44200-308)
  - 1005r System Evaluation (NN44200-316)
  - 1006r Server Hardware Installation Guide (NN44200-320)
  - 600r Server Hardware Installation Guide (NN44200-307)
  - 600r System Evaluation (NN44200-315)
- Configuration and Testing Guides
  - Meridian 1 and CallPilot Server Configuration Guide (NN44200-302)
  - T1/SMDI and CallPilot Server Configuration Guide (NN44200-303)
  - Communication Server 1000 System and CallPilot Server Configuration Guide (NN44200-312)
- Unified Messaging Software Installation

- Desktop Messaging and My CallPilot Installation and Administration Guide (NN44200-305)

Administration

- Administrator Guide (NN44200-601)
- Software Administration and Maintenance Guide (NN44200-600)
- Meridian Mail to CallPilot Migration Utility Guide (NN44200-502)
- Application Builder Guide (NN44200-102)
- Reporter Guide (NN44200-603)

Maintenance

- Troubleshooting Reference Guide (NN44200-700)
- Preventative Maintenance Guide (NN44200-505)
- Server Maintenance and Diagnostics
  - 201i Server Maintenance and Diagnostics Guide (NN44200-705)
  - 202i Server Maintenance and Diagnostics Guide (NN44200-708)
  - 703t Server Maintenance and Diagnostics Guide (NN44200-702)
  - 1002rp Server Maintenance and Diagnostics Guide (NN44200-701)
  - 1005r Server Maintenance and Diagnostics Guide (NN44200-704)
  - 1006r Server Maintenance and Diagnostics Guide (NN44200-709)
  - 600r Server Maintenance and Diagnostics Guide (NN44200-703)
  - Contact Center Manager Communication Server 1000/Meridian 1 & Voice Processing Guide (297-2183-931)

End User Information

- End User Cards
  - Unified Messaging Quick Reference Card (NN44200-111)
  - Unified Messaging Wallet Card (NN44200-112)
  - A-Style Command Comparison Card (NN44200-113)
  - S-Style Command Comparison Card (NN44200-114)
  - Menu Interface Quick Reference Card (NN44200-115)
  - Alternate Command Interface Quick Reference Card (NN44200-116)
  - Multimedia Messaging User Guide (NN44200-106)
  - Speech Activated Messaging User Guide (NN44200-107)
  - Desktop Messaging User Guide for Microsoft Outlook (NN44200-103)
  - Desktop Messaging User Guide for Lotus Notes (NN44200-104)

Desktop Messaging User Guide for Novell Groupwise (NN44200-105)
Desktop Messaging User Guide for Internet Clients (NN44200-108)
Desktop Messaging User Guide for My CallPilot (NN44200-109)
Voice Forms Transcriber User Guide (NN44200-110)

Chapter 4: Hardware troubleshooting

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201i server

System troubleshooting

Trouble	Action
The system emits beep codes.	The state of the PC chip set is associated with beep codes. Some codes indicate relatively harmless failure situations that allow you to start up the Avaya CallPilot® server, even though the system is not fully functional unless you solve the trouble. Some beep codes indicate catastrophic failures that cannot be easily resolved at the customer site. For example, the series of beep codes 1-3-3-1 indicates a defective or missing memory DIMM. Contact your next level of support. **Note:** The 201i server emits one pulse beep at startup. This is a normal beep and does not indicate a system failure.

Trouble	Action
The HEX display is not on at startup.	The system can be in a catastrophic failure state. • The power supplies have malfunctioned. • The 8051 system controller failed. The 8051 system controller and the HEX display work together and perform a quick system hardware test before the operating system starts up. Refer to the 201i Server Maintenance and Diagnostics document (NN44200-705) for information on interpreting the HEX display.
The red light on the back of the 201i board is on.	The onboard DSP field programmable gate array (FPGA) is not loading properly. Sometimes the system boots to the operating system, but Avaya CallPilot does not function. Contact your next level of support.
The DSP card socket light is on, but no DSP card is plugged in.	The DSPs failed to load. Sometimes the system boots to the operating system, but CallPilot does not function. Contact your next level of support.
The server does not fit or seat properly into the shelf.	**Important:** Do not force the 201i server into the shelf. Ensure that you set the proper physical spacing on the back of the server. The Option 11 and Meridian 1* cabinets have two different card-spacing options. Use a Phillips screwdriver to adjust the bracket on the back of the 201i server (the backplane card edge connector). Refer to the 201i Server Hardware Installation guide (NN44200-301).
The green HEX display indicates that the system works properly and you hear the hard drive spin, but no information is displayed on screen.	Verify that the monitor is properly connected to the power supply and to the CallPilot server. Ensure that the monitor is not defective. If the system still does not display information on screen, then Contact your next level of support.

SCSI peripheral troubleshooting

Trouble	Action
The system does not start from the CD-ROM.	**Note:** The 201i server does not support this feature at this time.
The system displays error messages while the	Ensure that the most recent version of the CD-ROM SCSI driver is installed on your system.

Trouble	Action
operating system is installed from the CD-ROM.	Newer CD-ROM drives are very fast, and the cables that connect them to the server can be too long. The faster the SCSI CD-ROM runs, the shorter the cable must be. The newest CallPilot SCSI drive driver is a de-stroked driver, which forces the SCSI drive to run more slowly and reliably with longer SCSI cables supplied by Avaya. If you get random installation errors during the loading of the operating system, then the SCSI driver installed on your system is not the most recent.
The CD-ROM drive is not shown in the operating system. Errors occur during CD-ROM or tape operation.	Because the SCSI cable can be plugged and unplugged from the faceplate of the 201i server, the cable connector pins can get bent or pushed in. Inspect the connector of the SCSI cable and ensure that all the connector pins are straight and level. Ensure that the cable is properly and fully plugged in and latched to the 201i server faceplate. When installing a new CD-ROM or external tape drive, you need to reboot the system before it recognizes the new hardware.

Ethernet cable troubleshooting

Trouble	Action
The Ethernet link LEDs are not on.	When an Ethernet cable is properly connected at both ends, the link LED associated with the Ethernet connector must be on at both ends of the Ethernet cable even when the operating system is not running. The 201i faceplate has a row of four green LEDs labeled E, C, I, and S: • The left most LED (E) is associated with the ELAN link. • The second LED (C) is associated with the CLAN link. • The other two LEDs indicate the IDE (I) and SCSI (S) activity. **Note:** The link LEDs blink to indicate network activity. If the Ethernet link LEDs are not on, check the Ethernet cabling.
The CallPilot Avaya server subnet does not work when the server is connected to a large Meridian 1 system.	The 201i server uses two auto-negotiating Ethernet network interface cards (NIC). When the NICs are connected to a 10/100Base-T port, they try automatically to negotiate transfer rates at the higher speed. The large Meridian 1 systems have filtered backplanes that generate loss on all signals, except on the signals routed to the bottom four pins (the ELAN subnet

Trouble	Action
	pins). As a result, the server can go into a loop or appear unresponsive on the Avaya server subnet. Use an unfiltered Ring/Tip cable supplied by Avaya. or Remove the filter block on the back of the Meridian 1 newer systems and connect the switch directly to the 201i server I/O cable. **Caution:** Dangerous voltage levels can be present in the back of the Meridian 1 switch. Use the proper cable, as indicated in the 201i Server Hardware Installation Guide (NN44200-301).

202i server

System troubleshooting

Trouble	Action
The system emits beep codes.	The state of the PC chip set is associated with beep codes. Some codes indicate relatively harmless failure situations that allow you to start up the CallPilot server, even though the system is not fully functional unless you solve the trouble. Some beep codes indicate catastrophic failures that cannot be easily resolved at the customer site. For example, the series of beep codes 1-3-3-1 indicates a defective or missing memory DIMM. Contact your next level of support. **Note:** The 202i server emits one pulse beep at startup. This is a normal beep and does not indicate a system failure.
The HEX display is not on at startup.	The system can be in a catastrophic failure state. • The power supplies have malfunctioned. • The 8051 system controller failed. The 8051 system controller and the HEX display work together and perform a quick system hardware test before the operating system starts up.

Trouble	Action
	Refer to the 202i Server Maintenance and Diagnostics document (NN44200-708) for information on interpreting the HEX display.
The green HEX display indicates that the system works properly and you hear the hard drive spin, but no information is displayed on screen.	Verify that the monitor is properly connected to the power supply and to the CallPilot server. Ensure that the monitor is not defective. If the system still does not display information on screen, then contact your next level of support.

Ethernet cable troubleshooting

Trouble	Action
The Ethernet link LEDs are not on.	When an Ethernet cable is properly connected at both ends, the link LED associated with the Ethernet connector must be on at both ends of the Ethernet cable even when the operating system is not running. The two 202i faceplate RJ45 network connections are located vertically on the faceplate. • The upper network connection is associated with the ELAN link. The upper LED of the connection indicates ELAN link activity. The lower LED of the connection indicates a 100Mb presence. If the connecting network be 10Mb, the lower LED will not illuminate but the link activity will function if network activity exists. • The lower network connection is associated wither the CLAN link. The upper LED of the connection indicates CLAN link activity. The lower LED of the connection indicates a 100Mb presence. If the connecting network be 10Mb, the lower LED will not illuminate but the link activity will function if network activity exists. If the Ethernet link LEDs are not on, check the Ethernet cabling.

Trouble	Action
	Note: The link LEDs blink to indicate network activity.
The CallPilot Avaya server subnet does not work when the server is connected to a large Meridian 1 system.	The 202i server uses two auto-negotiating Ethernet network interface cards (NIC). When the NICs are connected to a 10/100Base-T port, they try automatically to negotiate transfer rates at the higher speed. The large Meridian 1 systems have filtered backplanes that generate loss on all signals, except on the signals routed to the bottom four pins (the ELAN subnet pins). As a result, the server can go into a loop or appear unresponsive on the Avaya server subnet. Use an unfiltered Ring/Tip cable supplied by Avaya. or Remove the filter block on the back of the Meridian 1 newer systems and connect the switch directly to the 202i server I/O cable. **Caution:** Dangerous voltage levels can be present in the back of the Meridian 1 switch. Use the proper cable, as indicated in the 202i Server Hardware Installation Guide guide.

703t server

Server LEDs

The LEDs indicate the state of your server and can help you troubleshoot startup problems. The following tables provide useful information on the external and internal LEDs.

External LEDs

Description	Information
MPB96 DS30 link LEDs (three green LEDs located on the card bracket and visible from the back of the server)	When these LEDs are on, all three DS30 connections are working properly and the cables are connected correctly. If one or more LEDs is off, one of the following conditions is present: • One or more connections to the switch is interrupted. Check each of the three branches of the DS30 cable for faults, or replace the cable. • An MGate card in the switch is defective.
Blue LED at the back of the server	This LED is currently not used. The blue LED comes on only for a moment at server startup.
NIC LEDs	Each network interface card (NIC) has two LEDs: • The upper LED shows that the network cable is connected. • The lower LED blinks to indicate data transfer.

Internal LEDs

Description	Information
MPB96 board LEDs	The three red LEDs at the top of the MPB96 board are visible through the grill at the back of the server. • The PCI FPGA Done LED (the closest to the card I/O bracket) comes on at startup and turns off immediately. This indicates that the board works properly and was detected correctly by the system. If this LED stays on after the startup, the card is defective and must be replaced. • The DSP FPGA Done LED comes on at startup and stays on until the CallPilot drivers are loaded and the diagnostic screen is displayed. If the LED stays on after the operating system has started and the CallPilot diagnostic screen has appeared, then the MPB96 board is defective or the DSP and NTBus drivers do not function properly. • The CTbus FPGA Done LED (the farthest from the card I/O bracket) works in tandem with the DSP FPGA Done LED and turns on and off at the same time.

Description	Information
RAID controller LEDs	The RAID controller has one red LED and eight small LEDs at the back. When the card works properly, the red LED comes briefly on at startup indicating that the card was accessed for detection. At the same time, all eight LEDs at the back of the card come on, and then half of them turn off and stay off. Four lit LEDs at the back of the card indicate that the card works properly. If all eight LEDs stay on after startup, the card was not detected or is defective.

BMC beep codes

The main board used in the 703t server includes a baseboard management controller (BMC) that provides monitoring, alerting, and logging of critical system information obtained from sensors embedded on the board.

The BMC generates beep codes when it detects failure conditions. Each digit in the code represents a sequence of beeps.

Beep code	Reason
1	Front panel CMOS clear initiated
1-5-1-1	Fault resilient booting failure (processor failure)
1-5-2-1	No processor installed or empty processor socket 1
1-5-2-3	Processor configuration error (for example, mismatched voltage identifications and empty processor socket 1
1-5-2-4	Front-side bus select configuration error (for example, mismatched BSELs)
1-5-4-2	Power fault: dc power unexpectedly lost
1-5-4-3	Chipset control failure
1-5-4-4	Power control failure

System troubleshooting

Trouble	Action
The system does not boot and appears dead. The	Verify that the power cord is properly plugged in the power outlet.

Trouble	Action
system does not emit any beeps. The fans do not turn.	Check if other equipment plugged in the same power outlet works. **Note:** If the fans are turning, but the system emits no beeps, verify that: • The monitor is turned on. • The power cord to the board (processor and main) is plugged in correctly.
The system does not start, but emits beeps.	Identify the type of beeps that your system emitted: system board beeps or RAID beeps. • The system board beeps are usually short; their pattern is identified in the 703t Server Maintenance and Diagnostics guide (NN44200-702). The system board beeps are usually not associated with information displayed on the screen. If the system does not display information on the screen but emits board beeps, then a main board condition is present. • The RAID beeps are high-pitched and long. The RAID beeps emitted by the system during startup are associated with messages indicating that a system is in a critical state. Check the status LED at the front for a blinking or steady amber light, which indicates that: • A critical temperature or voltage fault has occurred. • The CPU was not installed or is not functioning. Check the beep codes provided in the 703t Server Maintenance and Diagnostics guide to identify the failure, and then replace the defective component or remedy the fault.
The system beeps and displays information on the screen, but the operating system does not start up.	This is a typical RAID beep. One of the following condition is present: • One cable or both cables from the hard drives is disconnected or improperly connected. • One or both drives is faulty. In special situations, this symptom indicates that the NVRAM contents and the drive configuration were lost. The data is still there, but the system beeps and shows that both drives are faulty. Perform a data recovery by configuring the drives as indicated in the 703t Server Maintenance and Diagnostics guide, without initializing the logical drives.
The system starts the operating system, but still beeps.	This symptom typically indicates a RAID trouble: one of the hard drives is in critical condition. Rebuild the drive as soon as you get to the operating system; refer to the 703t Server

Trouble	Action
	Maintenance and Diagnostics guide. If the drive rebuilding does not work, then the drive is defective and must be replaced.
The system does not boot to CallPilot.	This symptom can indicate a multimedia card failure or a software failure. Check for multimedia card errors on the diagnostic screen that appears immediately after the system boots. If the multimedia card functions properly, then investigate the software area; check the Event Viewer for information on software failures.
The system starts, but displays the following error message: PXE-E61 Media failure; please check cable	This is a critical message that appears when the ELAN or CLAN cable is not plugged in. Ensure that the ELAN and CLAN cables are properly plugged in.
The system starts up and, immediately after the video information string displays an error message such as the following: PCI vendor ID does not match the Device ID.	This is not a critical error message. In CallPilot 3.0, this trouble has been fixed by upgrading the BIOS. For previous CallPilot releases, ensure that the Ethernet controllers are enabled in the BIOS. The error message can appear, for example, when one of the Ethernet controllers is disabled in the BIOS.
The system board displays an error message in red and does not start up.	This is a Management Controller failure. This failure is serious and occurs because a board in the system was replaced, but the server was not shut down and unplugged. You must unplug the power cord when swapping boards to avoid causing server damage. When the error message appears, shut down the server, unplug the power cord, wait for a minute, and then plug the cord back in. If this action does not remedy the trouble, call Avaya support.

SCSI troubleshooting

Trouble	Action
The system does not scan the Adaptec SCSI controller BIOS startup. No information on the SCSI controller is displayed during startup.	The SCSI controller is disabled in the BIOS. Open the BIOS and enable the Adaptec SCSI controller.
The tape drive is detected during startup, but not in	The SCSI controller is configured as a RAID system.

Trouble	Action
the operating system. As a result, no backup can be performed.	Press Ctrl+A at startup to open the SCSI main menu and proceed as follows, depending on your CallPilot release: • CallPilot 3.0 and up (new systems): ensure that the HostRAID option is set to Disabled in the SCSI settings. • CallPilot 2.x: ensure that the HostRAID setting is set to Enable HostRAID.

RAID troubleshooting

Trouble	Action
The system boots and generates beeps.	One or more logical drives is in critical mode (one of the drives is in FAIL condition). Rebuild the drives. If the drive rebuilding is unsuccessful, replace the drives.
The system does not detect the RAID card.	The RAID card can be defective. Check the LEDs on the back of the card. If more than four LEDs are on, the RAID card is defective or the incorrect RAID firmware is used. Refer to either the 703t, 1002rp, 1005r or 600r Server Maintenance and Diagnostics guide for valid RAID firmware. • Ensure the RAID card is seated in the slot and the cables are connected to the disk drives. • Replace the RAID card.
The system detects the RAID card, does not boot, and attempts to boot from the network.	The logical hard drive that has the booting partition is offline or both physical drives on the booting logical drive are faulty. • Press Ctrl+M at startup to open the MegaRAID BIOS Configuration utility. • Recreate the RAID pack without initialization. • Restart the server. If the drives were offline, this action restores their functionality. If this solution does not remedy the trouble, replace the defective drives. **Note:** If you brought the hard drives offline deliberately or performed a RAID splitting operation, then you must not recreate the RAID pack without initialization.

Trouble	Action
The system does not rebuild a new drive installed to replace a faulty drive.	When you replace a defective drive, the new drive must be larger than the original drive. In this case, the system rebuilds the new drive. However, if the new drive is smaller than the original drive, it must not be smaller by more than 1 GB. If the new drive is smaller than the original drive by less than 1 Gbyte, the GBWay setting in the Adapter properties is disabled. Enable the GBWay setting and start a new RAID configuration. Because starting a new RAID configuration erases the existing data, back up the system before proceeding. The system does not rebuild a drive if an incorrect combination of operating system utility and RAID firmware is used on your system. Refer to either the 703t, 1002rp, 1005r or 600r Server Maintenance and Diagnostics guide for valid RAID firmware. **Note:** Non-supported combinations of operating system utility and RAID firmware can corrupt your system and prevent drives from rebuilding.
The system does not rebuild the drive automatically after you replaced a faulty drive.	The Automatic rebuild feature is disabled in the BIOS on the 703t platform. Initiate the rebuilding process manually in the Windows MegaRAID utility.

Windows and CallPilot hardware troubleshooting

Trouble symptom	Action
The system beeps, but seems to be running properly and taking calls.	This is a RAID card beep indicating that one of the drives does not function properly. Do not shut down the system. • Open the MegaRAID Client (CallPilot 2.x) or Power Console Plus (CallPilot 3.x) utility, and check which drive is marked as Dead. • Rebuild the drive marked as Dead. If the rebuild is unsuccessful, ensure that the other drive is working, then shut down the system and replace the drive marked as Dead.
The system displays a blue screen with the following message: Hardware Malfunction,	Check the release of the MPB96 board. The blue screen appears if the MPB96 board release is 5 or earlier, and the version of the system BIOS is other that P07, build 64 (NTRH40AA only).

Trouble symptom	Action
please contact your H/W vendor. The system does not take calls.	If the MPB96 board release is 6 or later, the system BIOS release is irrelevant (NTRH40AA only). Update the MPB96 board to release 6 or later to solve this trouble (NTRH40AA only).
All DSP diagnostics fail at system startup.	Shut down the server and open the lid. Turn on the server and check if the PCI LED on the MPB96 board is still on after startup. If the LED is still on, then shut down the server, reseat the board, and then turn on the server again. • If the LED is still on, the board is defective and must be replaced. • If the LED goes on and then off, but the DSP and CTbus FPGA LEDs are still on after the system booted completely to the operating system, then check the HAL and ensure that all its components are working properly. If the HAL components function properly, then at least one of the ctbus.mcs or dsp.mcs files is corrupted. Replace these files and reboot the system. If the PCI LED still stays on, then the MPB96 board is defective and must be replaced.
The system starts up, but attempts to boot to the operating system from the network.	Shut down the server and open the lid. Turn on the server and check the RAID controller LEDs. If more than four LEDs stay on after the startup, then the problem is related to the RAID controller. • Shut down the system. • Reseat the RAID controller. • Reboot the system. If these actions do not resolve the trouble, then the RAID card is defective and must be replaced.
The system ELAN or CLAN are not working, even though they are detected and displayed in the operating system control panel.	Enable the NIC controllers in the BIOS.
The system displays an error message after CallPilot languages have been installed.	There is an older version of the RAID controller firmware. Upgrade the RAID firmware to a currently support version. Refer to either the 703t, 1002rp, 1005r, 1006r, or 600r Server Maintenance and Diagnostics guide for valid RAID firmware.
The HAL does not detect the MPB96 board. All the DSPs report failures in the diagnostic window.	The MPB96 board is not installed in the correct slot.

Trouble symptom	Action
	• Refer to the 703t Server Hardware Installation guide for the correct number of the slot in which the MPB96 board must be installed. • Shut down the system. • Install the MPB96 board in the proper slot.
The system does not detect the MPB96 board after CallPilot has been migrated from an earlier platform.	• Check if the system is detected correctly in the HAL; that is, if the platform information file matches your system information. • If the platform information and the system information do not match, then load the correct platform information file into the registry.
The system detects the MPB96 board only partially, and Configuration Wizard does not run.	The MPB96 board is configured incorrectly from the clocking point of view. Contact your Avaya support representative for assistance.
The system detects the MPB96 board, but does not load correctly the DSP information at startup.	The cache.bin file in the D:\nortel\hardware\dsp\c52\ folder is corrupted. Rerun the Configuration Wizard to reflash the DSPs.

1002rp server

The LEDs indicate the state of your server and can help you troubleshoot startup problems. The following tables provide useful information on the external and internal LEDs.

External LEDs

Description	Information
Fan fault	Two LEDs at the front of the server indicating the status of the fans
Disk activity	Six LEDs at the front of the server indicating the status of the disk drives
Pwr spply	Indicates the status of the power supply
Fan	Indicates that the fan functions normally

Description	Information
Power on	Indicates that the server is on
Over temp	The temperature inside the server is above the safety threshold. This LED indicates that both fans are faulty.
Fault	Comes on when the Pwr Spply, Over temp or Fan fault LED come on.
MPB96 DS30 link LEDs (three green LEDs located on the card bracket and visible from the back of the server)	When these LEDs are on, all three DS30 connections are working properly and the cables are connected correctly. If one or more LEDs is off, one of the following conditions is present: • One or more connections to the switch is interrupted. Check each of the three branches of the DS30 cable for faults, or replace the cable. • An MGate card in the switch is defective.
Network interface card (NIC) LEDs	Each NIC has two LEDs: • The upper LED shows that the network cable is connected. • The lower LED blinks to indicate data transfer.

Internal LEDs

Description	Information
MPB16-4 board LED	The five LEDs at the top of the MPB16-4 board are visible through the grill at the back of the server. • The four DSP Power On LEDs come on when the CallPilot drivers are loaded, right before the diagnostic screen starts. If these LEDs are not on after the system has booted to the operating system and the diagnostic screen has started, then one of the following conditions can be present: - The board is faulty and must be replaced. - The CallPilot DSP and the NTBus drivers do not function properly. - The DSP card to which the LED belongs is faulty. • The PCI FPGA Done LED (the farthest from the card bracket) comes on briefly at startup. If this LED stays on after system startup, then the MPB16-4 card is faulty and must be replaced.
MPB96 board LEDs	The three red LEDs at the top of the MPB96 board are visible through the grill at the back of the server.

Description	Information
	• The PCI FPGA Done LED (the closest to the card I/O bracket) comes on at startup and turns off immediately. This indicates that the board works properly and was detected correctly by the system. If this LED stays on after the startup, the card is defective and must be replaced. • The DSP FPGA Done LED comes on at startup and stays on until the CallPilot drivers are loaded and the diagnostic screen is displayed. If the LED stays on after the operating system has started and the CallPilot diagnostic screen has appeared, then the MPB96 board is defective or the DSP and NTBus drivers do not function properly. • The CTbus FPGA Done LED (the farthest from the card I/O bracket) works in tandem with the DSP FPGA Done LED and turns on and off at the same time.
RAID controller LEDs	The RAID card has one red LED and eight small LEDs on the back. When the card works properly, the red LED comes briefly on at startup; this indicates that the card was accessed for detection. At the same time, all eight LEDs at the back come on, and then half of them turn off and stay off. Four LEDs lit at the back of the card indicate that the card works properly. If all eight LEDs stay on after startup and boot, the card was not detected or is defective.

BIOS beep codes

During the power-on self test (POST) routines performed each time that the system is powered on, various errors can occur.

Error type	Description
Non-fatal error	In most cases, these error allow the system to continue the bootup process. Error messages normally appear on the screen.
Fatal error	These errors do not allow the system to continue the bootup process.

The following table describes the errors communicated by beeps.

Beep count	Message	Description
1	Refresh Failure	The memory refresh circuitry of the processor board is faulty.

Beep count	Message	Description
2	Parity error	A parity error was detected in the base memory (the first block of 64 kbytes of the system).
3	Base 64KB Memory Failure	A memory failure occurred in the first 64 KB of memory.
4	Timer Not Operational	A memory failure occurred in the first 64 KB of memory, or Timer #1 on the processor board failed to function properly
5	Processor Error	The CPU on the processor board generated an error.
6	8042 - Gate A20 Failure	The keyboard controller (8042) contains the Gate A20 switch, which allows the CPU to operate in protected mode. This error message means that the BIOS is not able to switch the CPU in the protected mode.
7	Processor Exception Interrupt Error	The CPU on the processor board generated an exception interrupt.
8	Display Memory Read/ Write Error	The system video adapter is missing, or its memory is faulty. **Note:** This error is not fatal.
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in the BIOS.

System troubleshooting

Trouble symptom	Action
The system appears dead. • The server does not boot. • The server emits no beeps. • The fans do not turn.	• Check if the power cord is properly plugged in the power outlet. If the system is a direct current (dc) version, the power cables can be reversed; ensure that the polarity of the cables is correct. • Ensure that the breaker corresponding to the cable is in the ON position. • Ensure that the correct type of cable is used, depending on the type of power supply (ac or dc). • Check if other equipment plugged in the same power outlet works.

Trouble symptom	Action
	Note: If the fans are turning, but the system emits no beeps, check if the monitor is turned on. Check if the two LEDs on the power supplies (at the back of the server) are on or red. • If the LEDs are not on, check the power supply fuse. • If the LEDs are on and red, one or both power supplies is not plugged in or plugged in incorrectly, or the connection pins on the power supplies are bent or missing.
The system does not start, but emits beeps. No information is displayed on screen.	Identify the type of beeps that your system emitted. • The system board beeps are usually short; their pattern is identified in the 1002rp Server Maintenance and Diagnostics guide (NN44200-300). The system board beeps are usually not associated with information displayed on screen. • The RAID beeps emitted by the system at startup are associated with messages indicating that the system is in a critical state. The RAID beeps are high-pitched and long. Press Ctrl+M at startup to open the MegaRAID BIOS Configuration utility and check for a faulty or disconnected drive. The system also emits RAID beeps when a RAID splitting procedure is performed. However, these beeps do not indicate a fault condition. • A continuous high-pitched beep indicates a chassis condition and is usually associated with a LED lit on the front of the chassis (power supply, fan, or over temperature). If the power supply is the cause of the beep, look at the back of the server and identify the defective power supply (the LED is red or off). The power supply can be plugged in incorrectly. Unplug the power cord, check the pins, and plug the cord back in. If the condition persists, replace the power supply. If a fan is defective, replace it. You can hot-swap the fans. The over temperature condition appears when both fans are faulty. • Sets of 1 through 11 intermittent beeps indicate faults associated with the following hardware.
The system displays information on screen, emits long beeps separated by pauses, but does not boot to the operating system.	These are typical RAID beeps. If the system does not boot, one of the following conditions can be present: • One cable or both cables from the hard drives are disconnected or improperly connected. • One or both drives are faulty. In special situations, the NVRAM contents and drive configuration were lost. The data is still there, but the system beeps and shows that both drives are faulty. Perform a data

Trouble symptom	Action
	recovery by configuring the drives as indicated in the 1002rp Server Maintenance and Diagnostics guide, without initializing the logical drives. Open the Ctrl+M utility at startup, and ensure that the RAID setup matches the settings indicated in the 1002rp Server Maintenance and Diagnostics guide.
The system boots to the operating system and beeps intermittently.	**Important:** **Do not reboot your system!** This symptom typically indicates a RAID problem: one of the hard drives is in critical condition. Rebuild the drives as soon as your system boots to the operating system. If the drive rebuilding does not work, then the drive is defective and must be replaced. Use the Ctrl+M or MegaRAID utility to remedy the trouble as indicated in the 1002rp Server Maintenance and Diagnostics guide. Do not disable the alarm. You can silence the alarm in the utility instead.
The system display information on the screen, but does not boot to the operating system. The startup routine stops after the RAID status is displayed; the cursor blinks on the screen.	The system BIOS is configured incorrectly. The setting "Chipset \Allow card to trap INT19" is set to Yes. Reboot, open the BIOS and set the setting "Chipset\Allow card to trap INT19" to No. Ensure that all the BIOS settings are as indicated in the 1002rp Server Maintenance and Diagnostics guide.
The system displays information on screen, but does not boot to the operating system and does not detect the RAID controller card.	One of the following conditions affects the system: • The RAID controller is defective—more than four LEDs at the back of the card are on. • The PCI bridge that drives the first four PCI slots on which the RAID card resides is defective, or the bridge pins are disconnected or short-circuited. Replace the RAID card. Refer to either the 703t or 1002rp Server Maintenance and Diagnostics guide for valid RAID configurations. If this action does not remedy the trouble, move the RAID card into the next set of four PCI slots and reboot the system. • If the system boots correctly, consider replacing the PCI backplane because it is only partially functional. • If the system does not boot correctly, replace the PCI backplane. **Note:** Each set of four slots is controlled by a different PCI bridge. When you move the RAID card to the next set of four PCI slots, you try to determine if the PCI bridge that controls the

Trouble symptom	Action
	set of four PCI slots in which the card was initially installed is defective.
The system boots, but the keyboard or the mouse or both are not functional.	The Y cable is connected incorrectly or is not the cable that Avaya shipped with the system. The Y cable can also be plugged in improperly.
The system does not boot to CallPilot.	This symptom can indicate a multimedia card failure or a software failure. Check for multimedia card errors on the diagnostic screen that appears immediately after the system is rebooted. If the multimedia card functions properly, then investigate the software area; check the Event Viewer for information on software failures.
The RAID controller card displays SCSI IDs from 0 to 6 for the hard drives, although they are configured on different channels.	The jumpers of the SCSI drive backplane are installed. Remove the jumpers. The displayed SCSI IDs must be from 0 to 2 on both channels.
The RAID controller displays the drives on the second section as being on channel 1 (the established channels are 1 and 2).	The SCSI cables that connect the RAID controller card and the SCSI drive backplane are inverted. Power down the system and reconnect the cables so that they match the channels as indicated in the 1002rp Server Maintenance and Diagnostics guide. The RAID controller performs channel roaming without losing data.
The Ethernet controllers are enabled and detected, but the ping command fails when used to check network resources.	• Open a DOS command prompt window. • Type ipconfig /all. The ipconfig command displays the MAC addresses. If the MAC addresses are missing or have the same value, then they are not programmed. Return the SBC card to the factory.
The software feature key adapter (dongle) is installed properly, but CallPilot cannot detect it.	• Ensure that the software feature key adapter is plugged into the parallel port. The DS30 connector on the adjacent MPB16-4 board is similar to the parallel port and can be confused with it. • Ensure that all the flat cables inside the server have the red stripe towards the end of the chassis. Reinstall any cable whose red stripe is not in this position. • Check the parallel port settings in the BIOS. No IRQ must be assigned to the parallel port. If you performed all the preceding tasks and CallPilot still does not detect your software feature key adapter, return the board to the factory.

SCSI troubleshooting

Trouble	Action
The system BIOS does not scan the Adaptec SCSI controller at startup (no SCSI controller is referenced).	The SCSI controller is disabled in the system BIOS. Open the system BIOS at startup and enable the SCSI controller.
The tape drive driver is loaded but is not detected and does not work.	The cause of this trouble can be one of the following: • The tape drive is disconnected. • The SCSI controller is disabled in the BIOS. • The tape drive SCSI ID is set to 7

RAID troubleshooting

Trouble	Action
The system boots but emits beeps.	One or more logical drives are in critical mode (one of the drives is in FAIL condition). Rebuild the drives. If the drive rebuilding is unsuccessful, replace the drive.
The system does not detect the RAID card.	The RAID card can be defective. Check the LEDs on the back of the card. If more than four LEDs are lit, the RAID card or the PCI backplane is faulty.
The system detects the RAID card but does not boot and attempts to boot from the network.	The logical hard drive that has the booting partition is offline or both physical drives on the booting logical drive are faulty. • Press Ctrl+M at startup to open the configuration utility. • Recreate the RAID pack without initialization. • Restart the server. If the drives were just offline, this action restores their functionality. If this solution does not remedy the trouble, replace the defective drives.
The system does not rebuild a new drive installed to replace a faulty drive.	When you replace a defective drive, the new drive must be larger than the original drive. In this case, the system rebuilds the new drive.

Trouble	Action
	However, if the new drive is smaller than the original drive, it must not be smaller by more than 1 Gbyte. If the new drive is smaller than the original drive by less than 1 Gbyte, the GBWay setting in the Adapter properties is disabled. Enable the GBWay setting and start a new RAID configuration. Since starting a new RAID configuration erases the existing data, back up the system before proceeding. The system does not rebuild a drive if an incorrect combination of operating system utility and RAID firmware is used on your system. Refer to either the 703t or 1002rp Server Maintenance and Diagnostics guide for valid RAID configurations. **Note:** Non-supported combinations of operating system utility and RAID firmware can corrupt your system and prevent drives from rebuilding.
The system does not rebuild a new drive (a little smaller than the original drive) installed to replace a faulty drive.	The 1 Gbyte setting in the RAID Adapter properties is disabled. Enable the 1 Gbyte setting and start a new RAID configuration. Because starting a new RAID configuration erases the existing data, back up the system before proceeding.
The system does not rebuild the drive automatically after you replaced a faulty drive.	The system rebuilds a drive only if a change in the drive status is made (after a SCSI scan). You must access the drive to initiate a SCSI scan. The system does not start rebuilding the drive unless you access the drive. Initiate a drive rebuild manually using the MegaRAID utility.

Note:

If a drive is defective, the RAID utility determines the drive condition and marks the drive as FAIL. Hot-swap the drive with a good one and then rebuild the drive. If you suspect that a drive is faulty, simply remove it and replace it with a good drive.

Note:

New 1002rp systems do not automatically rebuild a drive that replaced a faulty drive marked as FAIL. You must rebuild the drive manually.

Note:

On older 1002rp systems, the Autorebuild option is enabled by default in the RAID firmware. Check this option and disable it before proceeding with RAID operations.

MPB16-4 board troubleshooting

Trouble	Action
The CallPilot Diagnostics tool reports that all or some of the DSPs have failed.	Ensure that the release of your board is 05 or later. If you have more than one MPB16-4 board in the server, ensure that the SCBus cable is present and properly connected.
CallPilot starts up, but voice services are not available.	You have more than one MPB16-4 board on your system. Ensure that the DS30X cable is connected to the correct MPB16-4 board.
CallPilot works, but the voice quality is low—T1/SMDI configurations only.	• Ensure that the release of the MPB16-4 board(s) is 05 or later. • Ensure that the SCBus cable is not defective.
CallPilot works, but no voice services are available—T1/SMDI configurations only.	Ensure that the PEC of your MPB16-4 board(s) is NTRH20BA. **Note:** The T1/SMDI systems do not work with CallPilot systems equipped with NTRH20AB MPB16-4 boards.
The Configuration Wizard fails programming the DSPs.	• Ensure that the latest CallPilot PEPs are installed on your system. • Ensure that no utility (such as Dspmon) that can access the DSPs is running. The Nbhalnda utility (in the CallPilot tools) cannot program DSPs accessed by more than one application.
The system does not read some MPC8 cards, displays DSP errors or hangs at login.	• Check the MPC8 cards and replace the defective ones. • Check the MPC8 socket pins on the carrier board and ensure that they are not bent. • Ensure that the MPC8 cards are plugged in properly. Do not force the MPC8 cards backwards in the slots.

Windows and CallPilot hardware troubleshooting

Trouble	Action
The system beeps but otherwise seems to be	This is a RAID card beep indicating that one of the drives does not function properly. Do not shut down the system.

Trouble	Action
running properly and taking calls.	• Open the MegaRAID utility and check which drive is marked as Dead. • Rebuild the drive marked as Dead. • If the drive rebuild is not successful, ensure that the other drive is functioning correctly. • Power down the system and replace the drive marked as Dead.
Voice services from the Meridian 1 switch are not available after an upgrade.	• Ensure that the MGate card PEC is NTRB18CA or later. • Ensure that the version of the MPB16-4 board is 05 or later.
The system stops taking calls after a powerful lightning storm.	The DS30 part of the system is affected. Replace the MGate card to which the MPB16-4 board is connected.
The system plays voice prompts but does not record messages (T1/SMDI configurations only).	Ensure that your system has the latest version of the Ctbus.mcs file. This file is located in the D:\nortel\hardware\board\m96\ folder.
The system is affected by the following symptoms: frame slips, crackling voice, fax dots, and alarms (T1/SMDI configurations only).	Ensure that the MPB16-4 board is release 5 or later (NTRH40AA only). Ensure that the cable used for the T1 connection is supplied by Avaya and is not a category 4 or 5 cable. Ensure that the SCBus or CTBus cable is not defective.
All DSP diagnostics fail at system startup.	Ensure that the MPB16-4 boards are release 5 or later. Ensure that the PCI backplane does not have Intel PCI bridge chips. Shut down the server and open the lid. Power up the server and check if the PCI LED on the MPB16-4 board is still on after startup. If the LED still stays on, shut down the server and replace the board. If the PCI LED comes on at system startup and then turns off, but the other four green LEDs are still off after the system booted to the operating system, check the HAL and ensure that all its components are working properly. If the HAL components are working properly, one or more MPC8 cards can be defective. Replace the defective MPC8 cards. If your system has two MPB16-4 boards and both have the same symptoms, ensure that the correct driver is installed. If only one MPB16-4 board seems to be defective, swap the boards. If the presumed defective board works after the swapping, then the PCI backplane is defective and you must replace it. If the presumed defective board does not work, then you must replace it.

Trouble	Action
All the DSPs and DS30 links are reported as "All busy", but the monitor shows that the resources are only partially busy (Option 11 Meridian 1 configurations only).	The switch and the CallPilot system do not have the same ground connection. Ensure that both systems are plugged into the same power outlet and connected to a single-point ground reference.
The system starts up but attempts to boot to the operating system from the network.	The RAID packs are either not configured or degraded. The RAID system is not operational. Proceed as follows: • Power down the system, plug the RAID card into the next set of four PCI slots and then turn on the system. If the system boots correctly to the operating system, then the PCI backplane is defective and you must replace it. • Power down the system, open the server lid and turn on the system. If more than four lights remain on, the RAID controller is faulty. Power down the system, reseat the controller card, and turn on the system. If this action does not remedy the trouble, then the RAID controller card is defective and you must replace it.
The system ELAN or CLAN are not working, even though they are detected and displayed in the operating system control panel.	Enable the NIC controllers in the BIOS, and ensure that the BIOS settings are correct. Open a DOS command prompt window and type ipconfig /all. The ipconfig command displays the MAC addresses. If the MAC addresses are missing or are the same, the MAC addresses are not programmed. Return the SBC card to the factory.
The hard drives have intermittent problems and media errors.	Provide the serial number to Avaya support to check if your drive is still covered by the warranty. The serial number provides the history of the hard drive. Open the RAID utility and check the status of each drive by looking at the logical level and physical level. Ensure that no media or surface errors are present. Open the Checkdisk utility in the operating system and run it to detect other type of hard drive errors. Ensure that the firmware version of the RAID controller is valid. Refer to either the 703t or 1002rp Server Maintenance and Diagnostics guide for valid RAID configurations.

1005r server

The 1005r server is based on an Intel Langley Irwindale server platform with advanced self-troubleshooting mechanisms. You can troubleshoot errors by observing multiple areas:

- Visual – front or rear panel LEDs
- Audio or Sound – beeps or increased fan noise pitch
- Software – remotely using network intelligent modules (SNMP and/or event logs).

If the system is powered on, you can access error reporting using the CallPilot image CD/DVD SEL viewer tool (if the system does not boot into Windows). This tool reports all hardware events and saves them as a text file on a USB media.

Server LEDs

The LEDs indicate the state of your server and can help you troubleshoot startup problems. The following tables provide useful information about the external and internal LEDs.

Front panel LEDs

LED	Functional Description
CRT	A critical system fault is an error or event that has a fatal system impact. The system cannot continue to operate.
MJR	A major system fault is an error or event that has a discernible impact on system operation. The system can continue to operate but with reduced performance or features.
MNR	A minor system fault is an error or event that has little impact on system operation. The system continues to operate.
PWR	A power supply fault indicates that one of the power supplies is not providing power. The MJR LED is also lit.

External LEDs

Description	Information
MPB96 DS30 link LEDs (three green LEDs located on the card bracket and visible from the back of the server)	When these LEDs are on, all three DS30 connections are working properly and the cables are connected correctly. If one or more LEDs are off, one of the following conditions is present: • One or more connections to the switch are interrupted. Check each of the three branches of the DS30 cable for faults, or replace the cable. • An MGate card in the switch is defective.
NIC LEDs	Each network interface card (NIC) has two LEDs: • The upper LED shows that the network cable is connected. • The lower LED blinks to indicate data transfer.
Power supply LEDs	Each power supply has its own LED: • OFF = system or power supply is off or faulty • Red/Amber = power supply is faulty or cable is disconnected • Green = power supply is working correctly and powered on

Internal LEDs

Description	Information
MPB96 board LEDs	The three red LEDs at the top of the MPB96 board are visible through the grill at the back of the server. • The PCI FPGA Done LED (the closest to the card I/O bracket) comes on at startup and turns off immediately. This indicates that the board works properly and was detected correctly by the system. If this LED stays on after the startup, the card is defective and must be replaced. • The DSP FPGA Done LED comes on at startup and stays on until the CallPilot drivers are loaded and the diagnostic screen appears. If the LED stays on after the operating system starts and the CallPilot diagnostic screen appears, then the MPB96

	board is defective or the DSP and NTBus drivers do not function properly. • The CTbus FPGA Done LED (the farthest from the card I/O bracket) works in tandem with the DSP FPGA Done LED and turns on and off at the same time.

POST beep codes

If an error occurs before video initialization, the POST emits beep codes that indicate errors in hardware, software, or firmware.

A beep code is a series of separate tones, each equal in length. Record the beep code sequence before calling Avaya technical support.

Beep count	Description
1, 2, or 3	A Memory error occurred. Reseat the memory or replace the DIMMs with known good modules.
4 – 7 or 9 – 11	A fatal error occurred and indicates a possible serious system problem. Remove all the add-in cards and restart the system. If the error still occurs, contact Avaya support. If the beep codes are not generated after you remove the add-in cards, insert the cards one at a time, booting the system between each card addition, until the beeps again occur to reveal the malfunctioning card.
8	A problem with the onboard video card occurred indicating a fault on the server board.

BIOS error messages

When a recoverable error occurs during the POST, the BIOS displays an error message describing the problem.

BIOS error messages appear on the video monitor. Refer to the following table for a description of the messages.

Error message	Description
GA20 Error	An error occurred with Gate A20 when switching to protected mode during the memory test.

Pri Master HDD Error Pri Slave HDD Error Sec Master HDD Error Sec Slave HDD Error	The system could not read the sector from the corresponding drive.
ATAPI Incompatible Drive • Pri Master Drive • Pri Slave Drive • Sec Master Drive • Sec Slave Drive	The corresponding drive is not an ATAPI (Advanced Technology Attachment Packet Interface) device. Run Setup to make sure the device is selected correctly.
A: Drive Error	No response from the disk drive.
CMOS Battery Low	The battery is losing power. Replace the battery soon.
CMOS Display Type Wron	The display type is different from that stored in CMOS. Check Setup to make sure the type is correct.
CMOS Checksum Bad	The CMOS checksum is incorrect. CMOS memory can be corrupted. Run Setup to reset the values.
CMOS Settings Wrong	The CMOS values are not the same as the last boot. Either these values are corrupted or the battery failed.
CMOS Date/Time Not Set	The time or date values stored in CMOS are invalid. Run Setup to set the correct values.
DMA Error	An error occurred during the read/write test of the DMA (Direct Memory Access) controller.
FDC Failure	An FDC Failure error occurred while trying to access the diskette drive controller.
HDC Failure	An error occurred trying to access the hard disk controller.
Checking NVRAM....	The NVRAM (Non-Volatile Random Access Memory) is being checked to see if it is valid.
Update OK!	The NVRAM is invalid and has been updated.
Updated Failed	The NVRAM is invalid and cannot be updated.
Keyboard Error	An error occurred in the keyboard connection. Make sure the keyboard is connected properly.
KB/Interface Error	The keyboard interface test failed.
Memory Size Decreased	The memory size has decreased since the last boot. If you have not removed any memory, then the memory may be faulty.
Memory Size Increased	The memory size has increased since the last boot. If you have not added any memory, there is a problem with the system.

Memory Size Changed	The memory size has changed since the last boot. If you did not add or remove any memory, then the memory may be faulty.
No Boot Device Available	The system did not find a device to boot from.
Off Board Parity Error	A parity error occurred on an offboard card. This error is followed by the card address.
On Board Parity Error	A parity error occurred in onboard memory. This error is followed by the card address.
Parity Error	A parity error occurred in onboard memory at an unknown address.
NVRAM / CMOS / PASSWORD cleared by Jumper	NVRAM, CMOS, and passwords have been cleared. Power the system down and remove the jumper.
<CTRL_N> Pressed	The CMOS is ignored and NVRAM is cleared. You must enter Setup.

System troubleshooting

Trouble symptom	Action
The system boots, the fans turn at high speed but do not return to normal speed. The system is extremely noisy.	Two possible causes are: • One or more fans are faulty and you need to replace the fan module. For instructions, see the 1005r Server Maintenance and Diagnostics Guide (NN44200-704). • An IMM module is faulty or incorrectly programmed. Reflash the system board F/W with Avaya-approved BMC and FRU/SDR and try again. If neither of the above actions resolves the problem, replace the server (as the IMM board is a non-FRU item).
The system boots and beeps, but there is no video. (In some cases a red LED appears on the front cover).	Refer to the error and beep codes or contact Avaya at http://www.avaya.com/support.
The system boots but a red CRT LED and an amber PWR LED appears.	One power supply is faulty, or the AC cable is unplugged (or faulty).
The system boots but PCI errors appear or fill the screen.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the

	slot. You must complete the reseating with the server out of the rack and on a solid surface. Ensure the power cable is plugged in.
The system boots, but a blue screen appears.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the reseating with the server out of the rack and on a solid surface.
The system boots, but does not detect the RAID card.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the reseating with the server out of the rack and on a solid surface.
The system (with only one MPB96 card) boots, but stops with a PCI error.	The MPB96 card is not plugged in to the top full-sized slot (slot FS1; FS=full sized).
The system boots, but does not report that one power supply is disconnected or that the cable is unplugged. The front panel LEDs do not display in multiple colors.	The system does not have the correct Avaya customized FRU/SDR firmware, or the firmware was loaded while these components were disconnected. Ensure all of the power supplies are plugged in and connected to the AC and the system is fully configured. Run the system board firmware and BIOS upgrade using the CallPilot image CD/DVD. Ensure the BIOS settings are verified after this procedure.
During an upgrade, the upgrade wizard states that the processor configuration is incorrect.	Ensure the BIOS settings are correct (including the hyper-threading setting) and that both processors are working properly.
The system starts to boot but two red lines appear at the bottom of the screen and the message cannot be read.	The server recovered from a system error (processor internal IERR error). To clear the resulting error message from the log, perform the following steps: 1. Reboot the system. 2. Press F2 so that the system boots into the BIOS. 3. Set Re-test to Enabled in the BIOS under Advanced Processor Configuration > Processor. 4. Exit BIOS and power down. 5. Disconnect both power cords for about 1 minute to allow the complete reset of the firmware module. 6. Re-connect the power cords. 7. Power on the system. 8. Boot into service.

During startup, a message indicates that the System Event Log is full and the log must be cleared.	This is an unusual situation and appears only if the server was booted many times. View the log before clearing it. See the 1005r Hardware Maintenance and Diagnostics guide NN44200-704 for viewing and clearing the System Event Log.
After startup, the Intel Server Manager reports that one of the processors is disabled. This causes the system processes to slow down.	1. Power down the server. 2. Disconnect the power cord and wait 2 minutes. 3. Connect the power cord. 4. Power up the server.

SCSI and tape drive troubleshooting

Trouble	Action
The SLR external tape drive was hot plugged but does not appear in the device manager.	Select a device within the Windows device manager and then select Action > Rescan. The drive should be detected. If not, ensure the correct driver is installed. If this does not resolve the problem, ensure the external drive is powered up and not faulty. Observe the LED codes on the tape drive for errors pertaining to the tape drive only.
The tape drive is plugged in correctly, but the system experiences errors. (The drive cannot be re-tensioned or go offline randomly).	The tape drive may have been plugged into the RAID external SCSI adaptor instead of the SCSI adaptor. Plug the tape into the correct connector at the back of the server. For instructions, see the 1005r Server Hardware Installation Guide (NN44200-308).

RAID troubleshooting

Trouble	Action
The system boots but does not detect the RAID card.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the reseating with

	the server out of the rack and on a solid surface.
The system boots and detects the RAID card but does not boot into Windows.	Check if any, or all, of the drives are offline. Re-create or repair the RAID packs.
The system boots but one of the drive LEDs on the front panel is amber.	The RAID is split, or one of the drives is faulty or offline. Replace or rebuild the drive. No action is required if this is due to a voluntary RAID split.
A drive fails and the replacement does not rebuild.	The RAID card settings are incorrect. The coercion algorithm is not set to 1 GB. **Important:** You must complete a full system rebuild to re-configure the RAID cards to the correct coercion algorithm.
The system is not rebuilding a drive or it returns an error after the rebuild is initiated.	The hard drive is faulty. Check the driver version or the power console version.
After a failed upgrade, both drives are brought offline to return to a previous CallPilot release, but the system displays a blue screen.	Do not use the power console to bring both drives offline. Use the Ctrl+M utility. If you disable both hard drives while in Windows, the system crashes.

Dongle troubleshooting

Trouble	Action
The dongle is plugged into the USB slot and is detected in the device manager but CallPilot does not recognize it.	Ensure the dongle is in USB slot 0, and not in slot 1 or 2.
The dongle is plugged into USB slot 0 but is not visible in the device manager. CallPilot also does not detect it.	The dongle holder is not plugged in correctly, or it is defective. Replace it and keep the button. Also, ensure the button is not installed backward. For installation instructions, see the 1005r Server Hardware Installation Guide (NN44200-308).

Windows and CallPilot hardware troubleshooting

Trouble	Action
The system beeps, but seems to be running properly and taking calls.	This is a RAID card beep indicating that one of the drives does not function properly. Do not shut down the system. Open the Power Console Plus (CallPilot 3.x) utility, and check which drive is marked as Dead. Rebuild the drive marked as Dead. If the rebuild is unsuccessful, ensure that the other drive is working, and then shut down the system and replace the drive marked as Dead.
The system displays a blue screen with the following message: Hardware Malfunction, please contact your H/W vendor. The system does not take calls.	Ensure the MPB96 board is release 5 or later (NTRH40AA only).
All DSP diagnostics fail at system startup.	Shut down the server and open the lid. Turn on the server and check if the PCI LED on the MPB96 board is still on after startup. If the LED is still on, then shut down the server, reseat the board, and then turn on the server again. • If the LED is still on, the board is defective and must be replaced. • If the LED goes on and then off, but the DSP and CTbus FPGA LEDs are still on after the system boots completely to the operating system, then check the HAL and ensure that all its components are working properly. If the HAL components function properly, then at least one of the ctbus.mcs or dsp.mcs files is corrupted. Replace these files and reboot the system. If the PCI LED still stays on, then the MPB96 board is defective and must be replaced.
The system starts up, but attempts to boot to the operating system from the network.	The RAID card was not detected due to improper seating during PCI assembly. Remove the system from the rack and place it on a table. Reseat the PCI assembly by securely pushing it into place. Ensure the slots and studs at the back are properly aligned.
The system ELAN or CLAN is not working, even though they are detected and displayed in the operating system control panel.	Enable the NIC controllers in the BIOS.

The system displays an error message after CallPilot languages are installed.	There is an older version of the RAID controller firmware. Upgrade the RAID firmware to a currently supported version. For information about valid RAID firmware, see the 1005r Server Maintenance and Diagnostics guide.
The HAL does not detect the MPB96 board. All the DSPs report failures in the diagnostic window.	By looking at the LEDs, ensure the MPB96 is not faulty. See MPB96 board LEDs on page.
The system does not detect the MPB96 board after CallPilot is migrated from an earlier platform.	• Check if the system is detected correctly in the HAL; that is, if the platform information file matches your system information. • If the platform information and the system information do not match, then load the correct platform information file into the registry.
The system detects the MPB96 board only partially, and Configuration Wizard does not run.	The MPB96 board is configured incorrectly from the clocking point of view. Contact your Avaya support representative for assistance.
The system detects the MPB96 board, but does not correctly load the DSP information at startup.	The cache.bin file in the D:\nortel\hardware\dsp\c52\ folder is corrupted. Rerun the Configuration Wizard to reflash the DSPs.

1006r server

The 1006r server is based on an Intel Driskill-T/Urbanna server platform with advanced self-troubleshooting mechanisms. You can troubleshoot errors by observing multiple areas:

- Visual – front, rear panel, and internal LEDs
- Audio or Sound – beeps or increased fan noise pitch
- Software – remotely using network intelligent modules (SNMP and/or event logs).

If the system is powered on, you can access error reporting using the System Event Log (SEL) viewer tool from the hard drive (C:\Program Files\Intel\Selview\selview.exe). This tool reports all Intel Server hardware events and can save events as a text file.

Server LEDs

The LEDs indicate the state of your server and can help you troubleshoot startup problems. The following tables provide useful information about the external and internal LEDs.

Front panel LEDs

LED	Color	State	Functional Description
NIC1/NIC2 Activity	Green	On	NIC link
		Blink	NIC activity
Power/Sleep (on standby power)	Green	On	Legacy power-on/ACPI S0 state
		Blink (see Note)	Sleep/ACPI S1 state
	Off	Off	Power-off/ACPI S4 or S5 state
System Status (on standby power) For more detailed information about System Status LEDs, see System status LEDs on page 51.	Green	On	Running/normal operation
		Blink (see Note)	Degraded
	Amber	On	Critical or unrecoverable condition
		Blink (see Note)	Non critical condition
	Off	Off	POST/System Stop
Disk Activity	Green	Random blink	Provides an indicator for disk activity.
	Off	Off (see Note)	No hard disk activity
System Identification	Blue	On	Identify active via command or button.
	Off	Off	No identification

Note:
The amber status takes precedence over the green status. When the amber LED is on or

	blinking, the green LED is off. The power LED sleep indication is maintained on standby by the chipset. If the system is powered down without going through the BIOS, the LED state that is in effect at the time of power-off is restored when the system is powered on until the BIOS clears it. If the system is not powered down normally, it is possible that the Power LED is blinking while the system status LED is off. This is due to a failure or configuration change that prevents the BIOS from running.		

System status LEDs

Color	State	Criticality	Description
Green	Solid on	OK	AC power is on.
	Blink	Degraded	System booted and ready System degraded. Including, but not limited to: • Unable to use all of the installed memory (more than one DIMM installed) • Correctable errors over a threshold of 10 and migrating to a spare DIMM (memory sparing). This indicates that the user no longer has spare DIMMs specifying a redundancy loss condition. The corresponding DIMM LED should light up. • In a mirrored configuration, when memory mirroring takes place and

			system loses memory redundancy. This is not covered by the second bullet above. • Redundancy loss such as power supply or fan. This does not apply to non-redundant subsystems. • PCI Express link errors • CPU failure/disabled: If there are two processors and one of them fails. • Fan alarm: fan failure. Number of operational fans should be more than a minimum number needed to cool the system. • Non critical threshold crossed (temperature and voltage)
Amber	Blink	Non critical	Non fatal alarm but system is likely to fail. Including, but not limited to: • Critical voltage threshold crossed voltage regulator (VR) hot asserted. • Minimum number of fans to cool the system are not present or have failed. • In non-sparing and non-mirroring mode if the threshold of ten. • Number of correctable errors is crossed within the window
	Solid on	Critical, unrecoverable	Fatal alarm: system has failed or shut down. Including, but not limited to: • DIMM failure: when there is only one DIMM present and it is not in a good state. • Run time memory uncorrectable error in non-redundant mode. • IERR signal asserted • Processor 1 missing • Temperature (for example, CPU ThermTrip, memory TempHi, critical threshold crossed)

	• No power signal: power fault • Processor configuration error (for example, processor stepping mismatch)

External LEDs

Description	Information
Main board POST code LEDs	During the system boot process, the BIOS executes a number of platform configuration processes, each assigned to a specific POST code number. The POST code is displayed using eight diagnostic LEDs on the back edge of the board. The POST codes are divided into two nibbles, an upper nibble and a lower nibble. See the diagram in section LED error codes on page 55 for an illustration.
MPB96 CAT5 link LEDs (three LEDs located on the card bracket and visible from the back of the server)	The CR-MPB96 faceplate contains three RJ45 connectors for the three DS30 interfaces: • One green LED within each connector is used for DS30 cable signal activity detection. • One yellow LED within each connector is used to indicate occurrences of frame slips or connection issues. • The green LED on the MPB96 RJ45 is lit when the card is operational and fully connected to an operational MGate card via the CAT5 cable. If the RJ45 cable is disconnected or if there are any connection issues, the green LED will go off and the yellow LED will go on.
MGate LEDs	There are two LEDs on the DS30 RJ45 connector: green and yellow. If a DS30X 50 pin cable is plugged into the switch backplane slot corresponding to the MGate card, the front RJ45 connector is disabled and both LEDs are off. When the CAT5 cable is connected to the faceplate of the CR-MGate, the green LED is on, assuming no cable is plugged into the backplane as described above. It is also assumed that the other end of the CAT5 cable is connected to a fully operational MPB96. If the MPB96 is not operational, the yellow LED is on and the green LED is off. If the CAT5 cable is connected to the MPB96 but not connected to the MGates or vice versa, the yellow LED is turned on and the green LED is off.
NIC LEDs	Each network interface card (NIC) has two LEDs:

	• A solid yellow LED shows that the network cable is connected. • A green blinking LED indicates data transfer.
Hard drive LEDs	There is an activity/fault LED for each of the hard drive connectors. The LED illuminates green for activity or amber for a drive fault. The green activity LED is driven by the SAS/SATA hard disk drive directly. The amber fault LED is driven by the VSC410 management controller when a fault condition is detected. When the drive is used in a RAID configuration, the RAID controller has control over the fault LED and it may exhibit different behavior.
Power supply LEDs	Each power supply has its own LED: • OFF = system or power supply is off or faulty • Red/Amber = power supply is faulty or cable is disconnected • Green = power supply is working correctly and powered on

Internal LEDs

Description	Information
MPB96 CAT5 board LEDs	The three red LEDs at the top of the MPB96 board are visible through the grill at the back of the server. • The PCI FPGA Done LED (the closest to the card I/O bracket) comes on at startup and turns off immediately. This indicates that the board works properly and was detected correctly by the system. If this LED stays on after the startup, the card is defective and must be replaced. • The DSP FPGA Done LED also comes on at startup and turns off immediately. If the LED stays on after the startup, the card is defective and must be replaced. • The CTBus CPLD Done LED (the farthest from the card I/O bracket) also comes on at startup and turns off immediately. If the LED stays on after the startup, the card is defective and must be replaced.
Fan LEDs	Each of the six hot swappable fans has an LED at the top, embedded in the green handle. Solid or blinking amber LED indicates that either the fan is faulty or the FRU/SDR firmware is not up to date, the fan is not inserted properly, or the connector is faulty. A lit LED on any of the fans is always associated with high speed fan activity.

Memory LEDs	Each memory module has a corresponding fault LED located and labeled on the main board in close proximity to the corresponding memory slot. A lit LED indicates a faulty or improperly seated memory module.

POST error codes

Power on self test (POST) codes can be classified as either visual (LED), audio, or screen. If an error occurs before video initialization, the POST emits beep codes that indicate errors in hardware, software, or firmware. For more information about LED error codes, see LED error codes on page 55. For more information about screen LED error messages, see BIOS (screen displayed) error messages on page 56.

A beep code is a series of separate tones, each equal in length. Record the beep code sequence before calling Avaya technical support.

Beep count	Description
3	A Memory error occurred. System halted because a fatal error relating to the memory was detected. Reseat the memory or replace the DIMMs with functional modules.
1 – 5 – 2– 1	No CPUs installed or first CPU socket is empty.
1 – 5 – 4– 2	Power fault. DC power was unexpectedly lost (power good dropout).
1 – 5 – 4– 4	Power control fault (power good assertion timeout).

LED error codes

During the system boot process, the BIOS executes a number of platform configuration processes, each assigned to a specific POST code number. The POST code is displayed using eight diagnostic LEDs on the back edge of the board. The POST codes are divided into two nibbles, an upper nibble and a lower nibble. The upper nibble is represented by LEDs 4, 5, 6, and 7. The lower nibble bits are represented by LEDs 0, 1, 2, and 3. If the bit is set, the LED is lit. If the bit is clear, the LED is off.

For more information about other LED error messages, refer to Front panel LEDs on page 50 or External LEDs on page 53.

BIOS (screen displayed) error messages

When a recoverable error occurs during the POST, the BIOS displays an error message describing the problem.

BIOS error messages appear on the video monitor and will also be logged in the Error Manager menu in BIOS. The menu will also display the severity and the instance.

For a detailed definition of error codes, contact Avaya technical support at http://www.avaya.com/support.

System Event Logs (SEL)

System event logs are the repository for all system hardware events, including POST error codes. The SEL can be accessed via the SEL View Utility within the CallPilot image. Contact Avaya support for more information about how to read SEL and retrieve the log data.

System troubleshooting

Trouble symptom	Action
The system boots, the fans turn at high speed but do not return to normal speed. The system is extremely noisy.	Two possible causes are: • One or more fans are faulty and you need to replace the fan module. For instructions, see the 1006r Server Maintenance and Diagnostics Guide (NN44200-709). • The BMC or FRU/SDR firmware is not up to date or is corrupt. Re-flash the system board F/W with Avaya-approved BMC and FRU/SDR and try again. • The server cover is not secured properly. Replace the cover. • The switch on top of the PCI riser card is faulty or broken. Replace the PCI riser card. If none of the above actions resolves the problem, replace the server.

The system boots and beeps, but there is no video. (In most cases the front panel LEDs will indicate a hardware fault condition.	Refer to the error and beep codes or contact Avaya at http://www.avaya.com/support.
The system boots but PCI errors appear or fill the screen.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the re-seating with the server out of the rack and on a solid surface. Ensure the power cable is not plugged in during this task.
The system boots, but a blue screen appears.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the re-seating with the server out of the rack and on a solid surface. Ensure the power cable is not plugged in during this task. Also, ensure your CAT5 MPB96 card has the latest firmware (release 3.0 or later).
The system boots, but does not detect the RAID controller.	Ensure the RAID dongle and RAID mini DIMM are plugged in properly and the RAID controller is enabled in BIOS.
The system boots, but does not report that one power supply is disconnected or that the cable is unplugged. The front panel LEDs do not display in multiple colors.	The system does not have the correct Avaya customized FRU/SDR firmware, or the firmware was loaded while these components were disconnected. Ensure all of the power supplies are plugged in and connected to the AC and the system is fully configured. Run the system board firmware and BIOS upgrade. Ensure the BIOS settings are verified after this procedure.
During startup, a message indicates that the System Event Log is full and the log must be cleared.	This is an unusual situation and appears only if the server was booted many times. View the log before clearing it. See the 1006r Hardware Maintenance and Diagnostics guide NN44200-709 for viewing and clearing the System Event Log.

RDX and tape drive troubleshooting

Trouble	Action
The USB external RDX or SLR external tape drive (with USB to SCSI adapter) was hot	Select a device within the Windows device manager and then select Action > Rescan.

plugged but does not appear in the device manager.	The drive should be detected. If not, ensure the correct driver is installed. If this does not resolve the problem, ensure the external drive is powered up and not faulty. Observe the LED codes on the tape drive for errors pertaining to the tape drive only.

RAID troubleshooting

Trouble	Action
The system boots but does not detect the RAID controller.	Ensure the RAID dongle and RAID mini DIMM are plugged in properly and the RAID controller is enabled in BIOS. You must complete the re-seating with the server out of the rack and on a solid surface.
The system boots and detects the RAID controller but does not boot into Windows.	Check if any, or all, of the drives are offline. Recreate or repair the RAID packs.
The system boots but one of the drive LEDs on the front panel is amber.	The RAID is split, or one of the drives is faulty or offline. Replace or rebuild the drive. No action is required if this is due to a voluntary RAID split.
A drive fails and the replacement does not rebuild.	The RAID controller settings are incorrect or the size of the hard drive that is about to be rebuilt is well beyond the capacity of what the coercion algorithm can handle (typically 300-500 MB in size difference). **Important:** You must complete a full system rebuild to re-configure the RAID controller to the correct Coercion Algorithm, in case the setting is wrong.
The system is not rebuilding a drive or it returns an error after the rebuild is initiated.	The hard drive is faulty or much larger in size than what the Coercion Algorithm can handle.
After a failed upgrade, both drives are brought offline to return to a previous CallPilot release, but the system displays a blue screen.	Do not use the power console to bring both drives offline. Use the Ctrl+G utility. If you disable both hard drives while in Windows, the system crashes.

Dongle troubleshooting

Trouble	Action
The dongle is plugged in and is detected in the device manager but CallPilot does not recognize it.	Ensure the dongle is in the top right USB slot at the back of the server.
The dongle is plugged into the correct USB slot but is not visible in the device manager. CallPilot also does not detect it.	The dongle holder is not plugged in correctly, or it is defective. Replace it and keep the button. Also, ensure the button is not installed backward. For installation instructions, see the 1006r Server Hardware Installation Guide (NN44200-320).

Windows and CallPilot hardware troubleshooting

Trouble	Action
The system beeps, but seems to be running properly and taking calls.	This is a RAID controller beep indicating that one of the drives does not function properly. Do not shut down the system. Open the RAID Web Console, and check which drive is marked as Offline. Rebuild the drive marked as Offline. If the rebuild is unsuccessful, ensure that the other drive is working, and then shut down the system and replace the drive marked as Offline.
The system displays a blue screen with the following message: Hardware Malfunction, please contact your H/W vendor. The system does not take calls.	Ensure the CAT5 MPB96 board is release 3.0 or has the latest firmware (NTRH40CAE5 only).
All DSP diagnostics fail at system startup.	Shut down the server and open the lid. Turn on the server and check if the MPB96 internal LEDs are still lit after startup. If the LEDs are still on, then shut down the server, re-seat the board(s), and then turn on the server again. If the LED is still on, the board is defective and must be replaced.

The system starts up, but attempts to boot to the operating system from the network or boots to EFI shell.	The RAID controller was not detected. Check for mini DIMM and RAID dongle connections or presence.
The system ELAN or CLAN is not working, even though they are detected and displayed in the operating system control panel.	Enable the NIC controllers in the BIOS.
The system detects the MPB96 board only partially, and Configuration Wizard does not run.	The MPB96 board is configured incorrectly from the clocking point of view. Contact your Avaya support representative for assistance.
The system detects the MPB96 board, but does not correctly load the DSP information at startup.	The cache.bin file in the D:\nortel\hardware\dsp\c52\ folder is corrupted. Rerun the Configuration Wizard to reflash the DSPs.

600r server

The 600r server is based on an Intel Chesnee server platform with advanced self-troubleshooting mechanisms. You can troubleshoot errors by observing multiple areas:

- Visual – front or rear panel LEDs
- Audio or Sound – beeps or increased fan noise pitch
- Software – remotely using network intelligent modules (SNMP and/or event logs).

If the system is powered on, you can access error reporting using the CallPilot image CD/DVD SEL viewer tool (if the system does not boot into Windows). This tool reports all hardware events and saves them as a text file on a USB media.

Server LEDs

The LEDs indicate the state of your server and can help you troubleshoot startup problems. The following tables provide useful information about the external and internal LEDs.

Front panel LEDs

LED	Functional Description
CRT	A critical system fault is an error or event that has a fatal system impact. The system cannot continue to operate.
MJR	A major system fault is an error or event that has a discernible impact on system operation. The system can continue to operate but with reduced performance or features.
MNR	A minor system fault is an error or event that has little impact on system operation. The system continues to operate.
PWR	A power supply fault indicates that one of the power supplies is not providing power. The MJR LED is also lit.

External LEDs

Description	Information
MPB96 DS30 link LEDs (three green LEDs located on the card bracket and visible from the back of the server)	When these LEDs are on, all three DS30 connections are working properly and the cables are connected correctly. If one or more LEDs are off, one of the following conditions is present: • One or more connections to the switch are interrupted. Check each of the three branches of the DS30 cable for faults, or replace the cable. • An MGate card in the switch is defective.
NIC LEDs	Each network interface card (NIC) has two LEDs:

	• The upper LED shows that the network cable is connected. • The lower LED blinks to indicate data transfer.
Power supply LED	The power supply has its own LED: • OFF = system or power supply is off or faulty • Red/Amber = power supply is faulty or cable is disconnected • Green = power supply is working correctly and powered on

Internal LEDs

Description	Information
MPB96 board LEDs	The three red LEDs at the top of the MPB96 board are visible through the grill at the back of the server. • The PCI FPGA Done LED (the closest to the card I/O bracket) comes on at startup and turns off immediately. This indicates that the board works properly and was detected correctly by the system. If this LED stays on after the startup, the card is defective and must be replaced. • The DSP FPGA Done LED comes on at startup and stays on until the CallPilot drivers are loaded and the diagnostic screen appears. If the LED stays on after the operating system starts and the CallPilot diagnostic screen appears, then the MPB96 board is defective or the DSP and NTBus drivers do not function properly. • The CTbus FPGA Done LED (the farthest from the card I/O bracket) works in tandem with the DSP FPGA Done LED and turns on and off at the same time.

POST Beep Codes

If an error occurs before video initialization, the POST emits beep codes that indicate errors in hardware, software, or firmware.

A beep code is a series of separate tones, each equal in length. Record the beep code sequence before calling Avaya technical support.

Beep count	Description
1, 2, or 3	A Memory error occurred. Reseat the memory or replace the DIMMs with known good modules.
4 – 7 or 9 – 11	A fatal error occurred and indicates a possible serious system problem. Remove all the add-in cards and restart the system. If the error still occurs, contact Avaya support. If the beep codes are not generated after you remove the add-in cards, insert the cards one at a time, booting the system between each card addition, until the beeps again occur to reveal the malfunctioning card.
8	A problem with the onboard video card occurred indicating a fault on the server board.

BIOS error messages

When a recoverable error occurs during the POST, the BIOS displays an error message describing the problem.

BIOS error messages appear on the video monitor. Refer to the following table for a description of the messages.

Error message	Description
GA20 Error	An error occurred with Gate A20 when switching to protected mode during the memory test.
Pri Master HDD Error Pri Slave HDD Error	The system could not read the sector from the corresponding drive.
ATAPI Incompatible Drive • Pri Master Drive • Pri Slave Drive	The corresponding drive is not an ATAPI (Advanced Technology Attachment Packet Interface) device. Run Setup to make sure the device is selected correctly.
A: Drive Error	No response from the disk drive.
CMOS Battery Low	The battery is losing power. Replace the battery soon.

CMOS Display Type Wron	The display type is different from that stored in CMOS. Check Setup to make sure the type is correct.
CMOS Checksum Bad	The CMOS checksum is incorrect. CMOS memory can be corrupted. Run Setup to reset the values.
CMOS Settings Wrong	The CMOS values are not the same as the last boot. Either these values are corrupted or the battery failed.
CMOS Date/Time Not Set	The time or date values stored in CMOS are invalid. Run Setup to set the correct values.
DMA Error	An error occurred during the read/write test of the DMA (Direct Memory Access) controller.
FDC Failure	An FDC Failure error occurred while trying to access the diskette drive controller.
HDC Failure	An error occurred trying to access the hard disk controller.
Checking NVRAM....	The NVRAM (Non-Volatile Random Access Memory) is being checked to see if it is valid.
Update OK!	The NVRAM is invalid and has been updated.
Updated Failed	The NVRAM is invalid and cannot be updated.
Keyboard Error	An error occurred in the keyboard connection. Make sure the keyboard is connected properly.
KB/Interface Error	The keyboard interface test failed.
Memory Size Decreased	The memory size has decreased since the last boot. If you have not removed any memory, then the memory may be faulty.
Memory Size Increased	The memory size has increased since the last boot. If you have not added any memory, there is a problem with the system.
Memory Size Changed	The memory size has changed since the last boot. If you did not add or remove any memory, then the memory may be faulty.
No Boot Device Available	The system did not find a device to boot from.
Off Board Parity Error	A parity error occurred on an offboard card. This error is followed by the card address.

On Board Parity Error	A parity error occurred in onboard memory. This error is followed by the card address.
Parity Error	A parity error occurred in onboard memory at an unknown address.
NVRAM / CMOS / PASSWORD cleared by Jumper	NVRAM, CMOS, and passwords have been cleared. Power the system down and remove the jumper.
<CTRL_N> Pressed	The CMOS is ignored and NVRAM is cleared. You must enter Setup.

System troubleshooting

Trouble symptom	Action
The system boots, the fans turn at high speed but do not return to normal speed. The system is extremely noisy.	Two possible causes are: • One or more fans are faulty and you need to replace the fan module. For instructions, see the 600r Server Maintenance and Diagnostics Guide (NN44200-703). • Reflash the system board F/W with Avaya-approved BMC and FRU/SDR and try again. If neither of the above actions resolves the problem, replace the server.
The system boots and beeps, but there is no video. (In some cases a red LED appears on the front cover).	Refer to the error and beep codes or contact Avaya at http://www.avaya.com/support.
The system boots but a red CRT LED and an amber PWR LED appears.	One power supply is faulty, or the AC cable is unplugged (or faulty).
The system boots but PCI errors appear or fill the screen.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the reseating with the server out of the rack and on a solid surface. Ensure the power cable is plugged in.
The system boots, but a blue screen appears.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the reseating with the server out of the rack and on a solid surface.

During an upgrade, the upgrade wizard states that the processor configuration is incorrect.	Ensure the BIOS settings are correct (including the hyper-threading setting).
The system starts to boot but two red lines appear at the bottom of the screen and the message cannot be read.	The server recovered from a system error (processor internal IERR error). To clear the resulting error message from the log, go to the processor menu in BIOS and set the processor re-test to enabled.
During startup, a message indicates that the System Event Log is full and the log must be cleared.	This is an unusual situation and appears only if the server was booted many times. View the log before clearing it. See the 600r Maintenance and Diagnostics guide NN44200-703 for viewing and clearing the System Event Log.
Server appears to boot but cannot find the hard drive.	This is likely due to the absence of the SCSI terminator on the back of the server. If the tape drive is plugged in, ensure it has the SCSI terminator installed.

SCSI and tape drive troubleshooting

Trouble	Action
The SLR external tape drive is plugged in but is not recognized by the device manager.	Select a device within the Windows device manager and then select Action > Rescan. The drive should be detected. If not, ensure the correct driver is installed. If this does not resolve the problem, ensure the external drive is powered up and not faulty. Observe the LED codes on the tape drive for errors pertaining to the tape drive only. Ensure the SCSI tape drive has the external SCSI terminator installed.
The tape drive is plugged in correctly, but the system experiences errors. (The drive cannot be re-tensioned or go offline randomly).	The tape drive may have been plugged into the RAID external SCSI adaptor instead of the SCSI adaptor. Plug the tape into the correct connector at the back of the server. For instructions, see the 600r Server Hardware Installation Guide (NN44200-307).

RAID troubleshooting

Trouble	Action
The system boots but does not detect the RAID card.	Ensure the PCI riser assembly is plugged in correctly, aligned, and firmly pressed into the slot. You must complete the reseating with the server out of the rack and on a solid surface.
The system boots and detects the RAID card but does not boot into Windows.	Check if any, or all, of the drives are offline. Re-create or repair the RAID packs.
The system boots but one of the drive LEDs on the front panel is amber.	The RAID is split, or one of the drives is faulty or offline. Replace or rebuild the drive. No action is required if this is due to a voluntary RAID split.
A drive fails and the replacement does not rebuild.	The RAID card settings are incorrect. The coercion algorithm is not set to 1 GB. **Important:** You must complete a full system rebuild to reconfigure the RAID cards to the correct coercion algorithm.
The system is not rebuilding a drive or it returns an error after the rebuild is initiated.	The hard drive is faulty. Check the driver version or the power console version.
After a failed upgrade, both drives are brought offline to return to a previous CallPilot release, but the system displays a blue screen.	Do not use the power console to bring both drives offline. Use the Ctrl+M utility. If you disable both hard drives while in Windows, the system crashes.

Dongle troubleshooting

Trouble	Action
The dongle is plugged into the USB slot and is detected in the device manager but CallPilot does not recognize it.	Ensure the dongle is in USB slot 0, and not in slot 1 or 2.

The dongle is plugged into USB slot 0 but is not visible in the device manager. CallPilot also does not detect it.	The dongle holder is not plugged in correctly, or it is defective. Replace it and keep the button. Also, ensure the button is not installed backward. For installation instructions, see the 600r Server Hardware Installation Guide (NN44200-307).

Windows and CallPilot hardware troubleshooting

Trouble	Action
The system beeps, but seems to be running properly and taking calls.	This is a RAID card beep indicating that one of the drives does not function properly. Do not shut down the system. Open the Power Console Plus (CallPilot 3.x) utility, and check which drive is marked as Dead. Rebuild the drive marked as Dead. If the rebuild is unsuccessful, ensure that the other drive is working, and then shut down the system and replace the drive marked as Dead.
The system displays a blue screen with the following message: Hardware Malfunction, please contact your H/W vendor. The system does not take calls.	Ensure the MPB96 board is release 5 or later (NTRH40AA only).
All DSP diagnostics fail at system startup.	Shut down the server and open the lid. Turn on the server and check if the PCI LED on the MPB96 board is still on after startup. If the LED is still on, then shut down the server, reseat the board, and then turn on the server again. • If the LED is still on, the board is defective and must be replaced. • If the LED goes on and then off, but the DSP and CTbus FPGA LEDs are still on after the system boots completely to the operating system, then check the HAL and ensure that all its components are working properly. If the HAL components function properly, then at least one of the ctbus.mcs or dsp.mcs files is corrupted. Replace these files and reboot the system. If the PCI

	LED still stays on, then the MPB96 board is defective and must be replaced.
The system starts up, but attempts to boot to the operating system from the network.	The RAID card was not detected due to improper seating during PCI assembly. Remove the system from the rack and place it on a table. Reseat the PCI assembly by securely pushing it into place. Ensure the slots and studs at the back are properly aligned.
The system ELAN or CLAN is not working, even though they are detected and displayed in the operating system control panel.	Enable the NIC controllers in the BIOS.
The system displays an error message after CallPilot languages are installed.	There is an older version of the RAID controller firmware. Upgrade the RAID firmware to a currently supported version. For information about valid RAID firmware, see the 1005r Server Maintenance and Diagnostics guide.
The HAL does not detect the MPB96 board. All the DSPs report failures in the diagnostic window.	By looking at the LEDs, ensure the MPB96 is not faulty. See MPB96 board LEDs on page.
The system does not detect the MPB96 board after CallPilot is migrated from an earlier platform.	• Check if the system is detected correctly in the HAL; that is, if the platform information file matches your system information. • If the platform information and the system information do not match, then load the correct platform information file into the registry.
The system detects the MPB96 board only partially, and Configuration Wizard does not run.	The MPB96 board is configured incorrectly from the clocking point of view. Contact your Avaya support representative for assistance.
The system detects the MPB96 board, but does not correctly load the DSP information at startup.	The cache.bin file in the D:\nortel\hardware \dsp\c52\ folder is corrupted. Rerun the Configuration Wizard to reflash the DSPs.

Chapter 5: Network troubleshooting

In this chapter

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Check end-to-end connectivity on page 71

Check network adapters and driver installation on page 71

Check TCP/IP configuration on page 72

Test the TCP/IP on page 94

Check event logs on page 95

Check cabling

Ensure that the link LEDs at both ends of each Ethernet cable are on. If the link LEDs are not on, then ensure that the crossover cables are not being used in error. Try different cables if the link LEDs do not come on. Use proper cables rated for at least 100 Mb/s; for example, category 5 UTP cables.

Check end-to-end connectivity

Ensure that any intermediate Ethernet switches or hubs, routers, and firewalls are properly connected and configured.

Check network adapters and driver installation

1. Start the Windows Device Manager:
    a. Click Start > Settings >Control Panel.

   b. Double-click System.
   c. Click the Hardware tab.
   d. Click Device Manager.

2. Expand the Network Adapters tree by clicking the plus sign (+) to the left of this device entry.

   Result: Two Ethernet adapters are displayed under Network Adapters.

3. Right-click the first network adapter, and then click Properties on the shortcut menu.

   Result: The network adapter Properties dialog box appears.

4. Depending on the information displayed in the Properties dialog box of the network adapter, proceed as follows:

   a. If the device is disabled, enable it.
   b. If the device is not working properly, try reinstalling the device driver.
   c. If you are unable to reinstall the device driver, a hardware problem can affect the adapter.

5. Perform steps 3 and 4 for the second network adapter.

Check TCP/IP configuration

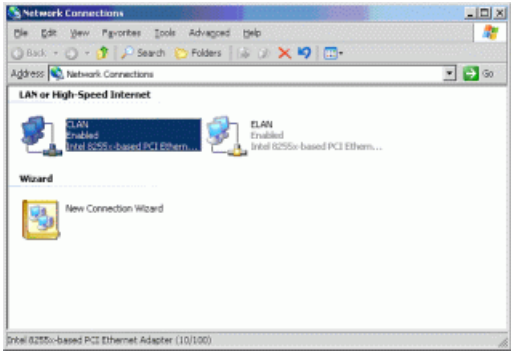
The TCP/IP communication works only if the TCP/IP configuration is correct. Ensure that the subnet mask information is correct and that the default gateway address is on the same subnet.

The following procedure outlines the steps necessary for troubleshooting TCP/IP configuration issues. Ensure that all settings, as well as the variables specific to your installation, are correct.

Important:
Do not use the IP addresses and names shown in the illustrations. Use the values provided by your network administrator.

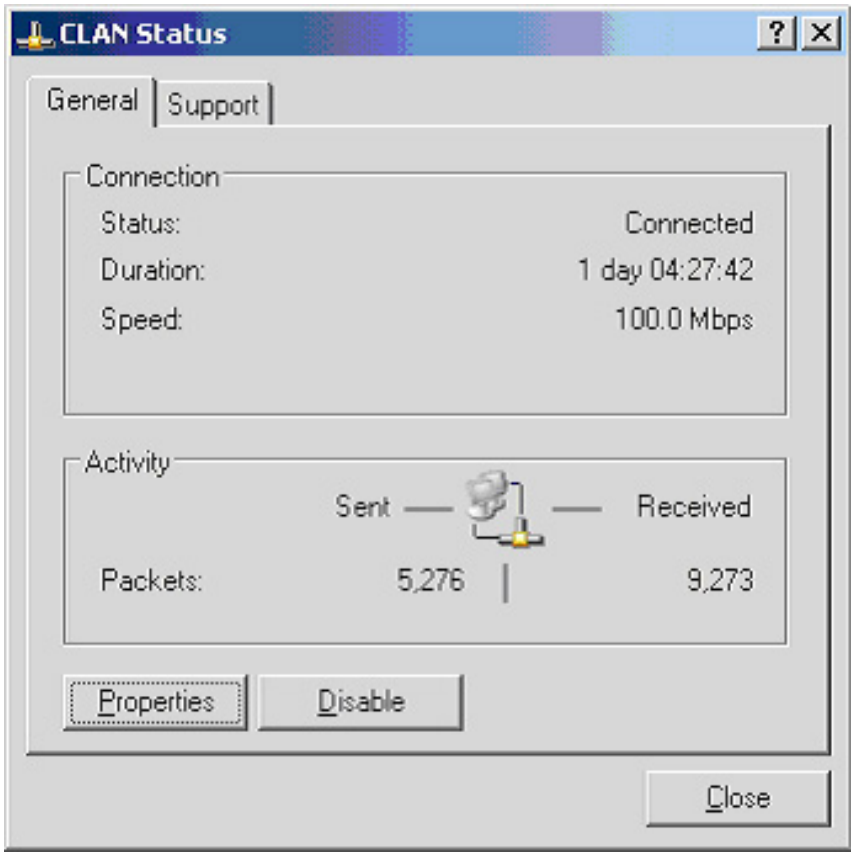
1. Click Start > Settings > Network and Dialup Connections.

   Result: The Network Connections window appears.

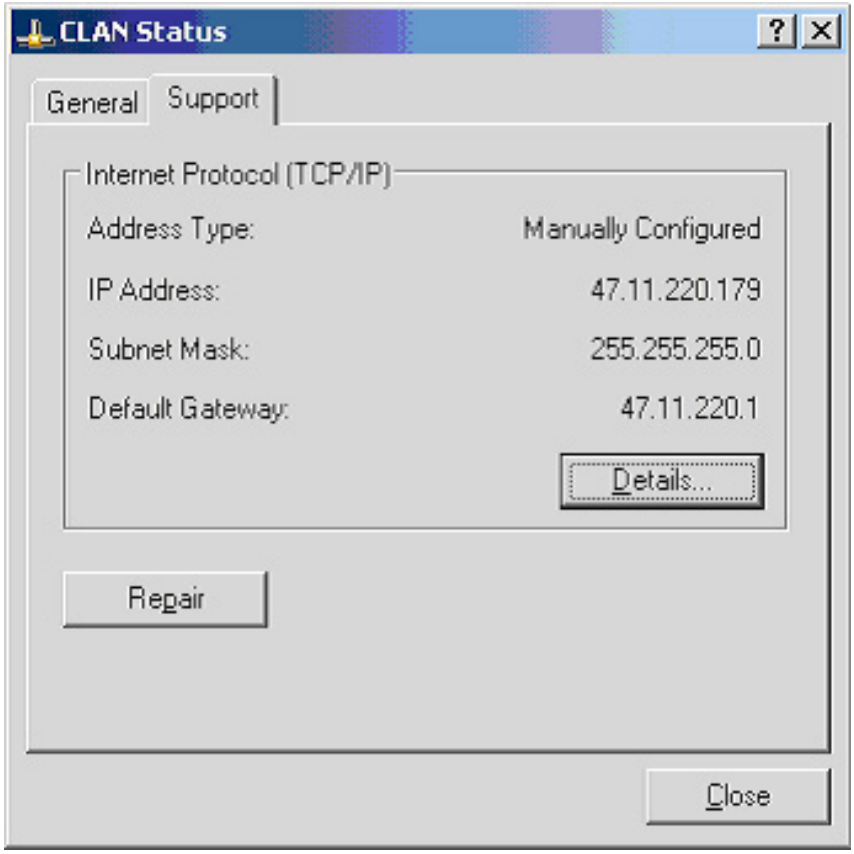


2. Right-click CLAN, and then click Status on the shortcut menu.

   Result:The following dialog box appears.

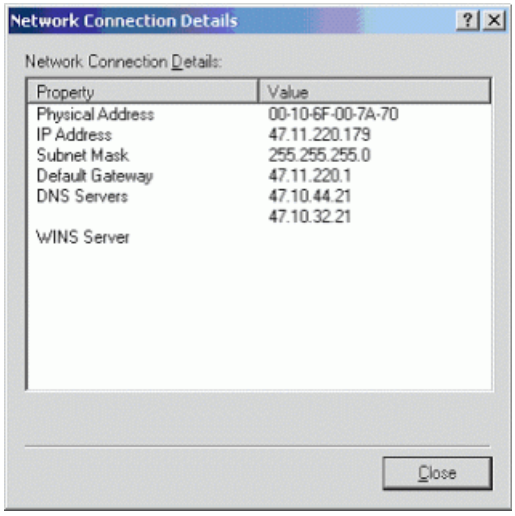


3. Click the Support tab.



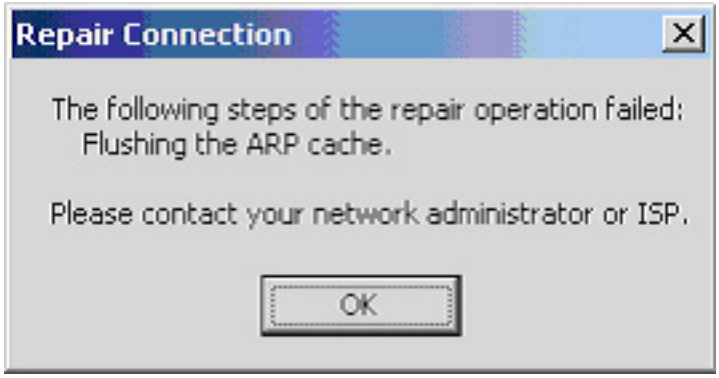
4. Click Details.

   Result:The following box appears.



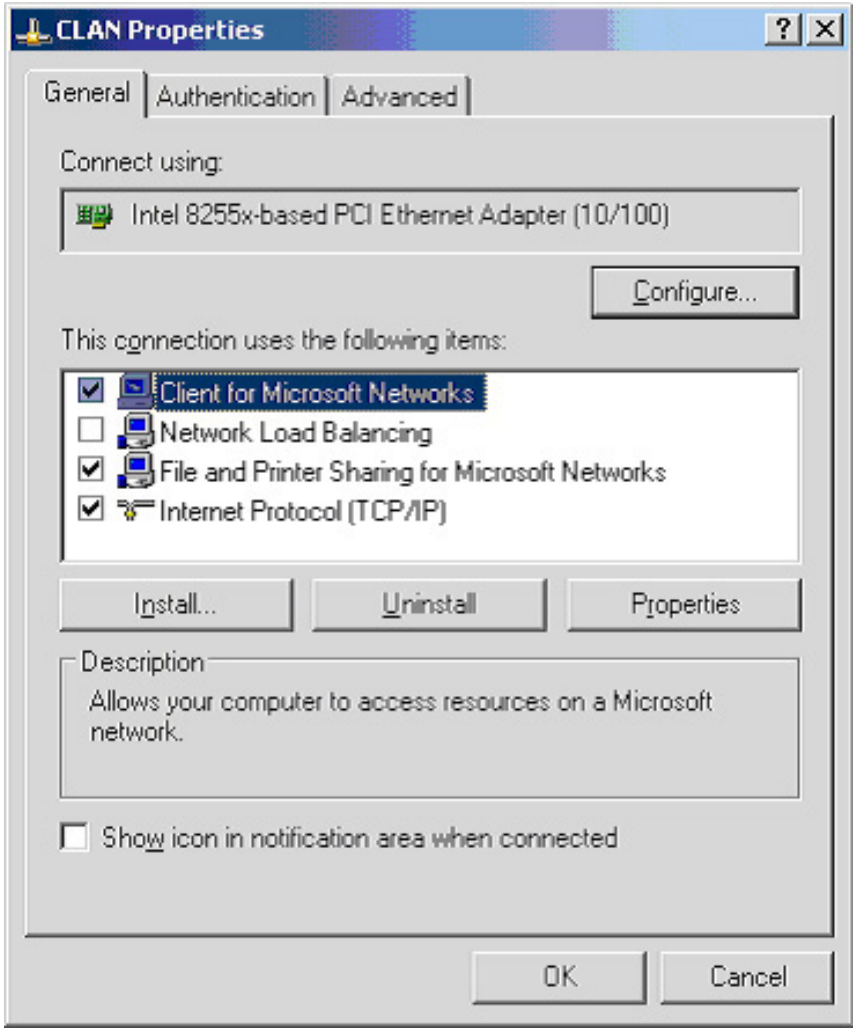
5. Click Close.
6. Click Repair on the network adapter status dialog box

Result:The following dialog box appears.

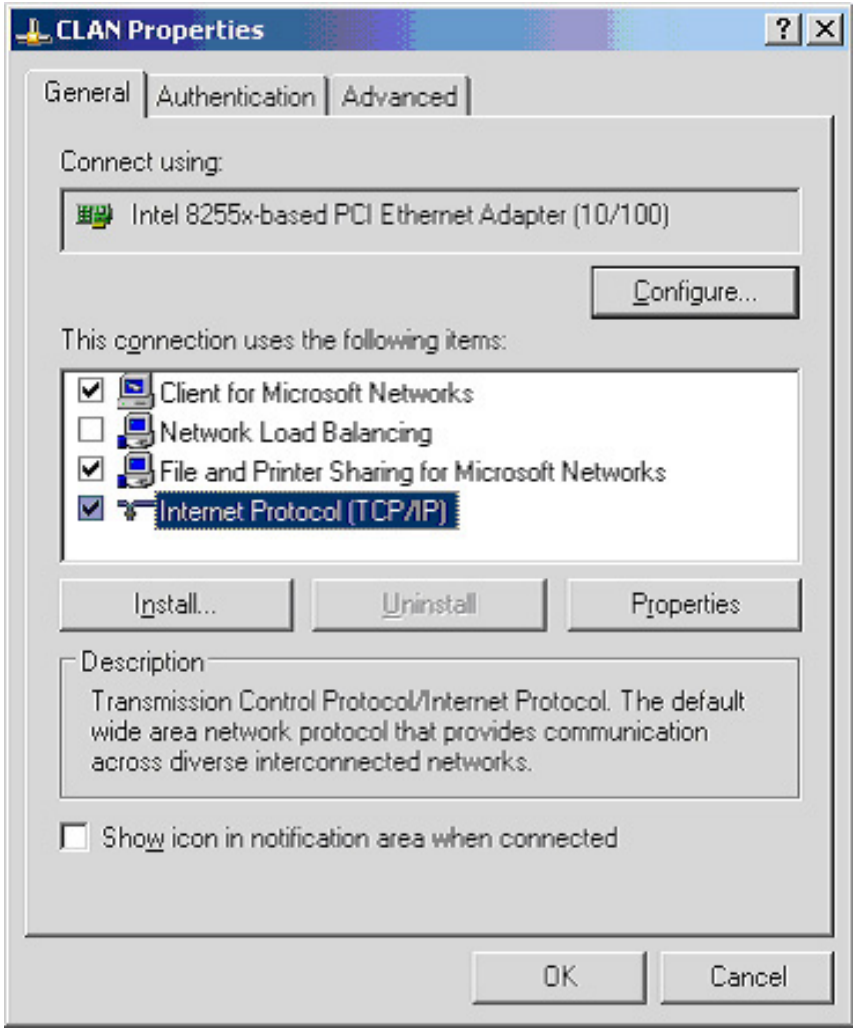


7. Click OK (this error is normal).
8. Click the General tab of the network adapter status dialog box, and then click Properties.

   Result:The following dialog box appears.

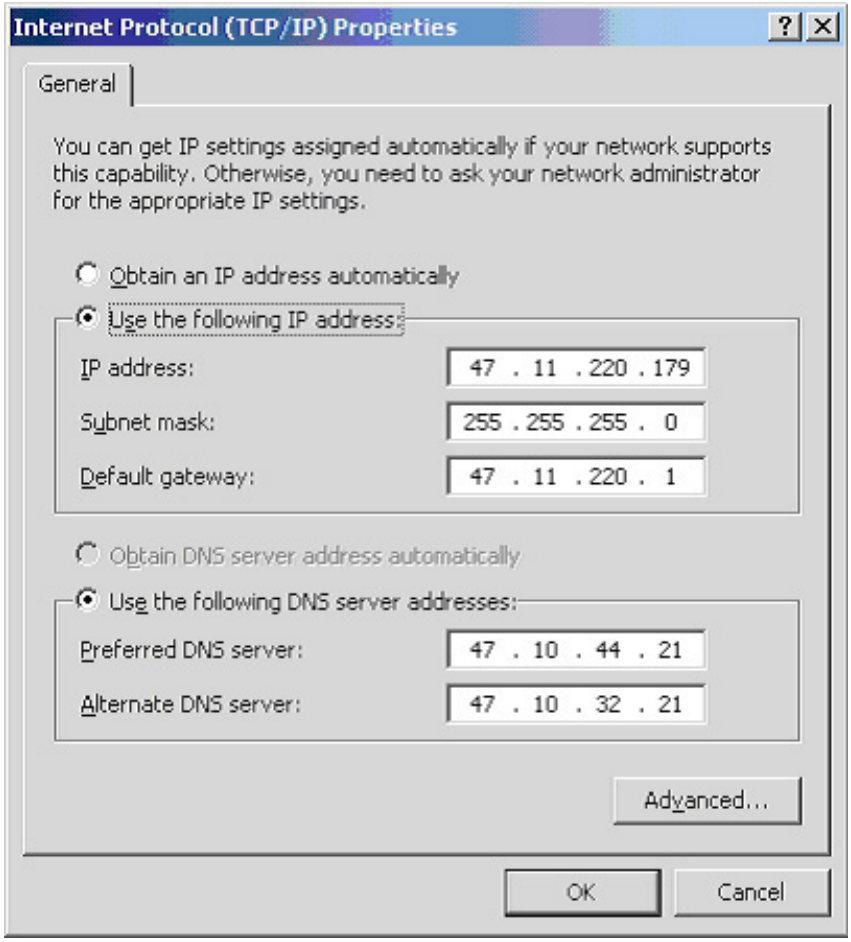


9. Click the Internet Protocol (TCP/IP) entry to select it.



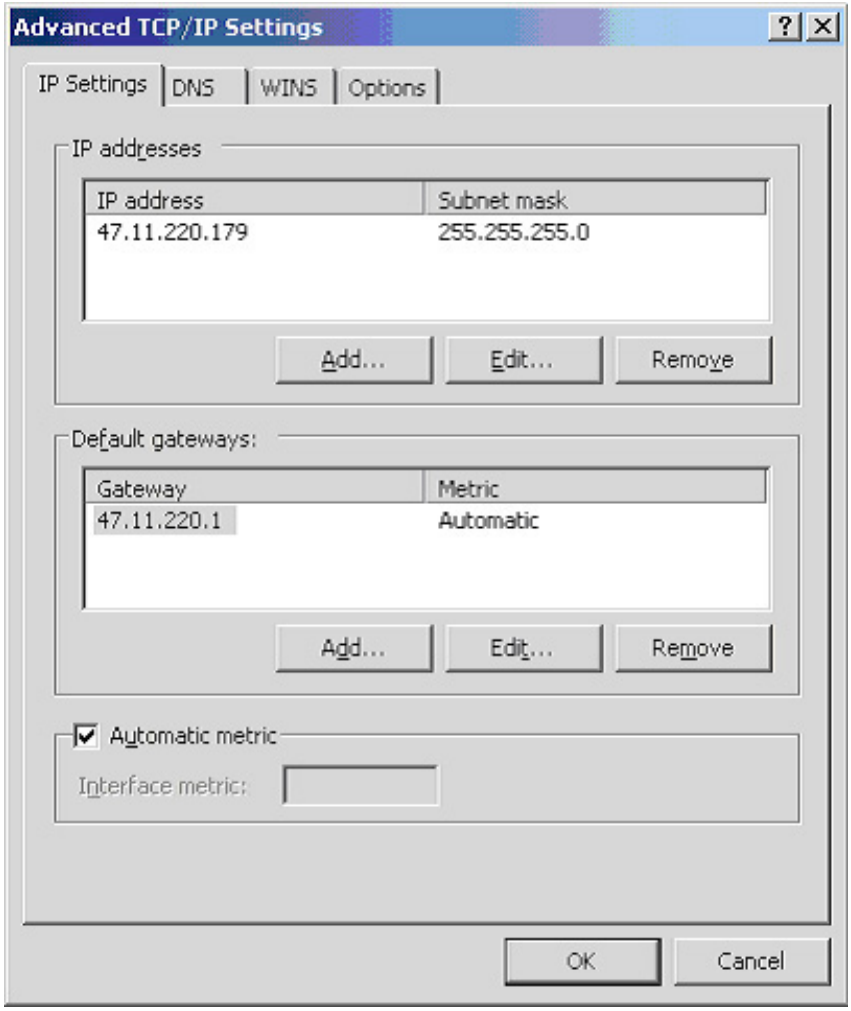
10. Click Properties.

    Result:The following dialog box appears.

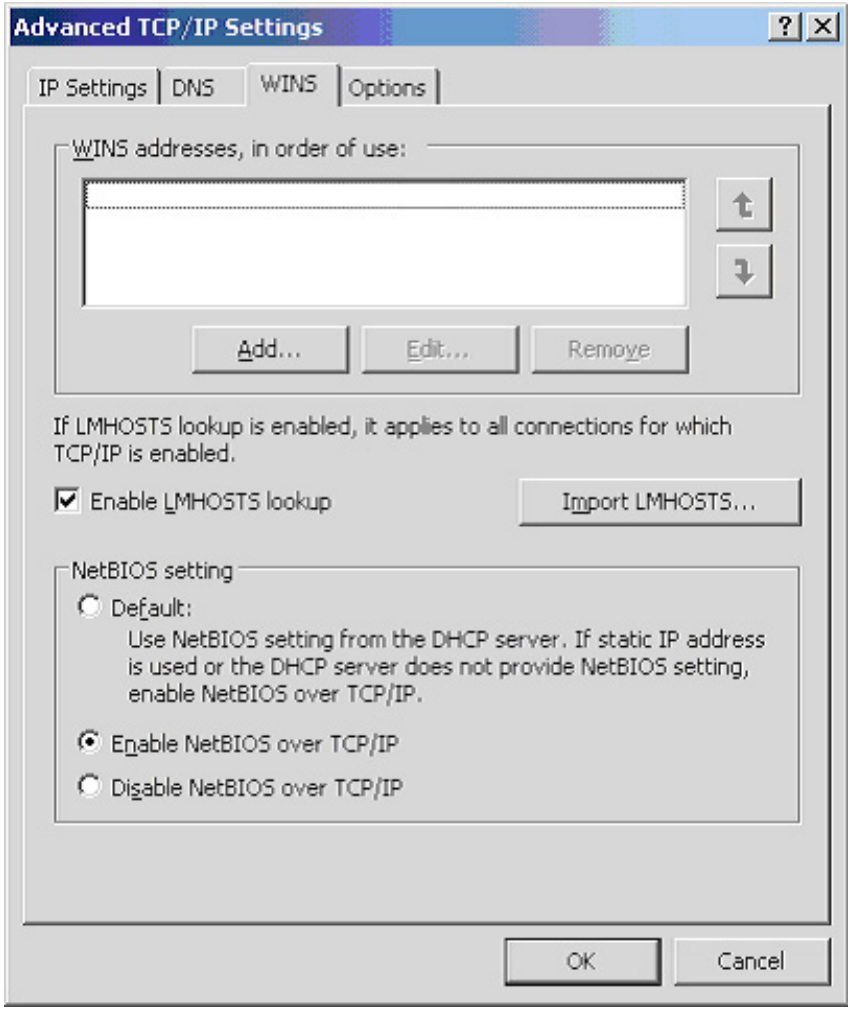


11. Click Advanced.

    Result:The following dialog box appears.



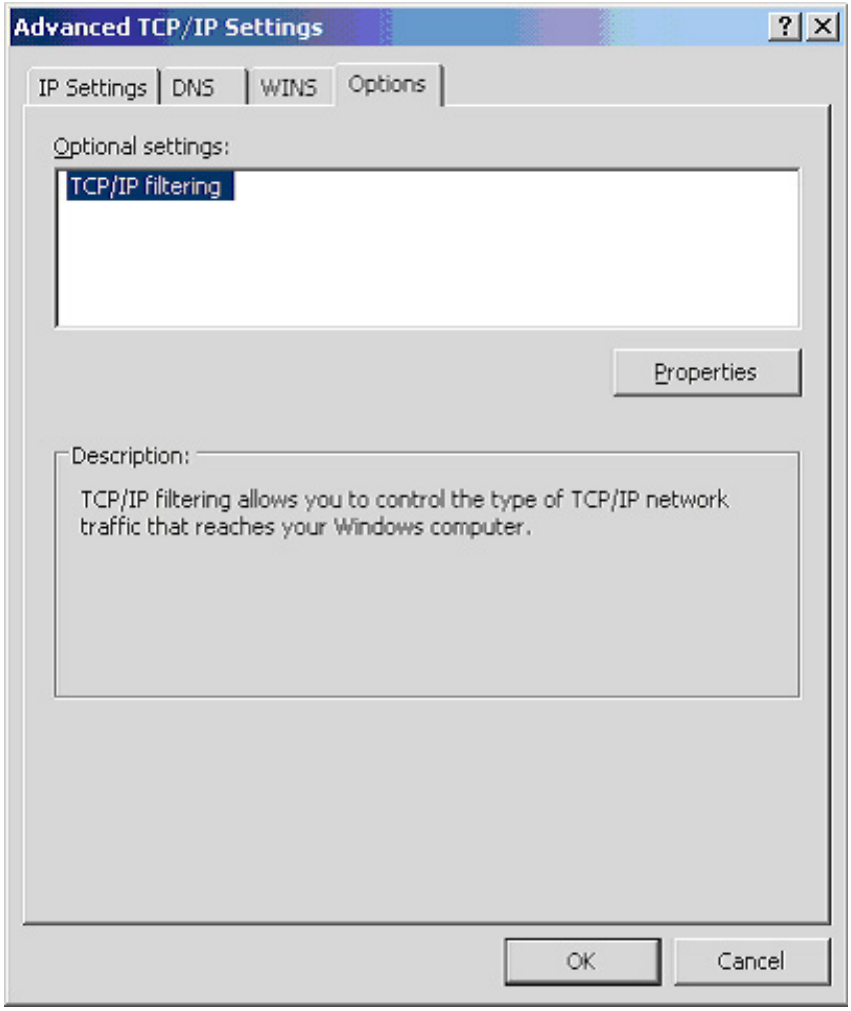
12. Click the DNS tab. Check that the settings are correct for your private network.
13. Click the WINS tab.



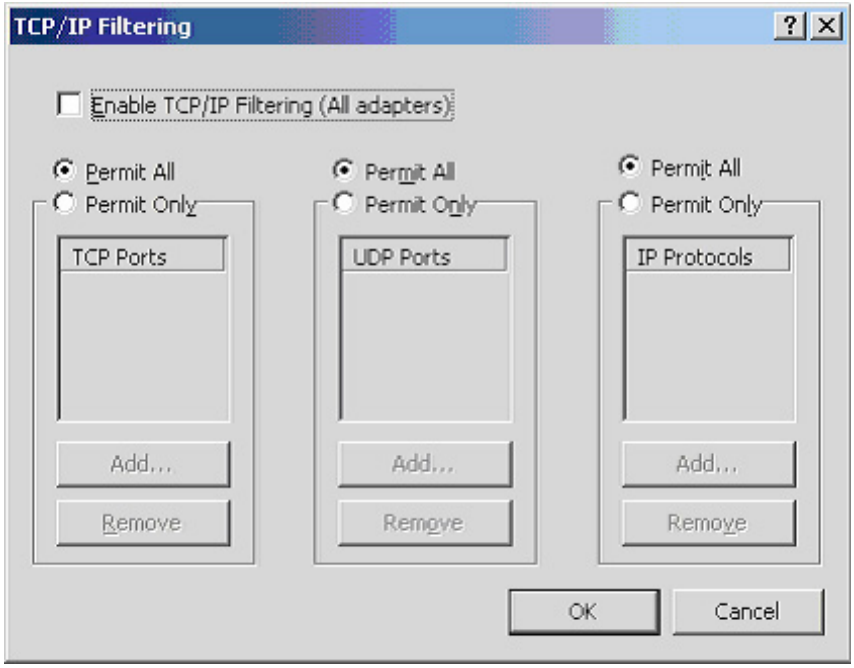
Note:

WINS IP addresses must be entered for your private network.

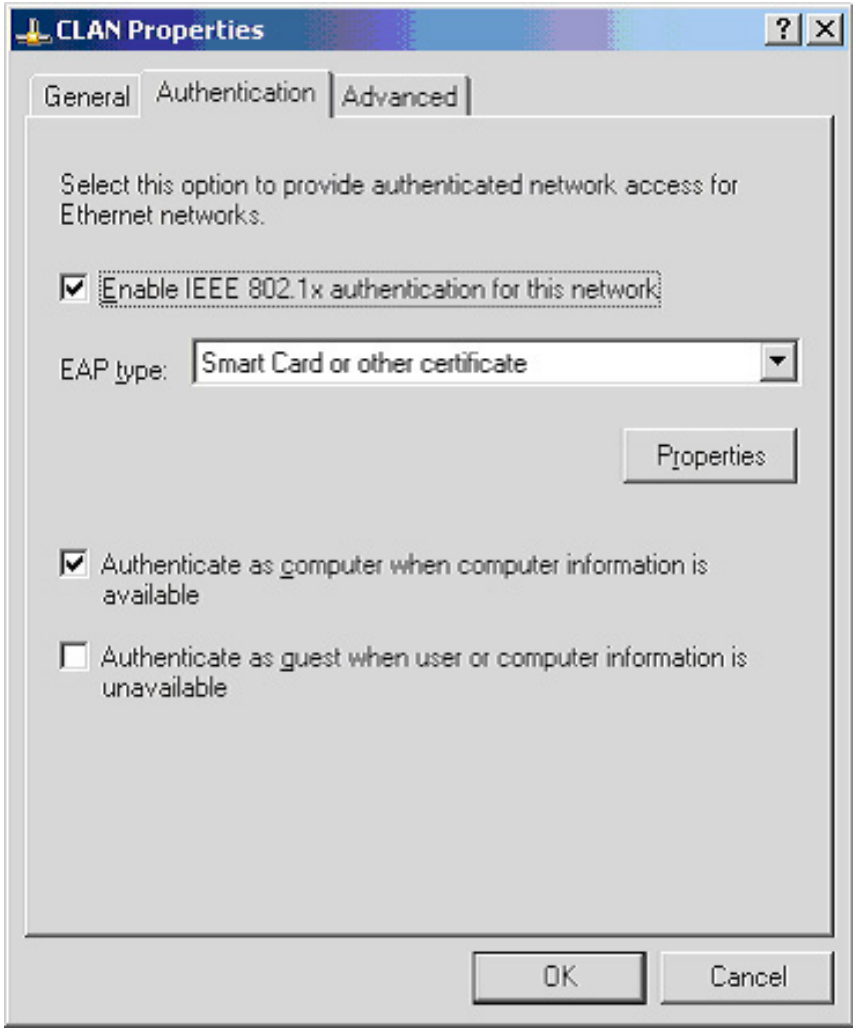
14. Click the Options tab. Check that the settings are correct for your private network.



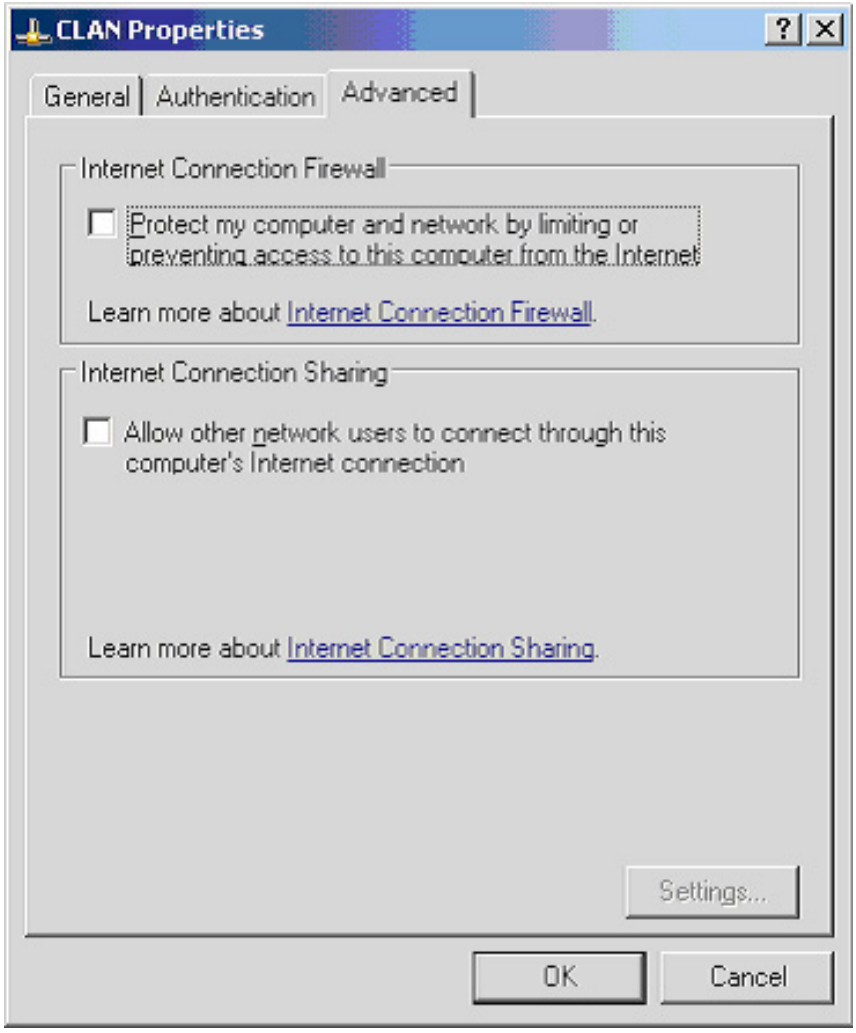
15. Click Properties on the Options tab to display information about TCP/IP filtering. Check that the settings are correct for your private network.



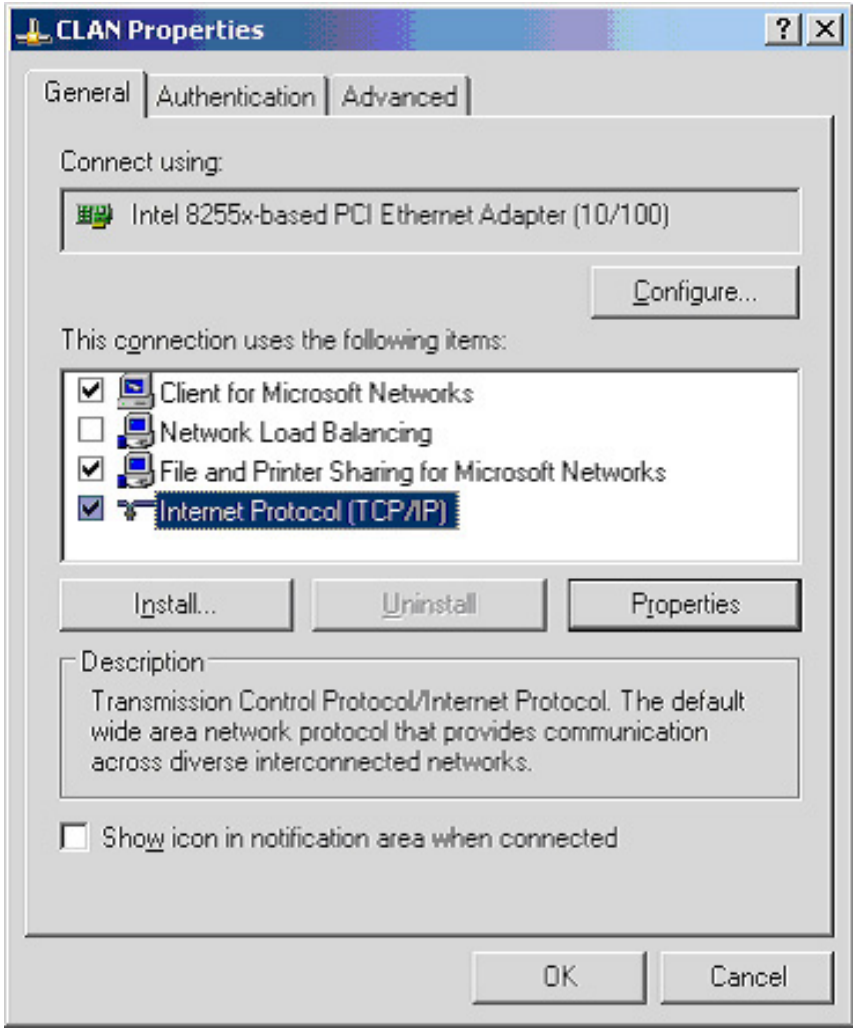
16. Click Cancel to close the TCP/IP filtering dialog box.
17. Click Cancel to close the Advanced TCP/IP Settings dialog box.
18. Click the Authentication tab in the CLAN Properties dialog box.



19. Click the Advanced tab in the CLAN Properties dialog box.

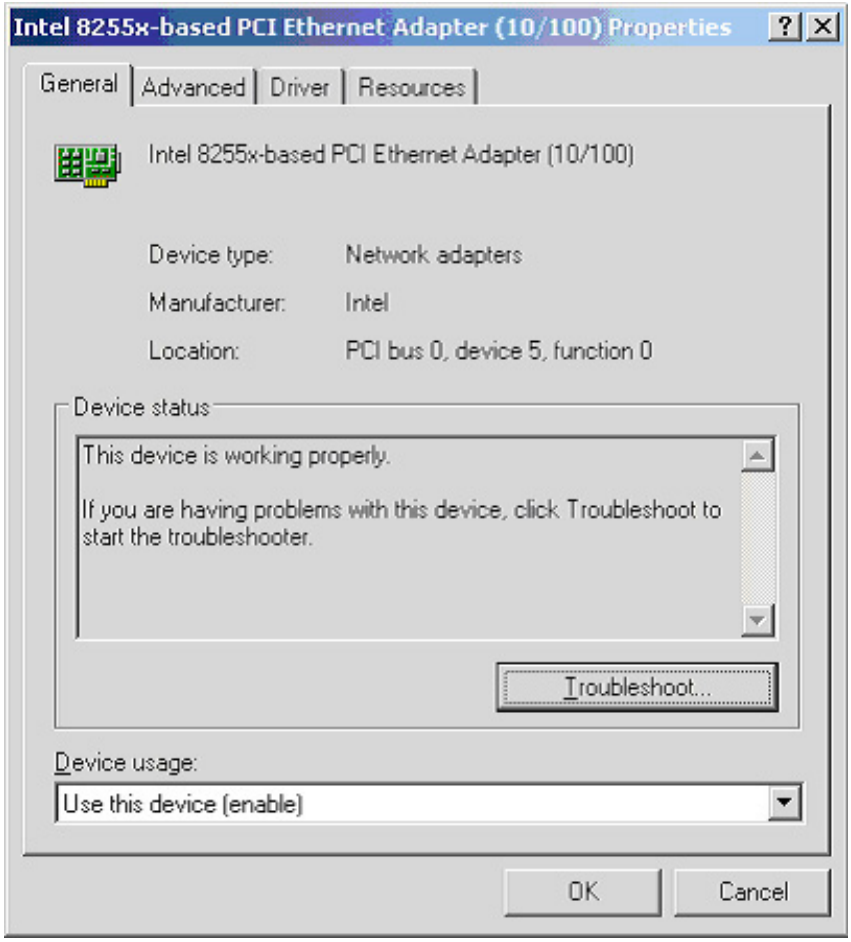


20. Click the General tab in the CLAN Properties dialog box.

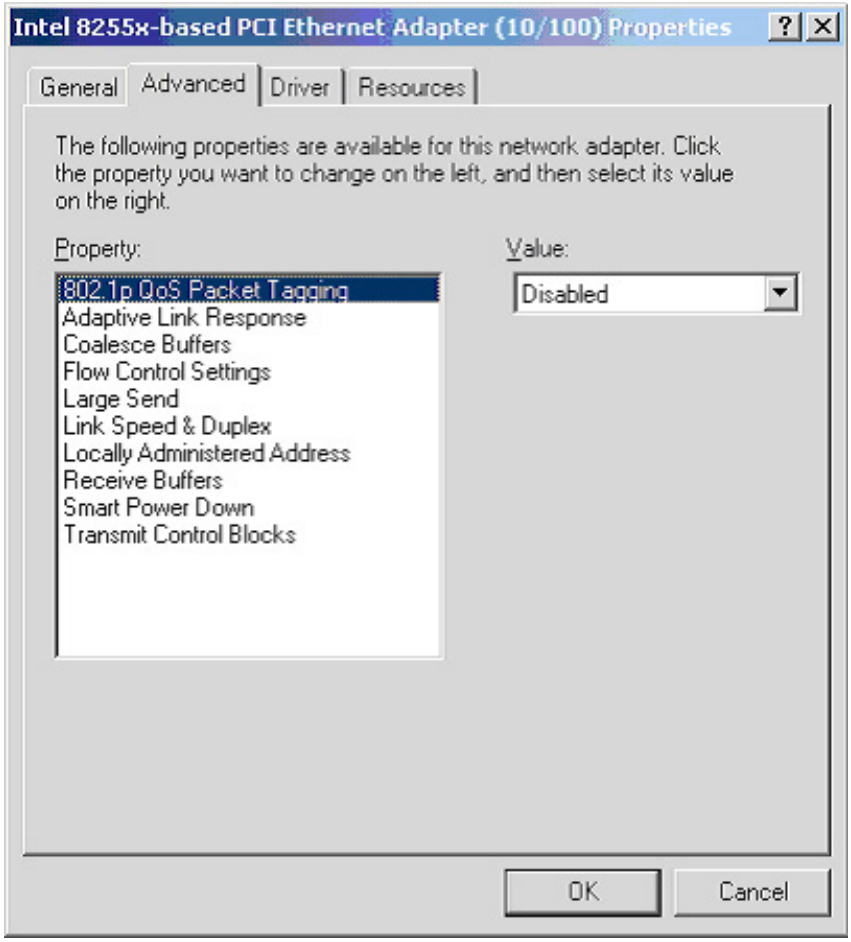


21. Click Configure.

    Result: The Ethernet adapter Properties dialog box appears.



22. Click the Advanced tab.



The default property values in the Advanced tab differ according to the link and Avaya CallPilot® platform used. The following tables provide the default values for different cases.

Note:

Other values can work and can be acceptable under certain circumstances.

Table 2: 201i Intel 8255xER PCI adapter (CLAN and ELAN) default advanced property values

Property	Value
Duplex	AutoDetect
IPv4* Priority Tag	Disabled
IPv4* VLAN Tag ID	0
Receive Buffers	16
Speed	AutoDetect

Property	Value
Transmit Control Blocks	8

Table 3: 202i Intel 8255xER PCI adapter (CLAN and ELAN) default advanced property values

Property	Value
Duplex	AutoDetect
IPv4* Priority Tag	Disabled
IPb4* VLAN Tag ID	0
Receive Buffers	16
Speed	AutoDetect
Transmit Control Blocks	8

Table 4: 703t Intel PRO/1000 MT network controller (CLAN) default advanced property values

Property	Value
Fast Transmit Completion	On
Flow Control	Both on
Link Speed & Duplex	AutoDetect
Locally Administered Address	Not Present
Number of Coalesce Buffers	128
Number of Receive Buffers	256
Number of Transmit Descriptors	256
Offload Receive IP checksum	On
Offload Receive TSP checksum	On
Offload TCP Segmentation	On

Property	Value
Offload Transmit IP Checksum	On
Offload Transmit TCP Checksum	On

Table 5: 703t Intel 8255x-based PCI Ethernet adapter (10/100) [ELAN] default advanced property values

Property	Value
802.1p QoS Packet Tagging	Disabled
Checksum	Enabled
Coalesce Buffers	8
Flow Control Settings	Off
IP Security	Enabled
Large Send	Enabled
Link Speed & Duplex	AutoDetect
Locally Administered Address	Not Present
Receive Buffers	48
Security Associations	64
Smart Power Down	Enabled
Transmit Control Blocks	16

Table 6: 1002rp Intel 8255x-based PCI Ethernet adapter (10/100) [CLAN and ELAN] default advanced property values

Property	Value
802.1p QoS Packet Tagging	Disabled
Adaptive Link Response	Off
Coalesce Buffers	8
Flow Control Settings	Off
Large Send	Enabled
Link Speed & Duplex	AutoDetect

Property	Value
Locally Administered Address	Not Present
Receive Buffers	48
Smart Power Down	Disabled
Transmit Control Blocks	16

Table 7: 1005r Intel PRO/1000 MT Dual port Ethernet adaptor - default advanced property values

Property	Value
Adaptive Inter-Frame Spacing	Enabled
Enable PME	OS controlled
Express Teaming	Teaming disabled
Flow Control	Generate and Respond
Interrupt Moderation Rate	Adaptive
Jumbo Frames	Disabled
Link Speed and Duplex	Auto Detect
Locally Administered Address	Not present
Log Link State Event	Enabled
Offload Receive IP Checksum	On
Offload Receive TCP Checksum	On
Offload TCP Segmentation	On
Offload Transmit IP Checksum	On
Offload Transmit TCP Checksum	On
Qos Packet Tagging	Disabled
Receive Descriptors	256
Transmit Descriptors	256
Wait for Link	Auto Detect
Wake on Link Settings	Disabled
Wake on Settings	OS Controlled

Table 8: 1006r Intel PRO/1000 MT Dual port Ethernet adaptor - default advanced property values

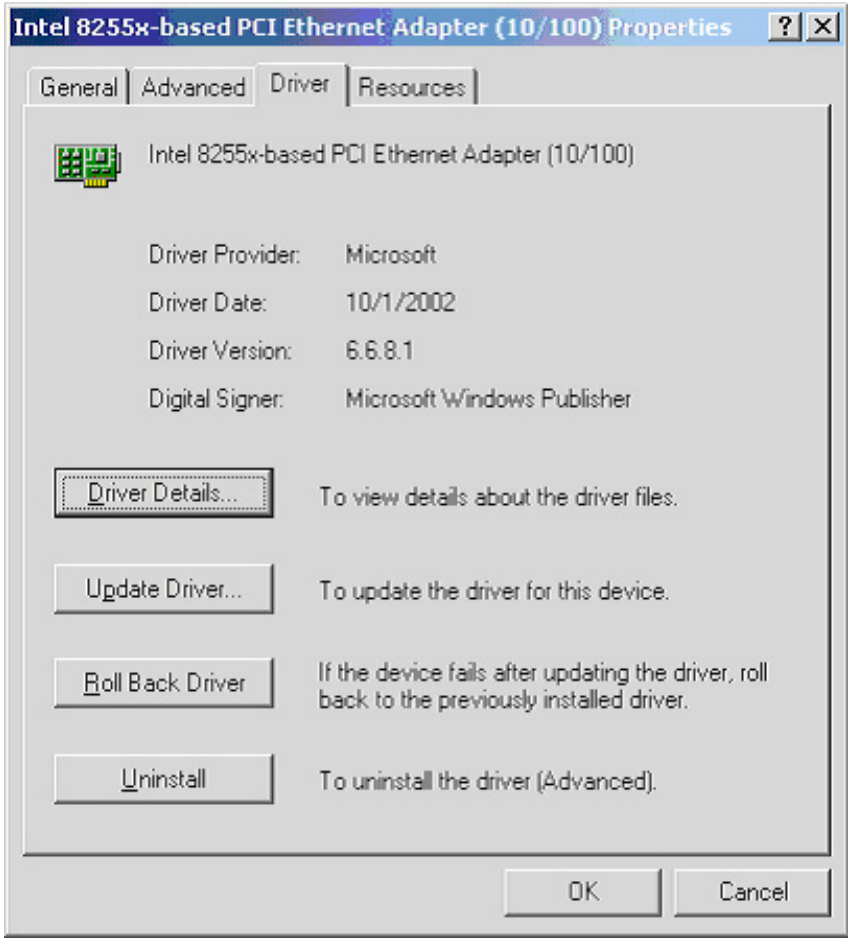
Property	Value
Adaptive Inter-Frame Spacing	Disabled
Enable PME	Enabled
Flow Control	Rx & Tx Enabled
Gigabit Master Slave Mode	Auto Detect
Interrupt Moderation Rate	Adaptive
IPv4 Checksum Offload	Rx & Tx Enabled
Jumbo Packet	Disabled
Link Speed and Duplex	Auto Negotiation
Locally Administered Address	Not present
Log Link State Event	Enabled
Offload TCP Segmentation	On
Priority & VLAN	Priority and VLAN Enabled
Receive Buffers	256
Receive Side Scaling	Enabled
Receive Side Scaling Queues	1 Queue
Smart Power Down	Hardware Default
TCP Checksum Offload (IPv4)	Rx & Tx Enabled
Transmit Buffers	512
UDP Checksum Offload (IPv4)	Rx & Tx Enabled
Wait for Link	Auto Detect
Wake on Link Settings	Disabled
Wake on Settings	OS Controlled

Table 9: 600r Intel PRO/1000 MT and Intel PRO/1000 CT port Ethernet adaptor - default advanced property values

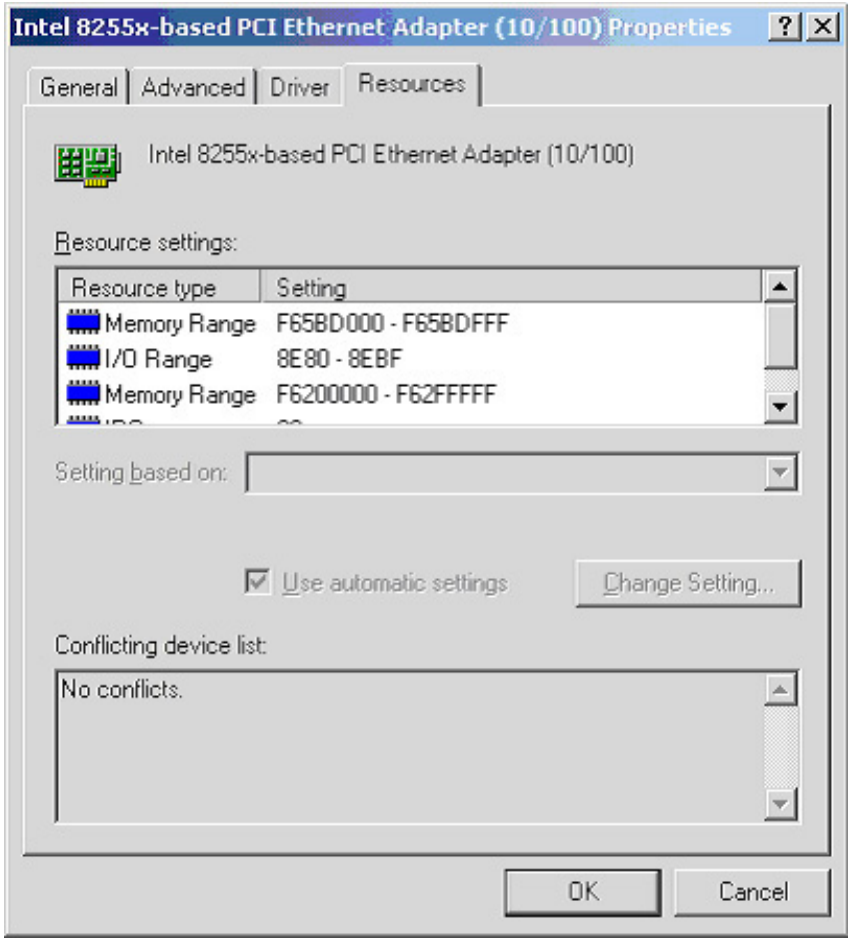
Adaptive Inter-Frame Spacing	Disabled
Enable PME	No action
Flow Control	Generate and respond
Gigabit Master Slave Mode	Hardware default

Interrupt Moderation Rate	Hardware default
Jumbo Frames	Disabled
Link Speed and Duplex	Auto detect
Locally Administered Address	Not present
Log Link State Event	Enabled
Offload Receive IP Checksum	On
Offload Receive TCP Checksum	On
Offload TCP Segmentation	On
Offload Transmit IP Checksum	On
Offload Transmit TCP Checksum	On
Qos Packet Tagging	Disabled
Receive Descriptors	256
Smart Power Down	Hardware default
Transmit Descriptors	256
Wake on Link Settings	Disabled
Wake on Settings	OS controlled

23. Click the Driver tab. Check that the settings are correct for your private network.



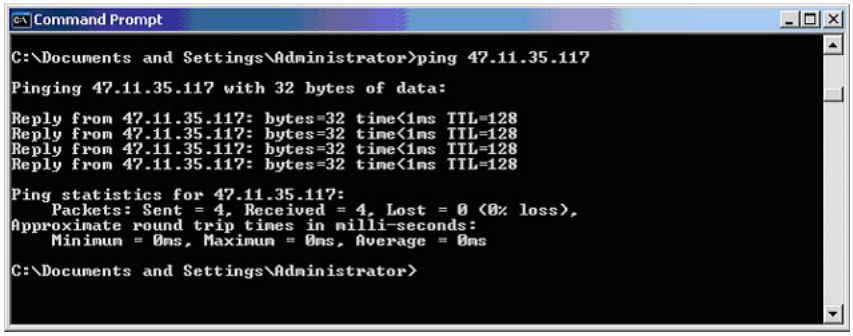
24. Click the Resources tab. Check that the settings are correct for your private network.



25. Perform steps 2 through 22 for the ELAN adapter.

Test the TCP/IP

1. Open a Command Prompt window.
2. Type ipconfig /all to display the network settings.
3. Use the ping command to check if other IP addresses are reachable. For example, ping the IP address of the switch.



Note:

Do not type the IP address shown in the preceding illustration. Use the IP address of your switch.

4. This step is required only if DNS server is used in the customer's network solution. It is suggested that a static DNS record created for the Avaya CallPilot CLAN interface on the customer's DNS server. Check that CallPilot host name could be resolved from the client PC which is planned to be used for administering CallPilot Server. Perform following steps:

    a. Login to client PC which is planned to be used for administering CallPilot Server.

    b. Run nslookup tool through Start → Run menu.

    c. Type CallPilot host name that you want to verify.

    d. If static DNS record created correctly than IP address of the CallPilot server will be displayed.

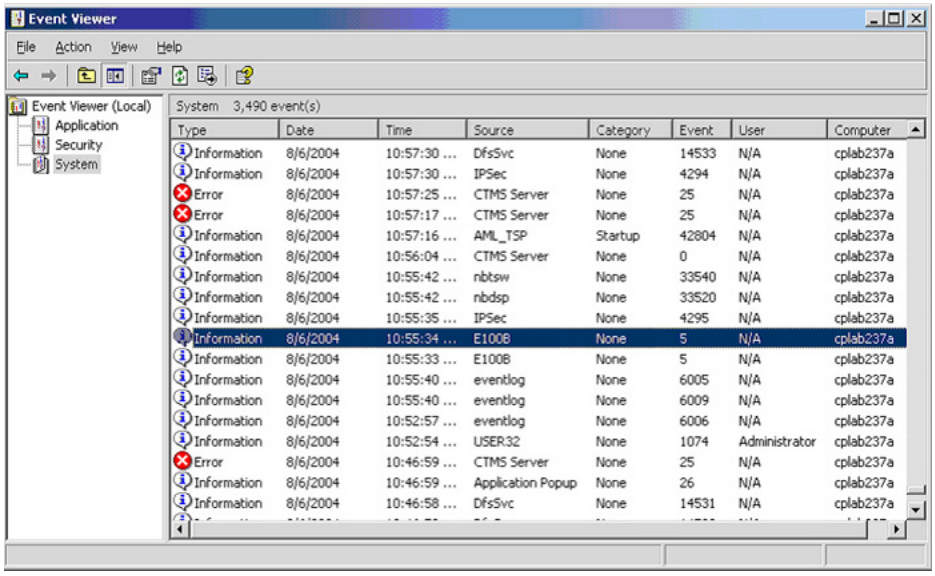
    e. If you get error message or IP address of the CallPilot Server is not correct, please contact your network administrator and fix the issue.

Check event logs

Check the system log for problems that occur when protocols are initialized after a reboot.

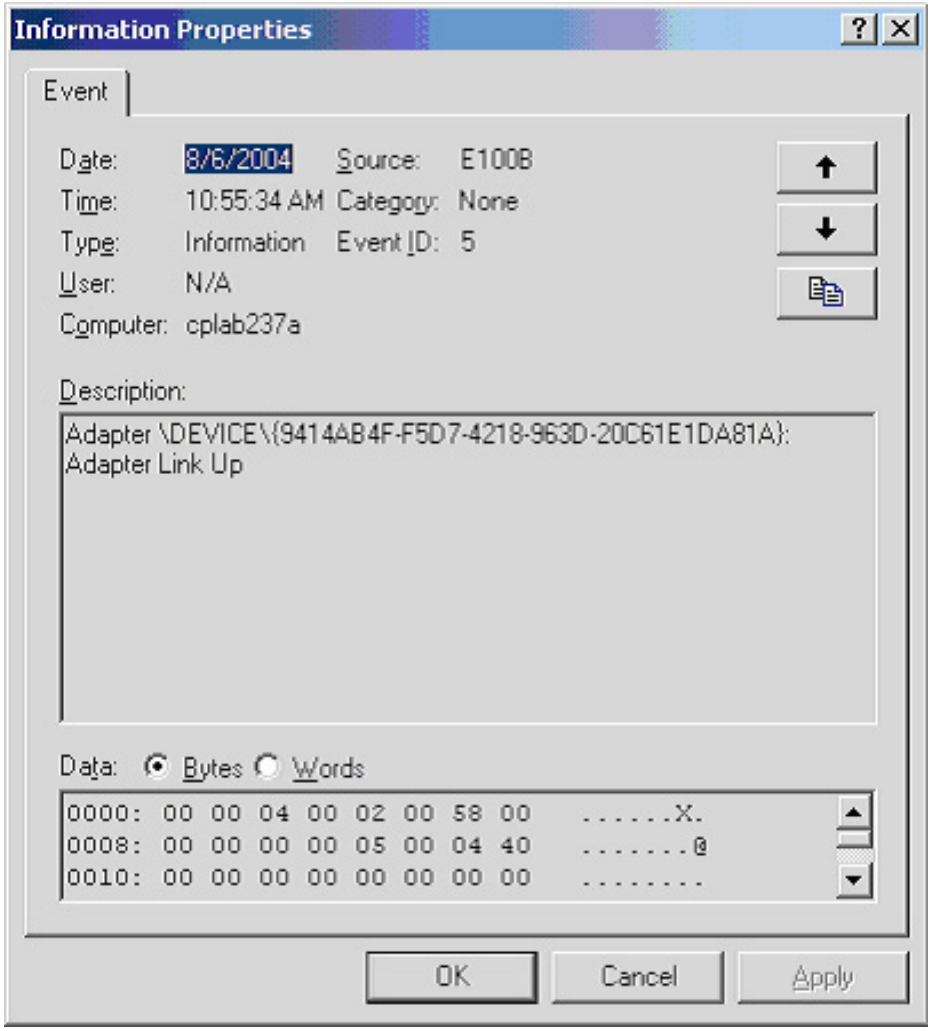
To access the event logs, click Start → Programs → Administrative Tools, and double-click Event Viewer.

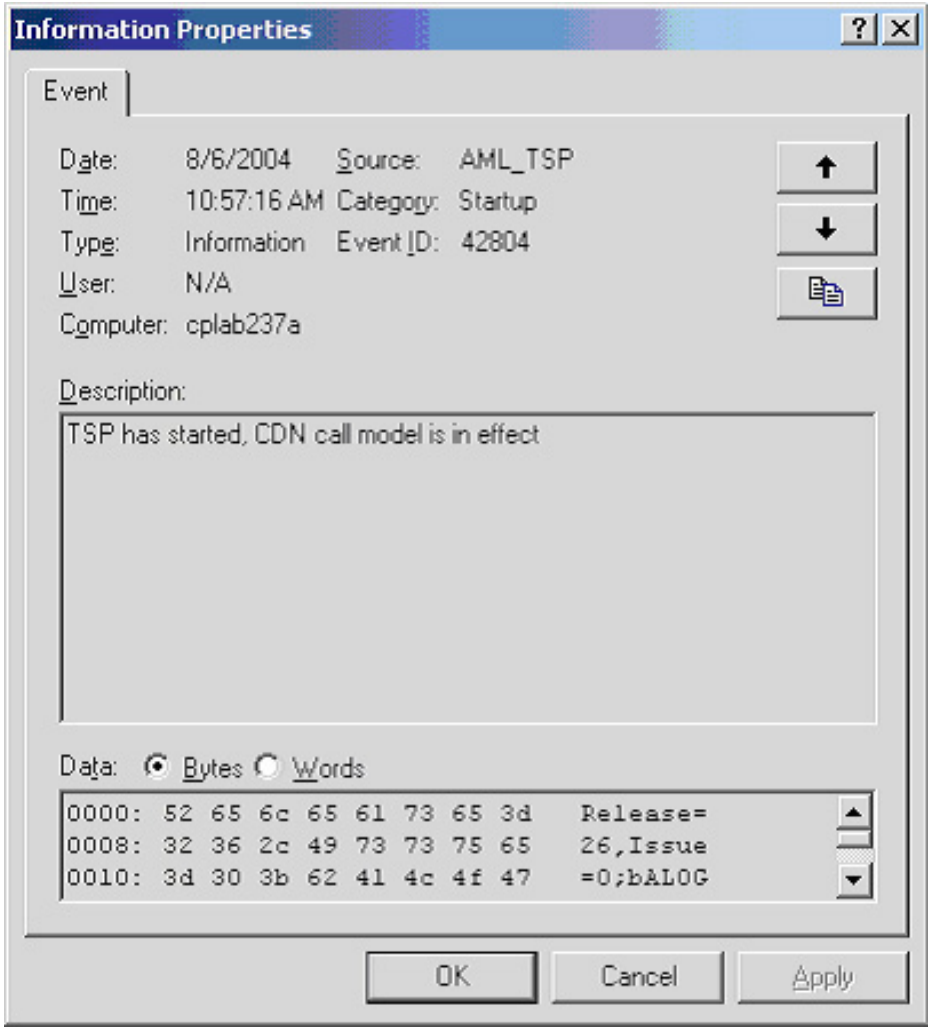
Errors in the networking configuration can result in System log events shortly after the system boots up. Look for events with values in the Source column such as E100B (the Intel Pro 100 adapter) and Tcpip. For example, if a duplicate IP address or a duplicate computer name is present on the network, the system issues event logs and networking does not work properly. The following illustration shows the Event Viewer window.



Type	Date	Time	Source	Category	Event	User	Computer
Information	8/6/2004	10:57:30 ...	DfsSvc	None	14533	N/A	cplab237a
Information	8/6/2004	10:57:30 ...	IPSec	None	4294	N/A	cplab237a
Error	8/6/2004	10:57:25 ...	CTMS Server	None	25	N/A	cplab237a
Error	8/6/2004	10:57:17 ...	CTMS Server	None	25	N/A	cplab237a
Information	8/6/2004	10:57:16 ...	AML_TSP	Startup	42804	N/A	cplab237a
Information	8/6/2004	10:56:04 ...	CTMS Server	None	0	N/A	cplab237a
Information	8/6/2004	10:55:42 ...	nbtsw	None	33540	N/A	cplab237a
Information	8/6/2004	10:55:42 ...	nbdsp	None	33520	N/A	cplab237a
Information	8/6/2004	10:55:35 ...	IPSec	None	4295	N/A	cplab237a
Information	8/6/2004	10:55:34 ...	E100B	None	5	N/A	cplab237a
Information	8/6/2004	10:55:33 ...	E100B	None	5	N/A	cplab237a
Information	8/6/2004	10:55:40 ...	eventlog	None	6005	N/A	cplab237a
Information	8/6/2004	10:55:40 ...	eventlog	None	6009	N/A	cplab237a
Information	8/6/2004	10:52:57 ...	eventlog	None	6006	N/A	cplab237a
Information	8/6/2004	10:52:54 ...	USER32	None	1074	Administrator	cplab237a
Error	8/6/2004	10:46:59 ...	CTMS Server	None	25	N/A	cplab237a
Information	8/6/2004	10:46:59 ...	Application Popup	None	26	N/A	cplab237a
Information	8/6/2004	10:46:58 ...	DfsSvc	None	14531	N/A	cplab237a

Double-click an event to display the Information Properties dialog box. The following illustrations are examples of Information Properties dialog boxes.


Information Properties
Event
Date: 8/6/2004
Source: E100B
Time: 10:55:34 AM
Category: None
Type: Information
Event ID: 5
User: N/A
Computer: cplab237a
Description:
Adapter \DEVICE\{9414AB4F-F5D7-4218-963D-20C61E1DA81A}:
Adapter Link Up
Data: Bytes Words
0000: 00 00 04 00 02 00 58 00 .....X.
0008: 00 00 00 00 05 00 04 40 .....@
0010: 00 00 00 00 00 00 00 00 .....
OK
Cancel
Apply



Checking the SCSI speed for RAID controllers

Check SCSI channel speed if there are issues with the hard drive. Before shutting down and after rebooting, check the previous power up negotiated speed using Power Console Windows Utility. If the speed shown is anything else but Maximum or 160M or if Asynchronous displays, there is a serious issue with the SCSI chain. This could be either a bad termination, SCSI backplane, cable or a drive is about to fail. Additionally, you should immediately check the media errors on the same menu. The Asynchronous speed is usually accompanied by media errors and sense error keys in the logs.

SCSI speed is negotiated when the system powers up. Warm Rebooting will not trigger a re-negotiation.

Check the SCSI speed setting of 160M using the CTRL+M utility or ,in the case of the 1006r, the CTRL+G utility. This will restart the system.

To check the SCSI speed

1. Start the system and press CTRL+M when prompted during system startup. The CTRL+M utility can take up to one minute to launch with 1L37 firmware. The system can appear frozen. Do not reset.
2. From the Objects menu, select Adapter > Other Adapter Information.

   The SCSI speed is displayed here.

Chapter 6: Routing and remote access troubleshooting

In this chapter

General on page 101

Modem on page 102

Routing and Remote Access on page 111

Symantec pcAnywhere on page 121

Microsoft Remote Desktop Connection (RDC) on page 125

General

Follow these general steps to connect remotely to an Avaya CallPilot® server.

1. Use dial-up networking on a Windows client PC to dial into the Avaya CallPilot server and establish a TCP/IP connection over the dial-up modem link.
2. Start a Symantec pcAnywhere session over the established TCP/IP connection.

The remote connection functions properly only if the following components are correctly configured:

- the modem
- the Routing and Remote Access Service (RRAS) in Windows 2003
- the pcAnywhere host

Modem

The preliminary modem troubleshooting routine consists of ensuring that:

- The modem is functioning and ready to accept calls.
- The modem is properly connected to the COM1 serial port, or the USB port for the 1005r or 1006r.
- The modem is connected to an analog telephone line.

Recognizing that the modem is functioning

The modem is functioning and ready to accept calls if both the Carrier Sense (CS) and Terminal Ready (TR) lamps are lit.

The CS light comes on when the modem is turned on. The TR lamp may not be lit after the following events:

- The modem is disconnected or turned off when CallPilot is rebooted.
- The modem is turned off and on, or is disconnected and reconnected from the power supply while in operation.

CallPilot rebooted and modem disconnected or turned off

Perform the following steps to bring the modem into service:

1. From the desktop, right-click on My Computer → Manage → Device Manager.

   Result: The list of devices appears.
2. Locate the Modem in the list. If Modems are not listed, right-click on the top device (the computer name) and select Scan for hardware changes.

   Result: The screen flashes a couple of times and the list of Modems appears.
3. The TR lamp is now lit and the modem ready to accept calls.

Modem disconnected or turned off while in operation

Perform the following steps to bring the modem into service:

1. From the desktop, right-click on My Computer → Manage → Device Manager.

   Result: The list of devices appears.

2. Locate the Modem in the list.

   If Modems are not listed:

   Right- click on the top device (the computer name) and select Scan for hardware changes.

   Result: The screen flashes a couple of times and the list of Modems appears.

   If Modems are listed:

   a. Click + to expand the list. This makes the connected modem visible.
   b. Right-click on the active modem and select Disable driver.

      Result: The message box Disabling this device will cause it to stop functioning... appears

   c. Click the Yes button.
   d. Right-click on the active modem and select Enable.

3. The TR lamp is now lit and the modem ready to accept calls.

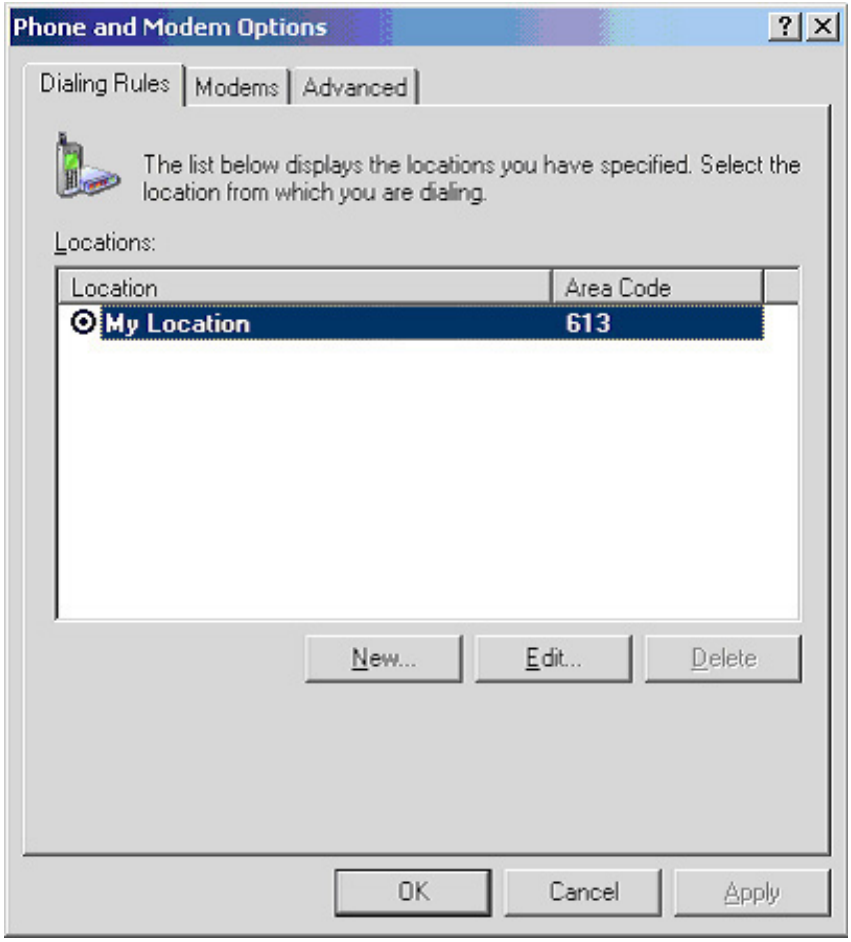
Troubleshooting modem configuration

The following procedure outlines the steps necessary for troubleshooting modem configuration issues. Ensure that all settings, as well as the variables specific to your installation, are correct.

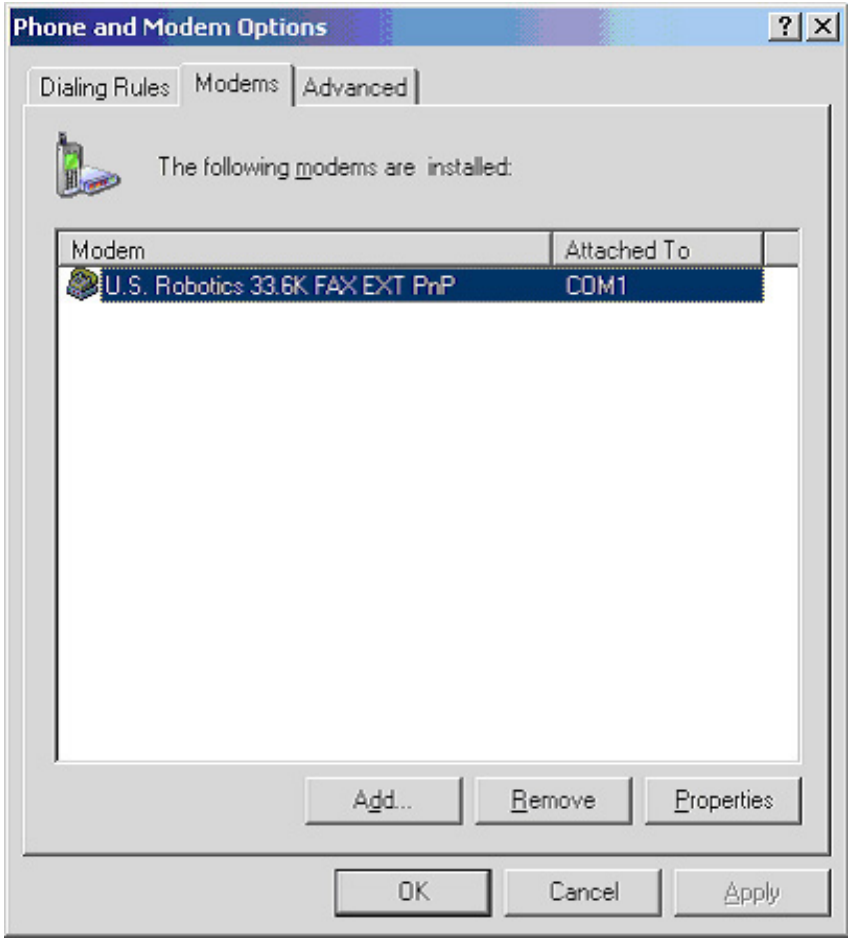
Important:
Do not use the exact information shown in the illustrations. Use the values provided by your network administrator.

1. Click Start → Settings → Control Panel, and then double-click Phone and Modem Options.

   Result: The Phone and Modem Options dialog box appears.

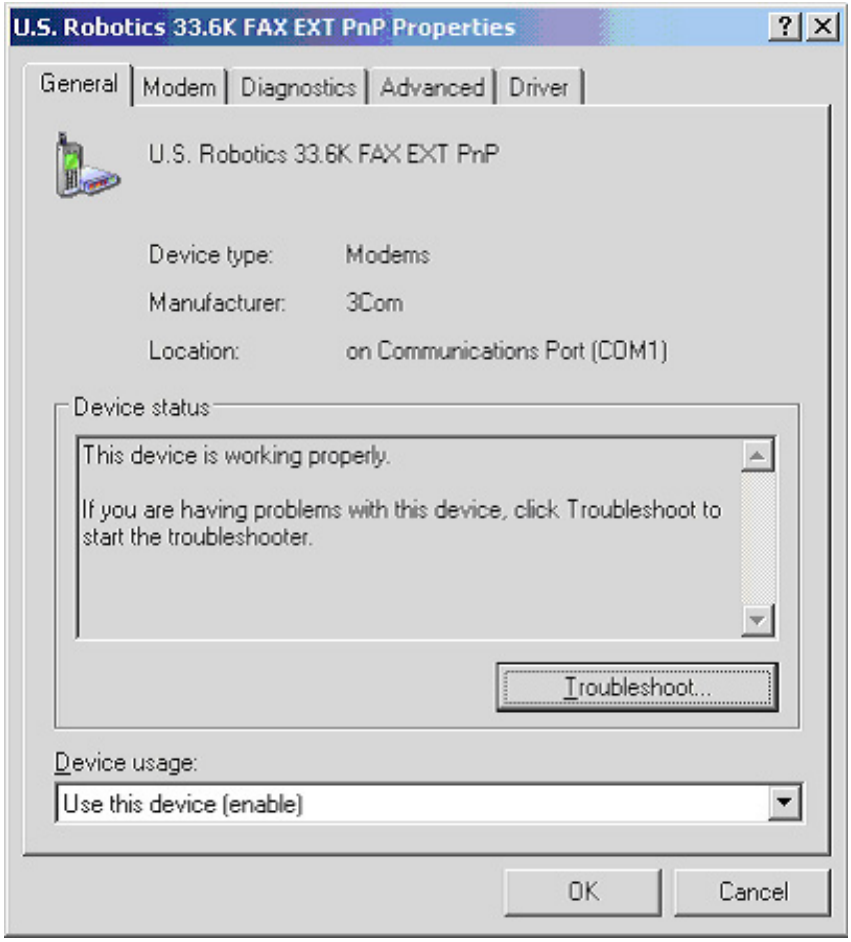


2. Click the Modems tab.

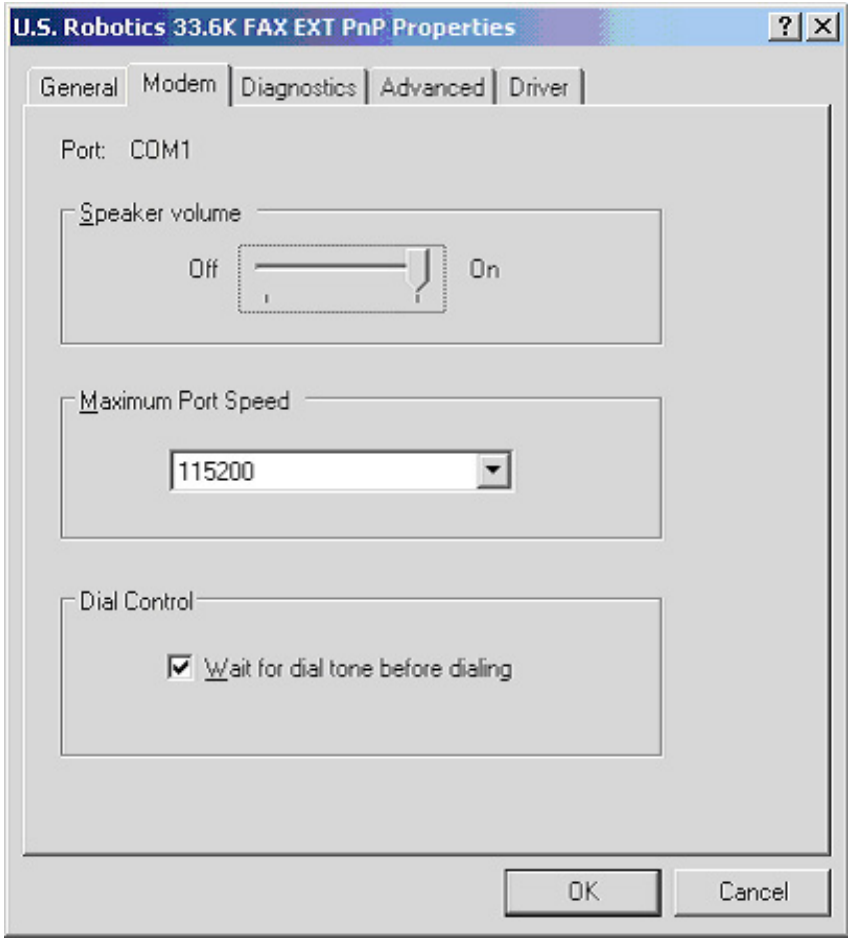


3. Click Properties.

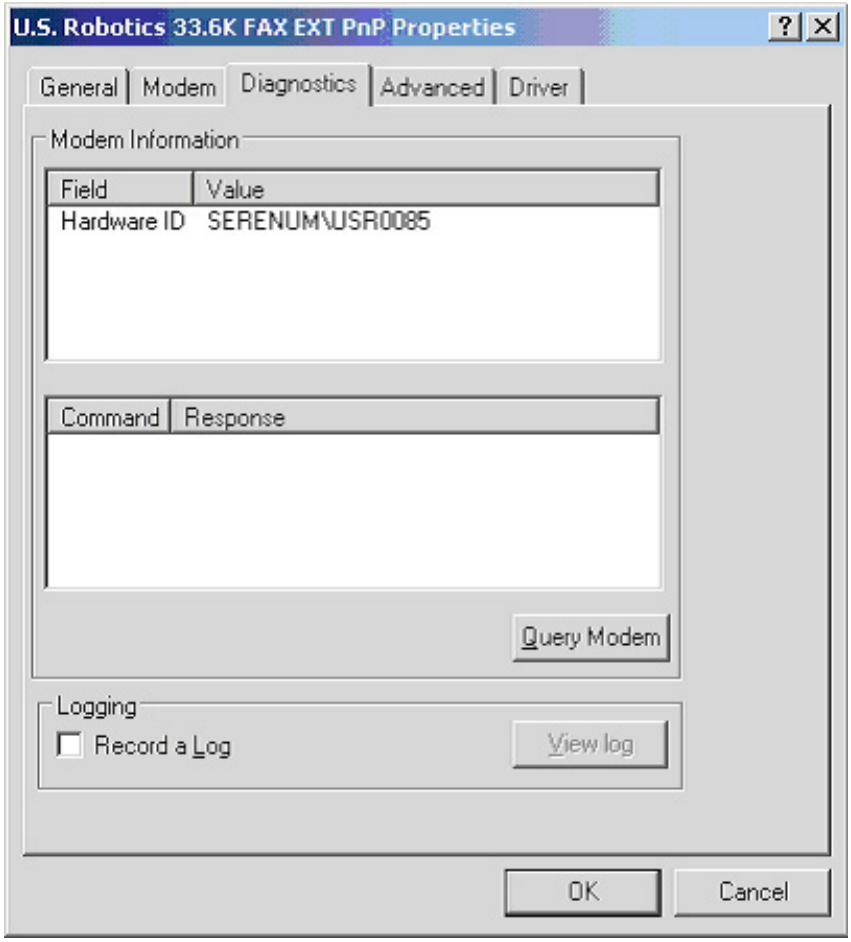
   Result: The modem Properties dialog box appears.



4. Click the Modem tab. Verify settings.

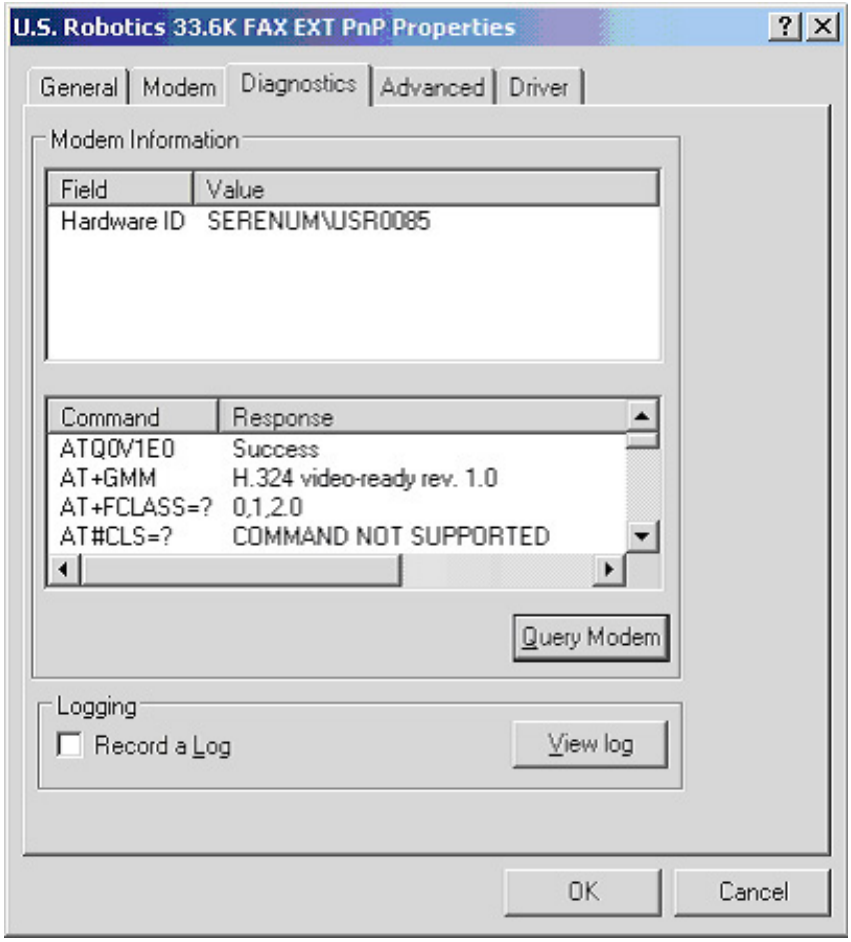


5. Click the Diagnostics tab.

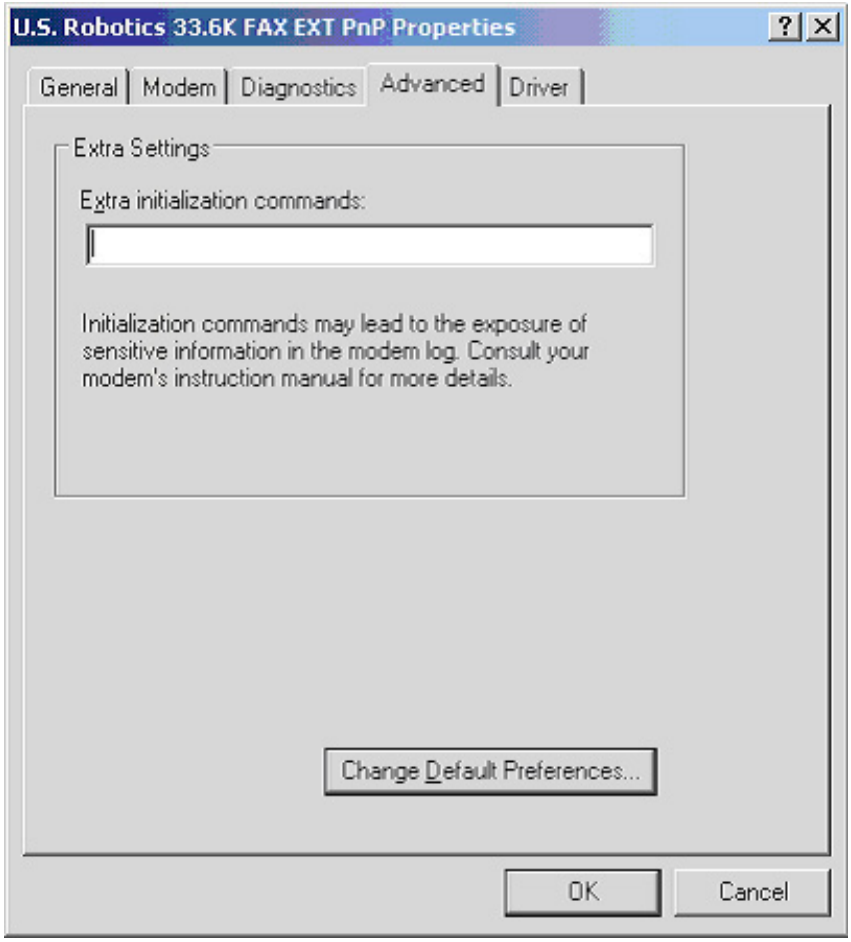


6. Click Query Modem.

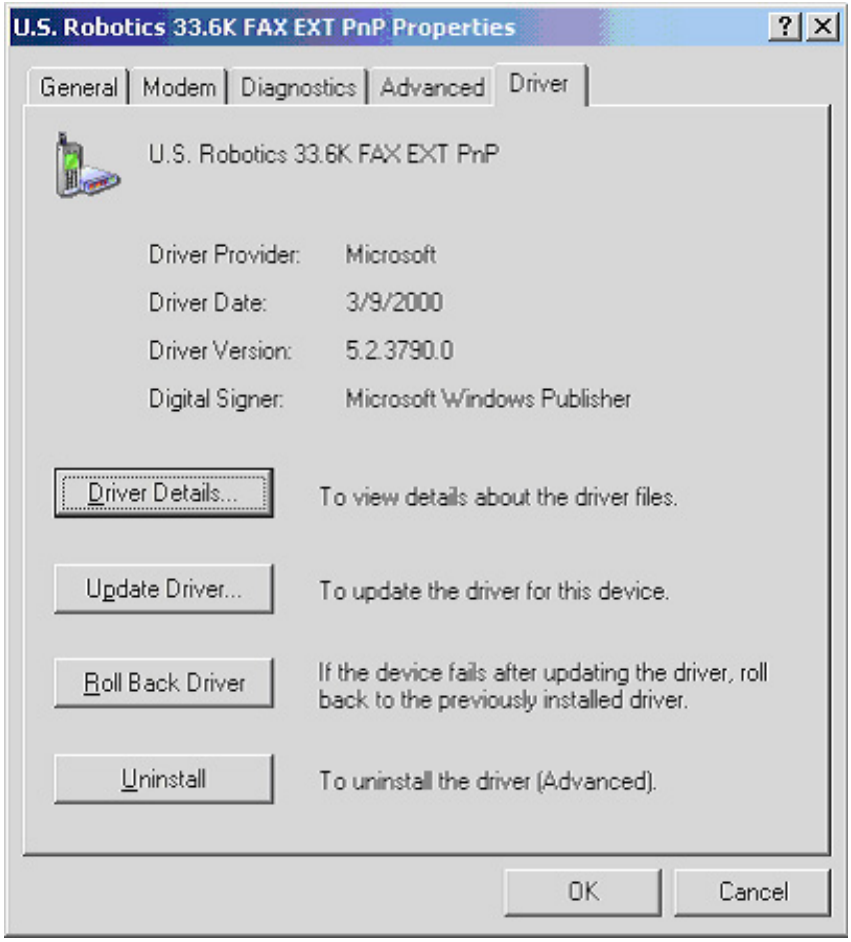
   Result: After a delay of several seconds, the system displays the response from the modem. The following illustration indicates that the modem is working.



7. Click the Advanced tab. Verify settings.



8. Click the Driver tab. Verify settings.



9. Click Close, and then close the Phone and Modem Options dialog box.

Routing and Remote Access

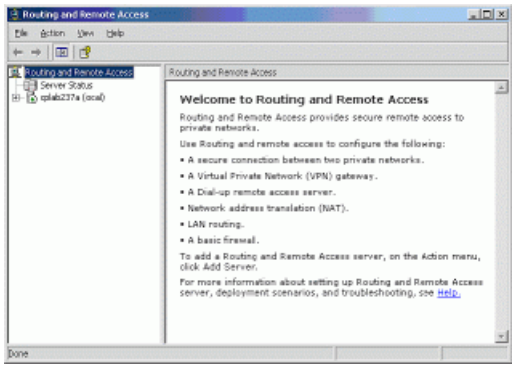
The following procedure walks you through the steps necessary for troubleshooting RRAS issues in Windows 2003. Ensure that all settings, as well as the variables specific to your installation (such as server names and IP addresses), are correct.

Important:

The illustrations show the default RRAS configuration. Under some circumstances, other RRAS configurations can apply.

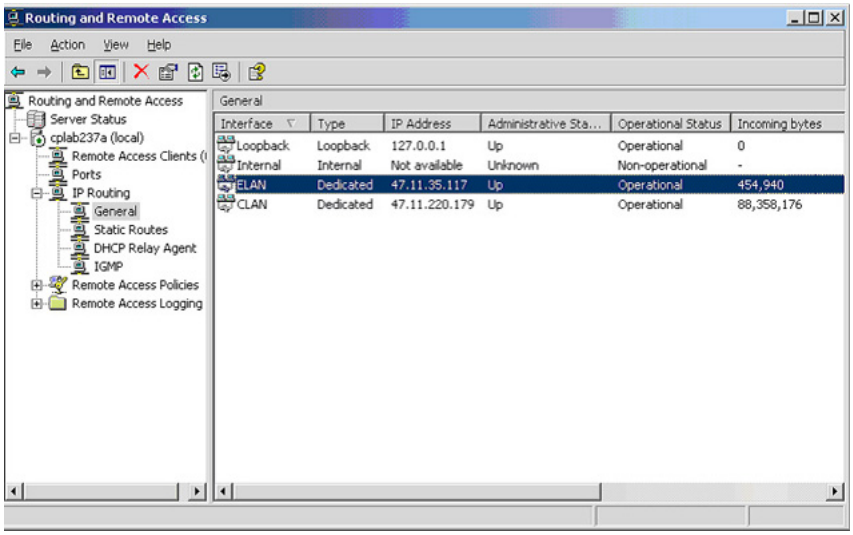
1. Start → Programs → Administrative Tools, and double-click Routing and Remote Access.

   Result: The Routing and Remote Access Window appears.

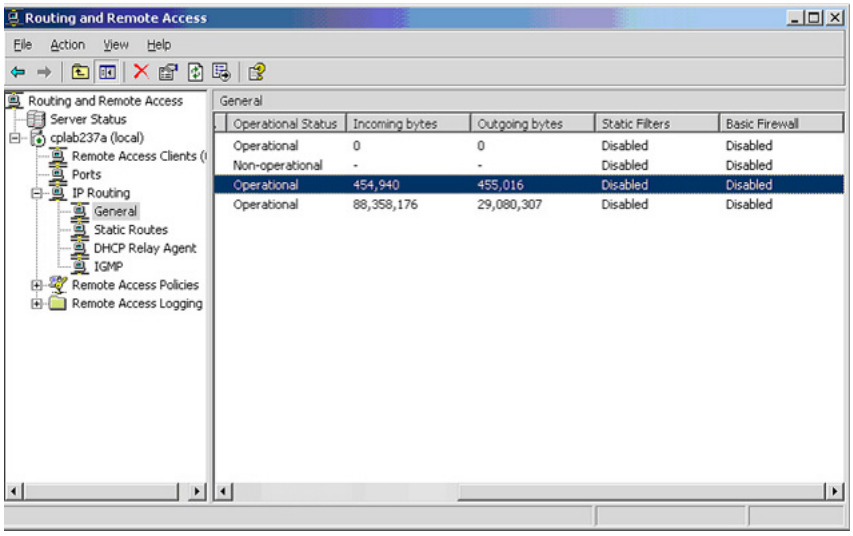


2. Click the plus sign (+) to the left of the server name in the left pane to expand the tree.
3. Click General under IP Routing.

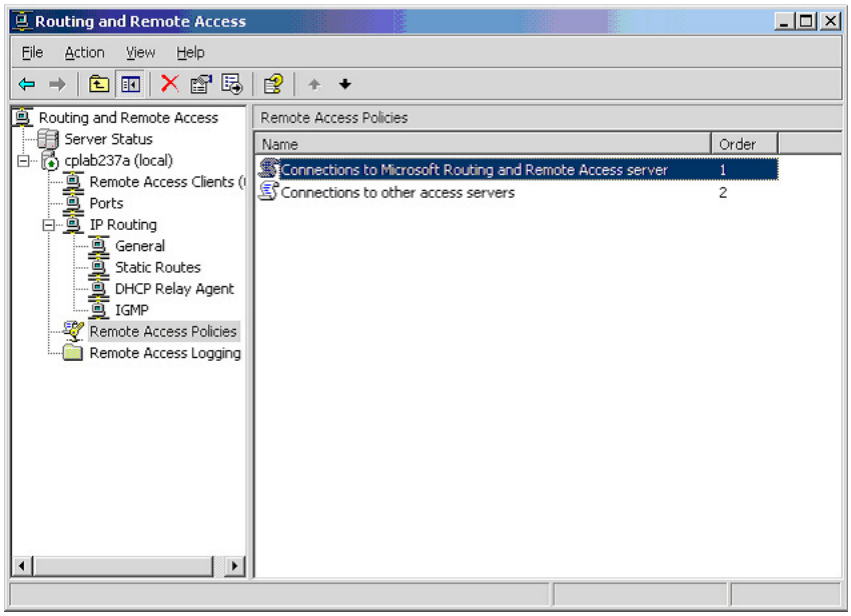
   Result: The system displays general information associated with IP Routing in the right pane.
4. Click the ELAN entry to select it.



5. Use the slider at the bottom of the window to scroll to the right and view additional information.

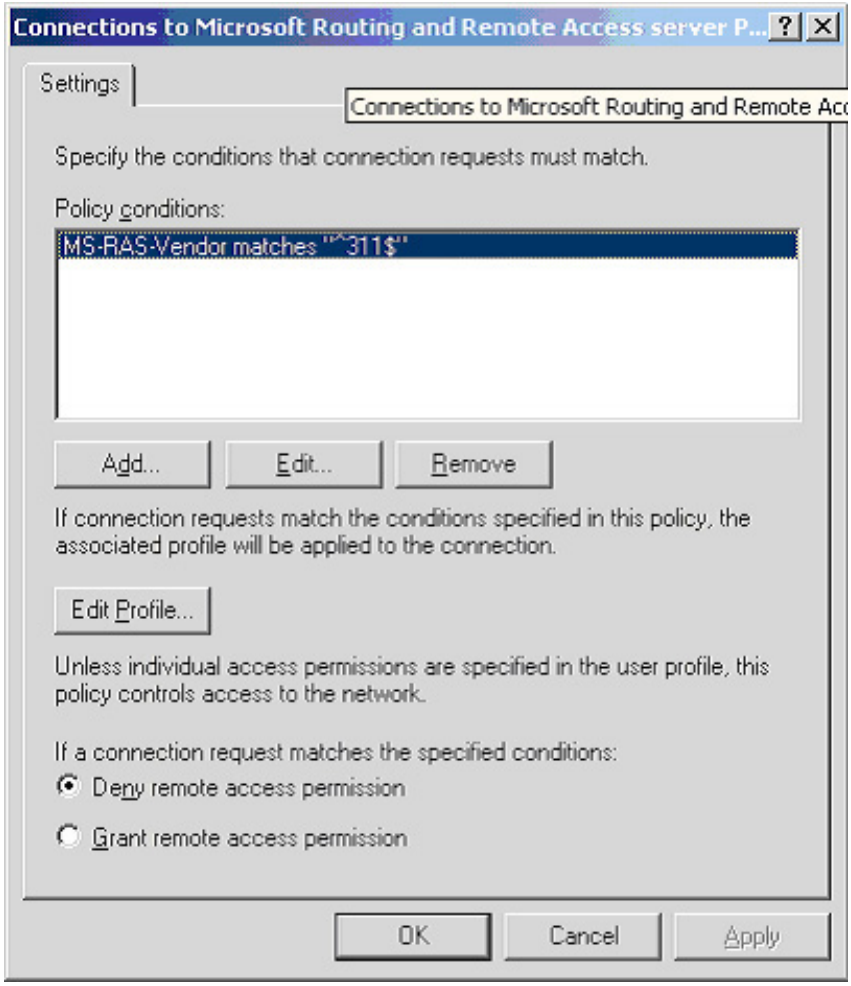


6. Click Remote Access Policies in the left pane.



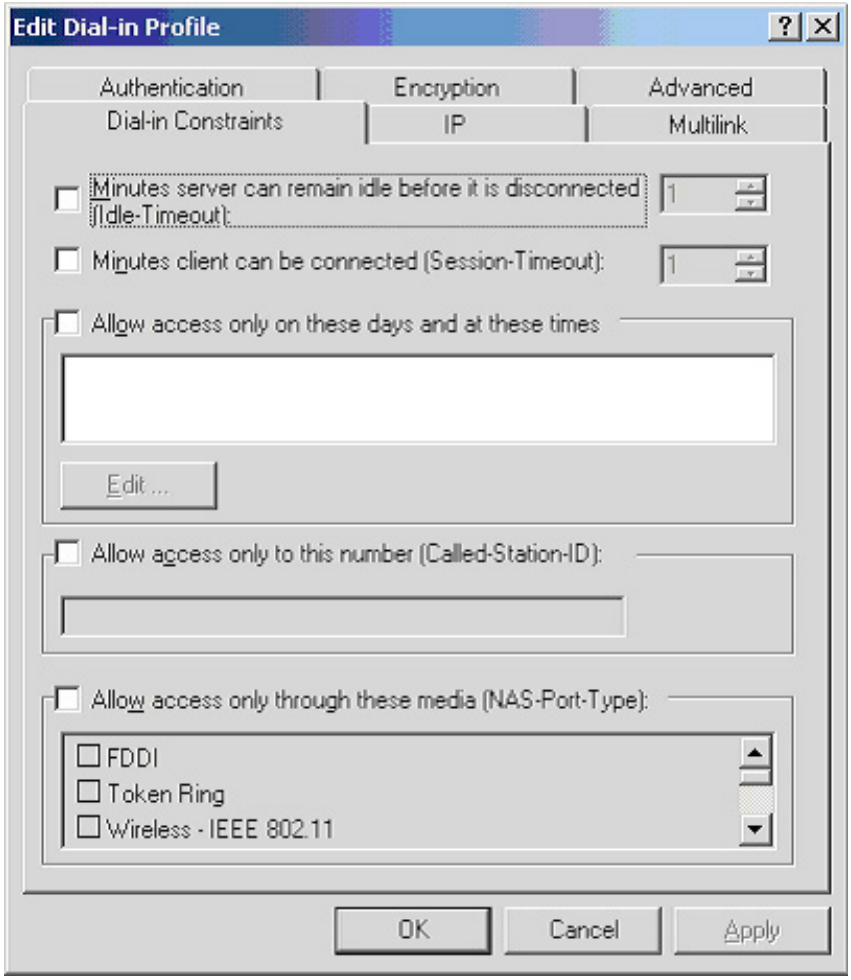
7. Right-click Connections to Microsoft Routing and Remote Access server, and then click Properties on the shortcut menu.

   Result: The following dialog box appears.

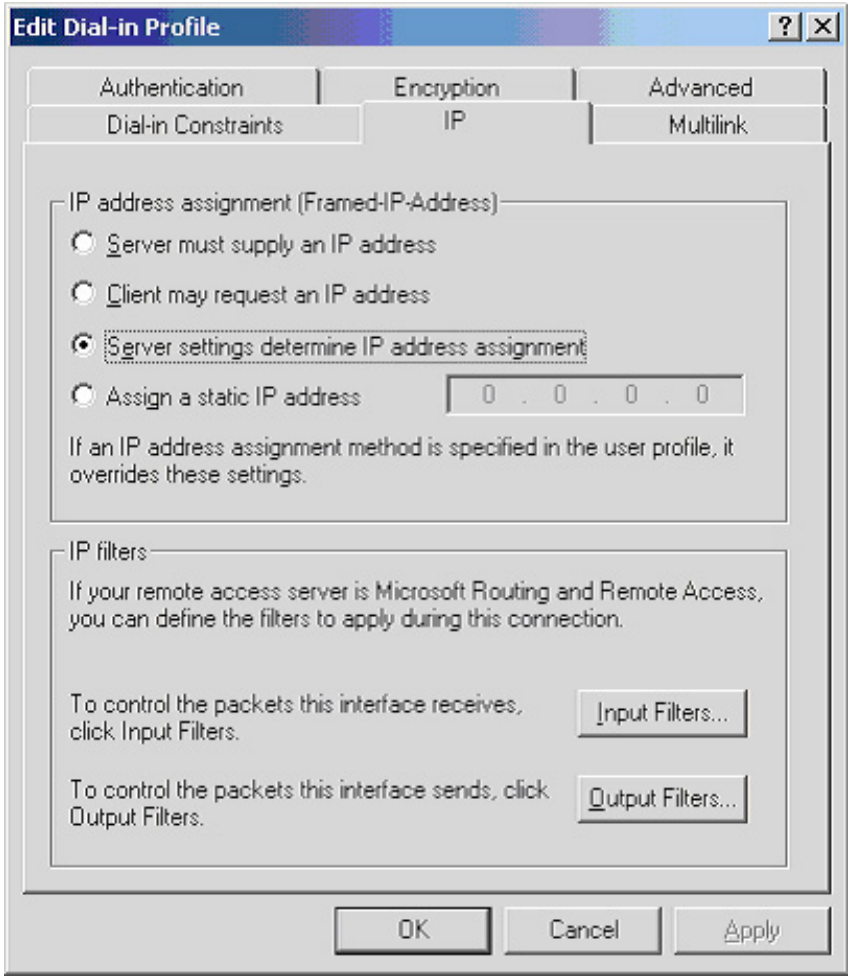


8. Click Edit Profile.

   Result: The Edit Dial-in Profile dialog box appears.

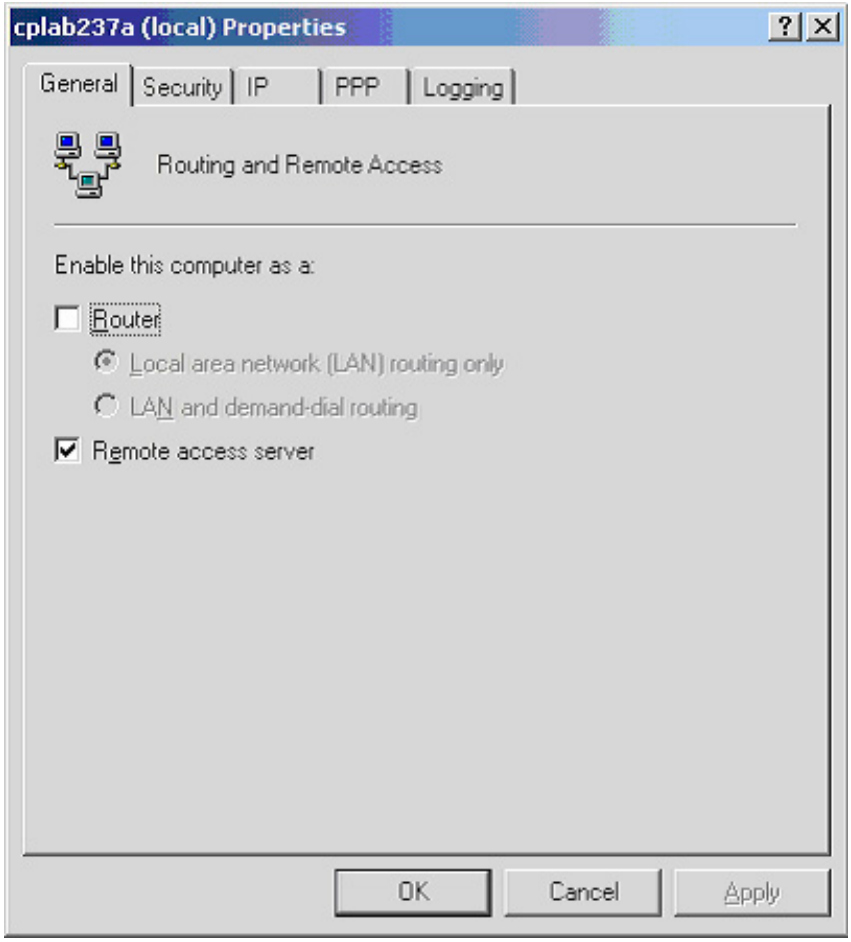


9. Click the IP tab.

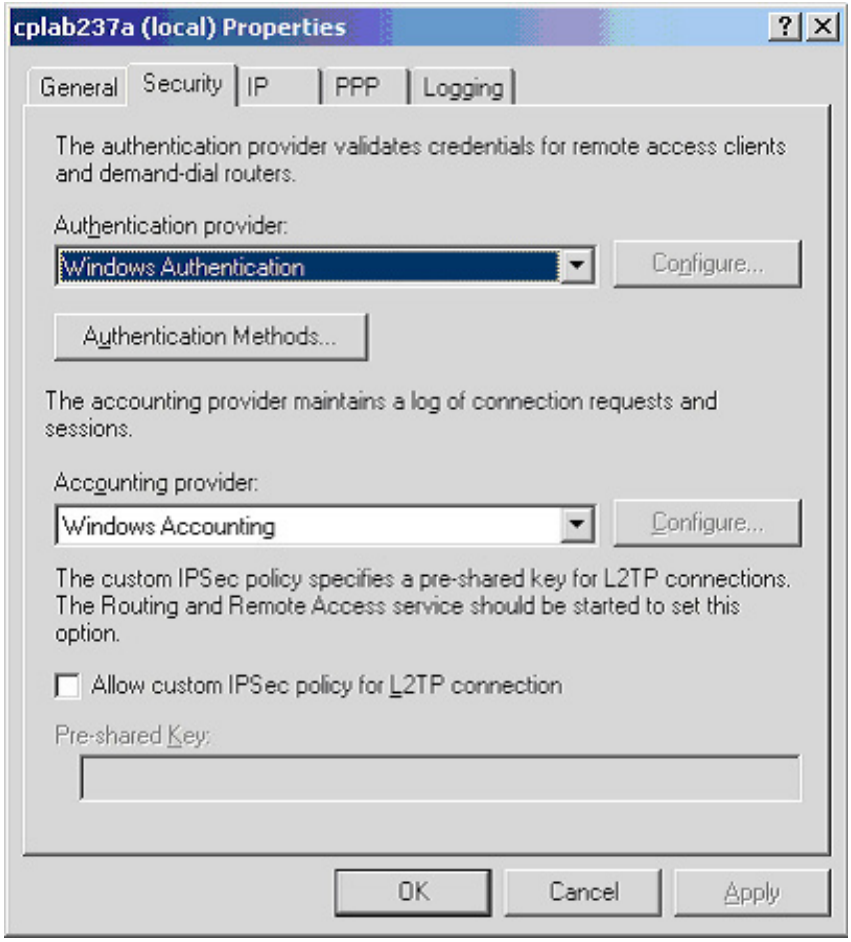


10. Click OK to close the Edit Dial-in Profile dialog box.
11. Right-click the server name (in this example, cplab237a) in the left pane of the Routing and Remote Access window, and then click Properties on the shortcut menu.

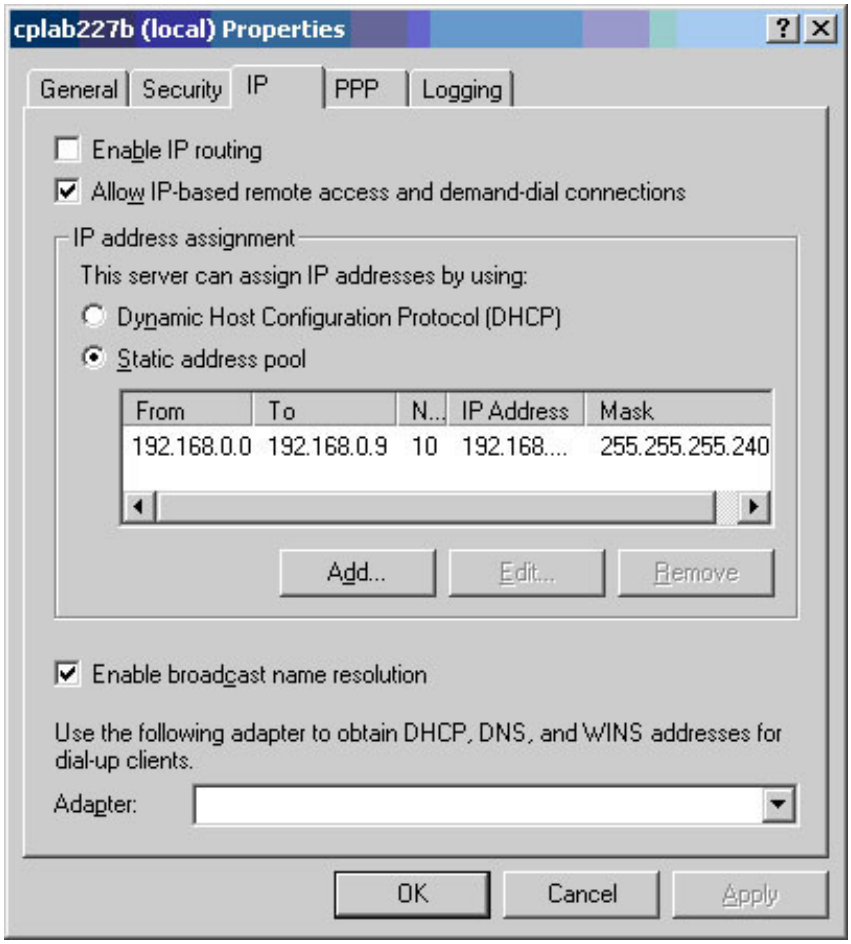
    Result: The server properties dialog box appears.



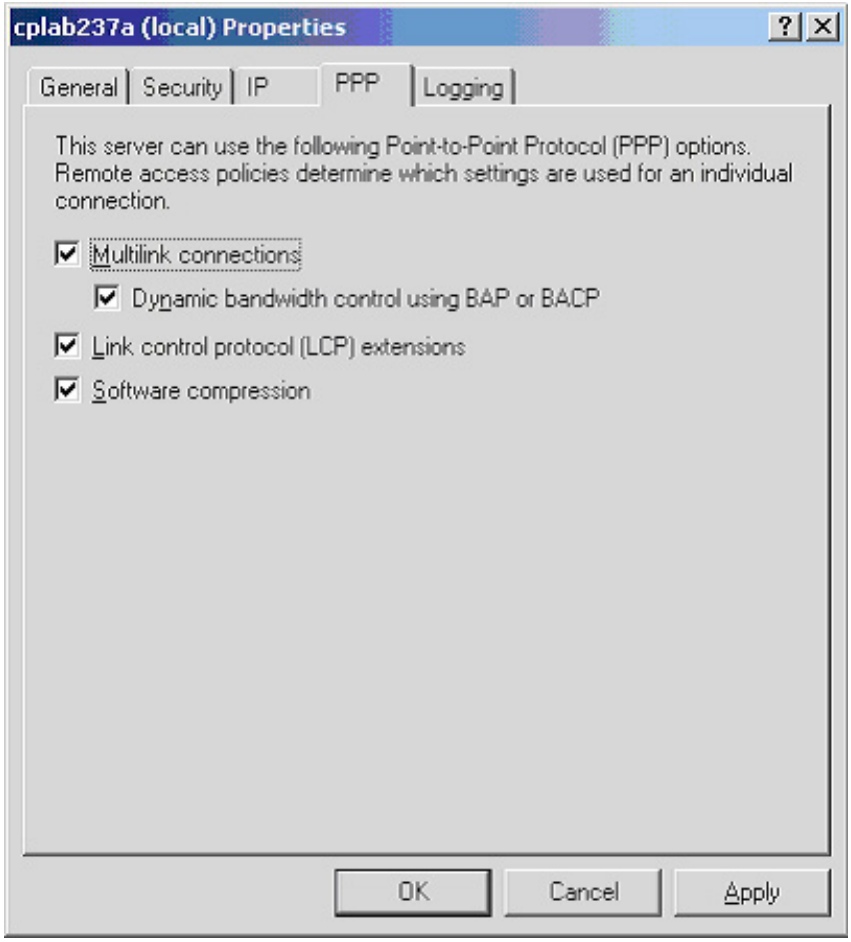
12. Click the Security tab. Verify settings.



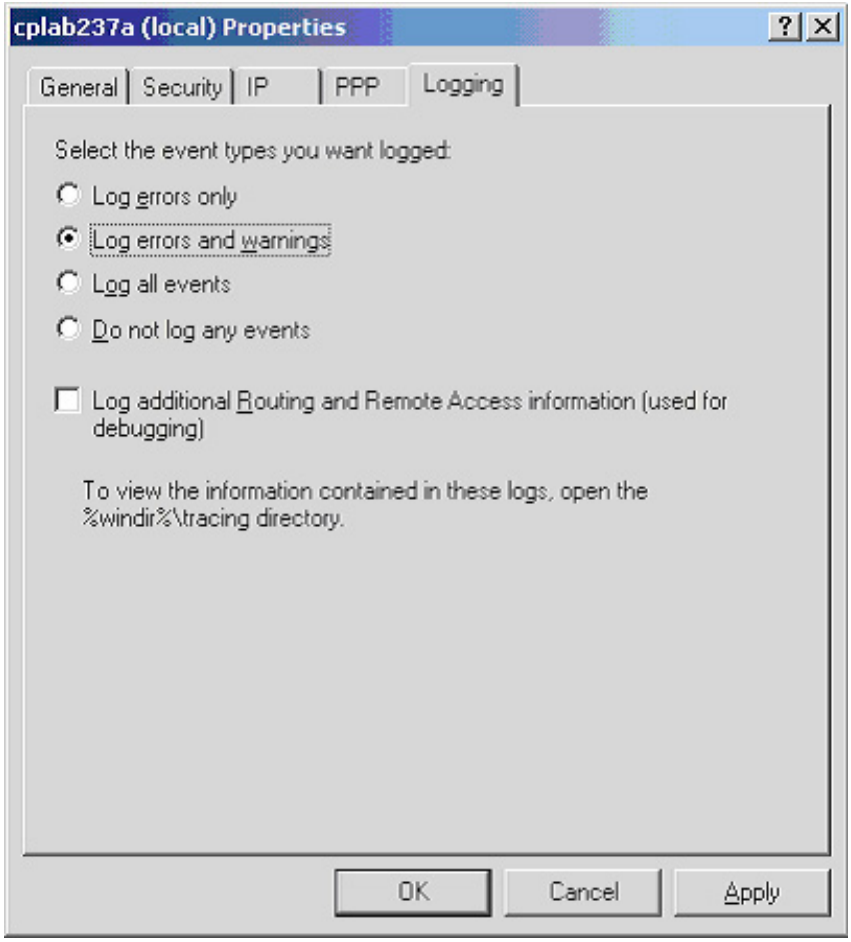
13. Click the IP tab. Verify settings.



14. Click the PPP tab. Verify settings.



15. Click the Logging tab. Verify settings.



16. Click OK to close the server properties dialog box, and then close the Routing and Remote Access window.

Symantec pcAnywhere

The Symantec pcAnywhere must be running so that the remote connection to a CallPilot server can be established. A blue-green square with a check mark at the bottom right of the CallPilot local console indicates that the pcAnywhere is running

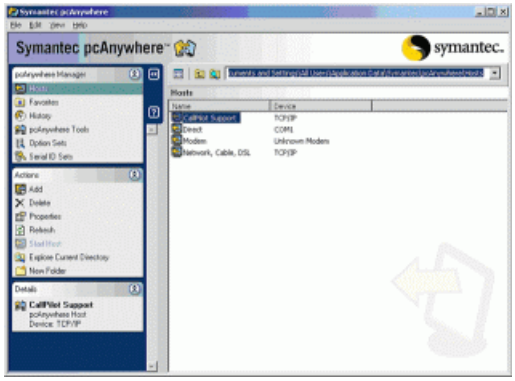
By default, CallPilot has a pcAnywhere host called CallPilot Support, predefined to start automatically every time that the system boots up. The following procedure presents the settings of the CallPilot Support pcAnywhere host. Ensure that all the settings are correct.

Important:

The illustrations show the default Symantec pcAnywhere configuration. Under some circumstances, it can be useful to define the pcAnywhere host in other ways.

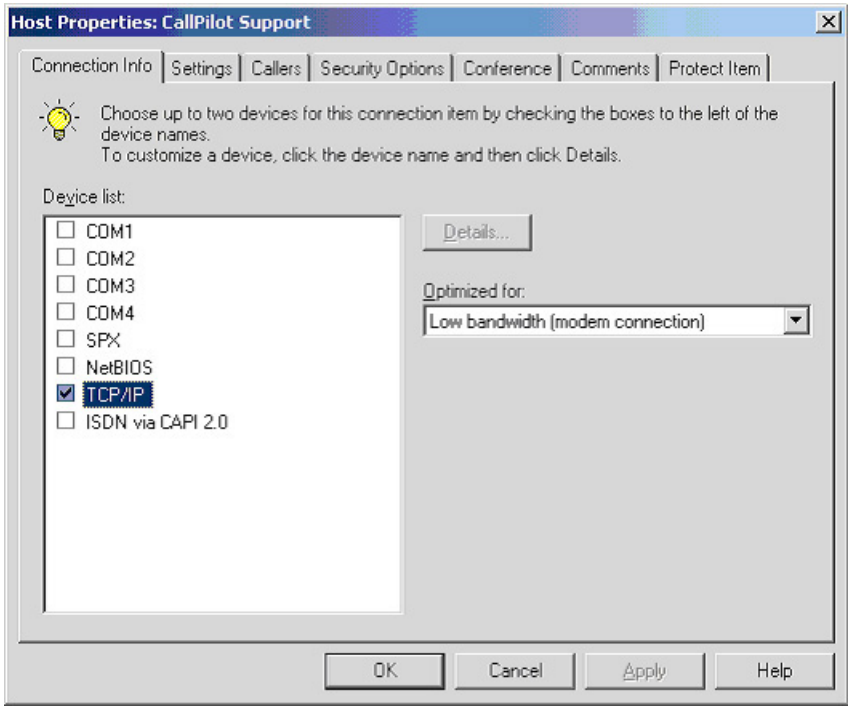
1. Click Start → Programs → Symantec pcAnywhere.

   Result: The Symantec pcAnywhere window appears.

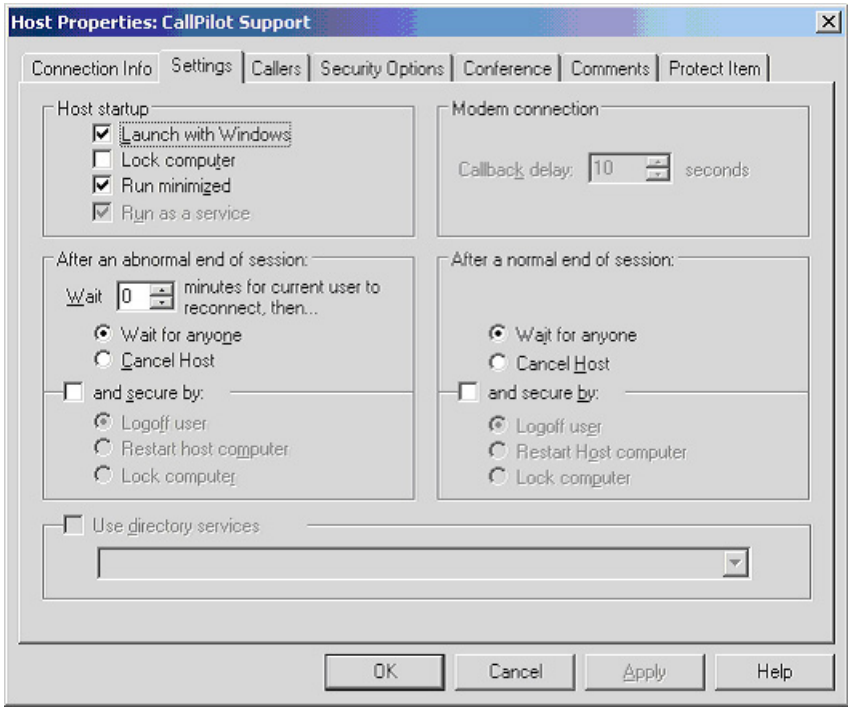


2. Right-click CallPilot Support, and then click Properties on the shortcut menu.

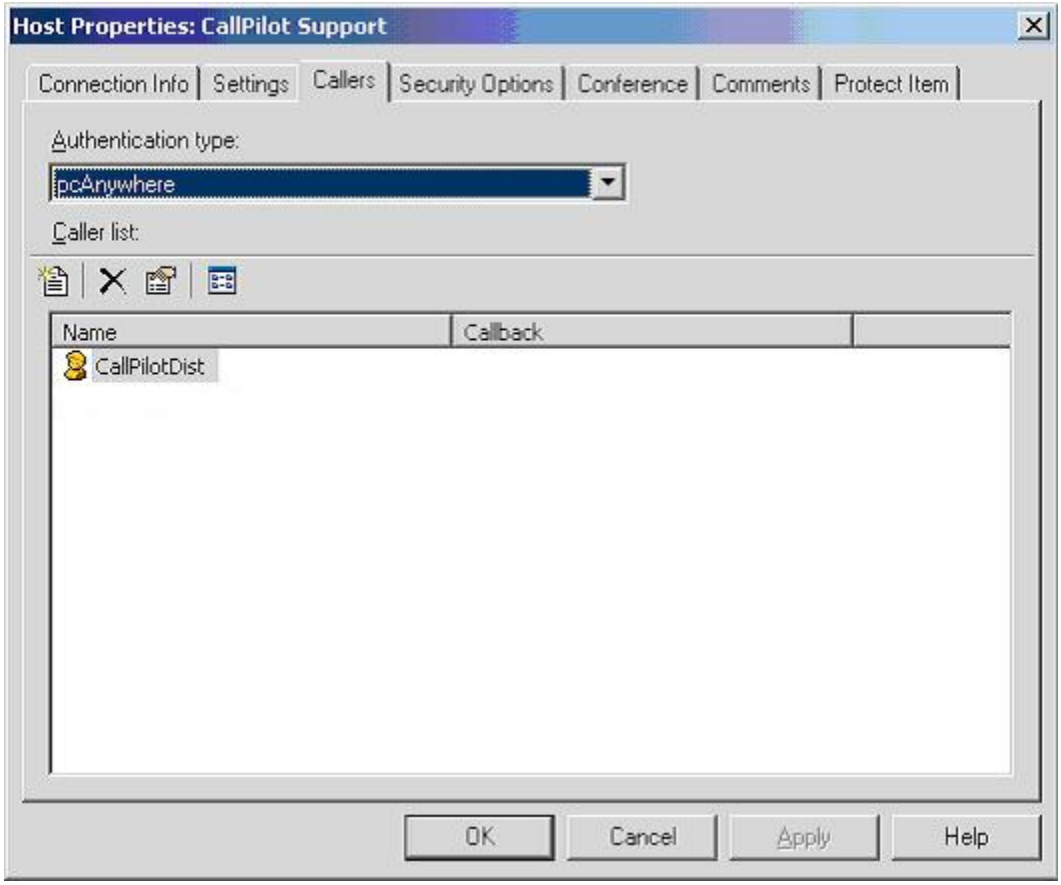
   Result: The host properties dialog box appears.



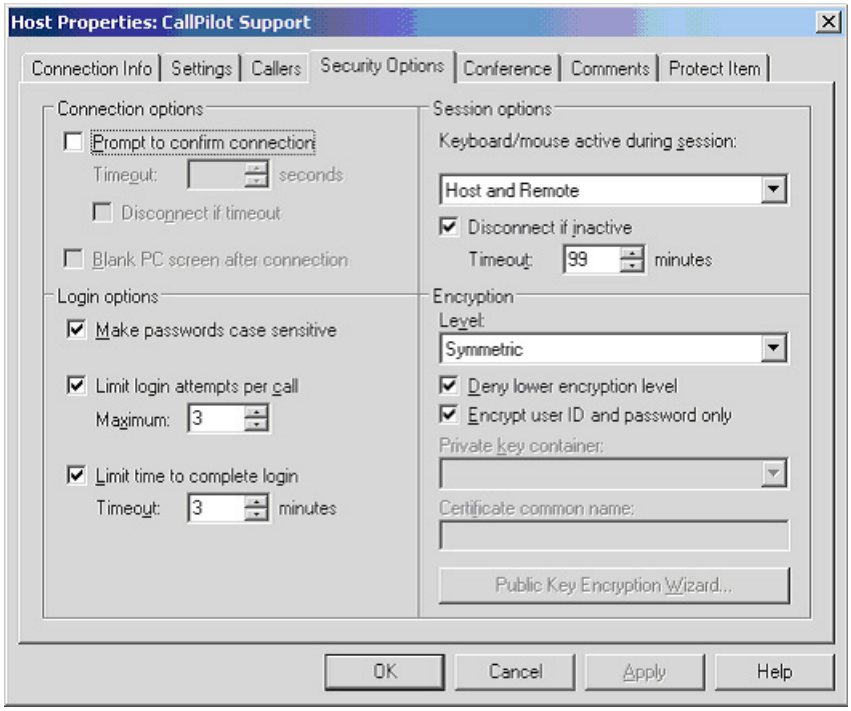
3. Click the Settings tab. Verify settings.



4. Click the Callers tab. Verify settings.



5. Click the Security Options tab. Verify settings.



6. Click Close, and then close the Symantec pcAnywhere window.

Microsoft Remote Desktop Connection (RDC)

The Remote Desktop Client software is installed by default on Windows XP Professional and on Windows Server 2003. However, the version for Windows Server 2003 is slightly different from the Windows XP version. Obtain the Windows Server 2003 version of the Remote Desktop Connection Client from the Microsoft Web site.

Installing RDC

RDC can be installed on client PCs running Windows 95, Windows 98, Windows ME, Windows NT 4, Windows 2000, or Windows XP using the following procedure:

1. Run the executable (msrdpcli.exe).

   Result: InstallShield scans the computer to prepare installing the client. When complete, the Welcome window appears.

2. Click Next to install.

   Result: The End User License Agreement window appears.

3. Accept the terms of the agreement and click on Next.

   Result: The Customer Information screen appears.

4. Type in your user name, organization, and click the Anyone who Uses this Computer button. Then click Next.

   Result: The Ready to Install the Program screen appears.

5. Click Install.

   Result: The Installing Remote Desktop Connection screen appears. A status bar shows installation progress. Once the installation is complete, the Install Shield Wizard Complete screen appears.

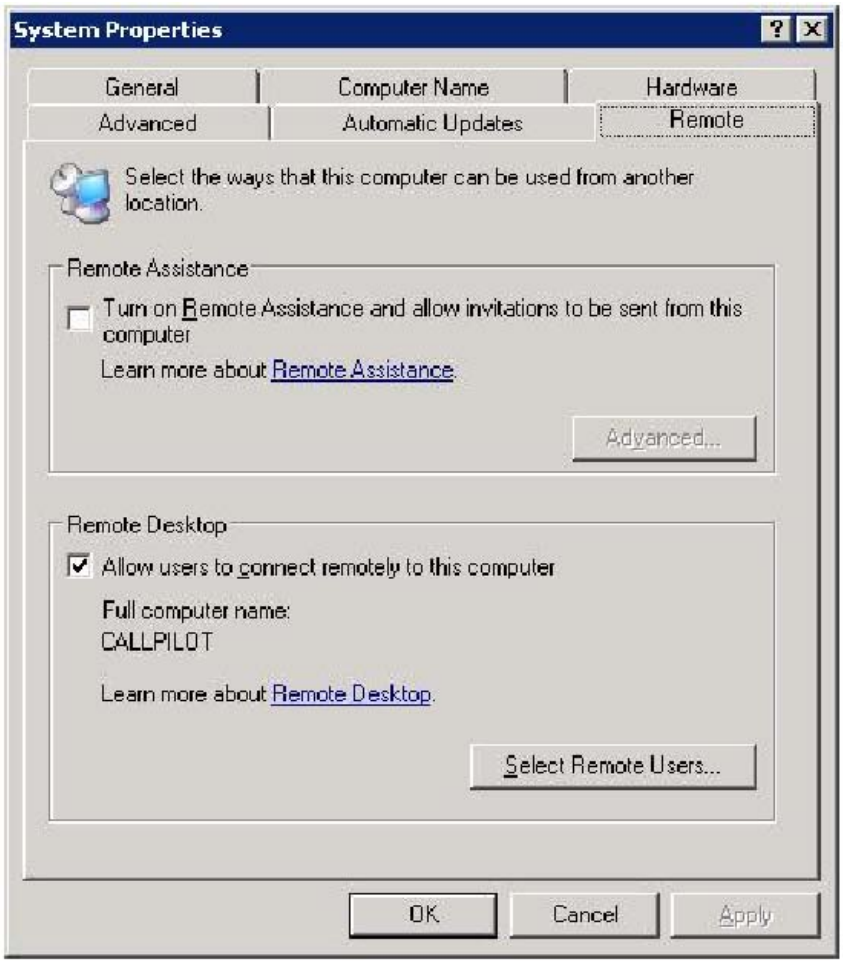
6. Click Finish to exit the install wizard.

Enable remote desktop feature and set policy on host

CallPilot server comes with the Remote Desktop server enabled and configured for use by default. If necessary, remote desktop access can be enabled or disabled as follows:

1. From the CallPilot server desktop, right-click My Computer, then choose Properties, and click on the Remote tab.

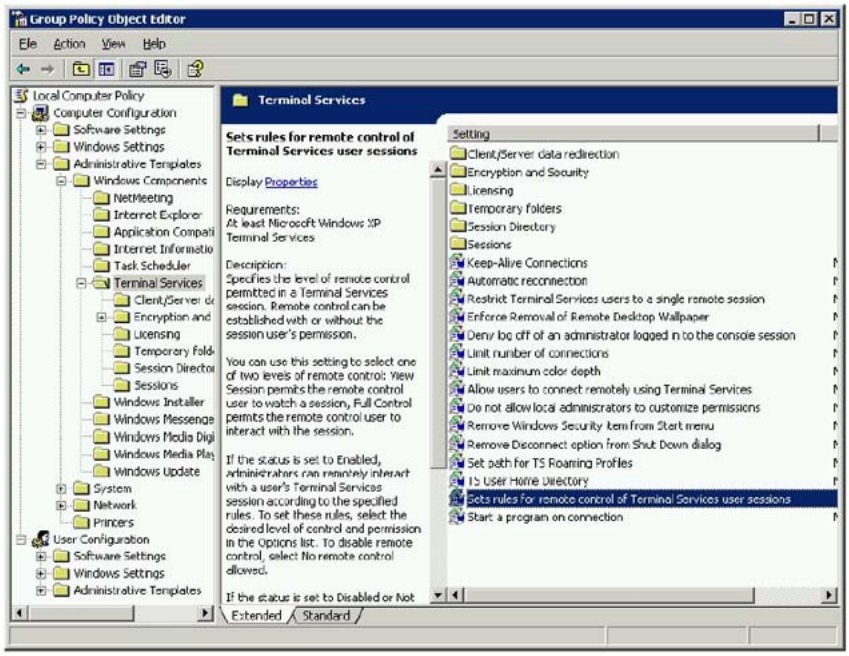
   Result: The System Properties screen appears.



2. Ensure the Allow users to connect remotely to this computer option is selected. Click OK to close the window.
3. Open the Group Policy Snap-in to choose from the five options available for remote control settings. Open a command prompt window by clicking Start → Run.

   Result: The Open window appears.
4. Type gpedit.msc and click OK or press Enter.

   Result: The Group Policy Object Editor window appears.



5. On the left side of the window, expand Computer Configuration, Administrative Templates, Windows Components, and then select Terminal Services.
6. On the right side of the window, double-click Sets Rules for Remote Control Terminal Services User Sessions.
7. The Sets Rules for Remote Control Terminal Services User Sessions window appears.
8. Select Enabled to load options into the box.
9. The default and recommended setting for CallPilot is Enabled with Full Control without User's Permission selected. This setting allows for RDC sessions without requiring interaction or consent from a local console user.

   Adjust the settings as required, and click OK to close the screen.
10. Click File → Close to close the Group Policy Object Editor.

Establish a RAS connection

If the CallPilot server is not directly accessible from the Client PC through an intranet or VPN, you must establish a Remote Access Service (RAS) connection.

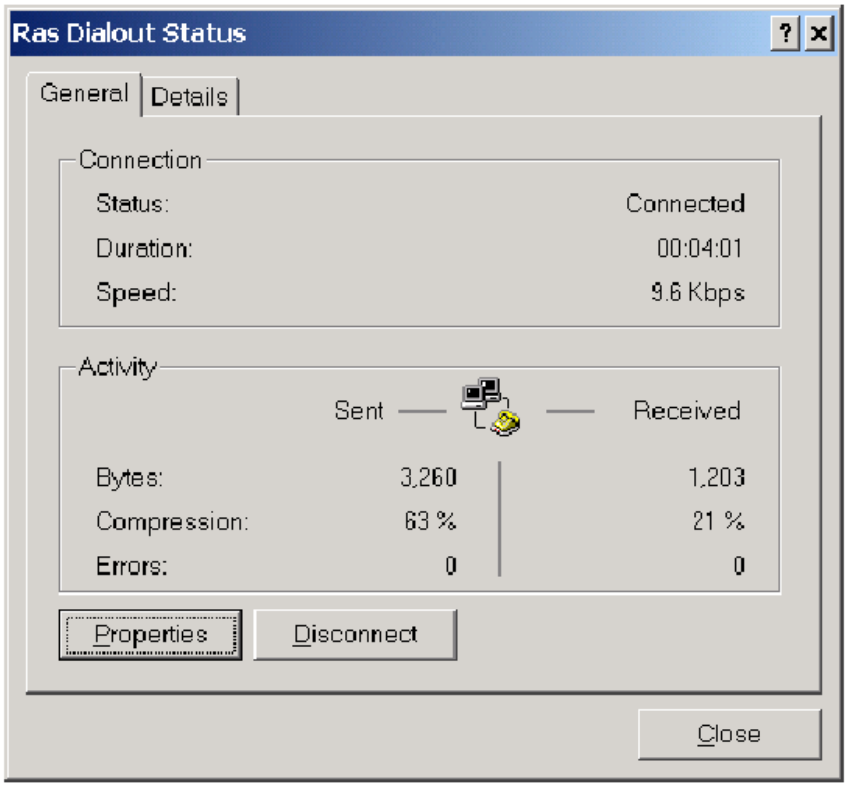
1. Connect to the CallPilot server using Dial-Up Networking. Use the NGenDist or NGenSys accounts because these accounts are enabled for dial-up access. You will need the password for the account.

Note:

The details of using Dial-up Networking vary depending on which version of Windows Operating System is running on the Client PC. Refer to the CallPilot NTPs, Windows Help, or other Microsoft documentation for details.

2. Right-click the connection icon in the system tray and choose Status (or just double-click the icon).

   Result: The RAS Status window appears.



3. To obtain the IP address, select the Details tab and read the Server IP Address.
4. Click Close on the Dial-Up Networking Status window.

Starting the Remote Desktop Client

Private Session (preferred method)

Use this method to perform the following tasks:

- Establish a private login session remotely, not visible from the server console.
- Utilize the CallPilot Support Tools.
- Transfer files from local PC to the CallPilot server.
- Install a PEP/Service Update that interacts with the CallPilot database.

Note:
If the local console is already logged in, it will get forcibly logged out (unsaved data will be lost). Your actions will not be visible on the local console.

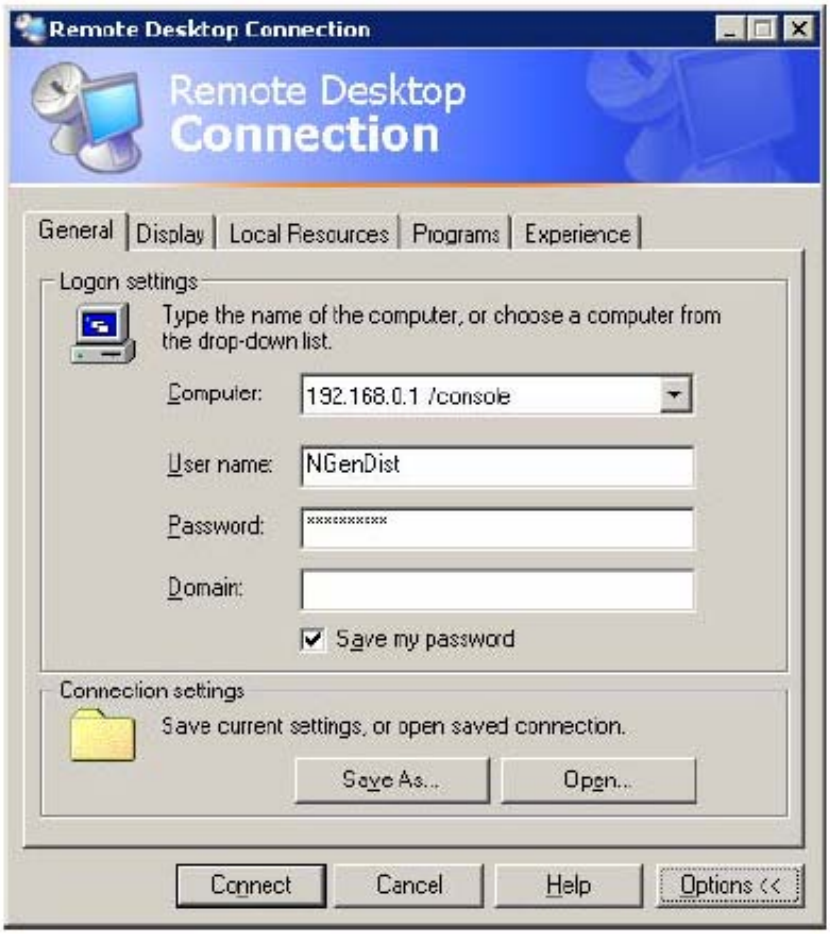
1. From the client PC, start the Remote Desktop Connection for Windows Server 2003 Client. Select Start → Programs → Remote Desktop Connection or Start → Programs → Accessories → Communications → Remote Desktop Connection.

   Result: the Remote Desktop Connection window appears.

2. Enter the IP address followed by a space and the suffix /console. The suffix sets up a private session connected to the logical console of the CallPilot server. Click Options.

   Note:
   For intranet or VPN connections, you can use the computer name instead of an IP address.

   Result: The Options window appears.



3. Type the IP address or computer name, a space, and the suffix /console.
4. Type the User name and Password.
5. Click the Local Resources tab.

   Result: The Local Resources window appears.
6. Make the disk drives and printers from the client PC available on the target CallPilot server by entering these settings:

   a. Select Remote Computer Sound → Leave at remote computer.

   b. Select Keyboard → On the remote computer.

   c. Select the local devices to be automatically connected.

   Note:
   Disk Drives must be checked to allow the transfer of files (SU/PEP, logs, traces, and so on) to and from the CallPilot server.
7. Click the Display tab.

   Result: The Display window appears.

8. Specify the screen size and colors for the remote desktop connection by entering these recommended settings:

    a. Select Remote Desktop Size → 800X600.

    b. Select Color Depth → High Color (16 bit).

9. Click the Experience tab.

    Result: The Experience window appears.

10. Specify the connection speed (broadband or modem) that the connection will be optimized for by entering these recommended settings:

    a. Select Performance → Modem (28.8 Kbps).

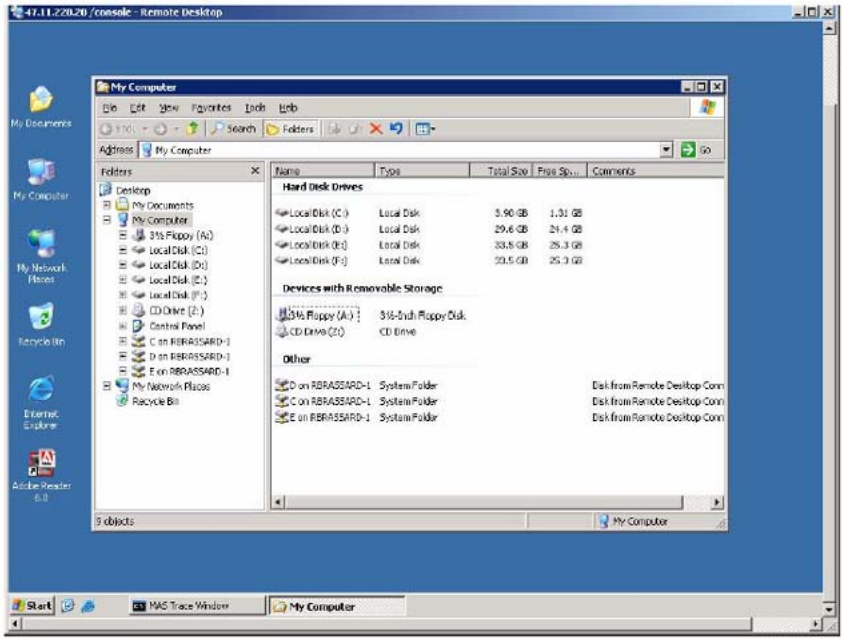
    b. Select Bitmap caching → Enabled.

11. Click Connect to create the remote desktop connection.

    Result: The Security Warning window appears.

12. Click OK to continue.

    Result: A remote desktop session starts in a window on the client PC.



Note:

You can maximize the window to make it full screen. The CallPilot MAS Trace Window should be visible on the task bar. By default, this is a private session that cannot be seen from the CallPilot local console. All disk drives from the client (including floppy and CD drives) are mapped to the CallPilot server. Files can be transferred by copying them using Windows Explorer.

If the RAS connection drops, the Remote Desktop Connection will be disconnected. You can dial back in to re-establish the RAS connection. Then reconnect using Remote Desktop Client. You will see any windows you left open.

Shared Session (only if local console is logged on)

Use this method in the following conditions:

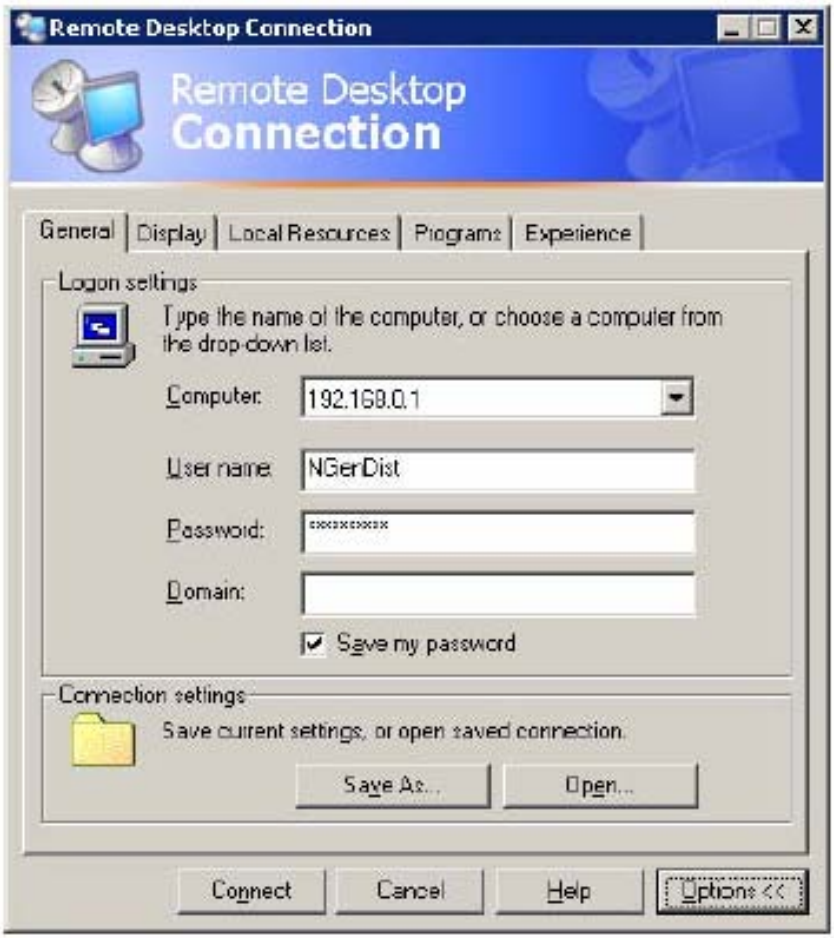
- You need a shared login session to see exactly what is on the local console, and all tasks are visible from the server console. Use a shared login during mentoring sessions or investigating an existing alarm message displayed on the console, and so on.)
- When the transfer of files between the local PC to the CallPilot server will not occur.

1. From the client PC, start the Remote Desktop Connection for Windows Server 2003 Client. Select Start → Programs → Remote Desktop Connection or Start → Programs → Accessories → Communications → Remote Desktop Connection.

   Result: the Remote Desktop Connection window appears.

2. Enter the IP address. Click Options.

   Result: The Options window appears.



3. Type in the IP address or computer name.
4. Type the User name and Password.
5. Click the Local Resources tab.

   Result: The Local Resources window appears.
6. Make the disk drives and printers from the client PC available on the target CallPilot server by entering these settings:

   a. Select Remote Computer Sound → Leave at remote computer.

   b. Select Keyboard → On the remote computer.

   c. Select the local devices to be automatically connected.

Note:
Disk drives must be checked to allow the transfer of files (SU/PEP, logs, traces, and so on) to and from the CallPilot server.

Note:

While file transfer is not possible in a shared session, Avaya recommends that these settings still be selected.

7. Click the Display tab.

   Result: The Display window appears.

8. Specify the screen size and colors for the remote desktop connection by entering these recommended settings:

   a. Select Remote Desktop Size → 800X600.

   b. Select Color Depth → High Color (16 bit).

9. Click the Experience tab.

   Result: The Experience window appears.

10. Specify the connection speed (broadband or modem) that the connection will be optimized for by entering these recommended settings:

    a. Select Performance → Modem (28.8 Kbps).

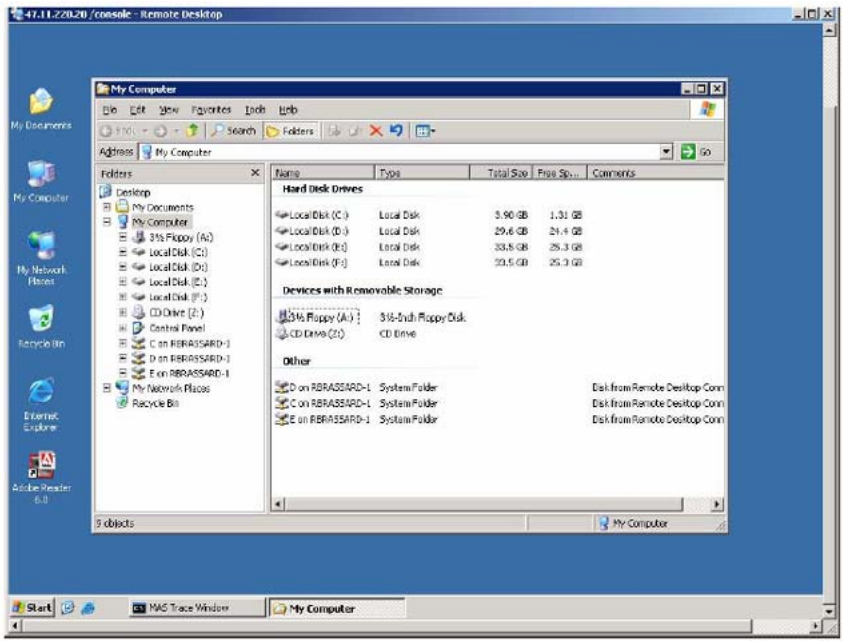
    b. Select Bitmap caching → Enabled.

11. Click Connect to create the remote desktop connection.

    Result: The Security Warning window appears.

12. Click OK to continue.

    Result: A remote desktop session starts in a window on the client PC.



13. Within the Remote Desktop session:

    a. Select Start → Run, then in the Open box type cmd and click OK.

    b. In the command prompt window, type shadow 0 and press Enter.

    Result: This step puts your private session on hold and starts a shared session, allowing the local and remote consoles to share/view the same screens. All your remote actions are visible on the local console. Both the local and remote mouse and keyboard are active. The screen resolution of the Remote Desktop Connection is adjusted to match the resolution of the local console. The disk drives shared from the client PC are not visible after you enter the shadow 0 command.

14. The CallPilot desktop background is visible during a shared session. This visibility can slow performance if you are connected over a modem. You can turn off the background using Control Panel → Display → Desktop → None. Remember to set the background back to its original setting once your shared session is over.

    Note:
    Browse to path: C:\windows\system32\CP3BackSplashs\ CPBAKxxxx.bmp where xxxx = platform number.

15. Cancel shadowing of the CallPilot console and return to the original session. Hold down the CTRL key while pressing the * key on the numeric keypad.

    Result: The shared disk drives are again visible. You can toggle back and forth using shadow 0 and CTRL num *.

Notes:

If no numeric keypad exists (for example, using a laptop), use the Function and * keys.

If you logout while in a shared session, console shadowing ends and you revert to your initial private session. The local console session logs out.

PEP installs and CallPilot support tools may not work properly when you are in an unshadowed session not connected to the console.

While in a shadow 0 session, you are unable to see your local drives on the remote server.

If the local console is not already logged on when the shadow 0 command is used, the system returns the following error within the Command prompt window:

```
Remote Control Failed. Error 7050
Error [7050]:The requested session cannot be controlled remotely. This may be
because the session is disconnected or does not currently have a user logged on.
```

You can still connect to the console session by logging out from your RDC session, then reconnecting using the /console option.

CallPilot support tools

Certain support tools and operations (including PEP installs) only work properly when run from the logical console. MMFS and database operations can only be done from the logical console session. These tools must be run using either a private session connected to the console or by using a shared session. Once you cancel console shadowing, support tool operations may not work unless you re-shadow.

If you wish to use support tools without the customer being able to see on the console, use a private session. This private session logs out any local user. You can start and stop Remote Desktop sessions without dropping the RAS dial-up connection.

Note:
PEP installs that perform database or MMFS operations may also require use of a session connected to the console.

There is no way to send the CTRL-ALT-DEL key combination. If you need to reboot the CallPilot server, use Start → Shutdown.

To disconnect, log out from the NGenDist session. Logging out closes any programs you started and terminates the Remote Desktop Client. You can then hang up the RAS connection.

RAS dial-up required to establish RDC

Unfortunately, it is not possible to use Remote Desktop directly through a modem. RAS dial-in must be working for this form of remote access to work.

Double-Hop remote control

A common support scenario is for one technician to dial in to a customer's CallPilot server, then another technician controls the first technician's computer (for example, by intranet or VPN), thereby gaining access to the dial-up remote control session on CallPilot. For this operation to work, the intermediate computer's Dial-Up Networking TCP/IP Settings must have the setting Use default gateway on remote network unchecked.

1. Double-click the Dial-up Networking connection icon in the system tray.
2. The Status window appears.
3. Click the Properties button and then select the Networking tab.

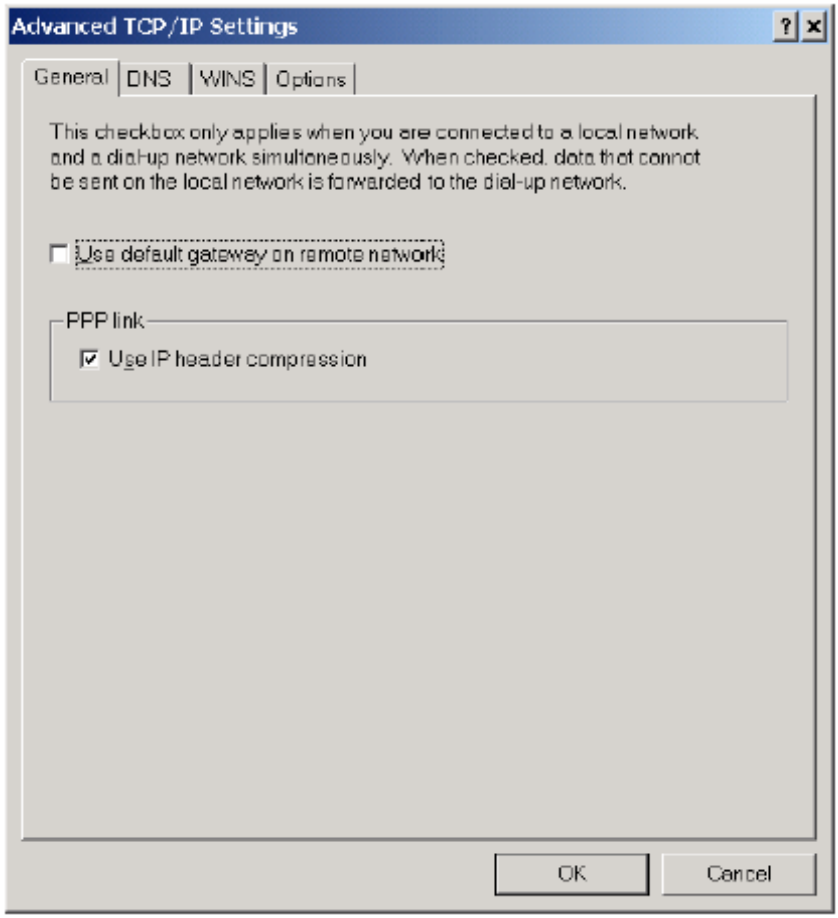
Result: The RAS Dialout Properties, Networking window appears.

4. Highlight the Internet Protocol (TCP/IP) component and click the Properties button. Do not un-check Internet Protocol (TCP/IP).

   Result: the Internet Protocol (TCP/IP) Properties window appears.

5. Click the Advanced button.

   Result: The Advanced TCP/IP Settings screen appears.



6. Uncheck Use default gateway on remote network. Click OK to close all windows.

   Result: The warning box appears with the following message:

```
Since this connection is currently active, some setting will not take
effect until the next time you dial it.
```

7. Click OK.
8. Disconnect and re-connect to the remote server. The modified Default gateway setting is now active.

Notes:

It is possible to use pcAnywhere to control a PC that is in turn connected into a CallPilot server through Remote Desktop Connection. However, the right keyboard shift key does not seem to work in this scenario, nor does the CAPS LOCK key. You must use the left shift key only to type upper case characters. This is especially important when typing passwords. (This problem was noted using pcAnywhere 10.5 and 11.01).

Double-Hop remote control is also possible using two Remote Desktop Connections if the intermediate PC is running an operating system that includes the Remote Desktop Connections Server. This method is effective and functions optimally when both sessions are not in full-screen mode. Refrain from maximizing the Remote Desktop windows to see them nested.

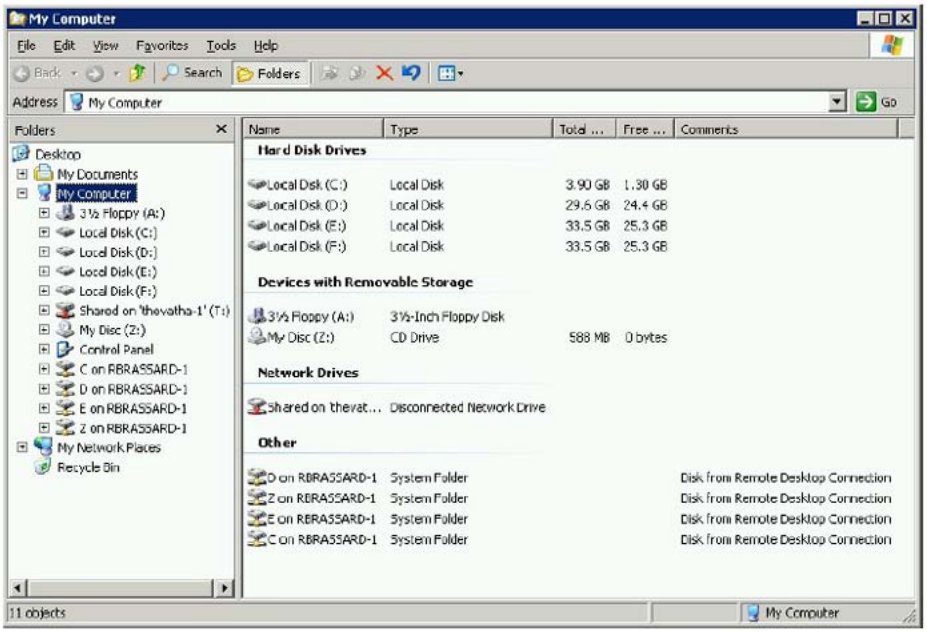
Transferring files in Remote Desktop Connection sessions

Before a file can be transferred between a local computer (the computer that is launching the Remote Desktop Connection and making the remote support connection session) and the remote CallPilot server, the local disk drives must be made available during the Remote Desktop Connection logon session.

Note:

Make sure the Local devices settings include the local disk drives to enable file transfer while in a Remote Desktop Connection session.

While in a session, moving files between the local computer and the remote CallPilot server can be done within an Explorer window. If the Local devices setting for disk drives was checked during the initial connection, the local drives are displayed in the Other section as shown in the following example.



Terminal Server Maximum Connections Exceeded error

CallPilot supports a maximum of two remote sessions and one console session concurrently. If these limits are exceeded, you might receive the error;

```
The terminal server has exceeded the maximum number of allowed connections.
```

If this occurs, it is still possible to make a connection without the need for local intervention. Use a private session to connect, forcing any local user to logout and allowing you to connect.

Disconnecting the Remote Desktop Connection session

You should not terminate a Remote Desktop Connection by clicking X on the Remote Desktop Window. This action disconnects your session, but the session continues to exist on the CallPilot server. Any programs you were running continue to run, and you can reconnect and see the same session.

Use one of these methods to log off:

1. In the Remote Desktop Connection window, click Start → Log Off <username>.

   Result: The Confirmation dialog box appears.

2. Click Log Off to exit the Remote Desktop Connection session.

Or

1. In the Remote Desktop Connection window, click Start → Shutdown.

   Result: The Shut Down Windows dialog box appears.
2. Select Log Off <username>, from What to do, and then click OK.

View or disconnect concurrent or previous stale sessions

Microsoft Windows Terminal Services Manager provides the following services:

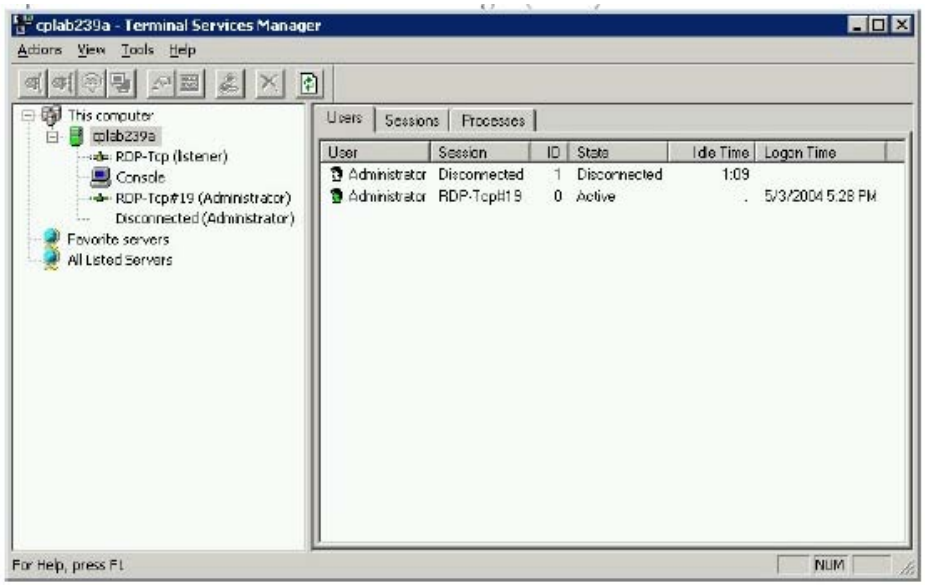
- The administrative user can view active or inactive sessions on the server.
- Log off and/or disconnect any leftover sessions that are no longer needed.
- Send messages to other sessions for messaging between users.

To start the Terminal services Manager select Start → Programs → Administrative Tools → Terminal Services Manager.

Note:
Similar functionality is also available from the Users tab of the Task Manager.

Example

Result: The Terminal Services Manager window appears.



Example

Switch between the Users and Sessions tabs.

Troubleshooting tips

Session disconnected unexpectedly

If you are in a private console session and another user takes away the console (either local to the server or another remote RDC session), the Remote Desktop Disconnected message appears.

Contact the site to arrange for access, or use a shared session and then message the other user through Windows Terminal Services Manager or Task Manager.

Cannot connect using a private session

When trying to establish a private session, the Server Name Specified is Invalid message appears.

If using an older version of Microsoft Remote Desktop Connection client, upgrade to the newer Windows 2003 RDC client (this document references version control 5.2.3790.0). Check the RDC client version by right-clicking the title bar and selecting About.

If the RDC client cannot readily be upgraded:

1. Open a command prompt window on your client PC.
2. Type mstsc /console and press Enter.

   Result: The RDC connection window appears.
3. Type the IP address of the server into the Computer field and click Connect.

Unable to transfer files to the remote CallPilot server

If you cannot see local client PC files and folders from within the RDC client session, check for the following conditions:

- The Local Devices, Disk Drives option was not checked in the Options window before connecting to the remote server in the RDC client.
- The CallPilot server is connected using a shared session. Files will not be visible and, therefore, cannot be transferred.

When transferring files between the CallPilot server and RDC client PC, use a private session.

Connection to server is extremely slow

The RDC access speed is diminished if the Desktop Background setting is turned on.

In a private session, prior to connecting, select the Experience tab → Options → Desktop Background (unchecked).

In a shared session, after connecting and logging onto the server, right-click on the Desktop, select Properties, then select the Desktop tab. In the Background selection box, choose None.

Click OK to close either window.

Shared remote connection fails to start

If the local console is not already logged on when the shadow 0 command is used, the system displays the following error:

```
Error [7050]:The requested session cannot be controlled remotely. This may be
because the session is disconnected or does not currently have a user logged on.
```

Connect to the console session using a private session. This method does not require a user to be logged on already.

System monitor or support tools do not return valid or legible information

If you connect to the CallPilot server using a shared session but do not issue the shadow 0 command, support tools and diagnostics that access the database, may return invalid results.

Use a private session or issue the shadow 0 commend when setting up a shared session.

User changes fail to replicate during nightly GR resynchronization

If a user reports that previous changes have reverted to earlier settings, after the main and alternate servers are synchronized during the nightly audit, advise the user to make the changes again.

This event occurs when a user changes a password while connected to the alternate server, and while the main server is inactive. During the resync, the changes are overwritten by the settings retained on the now active main server. This issue is resolved when the changes are made again on the main server.

Chapter 7: Application troubleshooting

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Symptom 1: Avaya CallPilot® answers calls, but voice services are not available

Diagnostic steps		Resolution	
Perform basic checks.		A	Ensure that the DS30X or DS30 cable is not defective, the MGate card operates properly, and Avaya CallPilot is configured with the correct TNs.
1	Check the DS30X or DS30 cable connected to the MGate card on the switch.		

Diagnostic steps		Resolution
2	Check the MGate card.	
3	Check if CallPilot is configured with the correct TNs.	
Check the DS0s and DSPs.	B	If the DS0s and DSPs are not active, verify the switch configuration.
4	Check if the DS0s and DSPs are in service and accepting calls. Refer to the Server Maintenance and Diagnostics guide that applies to your server type.	C If the DS0s and DSPs are active, but voice services are not available, verify the prompt installation. Refer to the Configuration and Testing Guide that applies to your switch.
Verify the switch configuration.	D	If the channels were disabled, use overlay 32 (LD 32) to enable them. Ensure that the channels were not disabled because of a prior maintenance task.
5	In the switch administration console, load overlay 32 (LD 32) and verify that the status of the defined DS0 channels is either Idle or Login.	
Check the server IP address.	E	If the IP address was changed, shut down and restart the CallPilot server.
6	Check if the IP address of the CallPilot server has been changed since the last restart.	
Verify the MGate card version and placement.	F	If the MGate card has a different part number, replace it with an NTRB18CA (or later) card.
7	If the system uses an MGate card on an Option 11 switch, verify that: • The MGate card has the NTRB18CA (or later) part number. • The card is installed in the correct slot. • The card from the I/O panel is installed correctly.	G If the MGate card is not installed in the correct slot, then install it in a slot that is consistent with the switch programming requirements.
Verify the prompt installation.	H	Reinstall the prompts. Refer to the Software Administration and Maintenance guide.
8	Open the installation log file in the D:\nortel\sysops\MPCX \langprompts folder.	
9	Check the last line of the log file. The last line must be "Prompt Installation completed successfully." If you cannot verify	

Diagnostic steps	Resolution
that the prompts were installed successfully, they were probably not. **Note:** The log file name has the format xxxx.log, where xxxx is the Avaya Language ID; for example, 1033 for US English. The Avaya Language ID is specified in the cdstruct.lng file, which is located in the root directory of the language CD.	
Verify the new configuration. 10 In the D:\nortel\langXXXX\voice\map folder, verify that the file sysmap.mxxxx exists, has the date and time of the prompt installation, and has a reasonable size (more than 5 KB). 11 Verify that all the .l files in the D:\nortel\langXXXX\voice\template folder have the date and time of the prompt installation. 12 Verify that the file imap_lng.txt exists in the D:\nortel\langXXXX\desktop folder. 13 If the fax feature is installed, verify that the six .cptemp and .bmp files exist in the D:\nortel\langXXXX\fax folder. 14 If the automatic speech recognition (ASR) language component was installed (or was planned to be installed), verify that the D:\nortel\langxxxx\asr directory exists and contains three .ctx files, three .cfg files, and one .asr file.	If any one of the verification steps fails, you must reinstall the language. **Note:** Even if all the checks are valid, it is still possible that the language was not installed correctly.
Verify the new configuration (continued). 15 If the ASR language component was installed, verify that the ASR load was flashed in the DSP. Verify that the names of the ASR load for a specific language are in the flashnames.dat file, which can	

Diagnostic steps		Resolution	
	be found in the root directory of the language CD.		
16	Verify that the MPB cables are not installed inverted on the tower and rack-mount systems.	J	Install the cables correctly and then retest.
17	Does the problem still exist?	K	Contact your Avaya technical support representative for assistance.

Symptom 2: A user cannot log in to the mailbox from an external phone

Diagnostic steps		Resolution	
Verify internal access.		A	Log in to the CallPilot Manager and perform the following tasks: • Connect to the server. • Click User. • Click User search. • Enter the search criteria for the user. • Ensure that the Login status is enabled.
1	Check if the user can log in from an internal phone.		
Verify user rights.		B	Ensure that the external login for the user is enabled. Refer to the Avaya CallPilot® Administrator Guide (NN44200-601).
2	Check if the user has external login rights.		
3	Does the problem still exist?	C	Contact your Avaya technical support representative for assistance.

Symptom 3: Callers hear re-order tone when dialing or being forwarded to CallPilot

Diagnostic steps	Resolution

1. Ensure the Meridian 1 or Avaya Communication Server 1000 is not encountering network blocking. This could be caused by installing more than three MGate cards in the same superloop.	A Refer to document 553-3021-120 Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering.
2 Ensure proper ACD configuration on the Meridian 1 or Avaya CS 1000. 3 Ensure CDN and SDN have an associated DN on the Meridian 1 or CS 1000.	B Refer to document NN44200-302 Avaya Meridian 1 and Avaya CallPilot® Server Configuration Guide, or NN44200-312 Avaya CallPilot® Communication Server 1000 and CallPilot Server Configuration.

Symptom 4: Speech recognition does not work

Diagnostic steps		Resolution
Verify that speech recognition resources are assigned to the DN.	A	Change the DN media type to "Speech Rec."
1 In CallPilot Manager, connect to the server and then click System→Service Directory Number.		
2 View the Speech Recognition Service Directory Number.		
3 Verify that the Media type is "Speech Rec."		
Verify speech recognition on keycode.	B	Perform a keycode expansion. Contact your Avaya order management representative or sales representative for assistance.
4 If the "Speech Rec." option is not in the Media type list, then the server keycode does not enable the speech recognition feature. **Note:** The keycode must enable speech recognition languages and seats so that the speech recognition channels answer correctly.		
Verify the prompt installation.	C	Reinstall the language. Refer to the Software Administration and Maintenance Guide.
5 Check the language installation log file: D:\nortel\sysops\MPCX\langprompts.xxxx.log.		

Diagnostic steps			Resolution
6	Verify that the last line of the log file is "Prompt Installation completed successfully."		
7	Does the problem still exist?	D	Contact your Avaya technical support representative for assistance.

Symptom 5: Users cannot print or receive faxes

Diagnostic steps			Resolution
Verify that fax resources are assigned to the fax messaging DN.		A	Change the DN media type to Fax.
1	Log in to CallPilot Manager and proceed as follows: • Connect to the server. • Click System→Service Directory number.		
2	View the Service Directory Number.		
3	Verify that the Media type is Fax.		
4	Check if the user's Class of Service has Fax capability.		
Verify that Fax option is on the keycode.		B	Perform a keycode expansion. Contact your Avaya order management representative or sales representative for assistance.
5	If the Fax option is not available on the Media type list, the server keycode does not enable fax features.		
6	Does the problem still exist?	C	Contact your Avaya technical support representative for assistance.

Symptom 6: Avaya NES Contact Center voice services do not work

The Event Browser displays a Meridian Link* TSP or ACCESS link event. Mailbox owners notice that calls are not answered.

	Diagnostic steps	Resolution
	Verify that the voice port configuration is consistent across all subsystems.	
1	Verify the CallPilot server configuration.	On the CallPilot server, ensure that: • The NES Contact Center IP address is properly configured. • The ACD queue for ACCESS channels is configured as NES Contact Center Voice Services SDN. • The ACD queue for IVR* channels is configured as NES Contact Center Voice Services support announcement or voice menu SDN. • The Class ID configured in the Configuration Wizard is equal to the ACCESS port channel configured on the NES Contact Center.
2	Verify the NES Contact Center configuration.	On the NES Contact Center, ensure that: • The CallPilot ELAN IP address is properly configured. • The value of the ACCESS voice port channel is equal to the Class ID on the CallPilot server. • The port number is configured as 10008.
3	Verify the switch configuration.	On the switch, ensure that: • The ACD queue for ACCESS channels is configured as follows: IVR=YES and ALOG=YES. • The ACD queue for IVR channels is configured as follows: IVR=YES and ALOG=YES.

	Diagnostic steps	Resolution
	Verify that the voice port configuration is consistent across all subsystems.	
		• The ACCESS and IVR channels are configured as follows: AST=0, 1 and CLS=MMA, FLXA. • All CallPilot server ELAN VAS IDs are configured as follows: SECU=YES.
4	Does the problem still exist?	Contact your Avaya technical support representative for assistance.

Symptom 7: Users cannot send messages to a telephone/ fax machine from Desktop Messaging or CallPilot

To prevent toll fraud by Desktop Messaging and My CallPilot users, Avaya recommends that you define access restrictions for unauthenticated SMTP users. If users report that they are unable to send a CallPilot message to a telephone or fax machine from their desktops, then they are connecting to CallPilot as unauthenticated SMTP users and the Delivery to Telephone or Fax option is not selected for unauthenticated desktop users.

	Diagnostic steps	Resolution
Solution 1 (recommended)		
1	Select the required authentication options in Security Modes for SMTP Sessions.	• Log in to CallPilot Manager. • Click Messaging→Message Delivery Configuration. • Scroll down to the SMTP/VPIM section and click the Security Modes for SMTP Sessions link. • Select the authentication options required for your users. • Click Save.
2	Ensure that users provide SMTP authentication from their e-mail clients.	If users connect from an e-mail client supported by Avaya (such as Microsoft Outlook, Lotus Notes, GroupWise, or My CallPilot), then the client-side SMTP authentication option is automatically used if the correct authentication options are selected in Security Modes for SMTP Sessions on the server side.
Solution 2		

	Diagnostic steps	Resolution
1	Leave only the Unauthenticated option selected in Security Modes for SMTP Sessions, and select the correct option in Unauthenticated Access Restrictions. This solution is less secure becauseCallPilot allows unauthenticated desktop users to send messages to external telephone and fax numbers	• Log in to CallPilot Manager. • Click Messaging→Message Delivery Configuration. • Scroll down to the SMTP/VPIM section and click the Unauthenticated Access Restrictions link. • Select the Delivery to Telephone or Fax check box. • Click Save.

Symptom 8: Users cannot browse CPM if the Encoding is set to Chinese Simplified (HZ) in Microsoft IE

The users can not browse CallPilot Manager if the Encoding is set to Chinese Simplified (HZ) in Microsoft Internet Explorer (the Welcome to CallPilot page is blank).

	Diagnostic steps		Resolution
1	Open Internet Explorer and log in to CallPilot Manager. The Welcome to CallPilot Manager page is blank.	A	In Internet Explorer, click View→Encoding→Auto-Select.A check mark appears to the left of the Auto-Select option. When this option is selected, Internet Explorer can usually determine the appropriate language encoding.
2	Check the Encoding setting in Internet Explorer: click View→Encoding. The Chinese Simplified (HZ) option is selected. **Note:** The Chinese Simplified (GB2312) and Chinese Traditional options do not cause this problem.	B	To ensure that CallPilot Manager pages are displayed correctly, you must also select manually a different encoding option than Chinese Simplified (HZ): click View→Encoding→More, and then select a language encoding option from the list. **Note:** The system can prompt you to install a new language pack. You must have the operating system installation CD-ROM, or know the location of the required files

Diagnostic steps		Resolution	
			on a network server, if applicable.
		C	Click Refresh on the Internet Explorer toolbar or log in to CallPilot Manager again.

Symptom 9: Users cannot access the CallPilot Manager login page from a standalone Web server

Users cannot access the CallPilot Manager login page from a standalone Web server running Windows 2003 and Internet Information Services 5.0.

Diagnostic steps		Resolution	
Open the CallPilot Manager login page.		Add Authenticated Users and INTERACTIVE to the Users group for the Web server.	
1	On the Web server, open Internet Explorer.	A	On the Web server, click Start→Programs→Administrative Tools. The Administrative Tools window opens.
2	Type http:\\web_server_name \cpmgr in the browser Address box, or click the bookmark to the CallPilot Manager login page. The following message appears: "HTTP 500—Internal server error."	B	Double-click Computer Management. The Computer Management console opens.
Check the Event Viewer logs.		C	In the left pane, click the plus sign (+) to the left of Local Users and Groups to expand the folder tree.
3	On the Web server, click Start→ Programs→Administrative Tools. The Administrative Tools window opens.	D	Click the Groups folder. The contents of the Groups folder appear in the right pane.
4	Double-click Event Viewer. The Event Viewer window opens.	E	In the right pane, right-click Users, and then click Properties on the shortcut menu. The Properties dialog box opens.
5	Check the System Log for the following events:	F	Click Add. The Select Users or Groups dialog box opens.

	Diagnostic steps		Resolution
	• 36—The server failed to load application '/LM/w3svc/1/root/cpmgr'. The error was 'Server execution failed'. • 10010—The server {A62B60F6-4508-4E63-9C25-63102FF3E115} did not register with DCOM within the required time-out. These events indicate that the NT AUTHORITY/Authenticated Users or NT AUTHORITY \INTERACTIVE entry has been removed from the Users group. **Note:** Refer to the Microsoft bulletin Q327153 for more information.	G	Click the name of the local computer in the Look in list. The users and groups established on the local computer appear in the upper pane.
		H	Click Authenticated Users in the upper pane, and then click Add. The Authenticated Users group moves to the lower pane.
		I	Click INTERACTIVE, and then click Add. The INTERACTIVE entry moves to the lower pane.
		J	Click OK.
		K	Click Apply in the User Properties dialog box.
		L	Click OK. The Properties dialog box for the Users groups closes.
		Restart the Internet Information Service.	
		M	In the left pane of the Computer Management console, click the plus sign (+) to the left of Services and Applications to expand the folder tree.
		N	Click Services. The available services appear in the right pane.
		O	In the right pane, right-click IIS Admin Services, and then click Restart on the shortcut menu. The Restart Other Services confirmation dialog box opens.
		P	Click Yes. The IIS Admin Service restarts.
6	Go to the CallPilot Manager login page.	Q	Contact your Avaya technical support representative for assistance.
7	Does the problem still exists?		

Symptom 10: CallPilot Manager users cannot connect to the CallPilot server

	Diagnostic steps	Resolution
1	When you try to log in to CallPilot Manager, the following message appears: "Failed to connect to the CallPilot server. Check server information and try again. If this problem persists, the server may be improperly configured."	The System and Application log events point to a problem related to the CallPilot server name. The name of your CallPilot server already exists on the network. To solve this problem, proceed as follows:
2	Verify the System event log and look for the following events: 3870, 7023, and 7001.	A Remove the CallPilot server from the network.
3	Verify the Application event log and look for the following events: 41504, 41550, and 41506.	B Change the CallPilot server name using Configuration Wizard. C Reconnect the CallPilot server to the network.
4	Try to log in to CallPilot Manager.	Contact your Avaya technical support representative for assistance.
5	Does the problem still exist?	

Chapter 8: Flight Recorder

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Introduction

This chapter includes procedures specific to managing the Flight Recorder feature. Use these procedures to enable or disable the feature as well as to archive and access Flight Recorder information in order to help in troubleshooting potential problems.

For more information about Flight Recorder, refer to the *CallPilot Fundamentals Guide* (NN44200-100).

Enabling Flight Recorder traces

As an administrator, you can enable the tracing of specific CallPilot modules in order to capture information about those modules. The default settings indicated in the Flight Recorder Manager are the optimal settings for each CallPilot platform.

Warning:

Avaya highly recommends that you do not change any of the default settings. Enabling additional traces may cause your system to become unresponsive while disabling enabled traces can result in the loss of vital diagnostic information.

1. Log on to CallPilot Manager.
2. Click **Maintenance > Flight Recorder**.
3. Select **Flight Recorder Manager** from the **Select a task** drop-down list.
4. Select the module(s) you want to trace.
5. Click **Enable**.
   A caution window appears warning you that capturing traces on some modules may impact performance.
6. Click **OK**.

Disabling Flight Recording traces

As an administrator, you can disable the tracing of specific CallPilot modules in order to stop capturing information about those modules. The default settings indicated in the Flight Recorder Manager are the optimal settings for each CallPilot platform.

Warning:
Avaya highly recommends that you do not change any of the default settings. Enabling additional traces may cause your system to become unresponsive while disabling enabled traces can result in the loss of vital diagnostic information.

1. Log on to CallPilot Manager.
2. Click **Maintenance > Flight Recorder**.
3. Select **Flight Recorder Manager** from the **Select a task** drop-down list.
4. Select the module(s) for which you want to stop tracing.
5. Click **Disable**.
   A caution window appears warning you that capturing traces on some modules may impact performance.
6. Click **OK**.

Archiving Flight Recorder information

Flight Recorder (FR) continuously captures key performance counters, traces, logs, and events on your system. As an administrator, you can archive this information in order to make it available for diagnostic purposes.

Flight Recorder log files for all platforms (except 703t) are stored on the CallPilot server in the C:\CallPilot\FlightRecorder directory. Log files for the 703t server are stored in the D:\Nortel \FlightRecorder directory. Flight Recorder archives are stored in the C:\Inetpub\wwwroot \cpmgr\Upload directory on all platforms.

Important:

There is a threshold for the amount of disk space that can be consumed by archives. If the amount of free space on the drive where logs are stored drops below 10%, Flight Recorder blocks any further creation of archives and logs. In this situation, archive creation and logging does not resume until the amount of free space rises above 12%. Increasing the amount of free space can be achieved by deleting archives. For information on how to delete archives, refer to Deleting Flight Recorder archives on page 160.

1. Log on to CallPilot Manager.
2. Click **Maintenance > Flight Recorder**.
3. Select **Archive Manager** from the **Select a task** drop-down list.
4. Select the module(s) for which you want to archive the data.
5. Click **Archive**.
   The Archiving Progress screen will display. To abort the archive click the **Cancel** button.

   Note:

   The duration of the archiving process is dependent upon the amount of data being archived and the current system load. As a result, archiving may take a significant amount of time or be cancelled altogether due to time out. In case of problems, additional details can be found in the Flight Recorder log file (C:\CallPilot \flr.log) and the Windows Application Event log.
6. When the archive is complete, click **Close**.

Viewing Flight Recorder archive statistics

The Download Manager displays all archives that have been created, the amount of disk space being used by the archives, and the maximum allowed disk space that archives can consume.

1. Launch CallPilot Manager.
2. Enter mailbox number and password.
3. Click **Maintenance > Flight Recorder**.
4. Select **Download Manager** from the **Select a task** drop-down list.
   The Download Manager window displays archives and associated disk information.

Downloading Flight Recorder archives

As an administrator, you can download archives captured by Flight Recorder at any time. If a server outage occurs, archives can be sent to support personnel and product design teams to determine what caused the outage.

1. Log on to CallPilot Manager.
2. Click **Maintenance > Flight Recorder**.
3. Select **Download Manager** from the **Select a task** drop-down list.
4. Click the link to the archive you want to download and save it to a specific location on your PC.

Deleting Flight Recorder archives

As an administrator, you can delete aging archives that are unnecessarily consuming disk space.

1. Log on to CallPilot Manager.
2. Click **Maintenance > Flight Recorder**.
3. Select **Download Manager** from the **Select a task** drop-down list.
4. Select the archive(s) you want to delete and click **Delete Selected**.

Chapter 9: Meridian Mail to Avaya CallPilot® migration troubleshooting

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General

This chapter provides troubleshooting information for issues that can affect the Meridian Mail to Avaya CallPilot migration process. For additional troubleshooting information, refer to the Avaya Meridian Mail to Avaya CallPilot® Migration Utility Guide (NN44200-502). This migration guide describes common causes of migration errors and provides methods to solve these errors.

The Avaya Meridian Mail to Avaya CallPilot® Migration Utility Guide also provides general information on the following topics:

- correcting pre-check inconsistencies
- troubleshooting tools
- Meridian Mail data collection error messages
- CallPilot migration error messages

Use both the Avaya Meridian Mail to Avaya CallPilot® Migration Utility Guide and this chapter to troubleshoot migration issues.

Symptom 1: Error reading tape during data transfer or message migration

Diagnostic steps		Resolution
Verify the log file 1 Open the migration transaction log file. The migration transaction log file (MigTransaction.log) is located in the D:\nortel\MPCX\Migration folder on the CallPilot server. 2 Check the error description in the log file for more information.	A	Correct the error according to the log information. If you cannot find a solution, go to the next step.
Verify the type of the tape. 3 Check if the type and size of the tape that you used to collect migration data is supported by CallPilot.	B	Use the correct tape (SLR 2.5 GB) to again collect Meridian Mail data.
Verify the tape drive. 4 Check if the CallPilot tape drive supports the migration tape. 5 Check if the internal or external tape drive that you are using is properly installed and connected.	C	Ensure that the tape drive supports the migration tape; connect the tape drive properly.
Verify the tape driver. 6 Open the Tape Devices box in Control Panel, and determine if the required devices and drivers are installed and loaded or started.	D	If the device driver is missing, install it. If the device driver is not started, start it. If you cannot start the device driver, reinstall it and then restart the CallPilot server.
Rerun the tape on the same CallPilot server. 7 Restart the migration using exactly the same command syntax as used to start the migration initially.	E	If the system still displays an error message, go to the next step.
Run another data or message tape on the same CallPilot server.	F	If the system does not display an error message, then the tape is the cause of the problem. Use another blank tape to

Diagnostic steps			Resolution
			collect data and then perform the migration again.
8	Ensure that the tape is serviceable before using it. Type the correct command in the command line window to start the migration. If the situation does not allow you to do this, then skip this step.	G	If the system still displays an error message, the problem is on the CallPilot server. Reboot the CallPilot server.
Rerun the tape on a different CallPilot server.		H	If the system does not display an error message, then the tape is good and the problem is on CallPilot server. Reboot the CallPilot server.
9	Type the correct command in the command line window to start the migration. If the situation does not allow you to do this, skip this step.	I	If the system still displays an error message, then the tape is the cause of the problem. Use another blank tape to perform the data collection and then perform the migration again.
10	Does the problem still exist?	J	Contact your Avaya technical support representative for assistance.

Symptom 2: All users cannot be migrated due to an invalid user-preferred language ID

Diagnostic steps			Resolution
Verify the CallPilot version and the Meridian Mail migration utility tape version.		A	If you found error messages similar to the example provided in step 2, you may not be running a supported CallPilot build. Refer to the Upgrade and Platform Migration Guide (NN44200-400) for supported versions and detailed migration instructions.
1	Open the migration transaction log file. The migration transaction log file (MigTransaction.log) is located in the D:\nortel\MPCX\Migration folder on the CallPilot server.		
2	Check for error messages similar to the following: `ERROR:(USRAPI):(55122):Invalid input USER PREFFERRED LANG ID:`	B	If you did not find error messages similar to the example provided in step 2, contact your Avaya technical support representative for assistance.
3	Does the problem still exist?	C	Contact your Avaya technical support representative for assistance.

Symptom 3: The system failed to create a map directory

Diagnostic steps	Resolution
Verify the log file. 1 Open the migration transaction log file. The migration transaction log file (MigTransaction.log) is located in the D:\nortel\MPCX\Migration folder on the CallPilot server. 2 Check for the following error message: `ERROR:(MAPFILE):(100): Map directory creation error:`	A If you found the error message provided in step 2, you probably changed the current directory at the command line. If necessary, change the directory to D:\nortel\MPCX\Migration and start the migrate.exe program again. **Note:** You must always start the migration program from the directory D:\nortel\MPCX\Migration. B If you still have problems when you start the program from the correct directory, check the same directory to find a file named nmmgmap.dat. Restore this file if it was accidentally renamed or moved to another directory. Reinstall the CallPilot software if the nmmgmap.dat file is missing. **Note:** The nmmgmap.dat file must exist in the D:\nortel\MPCX\Migration directory. C If you did not find the error message provided in step 2, contact your Avaya technical support representative for assistance.
3 Does the problem still exist?	D Contact your Avaya technical support representative for assistance.

Symptom 4: The automatic log file backup failed

Diagnostic steps	Resolution
Verify the disk space.	A If you found the error message provided in step 2, check the free space on the D

Diagnostic steps		Resolution	
1	Open the migration transaction log file. The migration transaction log file (MigTransaction.log) is located in the D:\nortel\MPCX\Migration folder on the CallPilot server.		drive (where the directory \nortel\MPCX\migration is located) on the CallPilot server. The system probably does not have enough disk space to back up the log files. Empty the Recycle Bin or move some log files to another disk drive. Back up the log file manually.
2	Check for the following error message: `Could not backup the. transaction log file`		**Note:** Older CallPilot releases do not support the automatic log file backup. Avaya recommends that you back up the log file manually each time you finish a migration tape.
		B	If you did not find the error message provided in step 2, contact your Avaya technical support representative for assistance.
3	Does the problem still exist?	C	Contact your Avaya technical support representative for assistance.

Symptom 5: On a recently migrated system, a user cannot log in to the mailbox or CallPilot does not recognize a user receiving an incoming call

Diagnostic steps		Resolution	
Check user's class of service		D	If the user does not have a personal COS, go to the next step. Otherwise, perform one of the following tasks: • Again collect the user data from Meridian Mail after reassigning the user COS. Perform the user migration again. • Use CallPilot Manager to add the non-migrated users to the CallPilot system. Refer to the CallPilot Administrator's Guide. **Note:** Before you recreate a user, ensure that the user's DN has not already been assigned to another user.
1	On Meridian Mail, determine if the user had a personal Class of Service (COS). You can also verify this by checking the migration transaction log file (MigTransaction.log) in the D:\nortel\MPCX\migration\ folder on the CallPilot server. **Note:** Before you migrate Meridian Mail users to CallPilot, you must reassign the personal COS to a dummy COS. Refer to the Meridian Mail System Administration Guide (NN44200-601) for information on		

Diagnostic steps		Resolution
adding and reassigning COSs. CallPilot does not migrate personal COSs and users with personal COSs.		CallPilot does not allow duplicate DNs.
Check user's mailbox number.	E	If the user has a mailbox number that is more than three digits in length, go to the next step.
2 On Meridian Mail, check if the user has a mailbox number that is less than three digits in length. You can also check the migration transaction log file (MigTransaction.log) in the D:\nortel \MPCX\Migration\ folder on the CallPilot server. **Note:** CallPilot does not support mailbox numbers that are less than three digits in length.	F	If the user has a mailbox number that is less than three digits in length, perform one of the following tasks: • Change the user mailbox number to a three-digit number, and then again collect user data from Meridian Mail. Perform the user migration again. • Use CallPilot Manager to add non-migrated users to the CallPilot system. Refer to the CallPilot Administrator's Guide.
Check the migration transaction log file. 3 Check the migration transaction log file (MigTransaction.log) in the D:\nortel \MPCX\Migration\ folder on the CallPilot server to determine if the user was migrated successfully. 4 Check the Meridian Mail log file. View it from the Meridian Mail→Tools menu.	G	If the user was migrated successfully, check the CallPilot system sanity. If the user was not migrated, perform one of the following tasks: • Again collect user data from Meridian Mail after correcting the user property or any other errors depending on the CallPilot migration log information. Perform the user migration again. • Use CallPilot Manager to add non-migrated users to the CallPilot system. Refer to the CallPilot Administrator's Guide.
5 Does the problem still exist?	H	Contact your Avaya technical support representative for assistance.

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