

Connecting a Modem to the Cisco VPN 3000 Concentrator Console

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Introduction

Prerequisites

Requirements

Components Used

Conventions

Configure the Modem

Connect the Modem to the VPN Concentrator

Troubleshoot

Related Information

Introduction

There are many cases where the Cisco Technical Support Center needs to troubleshoot a Cisco VPN 3000 Concentrator from the console port. Sometimes, a customer cannot be in front of the terminal connected to the console, or cannot be at the console one-hundred percent of the time. In these cases, it is useful to connect a modem to the console port to allow Technical Support to remotely troubleshoot the VPN Concentrator. This document explains how to do this.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on Cisco VPN 3000 Concentrators.

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

Conventions

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

Configure the Modem

Complete these steps:

1. Connect your modem to a PC and run a terminal emulation program to enter commands to the modem.

These commands are used to configure the modem to operate with the VPN Concentrator console

port. Windows 95, 98, and NT come with a terminal program called HyperTerm, which you can use to enter commands. Typically, you can find the HyperTerm program in the HyperTerm folder when you select **Start > Programs > Accessories > Communications > HyperTerm**.

2. Connect your modem to the PC using a straight through cable.

This is a typical, standard modem cable.

3. Run HyperTerm or any other terminal application and configure it for:

- ◆ 9600 bps
- ◆ 8 Data Bits
- ◆ No Parity
- ◆ 1 Stop Bit
- ◆ No Flow Control

4. Type **AT** at the terminal window and press **Enter**.

OK appears. If not, type **AT&F** and press **Enter** to see if OK appears.

5. Carefully type the command string shown in the table to your modem and press **Enter**.

Note: You might NOT see an OK after this command string because one of the commands in the string disables result codes.

Modem	AT Command String
Hayes Accura 336/56k FAXmodem (Model Number: 4703US)	ATS0=1S37=9&C0&D0&K0Q1&W

If your modem displays **ERROR** then your modem might not recognize some (or all) of the commands. You might possibly have to get the manual for your modem to find the equivalent commands that perform:

- ◆ **S0=1** Select ring to answer on. In this case, the first ring.
- ◆ **S37=9** Maximum data communications equipment (DCE) line speed. In this example, 9600 bps.
- ◆ **&C0** Assume presence of carrier detect signal.
- ◆ **&D0** Ignore status of data terminal ready (DTR) signal.
- ◆ **&K0** Disable local flow control.
- ◆ **Q1** Do not return result codes.
- ◆ **&W** Write current configuration to profile 0 (0 is assumed).

Save these commands in the modem with the **&W** command. If your modem does not understand the **&W** command or does not have memory to save commands in the modem (like a Diamond Supra Express 56 K), you cannot shut off the modem when you switch the modem between the PC and the VPN Concentrator console.

Connect the Modem to the VPN Concentrator

Disconnect the modem from your PC and connect it to the VPN Concentrator. The last **&W** command you typed to the modem allows you to shut off the modem, move it to the VPN Concentrator, and power it back on without the need to re-enter the commands mentioned earlier in this document. If not, find another modem that has this capability (for example, Hayes Accura 336/56 K FAXmodem).

Important: In order to connect to the VPN Concentrator, you need to use a Null Modem cable instead of a straight through modem cable. This is needed because the console port of the VPN Concentrator has the transmit and receive pins internally crossed so it can use a more common straight through cable to connect to

a terminal. Using a Null Modem cable crosses the transmit and receive pins again so the VPN Concentrator works properly with a modem. Cisco recommends you get a DB9 to DB25 Null Modem cable to make this connection to the console port. You might also require a 25–Pin Gender Changer to change it from Female to Male on one end.

DB9 to DB25 Null Modem Cable			
DB9	Function	DB25	Function
2	Receive Data	2	Transmit Data
3	Transmit Data	3	Receive Data
4	Data Terminal Ready	6,8	Data Set Ready, Data Carrier Detect
6,1	Data Set Ready, Data Carrier Detect	20	Data Terminal Ready
7	Request to Send	5	Clear to Send
8	Clear to Send	4	Request to Send
5	Signal Ground	7	Signal Ground
9	Ring Indicator	22	Ring Indicator

This is an example of a Null Modem cable:

Company	Description	Part Number
Belkin Components	Serial Printer Cable – Null Modem DB9F/DB25M	F2L044–10 (10 feet)

Cisco suggests you connect the modem to the VPN Concentrator while it is ON and booted up. Connect the phone line to the modem and it is ready to be called. When a call comes into the modem, the ring indicator light flashes on the front of the modem and the modem answers.

Troubleshoot

Use these as troubleshooting tips:

- Occasionally, Cisco has seen the modem not answer when a call comes in. Shut off the modem and turn it back on to resolve this.
- Sometimes when the C5 reboots, the Transmit (SD or TX) and Receive (RD or RX) lights flash non–stop. In this case the modem might not answer or when it does, the connecting terminal sees garbage on the screen. Shut off the modem and turn it back on to resolve this.
- Sometimes the VPN Concentrator goes into Probe+ mode. In this case, the VPN Concentrator reloads because the modem sends a "Control P" or garbage characters when the connection is torn down to the VPN Concentrator. This causes the VPN Concentrator to drop into Probe mode.

Related Information

- [Cisco VPN 3000 Series Concentrators](#)
- [Cisco VPN 3002 Hardware Clients](#)
- [IPsec Negotiation/IKE Protocols](#)
- [Technical Support & Documentation – Cisco Systems](#)

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