IntraPort 2 and IntraPort 2+ VPN Access Server Administrator's Guide

Compatible Systems Corporation
4730 Walnut Street
Suite 102
Boulder, Colorado 80301

303-444-9532
800-356-0283
http://www.compatible.com

IntraPort 2 and IntraPort 2+ VPN Access Server Administrator's Guide, Version 1.5

Part number: A00-1619

FCC Notice: This product has been certified to comply with the limits for a Class A computing device, pursuant to Subpart J of Part 15 of FCC Rules. It is designed to provide reasonable protection against radio or television communication interference in a commercial environment. Operation of this equipment in a residential area could cause interference with radio or television communication.

Chapter 1 - Introduction

About the IntraPort 2/2+ VPN Access Server

Congratulations on your purchase of the IntraPort 2 or IntraPort 2+ VPN Access Server. These VPN Access Servers provide secure Internet-based remote access and site-to-site connections.

The IntraPort 2 will support up to 16 simultaneous LAN-to-LAN connections and up to 64 simultaneous remote client connections. The IntraPort 2+ will support up to 32 simultaneous LAN-to-LAN connections and up to 500 simultaneous remote client connections.

A Note About Remote Client Connections

In order to create a tunnel to a network over the Internet, remote users must run VPN Client software on a Windows95/98 PC, Windows NT PC, Mac OS, Linux, or Solaris computer which is connected to the Internet via PPP or Ethernet.

The IntraPort VPN Clients are applications which set up the remote access VPN tunnels to the IntraPort 2/2+ VPN Access Server and make sure that appropriate data gets sent.

The clients work in conjunction with your communications software. Connections can be made to the Internet via PPP software or over a local intranet via your workstation's LAN adapter. Together, these pieces provide cost-effective on-demand connections to your corporate network.

IntraPort 2/2+ VPN Access Server Installation Overview

This manual will help you install either the IntraPort 2 or the IntraPort 2+ VPN Access Server on your Local Area Network. For an overview on installing and running the VPN Client software at remote user locations, refer to the ***VPN Client Reference Guide***. For the most up-to-date information available on Compatible Systems products, please visit the Technical Support section of our Web site at:
http://www.compatible.com.

In short, the installation steps are:

1. **Install** the IntraPort 2 or IntraPort 2+ hardware on your Ethernet LAN and connect one or both of the 10/100 twisted-pair Ethernet interfaces to a Fast Ethernet or Ethernet hub.
2. **Select** the management tool you wish to use with the server. If you want to use the CompatiView management software, you must install the software on a Windows PC computer which is connected to your network.
3. **Configure** the IntraPort 2/2+ LAN and tunnel parameters using the management tool you have chosen.
4. **Install and Configure** the VPN Client software for remote users.

The manual is divided into several sections that should provide you with all the information you will need to use the IntraPort 2/2+ on your network.

Getting Started

This part of the manual describes the contents of the IntraPort 2/2+ package and outlines the preparation and equipment you will need to install the device.

Network Installation

This part of the manual includes step-by-step instructions on how to physically install the server and connect it to your local Ethernet. Instructions are included for twisted-pair Ethernet environments.

CompatiView Software Installation

This part of the manual describes how to install CompatiView, Compatible Systems' GUI (Graphical User Interface) management software which is included with your server.

Command Line Preparation

This part of the manual provides basic instructions for using command line management and text-based configuration.

Basic Configuration Guide

This part of the manual contains a minimal list of parameters that must be entered into a server for proper operation using CompatiView, Compatible Systems' management software, and text-based configuration.

Alternate Protocols and Security Parameters

This part of the manual lists configuration parameters that must be set in order to use the IntraPort 2/2+ VPN Access Server with protocols other than TCP/IP, and when using additional security parameters such as SecurID and RADIUS.

Appendices

Additional information that might be of interest to you, such as technical specifications, default settings, and how to download current software from Compatible Systems' website, can be found at the end of this guide.

Chapter 2 - Getting Started

A Few Notes

Please Read the Manuals

The manuals included with your IntraPort 2/2+ VPN Access Server contain very important information about the product and Virtual Private Networking in general. Please read this manual thoroughly, and refer to the management reference guides as required. It's worth the few minutes it will take.

Also, please fill out the warranty registration card and return it to us today. This will help us keep you informed of updates to the IntraPort 2/2+ VPN Access Server and future products available from Compatible Systems. You can also register on the web at http://www.compatible.com. If you'd like to be notified via e-mail about new products and receive important news from Compatible Systems, please join our e-mail list on the web.

Warranty and Service

The IntraPort 2/2+ VPN Access Servers are covered by the Compatible Systems Integrated Support Package, which includes a lifetime comprehensive warranty, a twenty-four hour advanced replacement program, unlimited phone support and software upgrades for the life of the product.

Compatible Systems maintains copies of current software updates on the Internet. You may download product software from these sources at any time. For more information on downloading current product software, see Appendix E of this manual.

Getting Help with the IntraPort 2/2+ VPN Access Server

If you have a question about the IntraPort 2/2+ VPN Access Server and can't find the answer in one of the manuals included with the product, please visit the technical support section of our Web site (http://www.compatible.com). This site includes extensive technical resources which may answer many of your questions. You can also request technical support by filling out a brief form. Technical support requests received via the Web form will receive expedited treatment. You may also call Compatible Systems Corporation or send support

questions via e-mail to *support@compatible.com.* Compatible Systems' phone number is listed on the front of this guide. We will be happy to help you.

What You Will Need To Get Started

Before installing the IntraPort 2/2+ VPN Access Server, please check the list below to make sure that you have received all of the items that are supplied with the server package.

You should also make sure you have any additional items that are necessary to connect the server to your network.

Supplied with the IntraPort 2/2+ VPN Access Server

Please check your shipping package for the following items:

- IntraPort 2/2+ unit
- Wall-mount power supply
- One DB-25 male to DB-25 female console cable
- CD-ROM including:
  - CompatiView software
  - Operating software
  - VPN Client software (Windows and Mac OS versions)
  - HTML version of product documentation (which can be viewed with your favorite web browser)
- *CompatiView Management Software Reference Guide*
- *Text-Based Configuration and Command Line Management Reference Guide*
- *VPN Client Reference Guide*
- Warranty Registration card

Needed for Installation

Before connecting the IntraPort 2/2+ VPN Access Server to your network, you need to make sure that you have the necessary equipment for connecting to a local Ethernet and/or for remote users to connect to the Internet.

Ethernet Connection Requirements

The server's Ethernet interfaces directly support full or half duplex 100BaseTx or 10BaseT twisted-pair Ethernet. To connect the server's Ethernet interfaces to twisted-pair Ethernet cabling, you will need an unshielded twisted-pair station cable that is connected to a 10BaseT-compatible twisted-pair hub (for a transmit speed of 10 Mbps) or a 100Mbps Fast Ethernet hub (at either transmit speed) for each interface you plan to connect.

❖ **Note:** *Ethernet cables and cable connectors are not supplied with the IntraPort 2/2+ product. Please contact your reseller or your Compatible Systems representative for information on obtaining the correct Ethernet cabling supplies.*

VPN Client Software Requirements

In order to run the VPN Client software, your remote users will require one of the following:

- A Windows PC with a 486 or later processor and either the Windows95/98 or Windows NT operating system
- A Macintosh or compatible computer with a PowerPC CPU, Mac OS 7.6 or later and Open Transport 1.1.1 or later.
- Linux kernel 2.0.36 (Intel) and Perl 5.004_04 or higher.
- A Sparc™ machine running a 32 bit Solaris OS.

In addition, remote users must have a PPP-based dial-up connection to an Internet Service Provider or be connected to an Ethernet which is linked to the Internet.

Chapter 3 - Network Installation

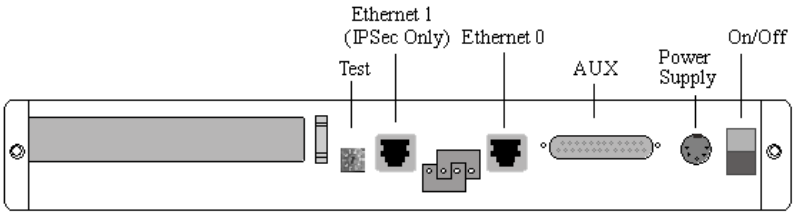


Figure 1. IntraPort 2/2+ VPN Access Server Back Panel

This section of the manual describes how to connect the IntraPort 2/2+ VPN Access Server to your Ethernet network. In summary, the steps for installation are:

1. Make sure the server is powered down and not connected to any power source.
2. Connect the server to the Ethernet network(s).
3. Connect a management console to the server (optional).
4. Plug in the power cable and power up the server.

Placing the Server

The IntraPort 2/2+ VPN Access Servers are meant to be left stand-alone on a desktop or equipment table.

❖ **Note:** *When stacking other equipment on the IntraPort 2/2+, do not exceed 25 pounds of evenly distributed weight on top of the device. Additional weight may bend the case.*

Connecting the Server to the Ethernet

Because Ethernet 1 is IPSec-only (meaning it will only handle IPSec packets and will drop all other traffic), you need to pay special attention to your Ethernet connection setup.

Ethernet 1 should only be used if you are planning to set the IntraPort 2/2+ to operate in parallel with your existing firewall. This is the recommended setup. In this scenario, Ethernet 1 should be connected to the same Ethernet segment as your Internet gateway router while Ethernet 0 will serve as an IP, IPX and AppleTalk router port for your internal networks.

The other option is to set up the server behind your Internet access router/firewall using Ethernet 0 only. In this scenario, Ethernet 1 is not used and should not be plugged in to anything. You will also have to set up your firewall to allow IPSec traffic through (see the section on setting up an IP Gateway for Ethernet 0 in Chapter 6 for more information).

The 10/100 Ethernet interfaces directly support full or half duplex 100BaseTx or 10BaseT twisted-pair Ethernet. To connect one of the server's Ethernet interfaces to twisted-pair Ethernet cabling, you will need an unshielded twisted-pair station cable that is connected to a 10BaseT-compatible twisted-pair hub (for a transmit speed of 10 Mbps) or a 100Mbps Fast Ethernet hub (for a transmit speed of 100 Mbps).

❖ **Note:** *Ethernet cables and cable connectors are not supplied with the IntraPort 2/2+. Category 5 cabling is required for 100 BaseT operation. Please contact your reseller or your Compatible Systems sales representative for information on obtaining the correct Ethernet cabling supplies.*

If your twisted-pair hub is already in place, you can connect the server to an active network without interrupting network activity. The server must be powered off.

Simply plug an unshielded twisted-pair cable (that is already connected to your 10BaseT-compatible or 100BaseTx-compatible twisted-pair hub) into the RJ-45 Ethernet connector on the back of the unit.

Connecting a Management Console

If you wish to connect an out-of-band management console, use the supplied cable and connect to the Console interface on the back of the IntraPort 2/2+. You can use a dumb terminal or a computer equipped with VT100 terminal emulation.

The default settings for the Console interface are VT100 terminal emulation, 9600 bps, 8 bits, no parity, 1 stop bit, and no Flow Control.

Powering Up the Server

Power up the server. At power-up, the server will take approximately one minute to become visible to CompatiView.

❖ **Note:** *If you want to use Telnet as a management tool, you must first configure an IP address into the server with either an out-of-band console, CompatiView or a reconfigured IP host or workstation on the same Ethernet segment as the server. See* Chapter 5 - Command Line Management.

Chapter 4 - CompatiView Software Installation

All of the products in the Compatible Systems networking family, including all IntraPort servers, RISC Router and MicroRouter models, can be managed from a single management platform called CompatiView. CompatiView is included on the CD-ROM which was shipped with your IntraPort 2/2+ VPN Access Server. If your IntraPort 2/2+ is running software version 5.0 or later, then you must use CompatiView version 5.3 or later. Earlier versions of CompatiView will not be able to log into the server.

❖ **Note:** *An older version of CompatiView for Mac OS is also included on the CD-ROM shipped with your server. The Mac OS version can be used with other Compatible products such as MicroRouters and RISC Routers; however, it is not compatible with the IntraPort 2/2+ VPN Access Server software. You must use CompatiView for Windows, versions 5.0 or later, to manage your server with CompatiView. PC emulator software such as SoftWindows may be used for this purpose, if your Macintosh supports it.*

❖ **Note:** *Once you have installed CompatiView, you can find more information on how to use it in the* ***CompatiView Management Software Reference Guide*** *which was included with your server.*

CompatiView for Windows

CompatiView for Windows allows you to manage the server from an IBM-compatible PC running Windows95/98 or Windows NT. The PC can either be configured as an IPX client on a Novell NetWare internet, or as an IP WinSock client on an IP internet.

System Requirements

In order to successfully run CompatiView for Windows, you need:

- IBM PC or compatible w/ 486 or later processor
- Microsoft Windows95/98 or Windows NT (version 3.51 or later) installed
- VGA or better monitor
- IP - A WinSock-compatible transport stack
  - and/or -
- IPX - A Netware or Microsoft Client installation

❖ **Note:** *To choose the active transport protocol on a Windows machine which has both IPX and IP installed, select "Options" from the Database menu and click the General tab. Then select the appropriate radio button under "Transport."*

Installation and Operation

The Windows version of the CompatiView program can be found in the Network Management/CompatiView/Windows directory on the CD-ROM that was included with your IntraPort 2/2+ VPN Access Server.

Run the auto-installation program (CV5x file) by double-clicking on it. The installation program will ask you to select (or create) a directory in which it should locate CompatiView and its associated files and database subdirectory.

Once the installation is complete, double click on the CompatiView icon to open the program. For further information on using CompatiView, see the ***CompatiView Management Software Reference Guide*** included with your server.

❖ **Note:** *For an up-to-date description of the changes (if any) made to Windows system files by the installation program, see the README.TXT file located in the CompatiView installation directory.*

Transport Protocols and CompatiView

CompatiView will be able to use the transport protocol (IP or IPX) you have selected to access Compatible Systems products anywhere on your internetwork. Depending on your security setup, you may also be able to use the IP transport option to manage devices across the Internet.

The IP protocol does not provide a method for CompatiView to automatically discover the IntraPort 2/2+ VPN Access Server. To initially contact the server over IP using CompatiView, you must first enter a valid IP address into the server. You can do this either on a console directly connected to the server or by setting a workstation's IP address to 198.41.12.2 with a Class C subnet mask (255.255.255.0) so that it can communicate over Ethernet with 198.41.12.1 (the shipping default of Ethernet 0). After setting the server's IP address, be sure to change the workstation's configuration back to its original settings.

The IPX protocol does allow CompatiView to automatically discover the server. Compatible Systems devices are configured to autoseed the

two most common IPX frame types upon startup (802.2 and 802.3 (raw)). If CompatiView has the IPX/SPX protocol selected as its transport, it will be necessary to either powerup the server before powering up the workstation, or reboot the workstation after the server has completed its boot sequence. This process will ensure that the workstation and the server have the proper IPX network bindings for communication.

For more information on using CompatiView management software to configure your server, see Chapter 6 - Basic Configuration Guide.

Chapter 5 - Command Line Management

The command line interface allows you to configure and monitor the server in-band via Telnet or out-of-band with a terminal connected to the server's Console interface.

❖ **Note:** *Proper syntax is vital to effective operation of command line management. Case is not significant – you may enter commands in upper case, lower case, or a combination of the two.*

Out-of-Band Command Line Management

You can use command line management and text-based configuration out-of-band as a permanent management method, or only temporarily in order to set the server's IP parameters to allow in-band Telnet access.

In order to access the command line out-of-band, do the following:

1. Set a terminal or a PC equipped with VT100 terminal emulation to a baud rate of 9600, 8 bits, no parity, 1 stop bit and no Flow Control.
2. Connect it to the server's Console interface using the cable which was supplied with the IntraPort 2/2+.
3. Press the <Return> key one or two times.
4. Enter the default password ***letmein*** at the password prompt. The command line interface prompt will appear on the screen.

If you plan to use out-of-band access for ongoing management of your server, you can find further information on configuring your server in Chapter 6 - Basic Configuration using Command Line. Otherwise, see the section later in this chapter on Setting Up Telnet Operation for information on setting the server to allow Telnet access from hosts on its network.

Temporarily Reconfiguring a Host for Command Line Management

You can temporarily reconfigure an IP host in order to set the server's IP parameters to allow in-band Telnet access.

If you wish to set the server's basic IP parameters in this fashion, the host must be on the same Ethernet segment as the IntraPort's server's 0 interface. You can then do the following:

1. Set the host's IP address to 198.41.12.2, with a Class C subnet mask (255.255.255.0) and then Telnet to 198.41.12.1.
2. Enter the default password ***letmein*** at the password prompt. The command line interface prompt will appear on the screen.
3. Use the **configure** command and set the **IPAddress**, **SubnetMask**, and **IPBroadcast** keywords in the **IP Ethernet 0** section.
4. Use the **save** command to save the changes to the device's Flash ROM.
5. Change the host's configuration back to its original settings.

See the next section (Setting Up Telnet Operation) for information on setting the server to allow Telnet access from hosts on its network.

Setting Up Telnet Operation

Telnet is a remote terminal communications protocol based on TCP/IP. With Telnet you can log into and manage the IntraPort 2/2+ from anywhere on your IP internetwork, including across the Internet if your security setup allows it.

To manage the server with Telnet, you must:

1. Run Telnet client software on your local computer, which will communicate with the Telnet server built into the IntraPort 2/2+.
2. You must also set some basic IP parameters in the server. The required parameters for Telnet access to an interface are the IP address, IP subnet mask, and IP broadcast address. There are several ways to set them.
    - You may set them using text-based configuration either out-of-band via the Console interface or in-band via a reconfigured IP host. Instructions for setting up these two methods were given earlier in this chapter. Once you have set up the

command line interface, do the following:

A. Use the **configure** command and set the **IPAddress**, **SubnetMask**, and **IPBroadcast** keywords in the **IP Ethernet 0** section.

B. Use the **save** command to save the changes to the device's Flash ROM.

- You may also use CompatiView from a reconfigured IP host (if using the IP transport protocol), or anywhere on your network (if using the IPX transport protocol). Instructions for these two methods are given in Chapter 4 - CompatiView Software Installation.

  With CompatiView, basic IP parameters can be set using the TCP/IP Routing: Ethernet 0:0 dialog box. Use the Save to/Device option under the File menu to save the changes.

After you have set these IP parameters and saved the changes, you can use Telnet to access the server from any node on your IP network. Invoke the Telnet client on your local host with the IP address of the server you wish to manage.

For more information on using Text-Based Configuration and Command Line Management to configure your server, see Chapter 6 - Basic Configuration Guide.

Chapter 6 - Basic Configuration Guide

This chapter provides a step-by-step outline of the minimum required parameters which must be configured into the device for proper operation. Detailed information on the meaning of the server's parameters is provided in the ***CompatiView Management Software Reference Guide*** and the ***Text-Based Configuration and Command Line Management Reference Guide***. You should use this list as a starting point to look up more specific information in the other documents.

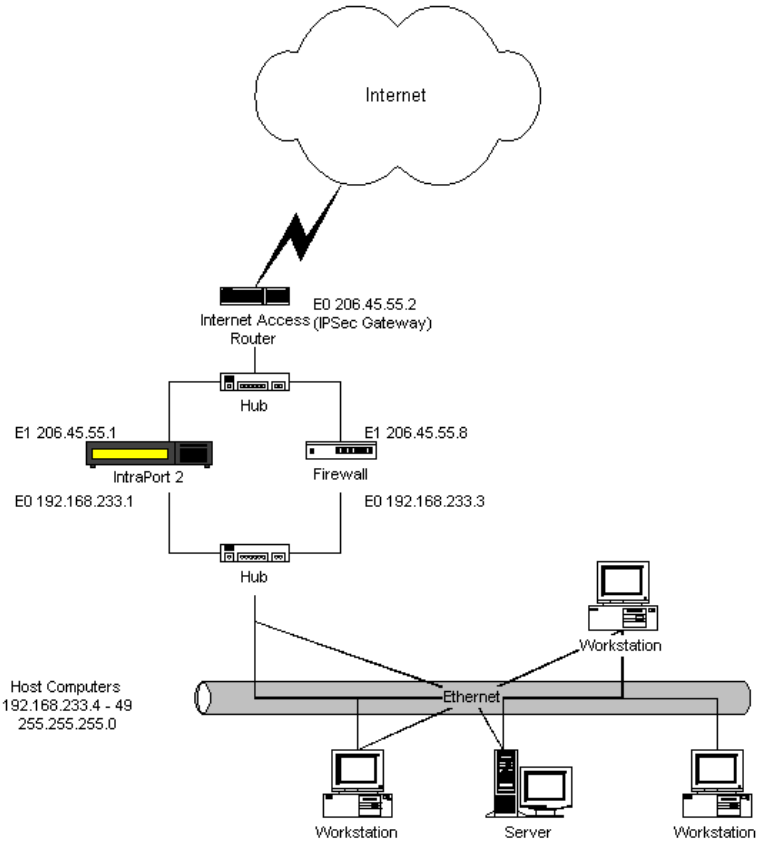
There are a number of settings which are optional, in the sense that they are not required for all installations. These settings are not covered in this chapter.

❖ **Note:** *This Basic Configuration Guide does not include information on setting up packet filters. See the* ***CompatiView Management Software Reference Guide*** *regarding IP, IPX and AppleTalk packet filters for more information. Refer to the* ***VPN Client Reference Guide*** *for information on the installation and operation of the VPN Client software*

Setup Options

The IntraPort 2/2+ can be set up in two different ways. The recommended setup is to use both Ethernet ports so that it operates in parallel with your existing firewall or proxy server and serves as the IPSec component of your security system. In this setup, Ethernet 0 serves as an IP, IPX and AppleTalk router port, while Ethernet 1 receives and sends only IPSec packets. The other option is to set up the server behind your Internet access router/firewall using Ethernet 0 only. This guide includes basic instructions for both setups.

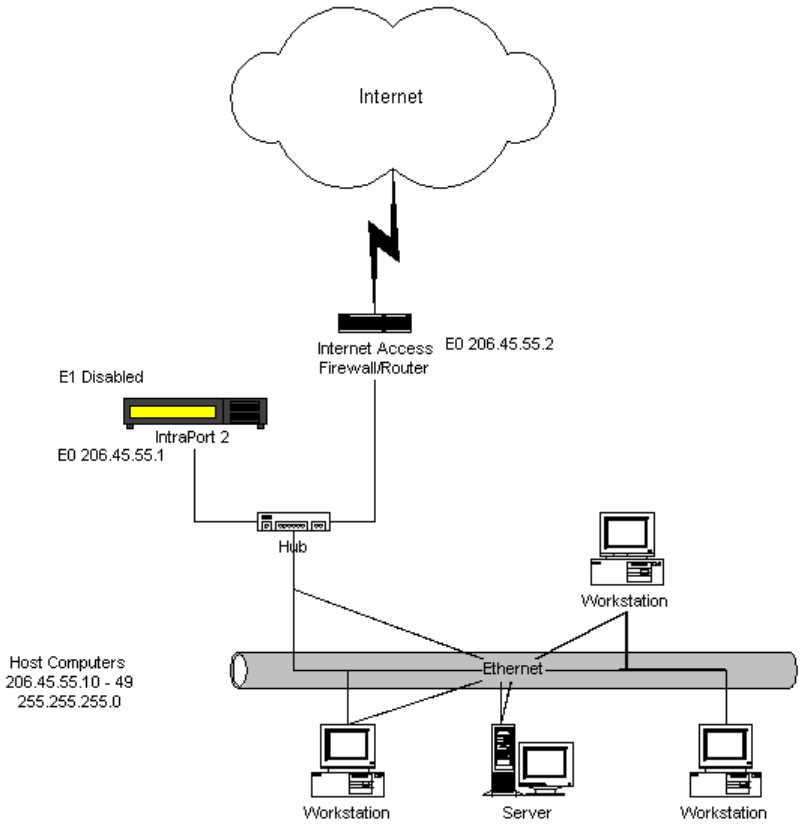
Diagram of Dual-Ethernet Setup



IP Static Route = 192.168.233.3 This points at the firewall or proxy that will connect VPN traffic with the Internet.
IPSec Gateway = 206.45.55.2 This points at the internet router that will connect VPN traffic with the internet.
Start IP Address= 192.168.233.50 This is the first IP address which can be assigned to incoming client connections (incremented by one for each new client connection).
Allow Connections to = 192.168.233.0/24 These networks are the only ones the client can access through the VPN connection
The Gateway address for internal host computers is 192.168.233.3.

Figure 2. Diagram of Dual-Ethernet Setup

Diagram of Single-Ethernet Setup



IP Static Route = 206.45.55.2 This points at the Internet router that will connect VPN traffic with the Internet.
IPSec Gateway = 206.45.55.2 This also points at the Internet router that will connect VPN traffic with the internet (optional in this mode).
Start IP Address = 206.45.55.50 This is the first IP address which can be assigned to incoming client connections (incremented by one for each new client connection).
Allow Connections to = 206.45.55.0/24 These networks are the only ones the client can access through the VPN connection.
The Gateway address for internal host computers is 206.45.55.2

Figure 3. Diagram of Single Ethernet Setup

Configuration Using CompatiView

This section provides a list of parameters that must be entered into a server for proper operation using CompatiView, Compatible Systems' management software. If you wish to use the command line interface to configure the server, see the next section in this chapter, Basic Configuration Using Command Line.

VPN Client Tunnel Settings

Configuration of the server for both dual and single Ethernet setups is very similar, but when there are differences between them, the appropriate step for each setup is indicated.

❖ **Note:** *Remember that in single Ethernet setups, Ethernet 1 must not be connected to anything or else it may cause difficult to diagnose problems on the IntraPort 2/2+ and on your network.*

1. Turn off AppleTalk and IPX (optional).

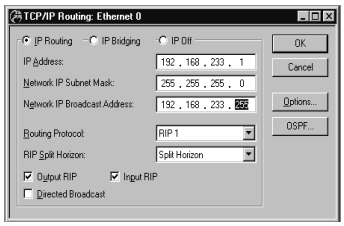
If you are using AppleTalk and/or IPX, you can either leave the default configuration parameters in place or see Chapter 7 for more information on configuring those protocols. If you are not using AppleTalk and/or IPX:

A. Click on the AppleTalk Routing protocol branch under Ethernet 0. In the AppleTalk Routing dialog box select the **Phase 2 Off** radio button.

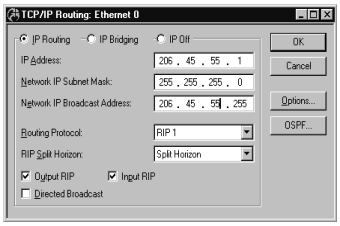
B. Click on the IPX Routing protocol branch under Ethernet 0. In the IPX Routing dialog box select the **IPX Off** radio button

C. Click **OK**.

2. Set basic IP parameters for Ethernet 0.



Dual Ethernet



Single Ethernet

TCP/IP Routing: Ethernet 0

To access this dialog box, select TCP/IP Routing under Ethernet 0 in the Device View.

A. Click the **IP Routing** radio button.

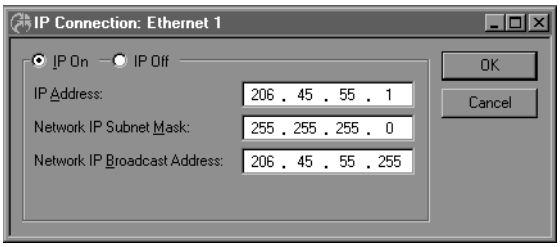
B. Enter the *internal* TCP/IP address you have assigned the IntraPort 2/2+. Verify that you have the **IP Address**, the **Network IP Subnet Mask** and the **Network IP Broadcast Mask** correctly entered. Incorrect information can cause difficult to diagnose problems or disable the IntraPort until the information is corrected.

C. If you are using RIP, select the correct version from the **Routing Protocol** pull-down menu. If you are not, select **None** in the **Routing Protocol** pull-down menu.

❖ **Note:** *Routing protocol options, OSPF, and all parameters under the Options button are advanced configuration parameters and are not covered here. Refer to the* ***CompatiView Management Software Reference Manual*** *for more information.*

D. Click **OK**.

3. (Dual Ethernet) Set basic IP parameters for Ethernet 1.

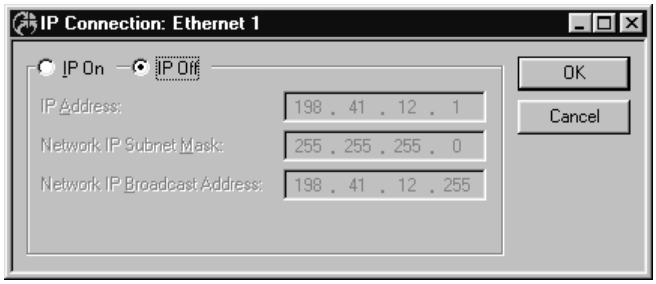


TCP/IP Routing: Ethernet 1

To access this dialog box, select TCP/IP Routing under Ethernet 1 in the Device View.

A. Click the **IP On** radio button.
B. Enter the *external* TCP/IP address you have assigned the IntraPort 2/2+. This address *must not* be in the same TCP/IP network as Ethernet 0 or you will disable TCP/IP in the IntraPort 2/2+. Verify that you have the **IP Address**, the **Network IP Subnet Mask** and the **Network IP Broadcast Mask** correctly entered.
C. Click **OK**.

3. (Single Ethernet) Turn IP off on Ethernet 1.

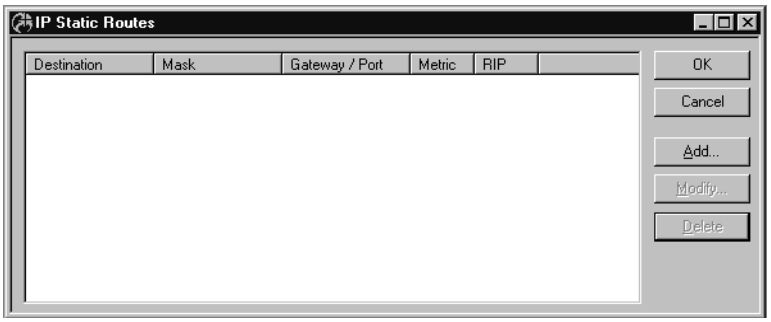


IP Connection: Ethernet 1

To access this dialog box, select TCP/IP Routing under Ethernet 1 in the Device View.

A. Click the **IP Off** radio button.
B. Click **OK**.

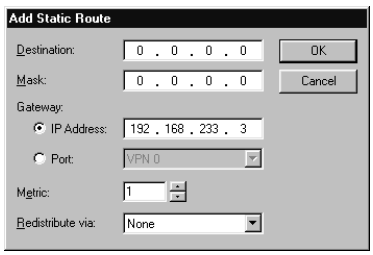
4. Set an IP Gateway for Ethernet 0.



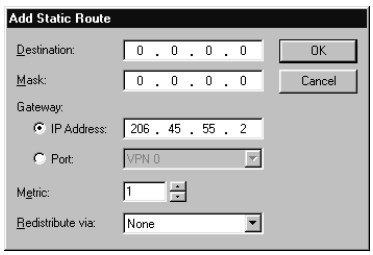
IP Static Routes

To access the IP Static Routes dialog box, select IP Static Routes under Global in the Device View.

A. Click the **Add...** button. The Static Route dialog box will appear:



Dual Ethernet Static Route



Single Ethernet Static Route

B. Click the **IP Address** radio button in the **Gateway** section.

For dual Ethernet setups, enter the *internal* TCP/IP address of your firewall or proxy, whichever is applicable.

For single Ethernet setups, enter the *internal* TCP/IP address of your upstream Internet access/firewalling router.

In either case, this address *must* be on the same TCP/IP network as the Ethernet 0 address of the IntraPort 2/2+.

Leave all other parameters at their default settings for basic configuration, or refer to the *CompatiView Management Software Reference Guide* for more advanced configuration settings.

❖ **Note:** *For single Ethernet setups, you must configure the firewall to allow:*

•UDP port 500 (ISAKMP)

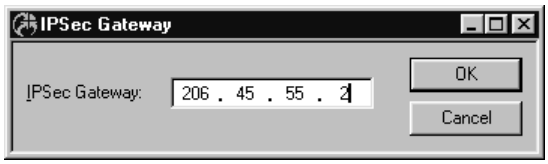
•Protocol number 51, which is the AH (Authentication Header) protocol packet type

- and/or -

•Protocol number 50, which is the ESP (Encapsulating Security Payload) protocol packet type

C. Click **OK**.

5. Set an IPSec Gateway.



IPSec Gateway

To access this dialog box, select IPSec Gateway under Global in the Device View.

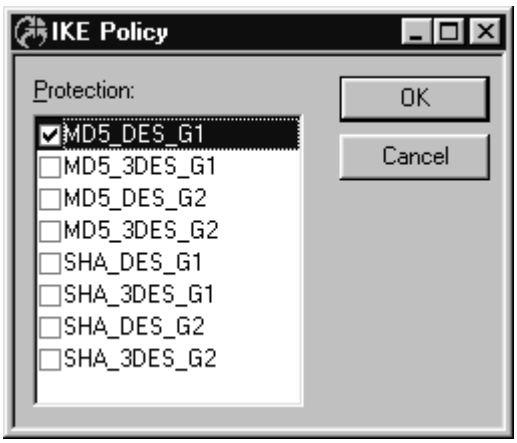
A. For dual Ethernet setups, the IPSec Gateway is the equivalent of a default gateway for the IPSec interface (Ethernet 1). Enter the TCP/IP address of the upstream or Internet router for your network. This *must* be an address on the same TCP/IP network as the Ethernet 1 address of the IntraPort 2/2+.

   For single Ethernet setups, the IPSec Gateway is an optional setting. It serves as a default gateway for all IPSec (i.e., tunneled) traffic. Enter the TCP/IP address of your Internet access/firewalling router. This *must* be an address on the same TCP/IP network as the Ethernet 0 address of the IntraPort 2/2+.

B. Click **OK**.

6. Set an IKE Policy.

There are two phases to the IKE negotiation. During Phase 1 negotiation, the IntraPort and Client must authenticate each other. The IKE Policy dialog box controls this Phase 1 negotiation. Phase 2 negotiation involves the setup of an individual tunnel connection and is controlled by the VPN Group Configuration, documented in Step 7.



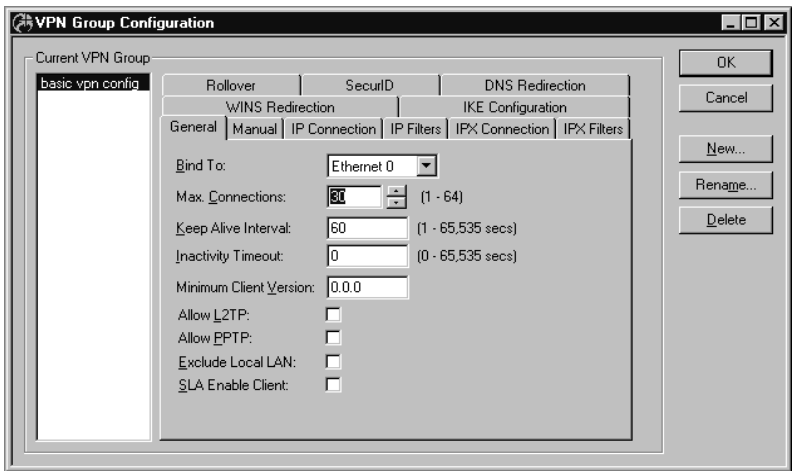
IKE Policy

To access this dialog box, select IKE Policy under Global in the Device View.

These parameters specify a protection suite for the IKE negotiation between the IntraPort server and client. There are three pieces to the IKE protection suite.

1. The first piece of each option is the authentication algorithm to be used for the negotiation. MD5 is the message-digest 5 hash algorithm. SHA is the Secure Hash Algorithm, which is considered to be somewhat more secure than MD5.
2. The second piece is the encryption algorithm. DES (Data Encryption Standard) uses a 56-bit key to scramble the data. 3DES uses three different keys and three applications of the DES algorithm to scramble the data.
3. The third piece is the Diffie-Hellman group to be used for key exchange. Because larger numbers are used by the Group 2 (G2) algorithm, it is more secure than Group 1 (G1).
   A. You can specify one or more protection suites by checking as many of the boxes as you wish, or leave the default setting.
   B. Click **OK**.

7. Set up VPN Group Configurations.



VPN Group Configuration: General Tab

To access this dialog box, select VPN Group Configuration in the Device View.

A. Click on the **New...** button.

B. Enter a **New VPN Group Config Name** (e.g. Sales, Accounting, etc.) in the pop-up box.

C. Click **OK**. You are now ready to enter group parameters.

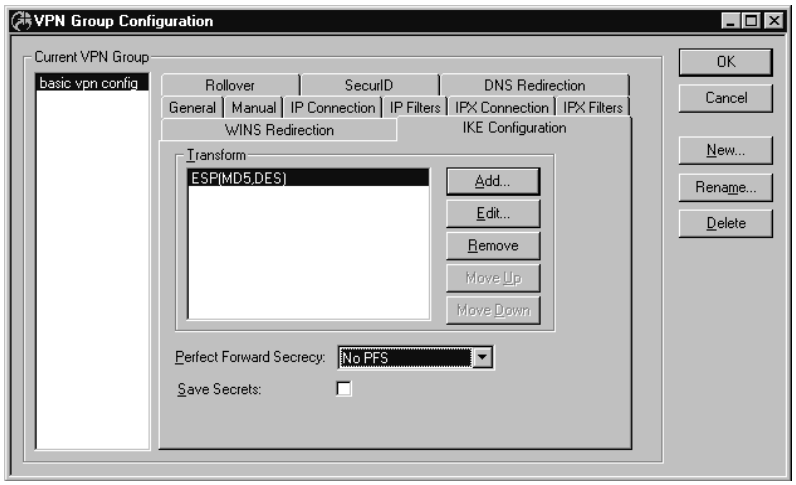
D. On the General Tab:

- Leave the **Bind To** pull-down menu set to Ethernet 0. You may change this value later, but that is an advanced configuration parameter and not covered here. The **Bind To** specifies which interface on the device will act as the local end point for tunnels defined by this configuration.
- Choose the **Max Connections** value and keep this number in mind. This number is the maximum number of concurrent Client sessions allowed in this VPN Group Configuration.
- Set a different **Keep Alive Interval** or leave the default value. This is the number of seconds between keep-alive packets sent to each connected client by the device.
- Set a different **Inactivity Timeout** or leave the default value. This is the number of seconds the device will wait

without receiving any traffic from a client belonging to this VPN Group Configuration without ending the tunnel session.

- Set the **Minimum Client Version** or keep the default value. This places a limit on the VPN Client Software version number which will be allowed to connect.

Leave all other parameters at their default settings for basic configuration, or refer to the *CompatiView Management Software Reference Guide* for more advanced configuration settings.

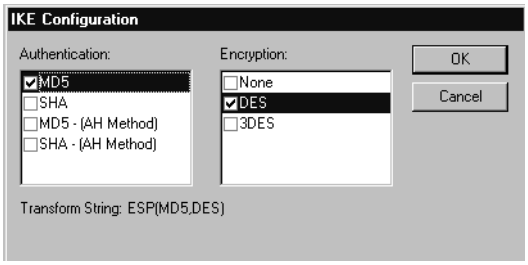


VPN Group Configuration: IKE Configuration Tab

E. On the IKE Configuration Tab, select the authentication and encryption algorithms to be used for tunnel sessions.

❖ **Note:** *STEP/STAMP (Compatible System's proprietary tunnel negotiation protocol) encryption parameters may be set using the Manual Tab. This can be used to allow connections from users running older versions of the VPN Client software, but is not recommended for other VPN Groups.*

- Click on the **Add...** button in the Transform section to access the IKE Configuration Transform List dialog box:

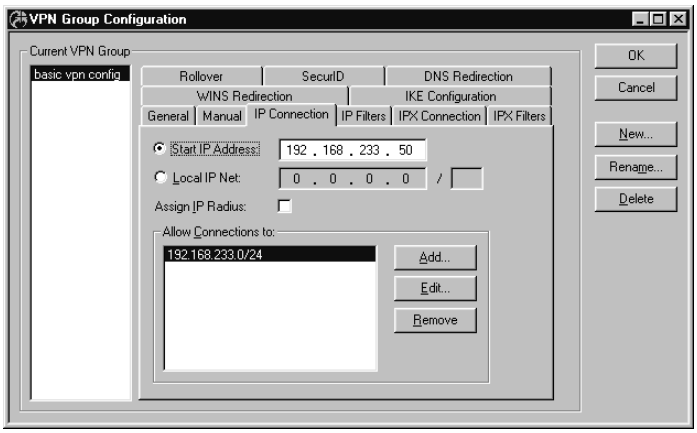


IKE Configuration Transform List

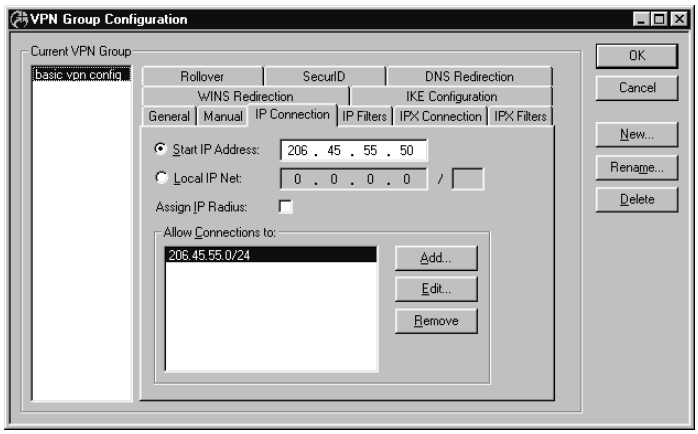
The default settings of **MD5** for **Authentication** and **DES** for **Encryption** are adequate for most setups. Click **OK**.

- In the IKE Key Management dialog box, you may click on the PFS checkbox to add additional security parameters during tunnel sessions. (This is optional.)

❖ **Note:** *For more information regarding encryption, authentication, and Perfect Forward Secrecy, refer to the* ***CompatiView Management Software Reference Guide***



Dual Ethernet VPN Group Configuration: IP Connection Tab



Single Ethernet VPN Group Configuration: IP Connection Tab

F. On the IP Connection Tab:

- Enter the **Start IP Address**. This specifies the first IP address to be assigned to client sessions under this configuration. This address will be incremented by one for each new client session, until the **Max Connections** number (entered on the General tab) is reached. Since the Max Connections value is 30 for this VPN Group, then the Start IP Address must be the first in a block of at least 30 unused IP addresses.

  For this very basic setup, it is recommended that these addresses be on the *internal* TCP/IP network (i.e., on the

same network as Ethernet 0 or a subinterface thereof). Also, they cannot conflict with those used for any other VPN Groups.

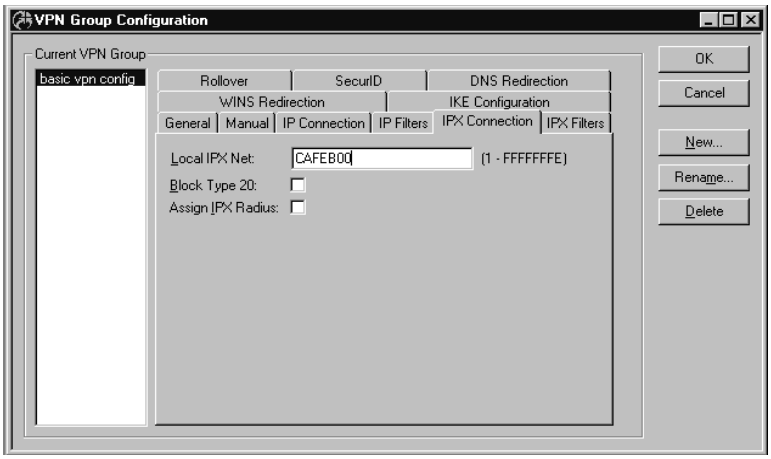
❖ **Note:** *For large numbers of users (i.e., over 50), it's recommended that the block of addresses be specified as a* ***Local IP Net*** *because address administration is easier. Using a* ***Start IP Address*** *is recommended for smaller numbers of users because the routing setup is simpler. See the* ***CompatiView Management Software Reference Guide*** *for more information on the difference between the Start IP Address and the Local IP Net.*

- Click the **Add...** button in the **Allow Connections to** area. An **Add IP Address** pop-up box will appear. THIS IS A VERY IMPORTANT FIELD. The values you enter here determine what TCP/IP traffic is tunneled, or, more commonly, where a client who belongs to this VPN Group Configuration can go on your network. If you enter the internal network (in the dual Ethernet example, 192.168.233.0/24), all traffic from a client going to the internal network will be tunneled through the IntraPort 2/2+. This is the most common configuration.

  As a special case, the entry 0.0.0.0/0 will send all IP traffic through the tunnel, although the Exclude Local LAN from Tunnel checkbox on the General tab can still be used to exclude LAN traffic if desired.

  There can be multiple entries, including individual addresses (i.e. hosts).

G. If you will not be tunneling IPX traffic, you are done with the VPN Group configuration. Click **OK** and skip to the VPN User Configuration section.



VPN Group Configuration: IPX Connection Tab

H. If you will be tunneling IPX traffic, click the IPX Connection Tab.

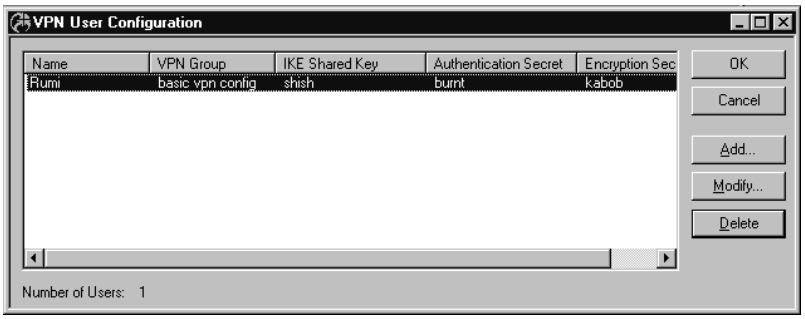
- Enter an IPX network number in the **Start IPX Network** edit box. This IPX network number is the first IPX address assigned to an incoming Client tunnel session. The **Start IPX Network** also works with the **Max Connections** value, which means you must have at least 30 consecutive unused IPX addresses available. The IPX network number entered here *must not* be the same network number as any other IPX network on your network and you *must* choose a network number which will not overlap as Client sessions are established. In this example, the first client to connect will be assigned the IPX network CAFEB00. The next client which connects concurrently will be assigned the IPX network CAFEB01, and so on.

Leave all other parameters at their default settings for basic configuration, or refer to the *CompatiView Management Software Reference Guide* for more advanced configuration settings.

I. **You may repeat Step 6 as needed to add all groups.** When you are finished adding groups, click **OK**.

8. Set up VPN Users.

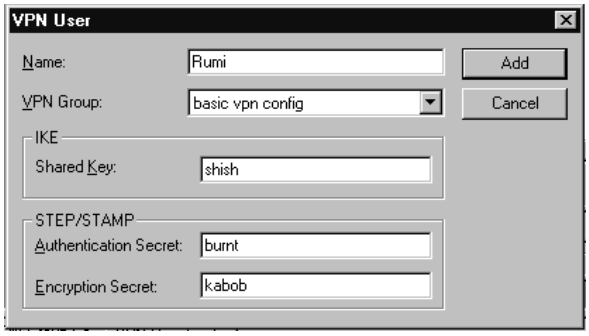
If you are using a RADIUS server for user authentication, you will need to set up VPN users on that server. If not, then you must enter each user into the VPN User database. Bear in mind that the values for each user *must* be identical in the VPN Client configuration on the remote computer.



VPN User Configuration

To access this dialog box, select VPN User Configuration in the Device View.

A. Click the **Add...** button. The following dialog box will appear:



VPN User

B. Enter the user name in the **Name** field. This name can be anything within reason but cannot exceed 60 ASCII characters.

The **VPN Group** specifies the VPN Group to which this user belongs. Select the VPN Group using the pull-down menu.

The **IKE Shared Key** is the secret used to generate session keys to authenticate and/or encrypt each packet received or

sent. This secret is used for VPN using IKE Key Management. The same secret must also be entered into the VPN Client for the tunnel session to be successful.

❖ **Note:** *STEP/STAMP is Compatible System's proprietary tunnel negotiation protocol. It can be used to allow connections from users running older versions of the VPN Client software, but is not recommended for new users and is not covered here.*

C. Click **OK**. **You may repeat Step 8 as needed to add all users.**

9. Save the configuration to a file and download to the device.

A. From the File menu choose Save To > File. This will bring up a file save dialog box. Name the device configuration file, making sure that you associate the file name with the IntraPort 2/2+ and can find the file later.

B. From the File menu choose Save To > Device. This will bring up a download configuration dialog window. Choose the IntraPort 2/2+ if given the option. When asked if you are sure that you want to download the configuration and restart the device, click on the **Yes** button. You should see a new window with a log of the download process. CompatiView will then tell you that the download is complete and the device is rebooting. Do not turn the IntraPort 2/2+ off during the boot process. After the IntraPort has rebooted, users will be able to connect with the VPN Client software.

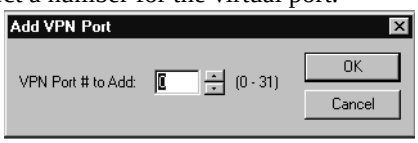
Configuring the Server for LAN-to-LAN Tunnels

This section configures VPN tunnel parameters and defines a virtual port for LAN-to-LAN tunnel traffic. It assumes that you have already assigned IP addresses to the Ethernet interface(s), and set up static routes, as shown in VPN Client Tunnel Settings.

❖ **Note:** *VPN Ports are only used for LAN-to-LAN tunnels. VPN Client tunnels do not use VPN Ports. LAN-to-LAN tunneling requires that you set parameters for a VPN port on each end of a tunnel, so you must repeat the following steps on the remote end.*

1. Add a VPN Port

A. From the File menu, choose VPN Port> Add VPN Port. This will bring up the Add VPN Port dialog box and will allow you to select a number for the virtual port.



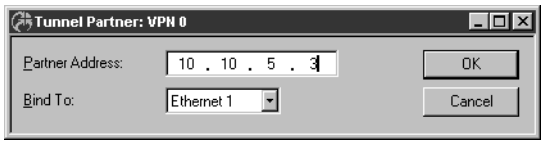
Add VPN Port

B. Click **OK**

2. Set up the Tunnel Partner

Once you have created a VPN port, you need to provide information about the remote Tunnel Partner and specify which interface on the local device will act as the endpoint for the tunnel.

A. In the Device View, click on the VPN port icon that was added in the previous step, and select Tunnel Partner. This will open the Tunnel Partner: VPN (#) dialog box.



Tunnel Partner: VPN (#)

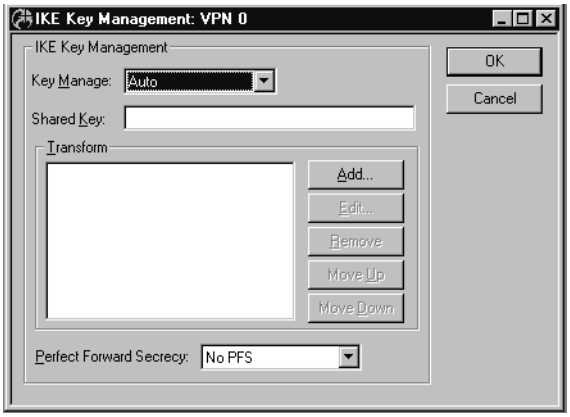
B. Enter the **Partner Address**. This is the IP address of the remote Tunnel Partner with which this VPN port will communicate via the tunnel. This will be an interface on the remote router which has been set to route IP and will also be the remote VPN port's **Bind To** interface.

C. If you are using both Ethernet ports, then the **Bind To** interface should be set to Ethernet 1. For single Ethernet setups, it should be Ethernet 0. This specifies which interface on this device will act as the end point for the tunnels defined by this configuration. Packets sent from this device to the remote Tunnel Partner will use this interface's IP address as a source address.

D. Click **OK**.

3. Set up Key Management

These settings control how the local Tunnel Partner will identify and authenticate the remote Tunnel Partner. IKE Key Management is recommended.



IKE Key Management

Once a VPN port has been created, you may access the IKE Key Management dialog box by clicking on the port's icon in the Device View and selecting IKE Key Management.

A. From the pull-down menu, select the Key Manage method to use for this tunnel.

If **Auto** key management is selected, IKE will be used to allow two devices to negotiate between themselves which encryption and authentication methods will be used for the tunnel.

If **Manual** is selected, this Tunnel Partner will not use IKE, and the tunnel's encryption and authentication parameters must be manually set in the Manual Key Management dialog box, which is not described in this guide.

If **Initiate** is selected, this Tunnel Partner will use IKE, but

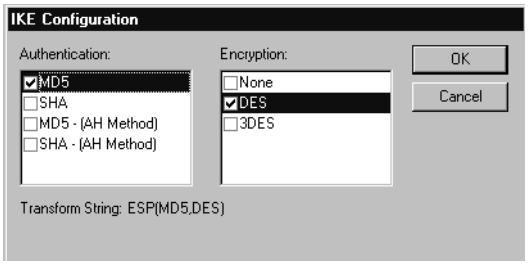
will only initiate tunnel establishment attempts and will not respond to them.

If **Respond** is selected, this Tunnel Partner will use IKE, but will only respond to tunnel establishment attempts and will not initiate them.

B. Enter the **Shared Key**. This is a shared alphanumeric secret that is used to generate session keys.

C. Select the authentication and encryption algorithms to be used for tunnel sessions using the IKE Configuration Transform list box.

Click on the **Add...** button in the Transform section to access the IKE Configuration Transform List dialog box.



IKE Configuration Transform List

The default settings of **MD5** for **Authentication** and **DES** for **Encryption** are adequate for most setups. Click **OK**.

D. In the IKE Key Management dialog box, you may click on the PFS checkbox to add additional security parameters during tunnel sessions. (This is optional.)

❖ **Note:** *For more information regarding encryption, authentication, and Perfect Forward Secrecy, refer to the* ***CompatiView Management Software Reference Guide****.*

E. Click **OK**.

4. Save the configuration to a file and download to the device.

A. From the File menu choose Save To > File. This will bring up a file save dialog box. Name the device configuration file, making sure that you associate the file name with the IntraPort 2/2+ and can find the file later.

B. From the File menu choose Save To > Device. This will bring up a download configuration dialog window. Choose the IntraPort 2/2+ if given the option. When asked if you are sure that you want to download the configuration and restart the device, click on the **Yes** button. You should see a new window with a log of the download process. CompatiView will then tell you that the download is complete and the device is rebooting. Do not turn the IntraPort 2/2+ off during the boot process. After the IntraPort has rebooted, LAN-to-LAN tunnels can be established.

Basic Configuration Using Command Line

This section briefly discusses the major parameters that must be set in order to use the IntraPort 2/2+ VPN Access Server using command line management or text-based configuration, either out-of-band (through the server's Console interface) or in-band through Telnet.

Detailed information on the meaning of the server's parameters is provided in the ***Text-Based Configuration and Command Line Management Reference Guide.*** You should use this list as a starting point to look up more specific information in other documents.

If you wish to use CompatiView, Compatible Systems' management software to configure the server, see the previous section in this chapter, *Configuration using CompatiView.*

VPN Client Tunnel Settings

Configuration of the server for both dual and single Ethernet setups is very similar, but when there are differences between them, the appropriate step for each setup is indicated.

❖ **Note:** *Remember that in single Ethernet setups, Ethernet 1 must not be connected to anything or else it may cause difficult to diagnose problems on the IntraPort 2/2+ and on your network.*

1. Turn off AppleTalk and IPX (optional).

If you are using AppleTalk and/or IPX, you can either leave the default configuration parameters in place or see Chapter 7 for more information on configuring those protocols. If you are not using AppleTalk and/or IPX, use **configure** and set the **Mode** keyword to **Off**.

Example

```
config AppleTalk Ethernet 0
[ AppleTalk Ethernet 0 ] # mode=off

config IPX Ethernet 0
[ IPX Ethernet 0 ] # mode=off
```

2. Set basic IP parameters for Ethernet 0.

This will be the *internal* TCP/IP addressing information you have assigned to the IntraPort 2/2+

Use **configure** and set the **IPAddress**, **SubnetMask**, and **IPBroadcast** keywords in the **IP Ethernet 0** section.

Dual Ethernet Setup Example

```
config IP Ethernet 0
[ IP Ethernet 0 ] # ipaddress=192.168.233.1
[ IP Ethernet 0 ] # subnetmask=255.255.255.0
[ IP Ethernet 0 ] # ipbroadcast=192.168.233.255
```

Single Ethernet Setup Example

```
config IP Ethernet 0
[ IP Ethernet 0 ] # ipaddress=206.45.55.1
[ IP Ethernet 0 ] # subnetmask=255.255.255.0
[ IP Ethernet 0 ] # ipbroadcast=206.45.55.255
```

3. (Dual Ethernet) Set basic IP parameters for Ethernet 1.

Enter the *external* TCP/IP address you have assigned the IntraPort 2/2+. This address *must not* be in the same TCP/IP network as Ethernet 0 or you will disable TCP/IP in the IntraPort 2/2+.

Use **configure** and set the **IPAddress**, **SubnetMask**, and **IPBroadcast** keywords in the **IP Ethernet 1** section.

Example

```
config IP Ethernet 1
[ IP Ethernet 1 ] # ipaddress=206.45.55.1
[ IP Ethernet 1 ] # subnetmask=255.255.255.0
[ IP Ethernet 1 ] # ipbroadcast=206.45.55.255
```

3. (Single Ethernet) Turn IP off on Ethernet 1.

Because you have only one Ethernet port, you will not be using Ethernet 1, which is the IPSec only port. Disable the port for Ethernet 1 here.

Use **configure** and set the **Mode** keyword in the **IP Ethernet 1** section.

Example

```
config IP Ethernet 1
[ IP Ethernet 1 ] # mode=off
```

4. Set an IP Gateway for Ethernet 0.

For dual Ethernet setups, this is the *internal* TCP/IP address of your firewall or proxy, whichever is applicable. For single Ethernet setups, this is the *internal* TCP/IP address of your upstream Internet access/firewalling router. In either case, this address *must* be on the same TCP/IP network as the Ethernet 0 address of the IntraPort 2/2+.

Use **edit config** to modify the **IP Static** section. Configuration lines in this section have the following format:

```
<Destination><Mask><Gateway/Port><Metric>[<Redist=(RIP|none)>]
```

Dual Ethernet Setup Example

```
Edit [ IP Static ]> append 1
Enter lines at the prompt.  To terminate input, enter
a . on a line all by itself.

Append>  0.0.0.0 0.0.0.0 192.168.233.3 1 redist=none
Append>  .
Edit [ IP Static ]> exit
```

Single Ethernet Setup Example

```
Edit [ IP Static ]> append 1
Enter lines at the prompt.  To terminate input, enter
a . on a line all by itself.

Append>  0.0.0.0 0.0.0.0 206.45.55.2 1 redist=none
Append>  .
Edit [ IP Static ]> exit
```

❖ **Note:** *For single Ethernet setups, you must configure the firewall to allow:*

•*UDP port 500 (ISAKMP)*

•*Protocol number 51, which is the AH (Authentication Header) protocol packet type*

- and/or -

•*Protocol number 50, which is the ESP (Encapsulating Security Payload) protocol packet type*

5. Set an IPSec Gateway.

For dual Ethernet setups, the IPSec Gateway is the equivalent of a default gateway for the IPSec interface (Ethernet 1). Enter the TCP/IP address of the upstream or Internet router for your network. This *must* be an address on the same TCP/IP network as the Ethernet 1 address of the IntraPort 2/2+.

For single Ethernet setups, the IPSec Gateway is an optional setting. It serves as a default gateway for all IPSec (i.e., tunneled) traffic. Enter the TCP/IP address of your Internet firewalling router. This *must* be an address on the same TCP/IP network as the Ethernet 0 address of the IntraPort 2/2+.

Use **configure** and set the **IPSecGateway** keyword in the **General** section.

Example

```
configure general
[ General ] # ipsecgateway = 206.45.55.2
```

6. Set an IKE Policy.

There are two phases to the IKE negotiation. During Phase 1 negotiation, the IntraPort and Client must authenticate each other. The **IKE Policy** section controls this Phase 1 negotiation. Phase 2 negotiation involves the setup of an individual tunnel connection and is controlled by the **Transform** keyword in the **VPN Group *Name*** section, documented in Step 7.

Use configure and set the **Protection** keyword in the **IKE Policy** section. The **Protection** keyword specifies a protection suite for the IKE negotiation between the IntraPort server and client.

Example

```
configure IKE Policy
[ IKE Policy ]# protection=md5_des_g1
```

7. Set up VPN Group Configurations.

This is where tunneling profiles for a group of one or more IntraPort 2/2+ users are defined.

Use **configure VPN Group *Name*** to create a VPN Group section and set the following keywords in the section you just created:

BindTo-Specifies which interface on the device will act as the local end point for the tunnels defined by this configuration.

MaxConnections-Used to limit the number of client connections for this VPN Group configuration.

StartIPAddress-Specifies the first IP address to be assigned to client sessions under this configuration. This address will be incremented by one for each new client session, until the **MaxConnections** value is reached. Since the MaxConnections value is 30 for this VPN Group, then the StartIPAddress must be the first in a block of at least 30 unused IP addresses.

For this very basic setup, it is recommended that these addresses be on the *internal* TCP/IP network (i.e., on the same network as Ethernet 0 or a subinterface thereof). Also, they cannot conflict with those used for any other VPN Groups.

❖ **Note:** *For large numbers of users (i.e., over 50), it's recommended that the block of addresses be specified as a **Local IP Net** because address administration is easier. Using a **Start IP Address** is recommended for smaller numbers of users because the routing setup is simpler. See the **Text-Based Configuration and Command Line Management Reference Guide** for more information on the difference between the StartIPAddress and the LocalIPNet.*

LocalIPXNet-Specifies the first IPX address assigned to an incoming Client tunnel session. The **LocalIPXNet** also works with the **MaxConnections** value, which means you must have at least 30 consecutive unused IPX addresses available. The IPX network number entered here *must not* be the same network number as any other IPX network on your network and you *must* choose a network number which will not overlap as Client sessions are established. In this example, the first client to connect will be assigned the IPX network CAFEB00. The next client which connects concurrently will be assigned the IPX network CAFEB01, and so on.

IPNet-Specifies a range of IP addresses which will be reachable by clients using this configuration. THIS IS A VERY IMPORTANT SETTING. If you enter the internal network (in the dual

Ethernet example, 192.168.233.0/24), all traffic from a client going to the internal network will be tunneled through the IntraPort 2/2+. This is the most common configuration. There can be multiple entries, including individual addresses (i.e. hosts).

As a special case, the entry 0.0.0.0/0 will send all IP traffic through the tunnel, although the ExcludeLocalLAN keyword can still be used to exclude LAN traffic if desired.

Transform-Specifies the protection types and algorithms to be used for client sessions.

❖ **Note:** *STEP/STAMP (Compatible System's proprietary tunnel negotiation protocol) encryption parameters may be set using the* ***EncryptMethod*** *keyword. This can be used to allow connections from users running older versions of the VPN Client software, but is not recommended for other VPN Groups and is not covered here.*

Dual Ethernet Setup Example

```
configure vpn group "basic vpn config"
Section 'vpn group basic vpn config' not found in the config.
Do you want to add it to the config? y

Configure parameters in this section by entering:

   <Keyword> = <Value>

To find a list of valid keywords and additional help enter "?"

[ VPN Group "basic vpn config" ] # bindto=ethernet 0
[ VPN Group "basic vpn config" ] # maxconnections=30
[ VPN Group "basic vpn config" ] # startipaddress=192.168.233.50
[ VPN Group "basic vpn config" ] # localipxnet=CAFEBOO
[ VPN Group "basic vpn config" ] # ipnet=192.168.233.0/24
[ VPN Group "basic vpn config" ] # transform=ESP(MD5,DES)
```

Single Ethernet Setup Example

```
configure vpn group "basic vpn config"
Section 'vpn group basic vpn config' not found in the config.
Do you want to add it to the config? y

Configure parameters in this section by entering:

   <Keyword> = <Value>

To find a list of valid keywords and additional help enter "?"

[ VPN Group "basic vpn config" ] # bindto=ethernet 0
[ VPN Group "basic vpn config" ] # maxconnections=30
[ VPN Group "basic vpn config" ] # startipaddress=206.45.55.50
[ VPN Group "basic vpn config" ] # localipxnet=CAFEBOO
[ VPN Group "basic vpn config" ] # ipnet=206.45.55.0/24
[ VPN Group "basic vpn config" ] # transform=ESP(MD5,DES)
```

8. Set up VPN Users.

Users are added to the configuration by entering a few unique parameters, and each is assigned to a VPN Group Configuration, configured in the previous step.

Use **edit config** to set the parameters in the **VPN Users** section. All values are case sensitive.

Example

```
Edit [ VPN Users ] > append 1
Enter lines at the prompt. To terminate input, enter a . on a line
all by itself.

Append> Rumi Config=basic group config SharedKey=”shish” Auth=”Burnt”
Encrypt=”Kabob”
Append>
Edit [ VPN Users] exit
```

❖ **Note:** *The Auth and Encrypt keywords specify STEP/STAMP (Compatible System's proprietary tunnel negotiation protocol) parameters for users. These can be used to allow connections from users running older versions of the VPN Client software, but is not recommended for new users.*

9. Save the Configuration and download it to the device.

Use the **save** command to save the configuration and download it to the device. When asked if you are sure that you want to download the configuration and restart the device, reply yes. After the IntraPort has rebooted, users will be able to connect with VPN Client software.

❖ **Note:** *Do not turn the IntraPort 2/2+ off during the boot process or it will lose its operating software.*

Example

```
IntraPort2 # save
Save configuration to flash and restart device? y
```

Configuring the Server for LAN-to-LAN Tunnels

This section configures VPN tunnel parameters and defines a virtual port for LAN-to-LAN tunnel traffic. It assumes that you have already assigned IP addresses to the Ethernet interface(s), and set up static routes, as shown in VPN Client Tunnel Settings.

❖ **Note:** *VPN Ports are only used for LAN-to-LAN tunnels. VPN Client tunnels do not use VPN Ports. LAN-to-LAN tunneling requires that you set parameters for a VPN port on each end of a tunnel, so you must repeat the following steps on the remote end.*

1. Add a VPN Port.

Use the **configure** command to add a VPN Port.

Example

```
configure VPN Port 0
VPN Port(0) does not exist, do you wish to add it to the
config? y
```

2. Set up the Tunnel Partner.

Once you have created a VPN port, you need to provide some information about the remote Tunnel Partner and specify how tunnels will be set up.

Use **configure** and set keywords in the **Tunnel Partner VPN** *port number* section (this will be the number of the port you just created).

Partner-Specifies the IP address of the remote Tunnel Partner with which this VPN port will communicate via the tunnel. This will be an interface on the remote router which has been set to route IP and will also be the remote VPN port's **BindTo** interface.

BindTo-This specifies which interface on this device will act as the end point for the tunnels defined by this configuration. Packets sent from this device to the remote Tunnel Partner will use this interface's IP address as a source address. If you are using both Ethernet ports, then the **BindTo** interface should be set to Ethernet 1. For single Ethernet setups, it should be Ethernet 0.

KeyManage-Sets how the tunnel will be set up.

If **Auto** key management is specified, IKE will be used to allow two devices to negotiate between themselves which encryption and authentication methods will be used for the tunnel.

If **Manual** is specified, this Tunnel Partner will not use IKE, and the tunnel's encryption and authentication parameters must be manually set in the Manual Key Management dialog box, which is not described here.

❖ **Note:** *For more information regarding non-IKE encryption and authentication, refer to the* ***Text-Based Configuration and Command Line Management Reference Guide***.

If **Initiate** is specified, this Tunnel Partner will use IKE, but will only initiate tunnel establishment attempts and will not respond to them.

If **Respond** is specified, this Tunnel Partner will use IKE, but will only respond to tunnel establishment attempts and will not initiate them.

Transform-Sets the authentication and encryption algorithms to be used for tunnel sessions. **ESP(MD5,DES)** is the default setting and is recommended for most settings.

SharedKey-Sets a shared alphanumeric secret which is used to generate session keys for authenticating and/or encrypting each packet sent or received through the tunnel.

Dual Ethernet Setup Example

```
configure tunnel partner vpn 0
*[ Tunnel Partner VPN 0 ]# partner=10.10.5.3
*[ Tunnel Partner VPN 0 ]# bindto=ether 1
*[ Tunnel Partner VPN 0 ]# keymanage=auto
*[ Tunnel Partner VPN 0 ]# transform=esp(md5,des)
*[ Tunnel Partner VPN 0 ]# sharedkey=babaganoush
```

Single Ethernet Setup Example

```
configure tunnel partner vpn 0
*[ Tunnel Partner VPN 0 ]# partner=10.10.5.3
*[ Tunnel Partner VPN 0 ]# bindto=ether 0
*[ Tunnel Partner VPN 0 ]# keymanage=auto
*[ Tunnel Partner VPN 0 ]# transform=esp(md5,des)
*[ Tunnel Partner VPN 0 ]# sharedkey=babaganoush
```

3. Save the Configuration and download it to the device.

Use the **save** command to save the configuration and download it to the device. When asked if you are sure that you want to download the configuration and restart the device, reply yes. After the IntraPort has rebooted, LAN-to-LAN tunnels can be established.

❖ **Note:** *Do not turn the IntraPort 2/2+ off during the boot process or it will lose its operating software.*

Chapter 7 - Alternate Protocols and Security Parameters

This chapter briefly discusses the configuration of the IntraPort 2/2+ VPN Access Server for AppleTalk and IPX, and with RADIUS and SecurID authentication servers.

Detailed information on configuring the server to work with these protocols and servers is provided in the ***CompatiView Management Software Reference Guide*** and the ***Text-Based Configuration and Command Line Management Reference Guide***. You should use this list as a starting point to look up more specific information in the other documents.

❖ **Note:** *Refer to the **VPN Client Reference Guide** for information on the installation and operation of the VPN Client software*

In this chapter:

CV = Parameters configured using CompatiView management software

TB = Parameters configured using Text-Based or Command Line Management

IPX Protocol

Required for IPX

Generally, there are no required changes from the shipping Ethernet configuration for IPX. The Ethernet interface will autoconfigure to use the two most common IPX frame types, and will automatically adapt to conditions on the Ethernet.

Suggested for IPX

You may want to set your own network numbers, rather than using the autoconfigured values. You may also want to turn off unused frame types.

CV: Use the IPX Routing: Ethernet 0 dialog box.

TB: Use **configure** and set keywords in the **IPX Ethernet 0** section.

AppleTalk Protocol

Required for AppleTalk

Generally, there are no required changes from the shipping Ethernet configuration for AppleTalk. The Ethernet interface will autoconfigure to use AppleTalk Phase 2, and will adapt to conditions on the Ethernet.

Suggested for AppleTalk

You may want to set your own network numbers, rather than using the autoconfigured values. You may also want to use more meaningful zone names.

CV: Use the AppleTalk Routing: Ethernet 0 dialog box.

TB: Use **configure** and set keywords in the **AppleTalk Phase 2 Ethernet 0** section.

Setting up RADIUS Authentication

If you are using a RADIUS server for user authentication, you must set up the IntraPort to communicate with a RADIUS server and also set some special parameters in the RADIUS server itself

Setting the IntraPort for a RADIUS Server

Just a few basic settings are required for the IntraPort to communicate with a RADIUS server.

- Primary server IP address
- Secret
- VPN password attribute number
- VPN group attribute number

CV: Use the RADIUS Configuration dialog box. Select Global in the dialog box, then select RADIUS Configuration.

TB: Use the **configure** command and set the **PrimAddress**, **Secret**, **VPNPassword** and **VPNGroupInfo** keywords in the **RADIUS** section.

RADIUS Server User Authentication Settings

In order for client authentication and accounting to be done on a RADIUS server, the RADIUS server must be configured with four pieces of data for each user.

- User name
- Login password
- Group configuration
- Tunnel secret

The user name is kept in the User-Name attribute in the RADIUS server and the login password is kept in the Password attribute. The group configuration is kept in attribute number 77 of the RADIUS database, and the tunnel secret is kept in attribute number 69. These two attribute numbers must be configured in the RADIUS server's dictionary file.

The RADIUS server will also log the real IP address of the client and the IP address assigned to the client by the IntraPort as it begins to account for the client. To use this feature, the two attribute numbers for these two IP address strings must also be configured in the RADIUS server's dictionary file and in the **RADIUS** section of the IntraPort's configuration.

The following is an example for a Livingston RADIUS server dictionary file:

```
ATTRIBUTEClient-Real-IP       66     string
ATTRIBUTEClient-Assigned-IP   67     string
ATTRIBUTEVPN-Password         69     string
ATTRIBUTEVPN-GroupInfo        77     string
```

The following is a sample RADIUS user database entry from a Livingston RADIUS server.

```
User-Name = corpauser
Password = radius login
VPN-Password = abc
VPN-GroupInfo = CorporateA
```

After making and saving these changes, you must restart the RADIUS server in order for it to recognize the new settings.

❖ **Note:** *Refer to the user manual for your RADIUS server for the exact format of dictionary and user database entries.*

❖ **Note:** *Although MacRADIUS servers offer a GUI, the custom*

attribute settings will require that you enter users in the Users text file. See the user manual for your server for more information on exporting, editing and importing the Users text file.

In addition to the RADIUS server settings, the user name, login password and tunnel secret must match the settings for each user in the User Properties window of the VPN Client. The group configuration must match one of the VPN group configurations in the IntraPort's configuration.

Setting up SecurID Authentication

If you are using Security Dynamic's ACE/Server software for user authentication, you must set up the IntraPort to communicate with the ACE/Server.

The Security Dynamics ACE/Server software performs dynamic two-factor SecurID authentication. Dynamic two-factor authentication combines something the user knows – a memorized personal identification number (PIN) – with something the user possesses – a SecurID token which generates an unpredictable code every 60 seconds. This combination of PIN and SecurID tokencode represents a one-time PASSCODE and is transmitted to the ACE/Server software for verification. See Appendix C of this manual for information on how to obtain ACE/Server software and SecurID tokens.

To use ACE/Server software with the IntraPort, you will need the following:

- ACE/Server software running on a supported platform (see the *ACE/Server Installation Guide* or README document for a current list of ACE/Server-supported platforms and other server requirements)
- The VPN Client software, which functions as an ACE/Agent, running on a supported platform
- SecurID tokens, distributed to appropriate personnel who will use them to access the ACE/Server-protected ACE Agents, including the VPN Client.

Setting the IntraPort for an ACE/Server

Just a few basic settings are required for the IntraPort to communicate with an ACE/Server.

- SecurID on
- Encryption method
- ACE/Server IP address
- Enable SecurID for a group of IntraPort users

CV: Use the SecurID Configuration Window (under Global/SecurID Configuration) to set up a server. Use the SecurID tab in the VPN Group Configuration Window to enable SecurID for a VPN group.

TB: Use the **configure** command and set the **Enabled**, **EncryptMeth** and **PrimaryServer** keywords in the **SecurID** section, then set the **SecurIDRequired** keyword in a **VPN Group *Name*** section.

ACE/Server Settings

To configure the ACE/Server for communication with the IntraPort, consult the *ACE/Server Installation Guide*. You should consult the *ACE/Server Administration Manual* on the ACE/Server CD-ROM for instructions on adding and removing users in the ACE/Server database.

❖ **Note:** *The IntraPort should be configured as a communication server in the Client Type pull-down menu in the ACE/Server's Add Client dialog box (under Client>Add Client).*

❖ **Note:** *The first time the IntraPort contacts the ACE/Server, they exchange a secret based in part on the IntraPort's IP address. After the first exchange, the Sent Node Secret checkbox in the ACE/Server's Add Client dialog box (which can be accessed using the Add Client option under the Client menu) will be checked. The checkbox will be grayed out until this initial exchange has taken place. Any major changes to the IntraPort's configuration (such as changing its IP address) will mean that the IntraPort and the ACE/Server will no longer be able to communicate. To get around this, simply uncheck the Sent Node Secret checkbox on the ACE/Server and issue the* **reset securid secret** *command in the IntraPort. Remember to save the changes to both devices. The two devices will do a new secret exchange and will be able to communicate again.*

Saving a Configuration File to Flash ROM

Once a configuration is complete, you can save it to the router's Flash ROM. Until saved, all changes are made in a separate buffer and the server's interfaces continue to run as before the changes were made.

CV: Use the Save to>Device option from the File menu.

TB: Use the **save** command.

Appendix A - Shipping Defaults

Ethernet Interfaces

Default Password

- letmein

IP Defaults

- Ethernet 0 is on
- Address: 198.41.12.1
- Subnet mask: 255.255.255.0
- Broadcast address: 198.41.12.255
- Mode: Routed
- Ethernet 1 is off

IPX Defaults

- Ethernet 0 is on
- Mode: Routed
- Ethernet 1 is off

AppleTalk Defaults

- Ethernet 0 is on
- Mode: Routed
- Ethernet 1 is off

Appendix B - Connector and Cable Pin Outs

Pin Outs for DB-25 Male to DB-25 Female RS-232 Data & Console Cable

The cable supplied with the IntraPort 2/2+ VPN Access Server is 25 conductors connected straight through. Connections on the Console interface follow the standard RS-232 pin outs.

Appendix C - Security Dynamics ACE/Server Information

ACE/Server software and SecurID tokens can be purchased directly from Security Dynamics Technologies, Inc. Use the following information to contact Security Dynamics for more information:

Security Dynamics Technologies, Inc.
20 Crosby Drive
Bedford, MA 01730, U.S.A.

800-SECURID (800-732-8743 or 888-732-8743)

To telephone from outside the U.S., 781-687-7000

E-mail: info@securitydynamics.com

Web site: http://www.securitydynamics.com

Appendix D - LED Patterns and Test Switch Settings

IntraPort 2/2+ VPN Access Servers LED Patterns

Ethernet Back Panel Indicators LEDs

The IntraPort 2 and IntraPort 2+ VPN Access Servers feature two pairs of lights on the back panel to indicate the hardware status of the two Ethernet ports.

Link: The Link light indicates that there is a good connection to the hub.

Activity: The Activity light indicates that there is activity across the link.

Front Panel LEDs

The IntraPort 2 and IntraPort 2+ VPN Access Servers use a number of light patterns on their front LED bars to indicate various operating conditions.

Sys Ready

The server booted properly without detecting any failures.

Power On, No Traffic

The server will scan through the Ethernet LED bar, from left to right, illuminating one element at a time.

Ethernet Traffic Indicators

TX: Ethernet transmit packet

RX: Ethernet receive packet

IntraPort 2 Connections/Users LEDs

Connections/Users LED	User Range
1	1 - 5
6	6 - 11
12	12 - 17
18	18 - 23
24	24 - 29
30	30 - 35
36	36 - 41
42	42 - 47
48	48 - 53
54	54 - 64

IntraPort 2+ Connections/Users LEDs

Connections/Users LED	User Range
1	1 - 19
20	20 - 39
40	40 - 59
60	60 - 79
80	80 - 99
100	100 - 119
120	120 - 139
140	140 - 159
160	160 - 179
180	180 - 200

IntraPort 2 Special Indicators

Ethernet Lights	Connections/Users	Indication
4&5 flashing	36&42 flashing	Router stacks starting up.
2&3 flashing	1&6, 24&30, 48&54 flashing	No OS loaded. Running from ROM.
1,4&5 flashing	36,42 (and Sys Rdy) flashing	Erasing OS or config in Flash ROM.
Scanning from the outside toward the center		Flash ROM erase due to switch setting five or six is complete. Set switch to zero and cycle power.

IntraPort 2+ Special Indicators

Ethernet Lights	Connections/Users	Indication
4&5 flashing	120&140 flashing	Router stacks starting up.
2&3 flashing	1&20, 80&100, 160&180 flashing	No OS loaded. Running from ROM.
1,4&5 flashing	120&140(and Sys Rdy) flashing	Erasing OS or config in Flash ROM.
Scanning from the outside toward the center		Flash ROM erase due to switch setting five or six is complete. Set switch to zero and cycle power.

IntraPort 2/2+ VPN Access Server Switch Settings

0 Normal Operation
1 Unused*
2 Unused*
3 Run Boot ROM Downloader
4 Unused*
5 Erase Flash ROM (OS and Configuration)
6 Erase Flash ROM (Configuration Only)
7 Unused*
8 Unused*
9 **Allow *letmein* password for 5 minutes after powerup**

❖ **Note:** *Settings marked with an asterisk may erase your Flash ROM. Please do not use these settings without first contacting Compatible Systems Technical Support.*

Appendix E - Downloading Software From Compatible Systems

The latest versions of operating software for all Compatible Systems products are available at our Web site. The latest version of CompatiView management software is also available.

To download software, follow the instructions below.

The Compatible Systems WWW Server

The WWW Server is accessible via the Internet.

1. Use your browser to access http://www.compatible.com/, and find the link on our home page to “Software Downloads.”
2. Select the product and software version you want, then click on the appropriate file to download it.

❖ **Note**: *These files are also accessible directly via anonymous FTP at* **ftp.compatible.com/files/**.

Appendix F - Terms and Conditions

Compatible Systems Corporation (Compatible Systems) offers to sell only on the condition that Customer's acceptance is expressly limited to Compatible Systems' terms and conditions of sale. Compatible Systems' acceptance of any order from Customer is expressly made conditional on assent to these terms and conditions of sale unless otherwise specifically agreed to in writing by Compatible Systems. In the absence of such agreement, commencement of performance or delivery shall be for Customer's convenience only and shall not be construed as an acceptance of Compatible Systems' terms and conditions. If a contract is not earlier formed by mutual agreement in writing, Customer's acceptance of any goods or services shall be deemed acceptance of the terms and conditions stated herein.

1. **Warranty**. Compatible Systems warrants to the Customer and to all persons who purchase Products from the Customer during the Warranty terms ("subsequent purchasers"), that, for an unlimited period from the date (the "shipping date") on which Compatible Systems ships the Products to the Customer: (a) the Product meets, in all material respects, all specifications published by Compatible Systems for such Products as of the shipping date; (b) the Products are free from all material defects in materials and workmanship under normal use and service; and (c) that as a result of the purchase of the Products from Compatible Systems, the Customer will have good title to the Products, free and clear of all liens and encumbrances.

Compatible Systems' obligations pursuant to this Warranty, and the sole remedies of the Customer and of any subsequent purchaser, shall be limited to the repair or replacement, in Compatible Systems' sole discretion, of any of the Products that do not conform to this Warranty.

This Warranty shall be invalidated if the Products (a) have not been installed, handled, or used in accordance with Compatible Systems recommended procedures; (b) have been damaged through the negligence or abuse of the Customer or of any subsequent purchasers; (c) are damaged by causes external to the Products, including (without limitation) shipping damage, power or air conditioning failure, or accident or catastrophe of any nature; and (d) have been subjected to repairs or attempted repairs by any person other than Compatible Systems (or an authorized Compatible Systems service technician).

To obtain service under this Warranty, the Customer (or subsequent purchaser, if applicable) must follow the procedures outlined below, under "Product Return Policy."

THE WARRANTIES SET FORTH IN THESE TERMS AND CONDITIONS ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WITHOUT LIMITATION ON THE GENERALITY OF THE FOREGOING SENTENCE, COMPATIBLE SYSTEMS EXPRESSLY DISCLAIMS AND EXCLUDES ALL IMPLIED WARRANTIES OF MERCHANTIBILITY AND OF FITNESS (GENERALLY OR FOR A PARTICULAR PURPOSE).

2. **Shipments**. All delivery indications are estimated and are dependent in part upon prompt receipt of all necessary information to service an order. Compatible Systems shall not be liable for any premium transportation or other costs or losses incurred by Customer as a result of Compatible Systems inability to deliver Product in accordance with Customer's requested delivery dates. All shipments by Compatible Systems are made F.O.B. factory (Boulder, Colorado); risk of loss shall pass to Customer at point of shipment. Unless specified by the Customer, Compatible Systems will select the mode of transportation for each order. Compatible Systems reserves the right to make deliveries in installments. Partial shipments are subject to the terms of payment noted below. Compatible Systems reserves the right to allocate inventory and production if such allocation becomes necessary.

3. **Payment Terms**. Payment shall be made prior to shipment or upon delivery, unless otherwise agreed to in writing. Payment shall not constitute acceptance of the goods.

4. **Force Majeure**. All orders accepted by Compatible Systems are subject to postponement or cancellation for any cause beyond the reasonable control of Compatible Systems, including without limitation: inability to obtain necessary materials and components; strikes, labor disturbances, and other unavailability of workers; fire, flood, and other acts of God; war, riot, civil insurrection, and other disturbances; production or engineering difficulties; and governmental regulations, orders, directives, and restrictions.

5. **Product Return Policy**. Prior to shipping any Product to Compatible Systems, the Customer must contact Compatible Systems Technical Support (by letter or telephone) with the following information: (a) reason for return; (b) quantity, description, and model number, and (if applicable) serial number of each item being returned; (c) original Compatible Systems Sales Agreement number; and (d) any special instructions. Upon receipt of this information, Compatible Systems will issue an RMA ("Return Material Authorization") number and any required U.S. Customs identification to assure correct identification of the Customer and to insure prompt and accurate processing.

6. **Limitation of Remedies**. Compatible Systems' liability for all claims brought pursuant to or in connection with this agreement, including the purported breach hereof, shall be limited: (a) in the case of claims for breach of warranty, to compliance with the repair or replacement provisions of the warranty, and (b) in all other cases (including any claim that the warranty failed of its essential purpose), to actual damages of the Customer (or, if

appropriate, of the subsequent purchaser). IN NO EVENT SHALL COMPATIBLE SYSTEMS BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE SALE, USE, INSTALLATION OR OPERATION OF THE PRODUCTS, WHETHER A CLAIM IS BASED ON STRICT LIABILITY, BREACH OF WARRANTY, NEGLIGENCE, OR ANY OTHER CAUSE WHATSOEVER, WHETHER OR NOT SIMILAR. This limitation on remedies shall apply even if Compatible Systems is advised of the possibility and nature of any special, consequential, or incidental damages.

7. **Governing Law; Merger**. This agreement and all Terms and Conditions hereof shall be governed by, and construed in accordance with the internal laws of the State of Colorado. Except as superseded by a separate written contract signed by both Compatible Systems and the Customer, superseding all prior negotiations or offers, written or oral, this agreement may be amended only in writing, signed by an authorized officer of Compatible Systems.