NSP Installation
Made Simple

0450-0669
Rev. B

esi

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About ESI

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Overview

This document provides background, guidance and installation tips to the Installer who's new to the Network Services Processor, or NSP.

Regardless of whether you've had previous experience with data networks, using this document will give you a complete understanding of the information needed, the steps to go through, and the checks that you can perform as you go through the installation process. If you have a good background in telephone systems, learning about the NSP will be a cinch. After your first installation, you'll be an NSP guru!

Related documents

You may see references to the following documents as you go through this guide. You should have ready access to the ones listed in **bold type**. Remember that you can get the latest versions of these documents[1] and the latest *VIP* and system software at the ESI Resellers' Web site, *www.esiresellers.com.*

Part number	Description
0450-0513	*VIP Setup and User's Guide*
0450-0439	*Network Services Processor (NSP) Installation Manual*
0450-0574	**Network Services Processor (NSP) Installation/Programming instructions, IVX S/E-Class Gen II**
0450-0634	**Network Services Processor (NSP) installation sheet (Generation I NSP on Generation II systems)**
0450-0636	*Technical Update #182*: **Telling whether an NSP allows *VIP* support**
0450-0630	*VIP Quick Reference User's Guide*
0450-0497	Network Services Processor (NSP) Installation Sheet, E-Class
0450-0608	*VIP Product Overview*
0450-0667	*NSP and VIP Advanced Options Guide*

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[1] Other than installation sheets, which ship with each NSP.

About the NSP

This section describes what the NSP is, what it does, and what information you'll need to get the NSP installed and working. Then, in the following sections, we'll explain how to **find** the information you'll need for the NSP, and what you'll need to **do** with that information once you get it.

NSP description

The NSP is a dedicated processor that enables an ESI phone system to communicate to users' PCs via a local area network (LAN). The NSP is available for the E-Class Generation II (IVX and IP) and IVX S-Class Generation II systems as an optional card. The actual NSP circuit card is about the size of a credit card, and mounts in Base Cabinet I.[1] (In IVX X-Class, the NSP is built-in, located on the main processor board.) The NSP uses no station or CO line ports or port card slots.

An NSP is used for . . .

The NSP adds several capabilities to the ESI phone system:

- Computer/telephony integration with 48-Key Feature Phones using *VIP* on users' PCs
- Remote maintenance over the Internet using *Esi-Access*
- System administration over a LAN using *Esi-Admin*

If you or your customers want to use *VIP*, or if you need to perform remote maintenance using *Esi-Access* over the Internet, or your customer wants to use *Esi-Admin* over a LAN, you'll need an NSP. The phone system communicates via the NSP with a computer that is running any of these applications over a LAN. For more information about *VIP*, refer to the *VIP Product Overview* and the *VIP Setup and User Guide*.

NSP models

The NSP comes in two models:

- **Model NSP-0** — Supports maintenance and programming administration over the Internet via *Esi-Access* only. It is field-upgradable to support *VIP* users.
- **Model NSP-2** — Supports up to 2 *VIP* users and NSP-0 functions. Is also field-upgradeable to support additional *VIP* users.

The IVX X-Class's built-in NSP is by default an NSP-0, and is also field-upgradeable to support additional *VIP* users.

Before you start . . .

Here's a list of what you'll need to get the NSP to work:

- A LAN.
- A CAT 5 patch cable to connect the NSP to the LAN.
- At least one *Windows*® computer[2] connected to the LAN.
- Either an X-Class, E-Class Generation II or S-Class Generation II system.
- Enough *VIP* licenses for all *VIP* users on the system.
- A #0 Philips head screwdriver (you don't need this for an X-Class system).

What's NOT needed to get the NSP working . . .

You don't need an Internet connection[3], e-mail server, Web server, or a computer geek to get the NSP to work.

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[1] See the *Network Services Processor Installation Guide* for details.
[2] The computer must be running *Windows 98* or higher.
[3] If you plan to connect to the NSP using *Esi-Access* or *VIP* over the Internet, then you will need an Internet connection after all — but you still don't need it to get the NSP to work.

Networking terms and devices

About LANs

A local area network, or LAN, provides a standard way to connect many computers together to share resources, such as printers, file servers, Internet access, and the NSP.

VIP uses the LAN to send and receive voice mail and station status information to and from the NSP using the TCP/IP protocol. *Esi-Access* and *Esi-Admin* also connect to the NSP over the LAN for remote maintenance (*Esi-Access* can also perform remote maintenance via the Internet).
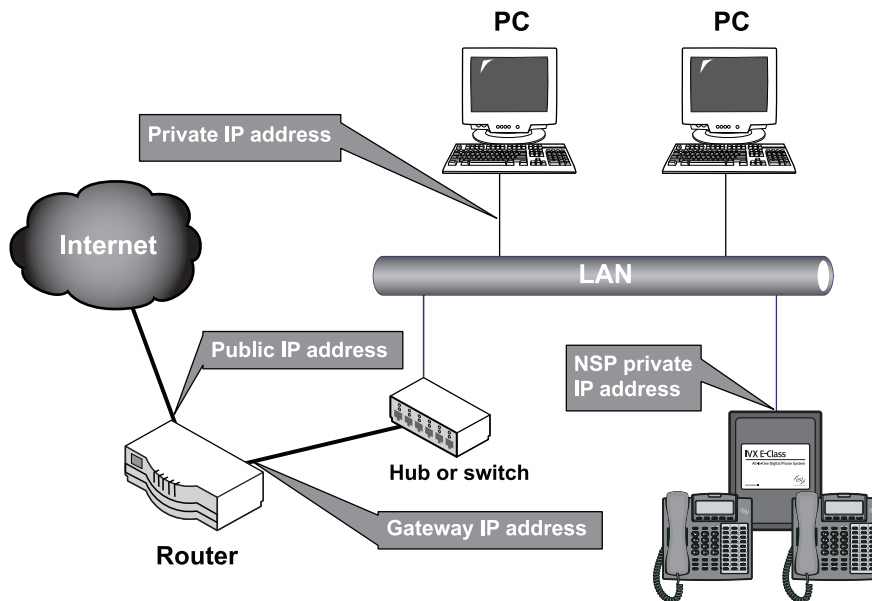
IP addresses

Every computer and printer on a network needs to have an *address* that other computers can use to communicate with that computer or printer. This address is called the *IP address*. IP stands for *Internet Protocol*, and the IP address is what the Internet and the LAN use to direct where data is to be sent to and from each computer. An IP address can be considered something like a telephone number — to make a connection to another phone, you need to know that phone's number. In the same way, a computer needs to know the IP address of another computer in order to make a connection to that computer.

Most often a computer is connected to a LAN, and is assigned a *private* IP address. This is a lot like a private extension number on a phone system. Like extension-to-extension calls, computers connected to a LAN can communicate directly to each other. Often, one phone number and a few outside lines are used for several phones, or extensions. Each of those phones has a private phone number, or *extension* number. A telephone system is used to connect all of the extensions to that one phone number.

In the IP world, several computers can share a single *public* IP address. A public IP address is an IP address that is connected directly to the Internet. The customer's Internet service provider (ISP) typically assigns a single public IP address to the customer's site, and a *router* is used to connect all of the computers connected to the LAN at that site to that public IP address. Each of the computers at the customer site is assigned a private IP address, which is what the router uses to identify each computer that is connecting to the Internet. This router is typically called the *gateway router*.

To connect with other computers on the LAN and the router, the NSP, too, will need its own private IP address; and, to connect remotely with other computers over the Internet, the NSP will also need to know the Internet router's private network IP address *and* public IP address.

Routers — a brief discussion

If you plan to perform remote maintenance using *Esi-Access*, or if the customer wants to use *VIP* remote notification or *VIP* remote office, then you'll need to make sure that the Internet router is configured correctly.

A *router* is used to connect all of the computers on a LAN to the Internet through the public IP address. This router is typically called the *gateway router* or simply the *gateway* (sometimes, this router is also called the *firewall)*. Many gateway routers also *translate* the private network addresses to the public address, and vice versa. This is called *network address translation* (NAT). The reason routers use NAT is so that every computer doesn't need to have (or have its user pay for) a public IP address. Also, if NAT wasn't used, we'd have run out of public IP addresses many years ago — after all, there are only about four billion IP addresses to go around the world, but there are *far* more than four billion PCs, routers, servers, and the like connected to the Internet today. That's why most companies' Internet gateway routers use NAT.

IP ports

Applications running on IP connections to other computers use an additional number after the IP address called a port number. Ports allow multiple applications on one computer to connect to several other computers and devices over a LAN at the same time. Each application has its own port number; that's how the computer knows which application an IP packet is for. The NSP uses ports 59002 through 59008[1] by default to connect to both *Esi-Access* and *VIP*; so, if you or your customer will be connecting to the NSP remotely using either of these programs, the customer's Internet router will need to be configured to *forward* these ports (see "About port forwarding," *below*).

About port forwarding

A router that's using NAT creates a simple *firewall* between your internal network and the Internet. A firewall keeps unwanted traffic from the Internet away from your LAN computers. You can configure the router so that some traffic on specific ports can be directed to a single computer or other device on the LAN. This is called *port forwarding* — also known as *port address translation* (PAT). If you or your customer will be connecting to the NSP remotely using *Esi-Access* or *VIP*, the customer's Internet router will need to be configured to forward ports 59002 through 59008 to the NSP's IP address. (The *NSP and VIP Advanced Options Guide* [ESI part number 0450-0667] provides more information about how to do this.)

If a Network Administrator is needed . . .

If you plan on providing *remote access* to the NSP, you may need to have a network administrator or technician make some router configuration changes. If you've provided the Internet gateway router, the *NSP and VIP Advanced Options Guide* (ESI part number 0450-0667) includes information about router configuration settings. If someone else has installed or is servicing the Internet router, you should have that person make the configuration changes.

Windows tools and utilities you'll be using

As you go through the NSP installation process, you'll be using a few software utilities that come with *Windows*. You'll use commands called *TRACERT*, *PING*, and either *WINIPCFG* (with *Windows 98* and *Windows ME*) or *IPCONFIG* (with *Windows NT*, *Windows 2000*, and *Windows XP*).

You'll be using these tools to figure out what the NSP's IP address will be (as well as some other IP information), and to test and confirm that the NSP is installed correctly.

PING

The *PING* command sends a message from a PC to a specified IP address and waits for a reply (also called an *echo*). You'll use *PING* to verify that the IP address you chose for the NSP isn't being used by another device on the LAN. You'll also use it to test the NSP after you program and connect it to the LAN.

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[1] If necessary, the port prefix *(59)* can be changed in Function 821 in the E-Class and X-Class systems.

WINIPCFG and IPCONFIG

The *WINIPCFG* and *IPCONFIG* commands are tools that are identical in function, but totally different in how they look. *WINIPCFG* is used in *Windows 98* and *ME*, while *IPCONFIG* is used in *Windows NT*, *2000*, and *XP*. These tools are used to identify the IP address subnet and gateway address.

TRACERT

The *TRACERT* (pronounced "trace route") command lets you view the path, or route, that an IP packet takes to reach a particular destination. When an IP packet is sent over a network, it usually will be routed through a series of devices before it reaches its final destination. Each leg of the IP packet's route is called a *hop*, and *TRACERT* displays information about each hop. In the next section, we'll use this tool to discover the NSP's public IP address.

About *VIP*

VIP is a software application (also called an *Outlook* add-in) that integrates with Microsoft *Outlook 2000*, *2002*, or *2003*, and provides advanced call and message handling on ESI 48-Key Feature Phones connected to compatible ESI systems.[1] *VIP* communicates with the ESI system through the NSP, over the LAN.

We'll go over some of the particulars of getting *VIP* to connect to the NSP later on in this document. However, you should use the *VIP Setup and User Guide* (part number 0450-0513) for detailed instructions on installing, setting up, and using *VIP*.

If you're also going to be installing *VIP*, you should verify the following:

• All *VIP* users must have either Microsoft *Outlook* 2000, *Outlook* 2002, or *Outlook* 2003 installed and working on their PC before they can install and use *VIP*.
• Each *VIP* user must have a 48-Key Feature Phone (Digital or IP).
• There must be enough *VIP* licenses programmed in the system for all of the *VIP* users.

VIP *licenses*

A *VIP* license lets a user use the *VIP Outlook* add-in. **There must be enough licenses programmed in the system for all *VIP* users.** You can easily check the total number of *VIP* licenses in the system by using programming Function 81. If you don't have enough *VIP* licenses, you'll need to purchase additional licenses from ESI.

> **Important:** If you do buy more licenses, make sure that the system has a phone line connected to it and you know the line's phone number. (ESI Technical Support will call into the system to activate the licenses.)

Advanced options of VIP *and the NSP*

There are a couple of advanced options and features of the NSP and *VIP* that are outside the scope of this guide — but we'll tell you a little about them, anyway. You can learn more about these features and how to install and enable them by referring to the *NSP and VIP Advanced Options Guide* (ESI part number 0450-0667). Here's a list of the advanced options, and what they allow:

• **Remote voice mail notification to an e-mail account** — Set your station options to notify you via e-mail of new voice mail messages that are left in your mailbox when you are out of the office.
• **Using *VIP* in a remote office** — Use *VIP* in a permanent location away from the site where the ESI phone system is installed — *e.g.*, a home office or small branch office.
• **Remote maintenance with *Esi-Access*** (Installer) — Perform programming changes to a site's phone system from a remote location using *Esi-Access*, one of the five modules of *Esi-Tools*.
• **Connecting *Esi-Admin* through the NSP** (Administrator) — Use *Esi-Admin* to program phone system features, such as extension feature authorization, through the NSP over a LAN.

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[1] *VIP*-compatible systems are IVX X-Class, E-Class (IVX/IP) Generation II, and IVX S-Class Generation II.

Finding the information you'll need to get the NSP up and running

Now you'll get to use all of the knowledge you've gained in the previous section to perform a little detective work, to gather the information you'll need to program the NSP — such as IP addresses and e-mail server information.

Information needed to program the NSP

You'll need to find a few IP addresses. You'll also need an unassigned e-mail address (if you plan to get *VIP* remote notification to work). The IP address information you'll need is divided into three parts — *local settings*, *remote access settings*, and *remote notification settings*.

- **Local settings** are needed to get the NSP's basic features to work with computers on the LAN and with *VIP*.
- **Remote access settings** are needed **only** if you need to use *Esi-Access* over the Internet or *VIP* in remote mode. **However**, you should go ahead and program them now, especially since you'll probably want to program the system remotely over the Internet with *Esi-Access.* You'll also need them to get the *VIP* remote office and roaming office modes to work.
- **Remote notification settings** are needed to get *VIP* remote notification to work.

Local settings

- **NSP private IP address** — Identifies the NSP to other computers on the LAN. *VIP* and *Esi-Admin* use this address to communicate with the phone system over the LAN. This will be a *static* IP address — which means that the NSP will always be found at this IP address.
- **NSP IP subnet mask** — Defines the network to which the NSP is connected. It is always the same as the subnet mask on a computer connected to the LAN. To find the subnet mask on a computer, see "How to make an IP address for the NSP" (page 7).

Remote access settings

- **IP gateway (router) address** — This is the private IP address of the Internet gateway router. This is needed for remote maintenance using *Esi-Access*. It's also needed if users are going to use *VIP* in either *remote office* or *roaming office*[1] mode. The IP gateway address typically is the same as the *Windows* default gateway assigned to computers on the network. If you don't know the gateway address, consult with the site network administrator to obtain the correct gateway address or see "How to make an IP address for the NSP" (page 7).
- **NSP public (router) address** — The gateway router's public IP address. (Also called the *WAN IP address.)* If you don't know this address, consult with the site Network Administrator to obtain the correct public IP address or see "Using *TRACERT* to find the NSP public IP address," page 11.
- **NSP IP port assignments** — By default, the NSP uses default ports 59002 through 59008 to communicate with *VIP* and *Esi-Access*. The first two digits (the *port prefix)* can be changed if needed in Function 821 in the E-Class (IVX/IP) and IVX X-Class systems (but not in IVX S-Class). However, the default ports usually will work fine; ESI hasn't encountered any other application that uses the same ports as the NSP.

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[1] *VIP* remote office and roaming office modes are described in the *VIP Setup and User's Guide* (ESI part number 0450-0513).

VIP remote voice mail notification settings

- **NSP remote notification e-mail server** — This is the IP address of the e-mail server that the NSP will use to *send remote voice mail notification as e-mail messages* to off-site *VIP* users. If the customer does not plan to use *VIP* remote voice mail notification, then this isn't needed, and may be left blank. To determine the e-mail server's IP address, refer to "Finding the e-mail server IP address" (page 15).

- **VIP remote notification e-mail address** — Everyone and everything that sends e-mail messages must have an e-mail account to send from, and the NSP is no exception. This is the address of the e-mail account that is *used only by the NSP* to send remote voice mail notification as e-mail messages to remote *VIP* users.

You should have a **dedicated** e-mail address set up **only for the NSP** — for example, *vipnotify@domain.com*. This is the e-mail address from which the NSP e-mails notifications to *VIP* users who are out of the office and using *VIP* remote notification. This e-mail address must be a valid SMTP[1] account on the customer's e-mail server or service, and **cannot** require a password to send e-mail messages. If necessary, ask the site's Network Administrator to set up an e-mail account for remote e-mail notification. (If the customer doesn't plan to use *VIP* remote voice mail notification, then this entry may be left blank.)

Finding the information

In this section we go through the detailed steps of collecting and defining the NSP addressing information you'll need during the installation process. Much of this information is easy to find, but may use PC commands with which you're not yet familiar. As we proceed, we will explain those commands — what they do and how to use them.
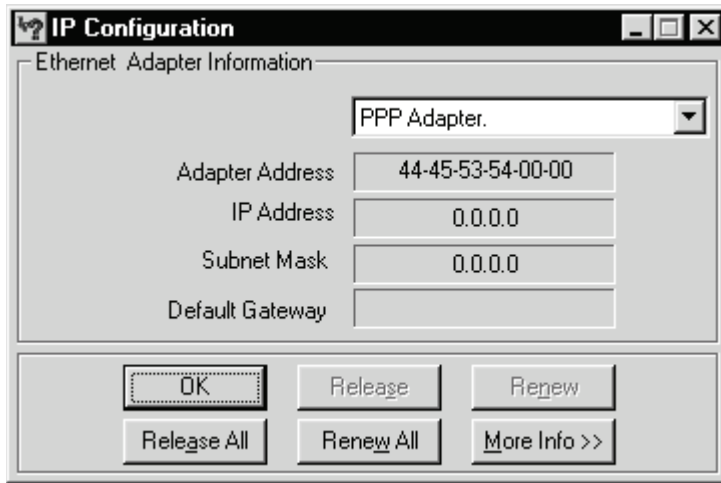
How to make an IP address for the NSP

First, make sure the NSP is disconnected from the LAN, to avoid any address conflicts that may occur. (Once you're done programming the system, you can then connect the NSP to the LAN.) Next, if you need to make an IP address for the NSP, you'll have to find a computer connected to the same LAN to which the NSP will be connected. (It would be ideal if that computer were also going to have *VIP* installed later on.)

To find the PC's IP address information, you'll use a couple of software utilities that come with *Windows*. With this information, you can figure out what the NSP's IP address will be, as well as some other IP information. If your PC is running *Windows 98* or *ME*, you'll be using the *WINIPCFG* and *PING* commands; just follow the steps in "*Windows 98* and *Windows ME*," page 8. If your PC is running *Windows NT, 2000*, or *XP*, you'll use the *IPCONFIG* and *PING* commands; follow the steps in "*Windows NT, Windows 2000,* and *Windows XP*," page 9.
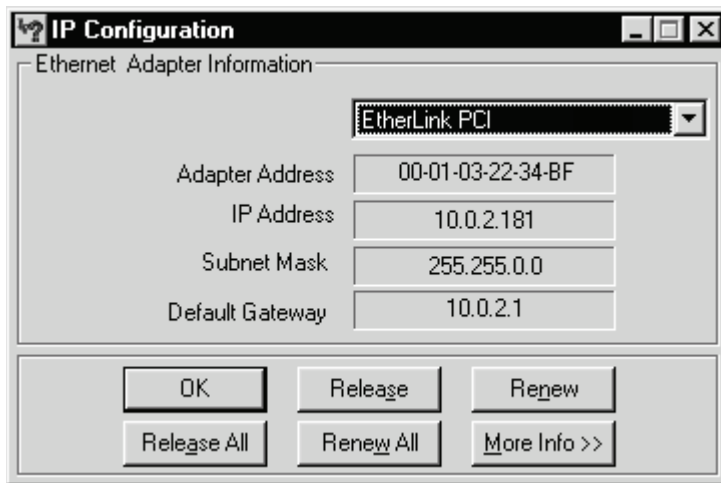
---

[1] SMTP — Simple Mail Transport Protocol

Windows 98 and *Windows ME*

1. Click the **Start** button and select **Run**. The **Run** window will appear.

2. Type `winipcfg` and click **OK**. The **IP Configuration** window will appear:

3. Choose the *Ethernet adapter* in the dropdown box:

4. Go to "Using *PING* to check the new NSP IP address," page 10.

Windows NT, Windows 2000, **and** *Windows XP*

1. Click the *Windows* **Start** button and select **Run**. The **Run** window will appear.

2. Type **command** and click **OK**. This will open a DOS window.

3. Type **ipconfig /all** and press **Enter**.

```
C:\WINDOWS\system32\command.com                                    _ □ ×

Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . : 10.0.2.201
        Subnet Mask . . . . . . . . . . : 255.255.0.0
        Default Gateway . . . . . . . . : 10.0.2.1

C:\>
```

4. The NSP's *subnet mask* must always match the PC's subnet mask — *i.e.*, what appears in the **Subnet Mask** field as shown in the screen shot, *above*. Write it down on the worksheet on page 16.
The NSP IP Gateway address is the same as the IP address of the default gateway, as shown in the **Default Gateway** field in *IPCONFIG* (again, see the screen shot). Also write this down on the worksheet.

5. The **IP Address** field shows the IP address assigned to the PC. You should choose an IP address for the NSP that begins with the same three numbers as the PC's IP address.

> **Example:** The first three numbers in the examples above are *10.0.2*. Therefore, the NSP's IP address should also start with *10.0.2*.

You usually will be able to pick the last number in the IP address as a high number (but make sure it's less than *255*), and use that for the NSP's IP address.

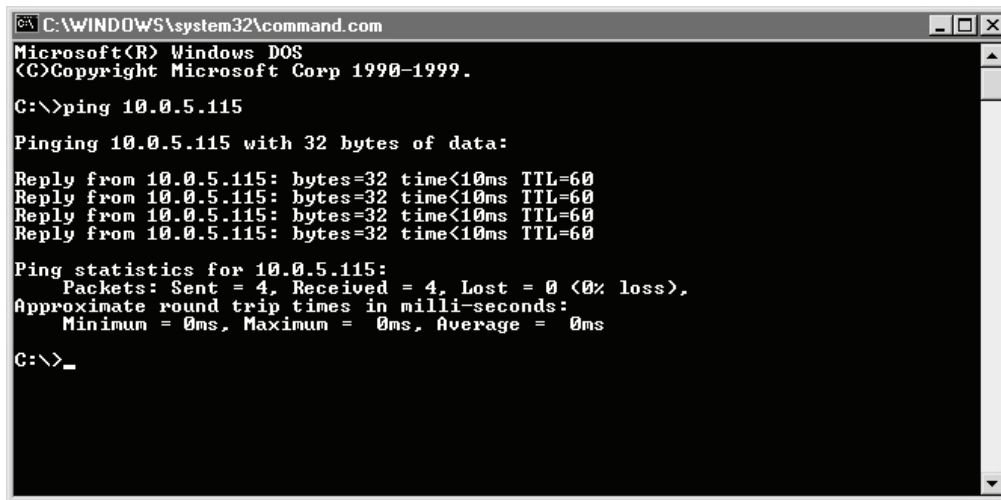**6.** Go to "Using *PING* to check the new NSP IP address," page 10.

Using PING to check the new NSP IP address

To make sure that a computer on the LAN isn't using the IP address you picked, you should use the ***PING*** command to check the IP address. If the *PING* always "times out" when you check an IP address, it's probably safe to use that address for the NSP.

PING sends an *echo* request from a PC to a specified address, and waits for the reply ("echo"). Using the *PING* command verifies that the IP address you chose for the NSP isn't being used by another device on the LAN.

To use *PING*, go to a PC on the LAN.

1. Click on the *Windows* **Start** button and select **Run**. The **Run** window will appear.

2. Type `command` and click **OK**. This will open a DOS window.

3. In the DOS window, type `ping` and a space, followed by the NSP private IP address, and press **Enter**. If the IP address is being used by another device on the LAN, a "Reply from..." message will be printed on the screen four times. If this happens, you'll need to change the last number of the NSP's IP address. The first screen shot, *below*, shows a *PING* test that found an address in use — meaning, an address that can't be used for the NSP.

```
C:\WINDOWS\system32\command.com                                 _ □ ×
Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>ping 10.0.5.115

Pinging 10.0.5.115 with 32 bytes of data:

Reply from 10.0.5.115: bytes=32 time<10ms TTL=60
Reply from 10.0.5.115: bytes=32 time<10ms TTL=60
Reply from 10.0.5.115: bytes=32 time<10ms TTL=60
Reply from 10.0.5.115: bytes=32 time<10ms TTL=60

Ping statistics for 10.0.5.115:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>_
```
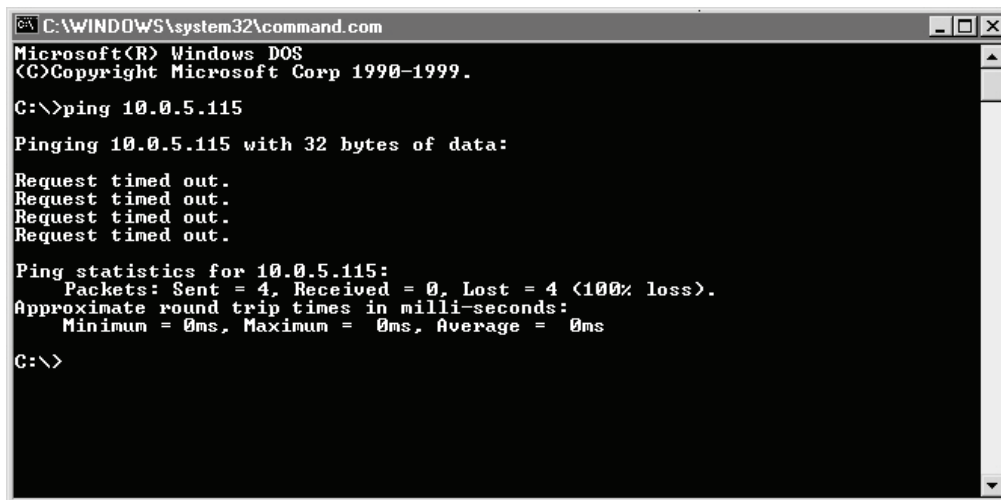
However, if "Request Timed Out" appears on the screen, instead (*below*), then you have an IP address that's free to use for the NSP! Write it down now in the worksheet on page 16.

```
C:\WINDOWS\system32\command.com                                 _ □ ×
Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>ping 10.0.5.115

Pinging 10.0.5.115 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.5.115:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss).
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>
```

Using TRACERT to find the NSP public IP Address

You'll need to know the *NSP public IP address* in order to use *Esi-Access* for remote maintenance via the Internet, or for *VIP* users that are going to be using *VIP* in remote office or roaming mode. Sometimes, the main office's Network Administrator or ISP can provide the public gateway IP address, or WAN[1] address (at the main office). This address will be used as the NSP public IP address. However, in the event that you can't reach either the Network Administrator or the ISP, you can use the *Windows TRACERT* utility to find the public IP address of the NSP.

TRACERT (pronounced *trace-route*) utility traces the route that an Internet connection takes from the PC to a server on the Internet. Network administrators use *TRACERT* for a number of things; but, for our purposes, we're going to use it just to find the public IP address that will connect us to the NSP over the Internet. The example below shows a *TRACERT* to the ARIN Web site, but actually you can do this using any well-known, publicly accessible Web site that's almost certain to be up and running.

> **Important:** Be sure to do this using the same PC you used to find an IP address for the NSP:

1. Click the *Windows* **Start** button and select **Run**. The **Run** window will appear.

2. Type `command` and click **OK**. This will open a DOS window.

3. In the DOS window, type `tracert -d www.arin.net` (the `-d` speeds up things).

4. After a few moments, the *TRACERT* command should return a display similar to that shown below.

```
C:\WINDOWS\system32\command.com                                    _ □ ×
Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>tracert -d www.arin.net

Tracing route to www.arin.net [192.149.252.16]
over a maximum of 30 hops:

  1    <10 ms    <10 ms    <10 ms   10.0.2.1
  2    <10 ms    <10 ms    <10 ms   4.22.141.65
  3    <10 ms    <10 ms     15 ms   4.24.111.89
  4    <10 ms     16 ms    <10 ms   4.68.112.177
  5    <10 ms    <10 ms     15 ms   209.244.15.162
  6    <10 ms     16 ms     16 ms   209.245.240.142
  7     16 ms     15 ms     16 ms   152.63.99.1
  8    <10 ms     16 ms    <10 ms   152.63.0.193
  9     47 ms     31 ms     47 ms   152.63.38.145
 10     78 ms     94 ms     94 ms   152.63.36.37
 11     78 ms     78 ms     47 ms   152.63.37.61
 12    110 ms     46 ms     63 ms   65.207.88.74
 13    110 ms     62 ms     47 ms   192.149.252.16

Trace complete.

C:\>
```

This would be the public IP address.

The first public IP address in the list typically will be the internal (gateway) address of the main office's Internet gateway router. The second address will be the public IP address, or WAN address of the main office router. *This is the NSP public IP address*; enter it in the worksheet on page 16.

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[1] Wide area network.

VIP remote voice mail notification programming

The next two programming items are used only for *VIP* remote voice mail notification to *VIP* users that want to have e-mail messages sent to an e-mail account for "off-site" notification of new voice messages.

Finding the remote notification e-mail server

To find the IP address of the e-mail server, here again you can use *PING*. You'll need to determine the name of the e-mail server that the customer is using.
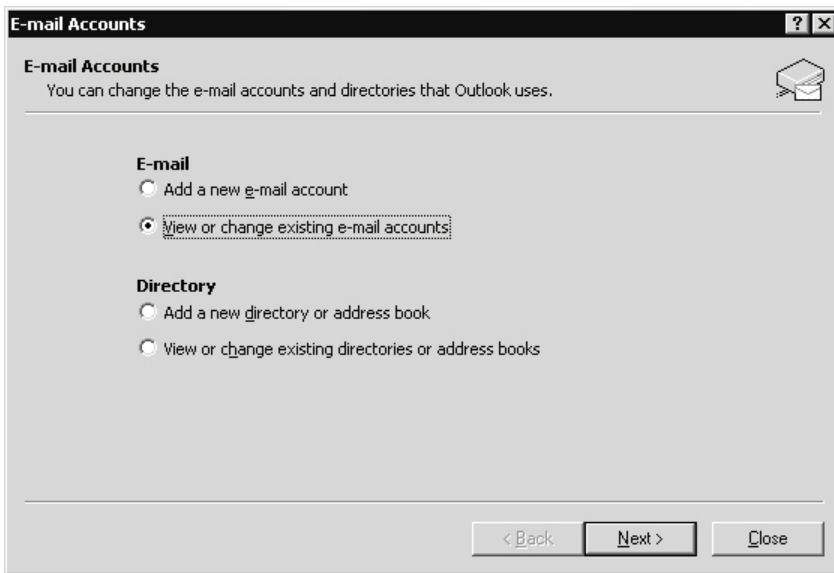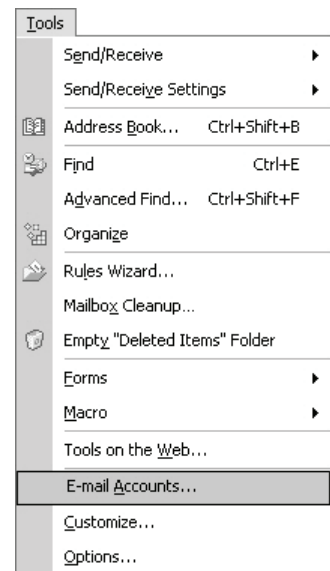
If the customers don't know the name of the e-mail server, and they're using *Outlook*, you can use *Outlook* to give you the e-mail server name. First, identify the version of *Outlook* they're running. To do this, open *Outlook* and, on the *Outlook* toolbar click **Help**, then **About Microsoft Outlook**. A window will open and, at its top, you'll see the *Outlook* version — *Outlook 2000*, *Outlook 2002*, or *Outlook 2003*[1] (don't worry about additional notes such as "SP-3"). Follow the instructions, beginning below, for the version of *Outlook* with which you're working.

Finding the name of the e-mail server

> **Note:**   The instructions for *Outlook 2000* begin on page 13.

Using Outlook 2002 & 2003

1. Open *Outlook*.

2. Click **Tools**, then **E-Mail Accounts**. (if you don't see **E-Mail Accounts**, click the menu item; you'll see it then).

3. The **E-mail Accounts** window will open. Click **View or change existing e-mail accounts**, and then click **Next**.
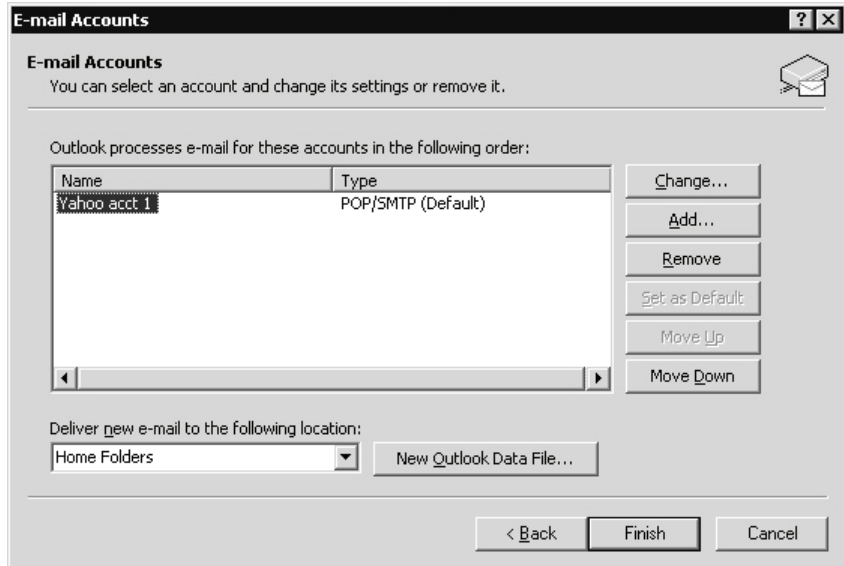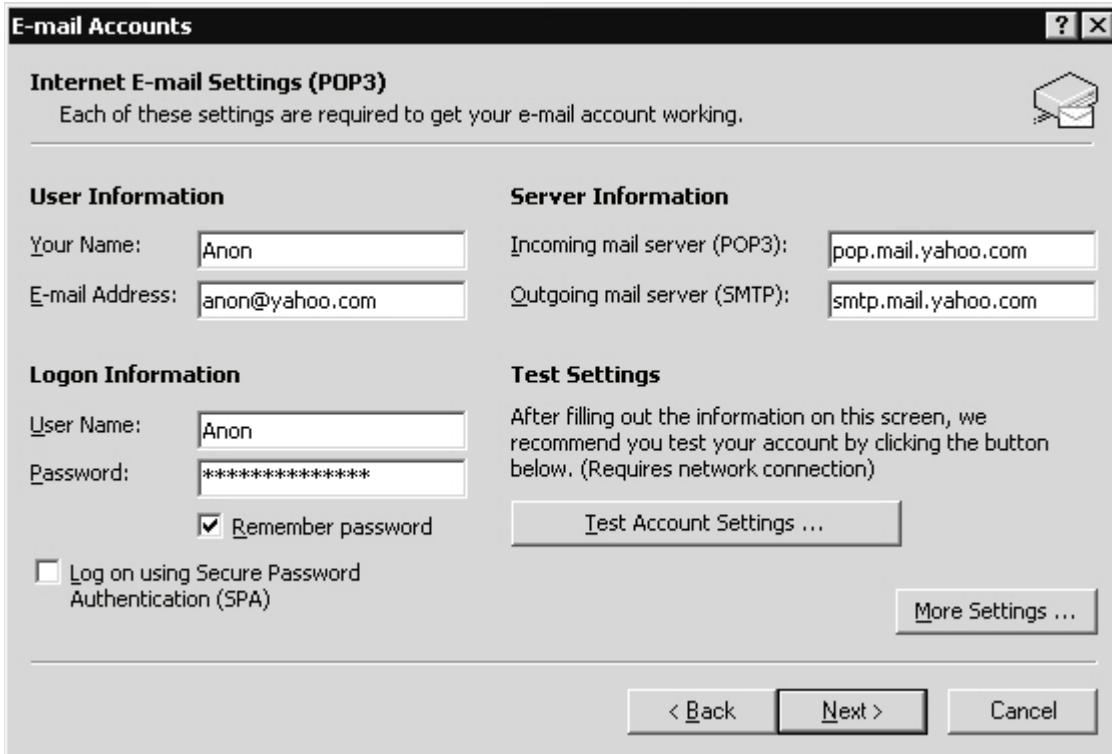
(Continued)

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[1]   These are the only versions of *Outlook* which work with *VIP*.

4. Select the **POP/SMTP** e-mail account type and click **Next**.

> **Note:** If you don't see a POP/SMTP account type, click the "**X**" to close this box; then, skip to making an NSP e-mail account. You'll have to get the e-mail server name from the customer or the customer's e-mail server Administrator.

E-mail Accounts

E-mail Accounts
You can select an account and change its settings or remove it.

Outlook processes e-mail for these accounts in the following order:

Name	Type
Yahoo acct 1	POP/SMTP (Default)

Change...
Add...
Remove
Set as Default
Move Up
Move Down

Deliver new e-mail to the following location:
Home Folders

New Outlook Data File...

< Back   Finish   Cancel

5. After clicking **Next** in the previous window, you'll see a new **E-mail Accounts** window that shows the mail server information. Write down the **Outgoing mail server (SMTP)**[1] name (in the example, *below*, it's *smtp.mail.yahoo.com*).

E-mail Accounts

Internet E-mail Settings (POP3)
Each of these settings are required to get your e-mail account working.

User Information
Your Name: Anon
E-mail Address: anon@yahoo.com

Server Information
Incoming mail server (POP3): pop.mail.yahoo.com
Outgoing mail server (SMTP): smtp.mail.yahoo.com

Logon Information
User Name: Anon
Password: ***************
☑ Remember password
☐ Log on using Secure Password Authentication (SPA)

Test Settings
After filling out the information on this screen, we recommend you test your account by clicking the button below. (Requires network connection)

Test Account Settings ...

More Settings ...

< Back   Next >   Cancel

6. Now, click either **Cancel** or **Close** buttons on each of the windows you just opened (you can keep *Outlook* open, though).

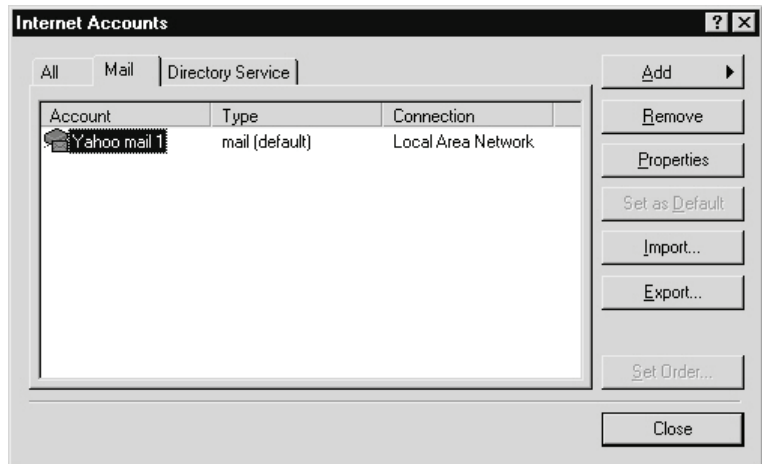**7.** Go to "Finding the e-mail server IP address," page 15.

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[1] *SMTP* stands for *Simple Mail Transfer Protocol*.
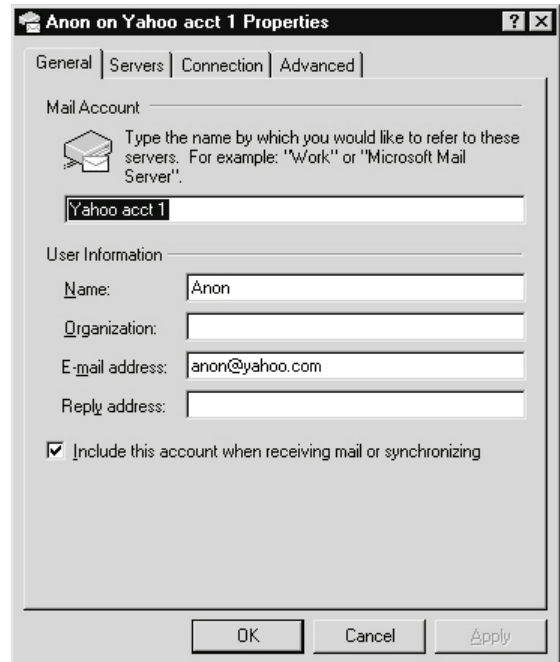
Using Outlook 2000

Outlook 2000 can be set up to use either the *"Internet Only"* or *"Corporate or Workgroup"* service option. We'll explain how to find the name of the e-mail server with either option.

1. Open *Outlook*.
.

2. Click the **Tools** menu bar item.

    a. *Internet Only:*
       Click **Accounts** (if you don't see **Accounts**, click the ⏬ menu item; you'll see it then).

    b. *Corporate or Workgroup:*
       Click **Services** (if you don't see **Services**, click the ⏬ menu item; you'll see it then).

3. If *Outlook* is using the *Internet Only* service option, then the next window you see will look like this *(at right)*:

    a. If you see this window, click **Properties**.
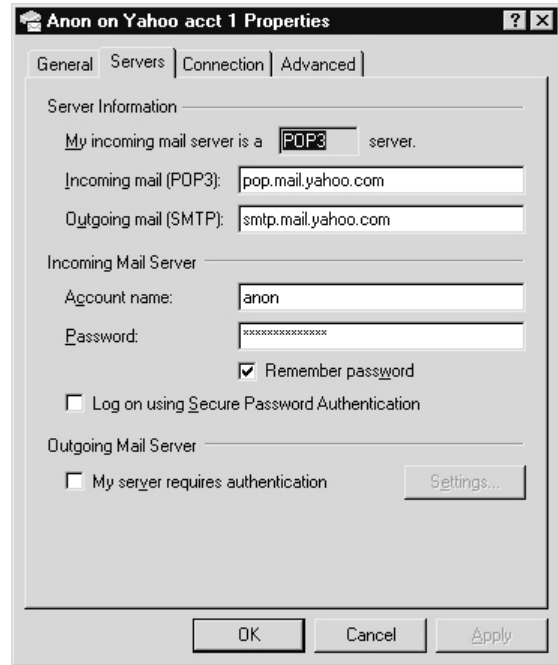
    b. If you don't see this window, continue to step 4.

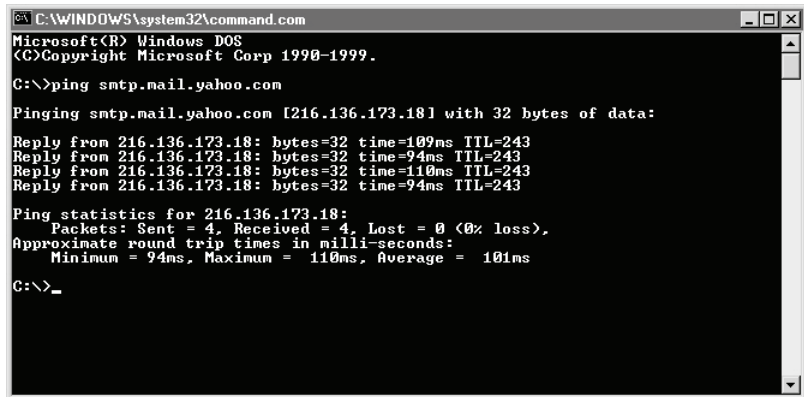**4.** You'll now see a window that looks like this *(at right)*:

(Continued)

5. Select the Internet E-mail information service. If you don't see an Internet E-mail information service, then click **Cancel**. You'll have to get the e-mail server name from the customer or the customer's e-mail server Administrator.

6. Click **Properties**. A new window will open.

7. Click the tab labeled **Servers**. You will see a window that looks like the example at *right*. Write down the server name that appears by **Outgoing mail server (SMTP)**[1] name (here, it's *smtp.mail.yahoo.com*).

8. Now, click the **Cancel** or **Close** buttons on each of the windows you just opened (you can keep *Outlook* open, though).

9. Continue to "Finding the e-mail server IP address," *next*.

Finding the e-mail server IP address

1. Now use *PING* again, as you did when you were checking the NSP IP address — only, this time, type the outgoing mail server name after the *PING* command. You should see something like the screen shot, *right*. The outgoing e-mail server's IP address will appear in brackets after the server name.

2. Enter this IP address in the NSP programming worksheet (page 16).

> **Note:** If you see "Unknown host." instead, you'll need to contact the customer's e-mail administrator to find the correct name of the e-mail server. If you see a "Request timed out message,." don't worry about it; some e-mail servers will not reply to a *PING*. (You should still see the IP address in the brackets.)

Setting up an e-mail account for the NSP

This e-mail address must be a valid SMTP account on the customer's e-mail server or service, and cannot require a password to send e-mail messages. It should not be a person's e-mail account, because NSP messages will be sent *from* this account — so, if you use a person's e-mail address, it will appear that the message came from that person. Consult with the site e-mail Administrator to set up an e-mail account for *VIP* remote voice mail notification, if required. (If the customer doesn't plan to use *VIP* remote voice mail notification, then this e-mail account doesn't need to be made and you can skip this part.)

---

[1] SMTP — Simple Mail Transport Protocol

NSP programming worksheet

Programming item	Value
NSP private IP address	_____._____._____._____
NSP subnet mask	_____._____._____._____
NSP gateway (default gateway)	_____._____._____._____
NSP public address (WAN address)	_____._____._____._____
E-mail server IP address	_____._____._____._____
NSP e-mail address	_____@_____._____
NSP IP port numbers	59002 through 59008

Summary

Once you have completed the worksheet, keep it handy, since you'll need it when you program the NSP. You've completed a big part of the job, and you're now on the home stretch. You've got just a few more things to do, and the NSP will be up and running!

NSP installation and programming

In this section, we'll take you though installing the NSP module for E-Class Generation II (IVX/IP) and IVX S-Class Generation II, and programming the system. **To program, you'll need the information you gained in the previous section.** We'll refer to the system *Installation Manual* and the NSP installation instructions for the detailed step-by-step instructions. We'll guide you through the overall process, pointing out the critical points you'll need to double-check. We'll also provide a test for verifying the NSP connection to the LAN. At the end of this section, there's a checklist to help you make sure you don't miss anything. **Once you complete this section, your NSP will be up and running** and will be ready to communicate with client applications, such as *VIP*, on local PCs.

VIP licenses and VIP feature authorization

If you're going to install *VIP*, you'll need to check the number of available *VIP* licenses and enable *VIP* for the selected user extensions in installer programming. We'll go over this in detail in "Installing *VIP*," beginning on page 20.

Installing the NSP

If you have an E- or S-Class system, your first step will be to install the NSP module. (If you have an X-Class system, then skip directly to "Programming the NSP," *below*.) The Network Services Processor installation sheet (part number 0450-0574) provides details for installing the NSP in the E-Class Generation II and IVX S-Class Generation II systems. This document can be found on the *Technical Resource Guide* CD (ESI part number 0470-0070), in the **Special Options** section.

Install the NSP as indicated by the instruction sheet. Double-check the position of the **red** wire on the data cable connecting the system main board to **J6** on the NSP. This cable must be installed with the correct orientation. The NSP power cable can be installed in either orientation. When you power-on the system, check that the NSP front-panel **Pwr** LED comes on. This indicates that power is connected to the NSP. If the LED doesn't come on, power down the system and recheck the cable installation. After you've confirmed that the **Pwr** LED is on, you're ready to program the system.

Programming the NSP

You will need to perform the following system programming steps: program the NSP addresses in Function 824, check the *VIP* licensing in Function 81 and enable *VIP* in extension feature authorization in Function 32. See the *Network Services Processor Installation Guide* (ESI part number 0450-0439) for detailed instructions.

NSP addresses

Enter the NSP programming information in Function 824. You can get all of the information you'll need from the NSP programming worksheet that you filled out earlier (page 16). Programming this information enables the NSP to communicate with computers on the local network and to other computers and e-mail servers across the public Internet. Check and double-check this programming. Any mistake in the NSP programming will disable all or some of the NSP capabilities.
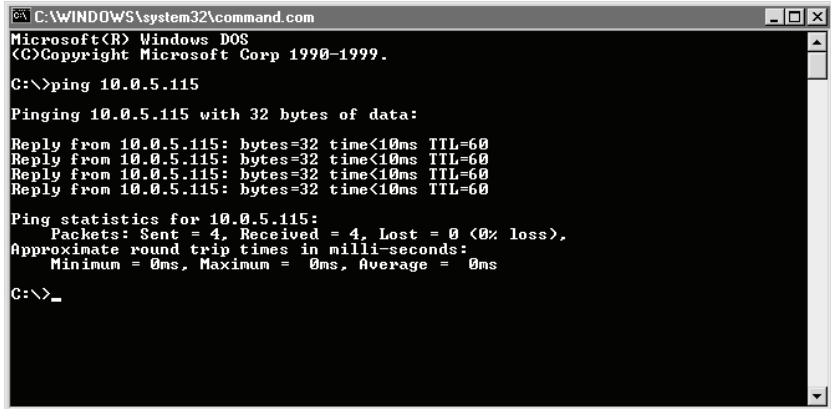
Connecting to the LAN

Connect the NSP to the LAN using a CAT 5 patch cable. Plug one end into the RJ-45 connector on the NSP. Plug the other end into a hub or switch that is part of the LAN. When both of these connections are made, the NSP RJ-45 **Link** LED should come on. (You may also see the **Activity** LED blink a few times.) If the NSP power is on and the **Link** LED is off, the NSP hasn't detected the LAN. The most likely problem is the connection to the LAN. If this happens, verify that the patch cable is good; also, try plugging it into a different port on the hub or switch.

Checking the NSP

The NSP now should be operational. You can use the *Windows PING* command as a quick test to verify that the NSP can communicate on the LAN. *PING* sends an echo request from a PC to a specified address and waits for the reply or echo; this verifies whether the PC can communicate with NSP in both directions.
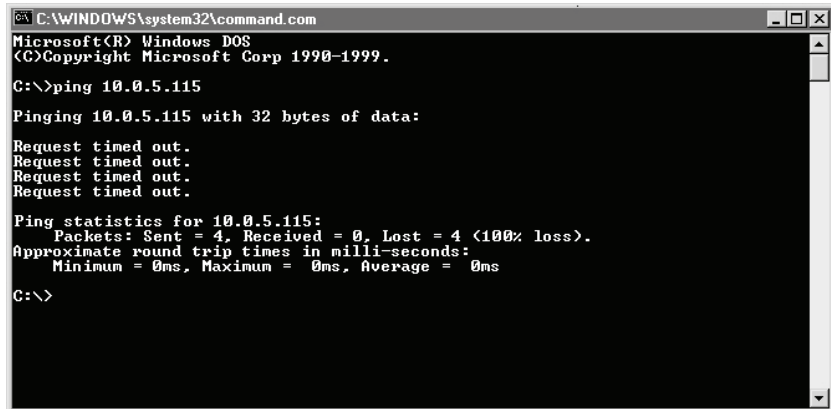
To use *PING*, go to a PC on the LAN. Click the *Windows* **Start** button, click **Run**, type **command** in the "**Open:**" window, and press **Enter**. At the "**C:\>**" prompt in the command window, type **ping** and a space, followed by the NSP private IP address, and press **Enter**. If the NSP can be reached over the LAN, a *"Reply from.."* message will appear on the screen four times, indicating that the NSP responded successfully to four *PING* requests. You see a successful *PING* test *above right*.

```
C:\WINDOWS\system32\command.com                                          _ □ ×
Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>ping 10.0.5.115

Pinging 10.0.5.115 with 32 bytes of data:

Reply from 10.0.5.115: bytes=32 time<10ms TTL=60
Reply from 10.0.5.115: bytes=32 time<10ms TTL=60
Reply from 10.0.5.115: bytes=32 time<10ms TTL=60
Reply from 10.0.5.115: bytes=32 time<10ms TTL=60

Ping statistics for 10.0.5.115:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>_
```

If "Request Timed Out" appears on the screen, as shown at *right*, this means that communication with the NSP failed.

If this occurs, double-check to make sure you entered the NSP IP address correctly. If you're still unsuccessful, use *PING* with the NSP gateway address. This will verify that the PC is not the problem because, if the PC can successfully *PING* the gateway,

```
C:\WINDOWS\system32\command.com                                          _ □ ×
Microsoft(R) Windows DOS
(C)Copyright Microsoft Corp 1990-1999.

C:\>ping 10.0.5.115

Pinging 10.0.5.115 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.5.115:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss).
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>
```

the PC is working correctly. Go back through the NSP installation and programming, checking for any errors. Also, make sure that the hub or switch that the NSP is plugged into is attached to the rest of the LAN. If you're still encountering problems, see page 29 for technical support contact information.

Summary

You now have successfully installed and tested the NSP. You're more than halfway done! The next steps include installing *VIP*, setting it up to connect to the NSP, and testing.

NSP installation and programming checklist

Installing the NSP
    NSP installed
    Data cable connected properly at NSP J6 _____
    NSP **Pwr** LED comes on when system powered up _____

Programming
    NSP addresses programmed in Function 824 _____
    Double-checked Function 824 _____

Connecting to the LAN
    NSP **Link** LED on _____

Checking the NSP
    PING reply received from NSP _____

Installing *VIP*

Before attempting to install *VIP*, the first thing you should do is to confirm that the phone system has the correct version of software to support *VIP* before you proceed any further. You can find the latest system software versions that support *VIP* at the ESI Resellers' Web site, *www.esiresellers.com*.

Next, follow **either** the instructions that begin below **or** those in the *VIP Setup & User Guide* (part number 0450-0513) to install *VIP* on a PC. Remember, the PC **must** be running *Windows* 98 or later and it **must** have Microsoft *Outlook* 2000, 2002, or 2003 already installed on it. If it doesn't, then the customer will need to have *Outlook* installed before you can continue. *Outlook* Express **won't** work. Also, remember that *VIP* works with **48-key Feature Phones only**.

Use the *VIP* setup and test checklist (page 28) to keep track of where you are in the *VIP* installation process, and to make sure you don't skip anything. We'll remind you to check off the checklist as you complete each item in the installation process.

If you plan to use advanced *VIP* and NSP options — such as using *VIP* in a remote office or using *Esi-Access* via the Internet — you should finish this section first, and then use the *NSP and VIP Advanced Options Guide* to set these up.

VIP licenses

Before you begin installing *VIP*, you should first check the number of *VIP* licenses available and then enable *VIP* for the selected user extensions in installer programming.

Function 81 ("Display licenses") shows two numbers, *MAX* and *USED*:

- **MAX** — The number of *VIP* licenses currently in the system, both assigned and not in use. This is the maximum number of *VIP* users allowed (without buying more licenses).
- **USED** — The number of *VIP* licenses currently assigned in Function 32. *USED* can't be greater than *MAX*.

If an NSP-2 has been installed, *MAX* will be *2* **unless** additional *VIP* licenses have been purchased and remotely enabled. If the number of *VIP* users you plan to assign is greater than the *MAX* displayed, you will need additional *VIP* licenses. If you **have** already purchased these licenses, you'll need to call ESI Tech Support to enable them. (Have your ESI order number on hand and the phone number for remote access. This will speed up the process.) If you **haven't** purchased the needed *VIP* licenses, you must call ESI Sales to order them.

VIP *feature authorization*

Now go to Function 32 (feature authorization), and enable *unified messaging* for the extensions that will be using *VIP*. Remember that the total number of extensions with *VIP* cannot exceed the *MAX* license count in Function 81. The system will block you from enabling more *VIP* users than licenses. Double-check Function 32 programming. **A mistake at this point will prevent *VIP* from working on a user's PC.**

Install the *VIP* software

To install and configure *VIP* correctly, you'll need to complete all of the following three steps

1. Install the *VIP* software on each *VIP* user's PC.
2. Configure station and network options.
3. Set up *Outlook* dialing options and properties.

ESI makes the *VIP* installer software available both on a CD-ROM and as a free download from ESI's *User's Guide* Web site *(www.esiusers.com)*. However, ESI recommends that you always get the *VIP* installer from the Web site: that way you're always getting the latest version.

Important:	If you have a previous version of *VIP* on your system, uninstall it before installing this version. Follow the "Uninstall *VIP*" instructions (page 26), and come back here when you're done uninstalling the previous version.

If you're installing *VIP* on *Windows NT*, *2000*, or *XP*, you must log in with *Windows* Administrator privileges before continuing. To find out if you have Administrator privileges, click **Start**, **Settings**, **Control Panel**, **User Accounts**. You will see the account name with which the user logged in, along with account information. If you see the word *Administrator* or *Administrators* in the account information, then you have Administrator privileges.

Next, close *Outlook* — including any open messages, reminders, or other *Outlook* items, even if they appear in separate windows. If you have the CD-ROM, you can proceed to "To install *VIP*" (page 21). If you're working with the Web download, please follow the instructions below.

Obtaining the VIP *installer software from the Web*

1. Open the Web browser (typically *Internet Explorer*). Enter *www.esiusers.com/downloads* in the browser address toolbar and press **Enter**. This will take you to the "Downloadables" page on ESI's on-line *User's Guide*.[1]

2. Click the link for *VIP* software. This is a self-expanding archive file, *VIP.exe*. When your Web browser asks whether you want to open or save the file, select **Save**. A file save window will open, and you should click on the **My Documents** folder, then the **New Folder** icon (see *right*) and create a new folder named *VIP Installer*. Click on this folder, click **Open**, and then click **Save** (the same button).

3. Open *Windows* Explorer and navigate to the *VIP Installer* folder.

4. Double-click *VIP.exe* to expand the needed files. (One of them, *Setup.exe*, is the *VIP* installer file. You'll use it in "To install *VIP*" on the next page.)[2]

Now you're ready to install *VIP*.

---

[1] *VIP* software is also on the password-protected Resellers' Web site *(www.esiresellers.com)*, but using the publicly available *www.esiusers.com* is more convenient, particularly when you are performing this action on someone else's PC.

[2] Depending on the **Folders** settings in *Windows*, the *.exe* extension may not appear in the listing — *i.e.*, the files' names may appear to be just *VIP* and *Setup* rather than *VIP.exe* and *Setup.exe*, respectively.

To install VIP

1. Close *Outlook* and any other programs currently running — including any open messages, reminders, or other *Outlook* items (yes, we're repeating this; it's important).

2. If you haven't done so already, have the user assign a password at the phone: press **PROGRAM 5 1** and follow the prompt instructions to set a password.

3. Go back to the **VIP Installer** folder and double-click *Setup.exe*.[1] This will cause the **VIP Setup Wizard** to appear.

4. Follow the installation instructions displayed by the **VIP Setup Wizard**.

5. When the installation is complete, launch *Outlook*.

6. If this is the first time *VIP* has been installed on this PC, you will be prompted to select the **VIP** tab in the Options window. Check this item off the *VIP* setup and test checklist (page 28) and proceed to "Configure station and network options" (next item).

Configure station and network options

This section contains configuration instructions — such as updating the extension and password settings and entering network settings. If you're installing *VIP* on this PC for the first time, you'll need the following information:

1. The extension number.

2. The voice mail password.

3. The NSP private IP address (you can get this from the NSP programming worksheet you filled out on page 16).

4. Port number prefix (you can also get this from the NSP programming worksheet).

Set voice mail delivery

The configuration window *(right)* will appear if this is the first time anyone has installed *VIP* on this PC. You also can manually launch the configuration window by clicking **Options** on the *VIP* toolbar (or selecting **Options** from the **Tools** menu) and then selecting the *VIP* tab.

Make sure that, under **Delivery Option**, **Local** is selected (we'll explain delivery options later on), and then click **Apply**. Check this item off the *VIP* setup and test checklist (page 28).

---

[1] As noted earlier, the **Folders** settings in *Windows* will determine whether the *.exe* extension appears.
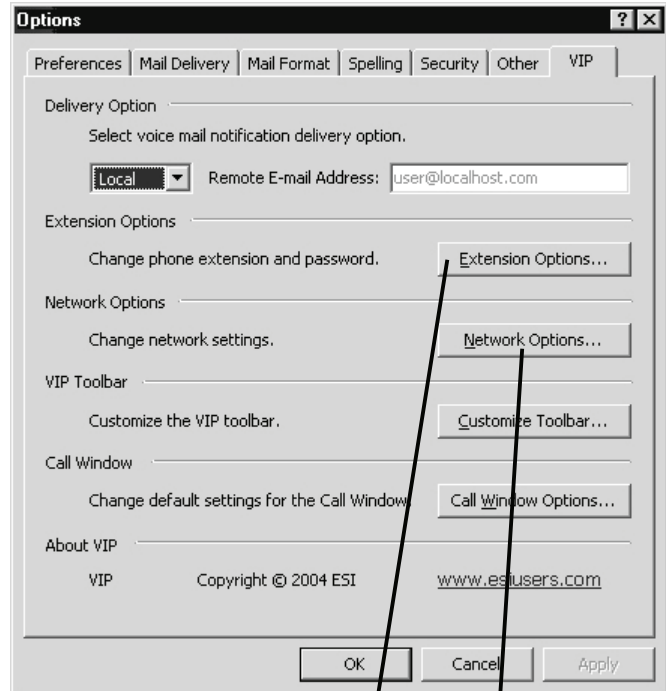
Set extension options

The extension and password you use for *VIP* must match the user's phone system extension and voice mail password.

To change the *VIP* extension and password:

1. Click **Extension Options**. The **VIP Extension Options** window appears.

2. Enter the extension number and current voice mailbox password in the appropriate fields. Then click **OK**. Check this item off the *VIP* setup and test checklist (page 28).
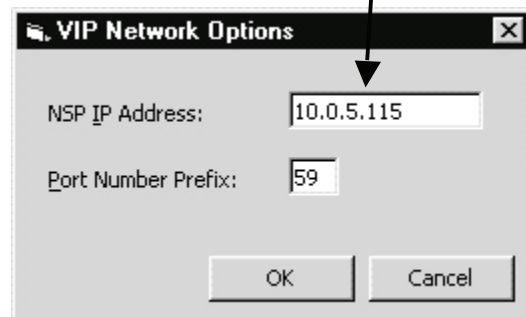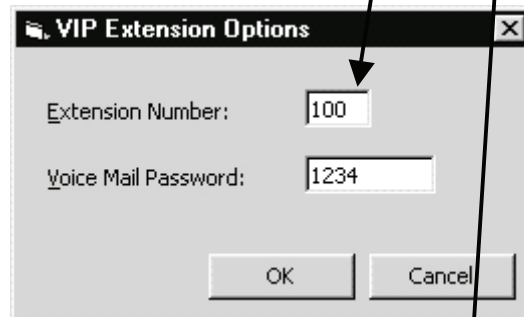
> **Note:** If you use the phone to change the mailbox password, you must update the *VIP* **Extension Options**.

Set network options

To set network options:

1. Click **Network Options**. The **VIP Network Options** window appears.

2. Go to the NSP Installation Worksheet (page 16) and enter the network information for each field. Then, click **OK**. Check this item off the *VIP* setup and test checklist on page 28.

Set up *Outlook* dialing options and properties

You will need to set up *Outlook* dialing rules in order to make calls from *Outlook* or the *VIP* Quick Call list in the Call Window.

1. Click the **VIP** button located on the *VIP* toolbar. You will see a progress bar while the PC retrieves data from the ESI phone system.

2. Click on the *Outlook* **Contacts** folder icon. Highlight any contact with a phone number, right-click, and select **Call Contact**. The **New Call** dialog box will appear.

3. There are two items to set from the **New Call** dialog box: **Dialing Options** *(below)* and **Dialing Properties** (page 25).

Dialing Options

1. In the New Call dialog box, click **Dialing Options**. The **Dialing Options** box will appear.

2. At the bottom of the **Dialing Options** box, there is a pull-down list under **Connect using line**. Scroll through the list and select **ESI VSP IP Line**, as shown *(right)*.
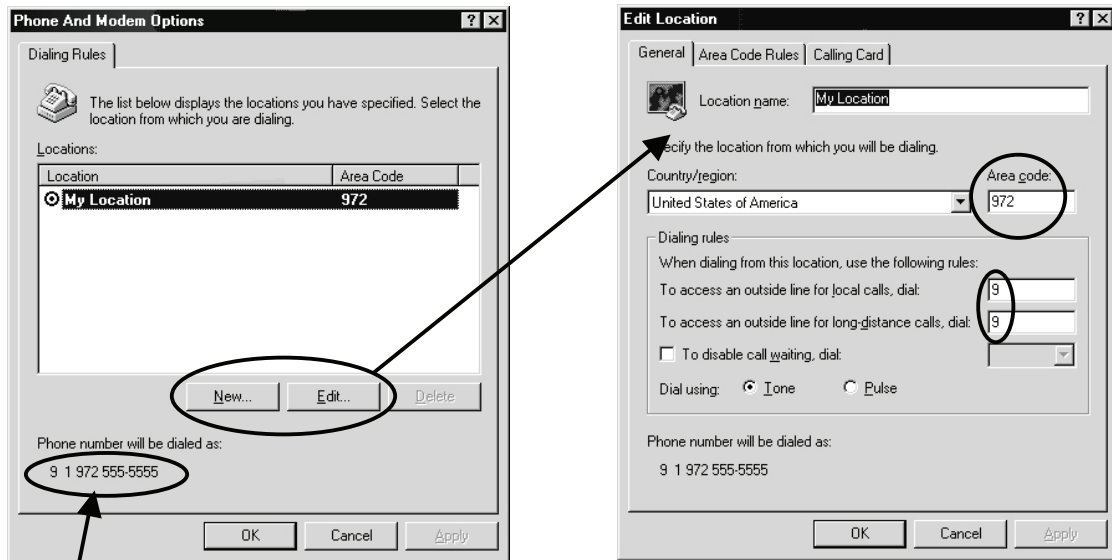
3. Click **OK**.

Dialing Properties

1. In the **New Call** dialog box (see page 24), click **Dialing Properties.** The **Phone and Modem Options** dialog box will appear.

> **Note:** *Outlook 98/ME* and *Outlook NT/2000/XP* have different views when opening **Dialing Properties**. If using *Outlook 98*, you will be taken directly to the **My Locations** tab, which is similar to the second picture *(below right)*.

2. If there are no locations listed in the **Phone and Modem Options** dialog box, click **New**. Otherwise, highlight the location listed and click **Edit**.

3. Next, enter the location's area code.

4. Enter the outside line access number. This number is the same access code (*9* is the most common) you use if dialing from the phone.

Notice that a sample appears, to show you how a number will be dialed from *Outlook*. If this sample doesn't accurately represent how a number should be dialed, go back through the *Outlook* dialing rules setup to ensure you've made all the appropriate selections. (If necessary, consult *Outlook*'s on-line help, under **Help** in the *Outlook* menu bar.)
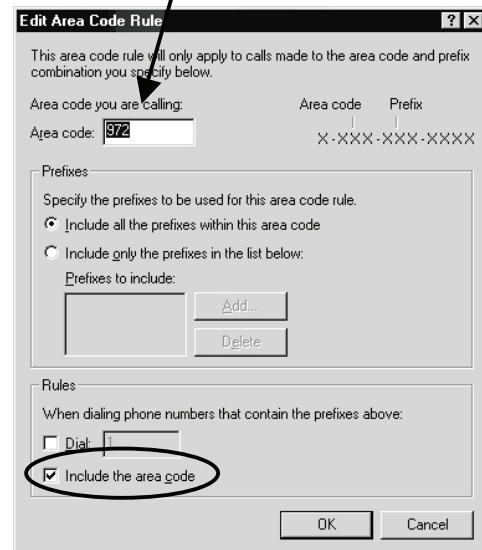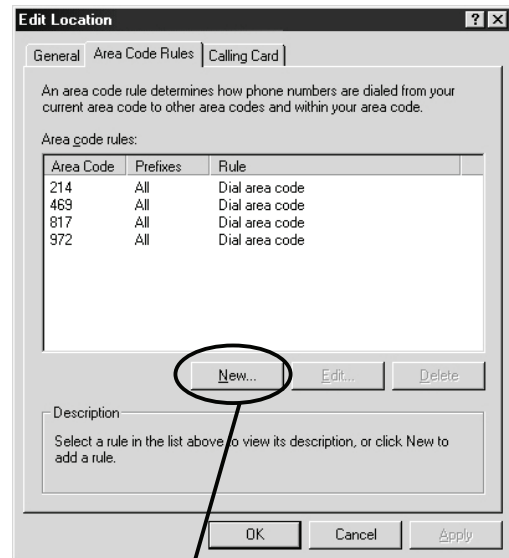
(Continued)

5. Now click the **Area Code Rules** tab.

6. Click **New** to add area codes for your region/area.

> **Example:** In the metropolitan area of Dallas/Fort Worth, Texas, you'll want to add all the area codes (at press time: *214, 469, 817*, and *972*) within your region/area.

7. To include the area when dialing, be sure to check the appropriate box.

8. You are now finished. Click **OK** until no more dialog boxes appear, and check this item off the *VIP* setup and test checklist on page 28.

Uninstalling VIP[1]

1. Close *Outlook* — including any open messages, reminders, or other *Outlook* items, even if they appear in separate windows.

2. Select **Settings** from the *Windows* **Start** menu.

3. Select **Control Panel** and double-click **Add/Remove Programs**.

4. Click on *VIP*, then click **Remove**.

5. When prompted to confirm removal, click **Yes**.

Testing VIP

A few simple tests of the *VIP* features will verify that the NSP and *VIP* are both configured correctly, and unless you need to install *VIP* on a few other PC's, your job will practically be done.

In case you run into problems while testing *VIP*, the *VIP Setup and User's Guide* has a good troubleshooting section that tells you how to fix common problems when using *VIP*. If you run into a problem that you're stuck on, ESI product support contact information can be found on page 29.
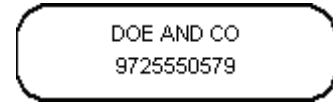
Test preparation

This part's easy — just make sure you've gone through all of the steps in the previous sections of this guide. You should have a copy of the *VIP Setup and User's Guide* nearby in case you need to use the troubleshooting section. Next, open *Outlook* (if its not already running). *VIP* will automatically load with *Outlook*.

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[1] This will not erase *VIP* settings, contacts, logs, etc.

Incoming call alert and answer

1. Go to another phone and call the extension that is associated to the PC that *VIP* and *Outlook* are running on. One or both of the following events will happen.

   a. The **VIP Call Control** window will appear in front of other PC applications. Upon the first ring, you'll see Caller ID information in the display.

   b. A mini-alert (shown, *right*) pops up in the lower right-hand corner of your PC screen, in front of your other PC applications.

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```

2. Answer the call.

   a. If the **VIP Call Control** window is visible, click the **Answer** button. The call will be answered.

   b. If the **VIP Call Control** window is **not** visible, then the mini-alert should be visible. Click the Caller ID information that you see in the mini-alert "balloon". The **VIP Call Control** window will appear in front of other PC applications. Click the **Answer** button. The call will be answered.

3. Click **Release** to hang up. Check this item off the *VIP* setup and test checklist on page 28.

Voice mail notification, playback, and save

1. Call the extension and let the call go to voice mail. Leave a short message in the mailbox.

   a. If the **VIP Call Control** window is visible, you will see the new and old voice mail message counts in the display.

   b. If the **VIP Call Control** window is **not** visible, then the mini-alert should be visible. The mini-alert balloon will display "New Voice Mails". Click the display, and the *Outlook* Inbox will be displayed. You'll see a new voice mail message in the Inbox.

2. Click the voice mail message in the *Outlook* Inbox and click the **Play** button on the *VIP* toolbar. The voice message will start to play.

3. Click the **Save Voice Mail as** … button and select WAV File. A *VIP* Message Manager window will appear to show the progress of the voice mail message being saved as a .WAV file.

4. When the message is done being saved as a WAV file, click on the Open button in the **VIP Message Manager** window. The message will be played in Windows Media Player or other WAV file player[1]. Close the media player after the message is done playing, and Check this item off the *VIP* setup and test checklist (page 28).

Make an outgoing call

1. Open the *Outlook* **Contacts** list and highlight the desired name and then click the *Outlook* toolbar phone icon. A **New Call** box appears, showing the contact's name and number. If the contact you selected has more than one phone number, click the arrow in the number field to select the number you want to call. Once you have the correct phone number, click **Start Call**.

2. Proceed normally with the call. Once the call is completed, click **Release**. Click the **Close** button to close the **New Call** box. Check this item off the *VIP* setup and test checklist.

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[1] If the message doesn't play, then the user probably doesn't have *Windows Media Player* installed. You can get a free installation of *Windows Media Player* from Microsoft. See the *VIP Setup and User's Guide* for instructions on installing *Windows Media Player*.

VIP setup and test checklist

VIP licensing
    VIP licenses correct in Function 81   _____

VIP feature authorization
    VIP enabled in Function 32   _____
    Double-check Function 32   _____

Install *VIP*
    Install the *VIP* software   _____

Configure station and network options
    Set voice mail delivery   _____
    Set extension options   _____
    Set network options   _____
    Set up *Outlook* dialing options and properties   _____

Testing *VIP*
    Incoming call and answer   _____
    Voice mail notification, playback, and save   _____
    Make an outgoing call   _____

Wrapping up

You're done! Nice work! You now know how to install the NSP and *VIP* — and after one or two more installations, you probably won't even need this guide. You've accomplished a lot! You know how to. . .

• Find IP addresses for the NSP and other devices.
• Install, program, and test the NSP.
• Verify *VIP* licensing.
• Install, configure, and test *VIP*.

Corrections and suggestions

If you have any suggestions for changes or improvements to this guide, we'd like to hear from you. Please e-mail any change requests, corrections, or suggestions to *techsupp@esi-estech.com*. You can also fax your suggestions to the attention of Product Management at 972 422-9705.

Where to go for additional help

ESI's Technical Support Center personnel are always ready to assist you Monday through Thursday, 7:00 AM to 7:00 PM, and Fridays 8:00 AM to 5:00 PM Central Time at 800 491-3609. You can also e-mail support questions to *techsupp@esi-estech.com* at any time — your e-mailed support request will be processed by the next business day.

Glossary

10/100 BASE-T	Physical connection type of an Ethernet LAN. Uses CAT 5 patch cables (see below). Almost all hubs or switches that were manufactured since 2001 are 10/100 BASE-T.
CAT 5 patch cables	Eight-conductor copper twisted pair cable with 8-pin connecters (also called *RJ-45 connectors*).
Ethernet	A low level data communications protocol developed by Xerox Corporation in the 1980's. Virtually all modern LAN's use the Ethernet protocol to carry IP traffic between computers and the Internet.
Hub	Used to connect computers together in a local area network (LAN). Acts like a repeater, where all computer connections get all traffic on the hub.
IP	Internet Protocol. *See* TCP/IP
LAN	Local area network. A LAN, provides a standard way to connect many computers together to share resources, such as printers, file servers, Internet access, and the NSP. A simple LAN can be a hub or switch that the NSP and one or more computers are plugged into.
Local area network	*See* LAN.
Patch cables	*See* CAT 5 patch cables
Switch	Used to connect computers together in a local area network (LAN). Similar to a hub, but directs network traffic to individual connections instead of all connections getting all traffic.
TCP/IP	Transmission Control Protocol/Internet Protocol. The suite of standard protocols that virtually all modern computers use to communicate with each other. The language of the Internet.

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