Easy Connection Package For NetWare

Overview

The Easy Connection Package for NetWare provides simple, secure, high-performance Internet access for small or medium-sized businesses using NetWare networks. Based on Internetwork Packet Exchange (IPX)-to-IP translation technology, this package requires only one IP address to connect an entire Novell network to the Internet. This solution enables small and medium-sized businesses using Novell LANs to gain easy and secure connectivity to the Internet and overcome the following challenges:

• Firewall security
• Cost-effective Internet access at every desktop
• Complexity of building a solution from multiple vendors
• Lack of administrative and auditing tools

This solution combines software and hardware to provide both IPX-to-IP gateway functionality and remote network connectivity in standalone products, eliminating the need for separate gateway and bridge/router solutions. The Easy Connection Package for NetWare allows for four wide-area network (WAN) connectivity options: Integrated Services Digital Network (ISDN), Frame Relay, dedicated leased line, and dialup.

The solution comes in 20- or 50-concurrent-user bundles and includes Netscape Navigator Web browsers for each user. The package supports Cisco's new ClickStart™ technology, allowing the router to be configured in minutes using a Web browser. Refer to Appendix A for more information on ClickStart.

The components of the Easy Connection Package for NetWare are:

• Router hardware
• IPeXchange Internet gateway software
• Client drivers
• Netscape Navigator

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The Cisco 1003 and 1004 routers support Ethernet-to-ISDN connectivity and the Cisco 1005 routers support Ethernet-to-Frame Relay, leased line, or asynchronous connectivity, as shown in Figure 1.
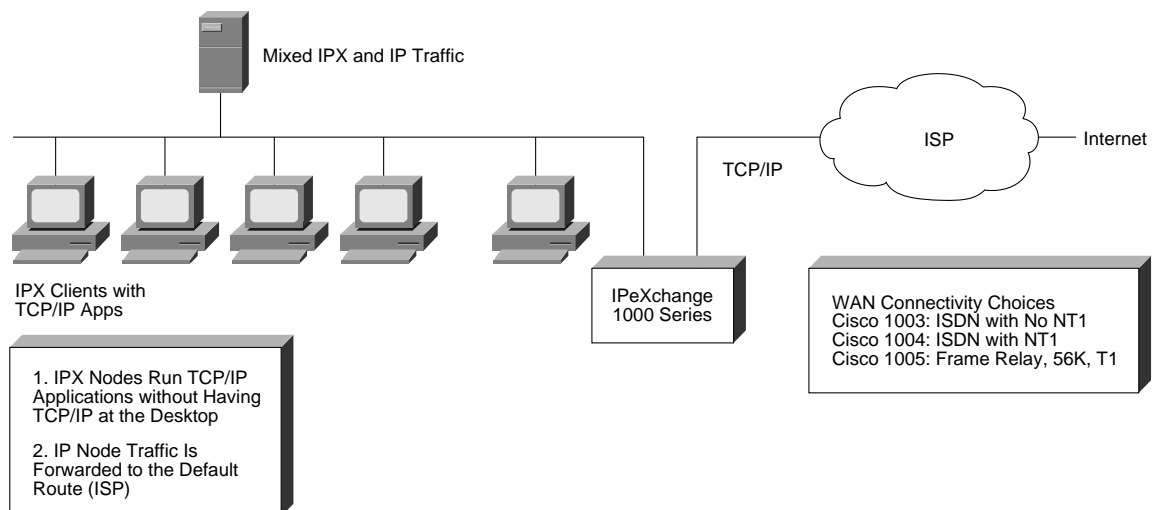
Solution Product Description

The Easy Connection Package for NetWare package is a complete, cost-effective solution, containing everything required to connect Novell NetWare users to the Internet. The package addresses ease of use and leverages previous LAN investments without incurring additional cost to access the Internet.

The Cisco 1000 series routers provide local and wide-area connectivity and the security required for internal Novell LAN users while providing access to the WWW network. This security capability is an integral part of the Cisco Internetwork Operating System (Cisco IOS™) software. Cisco IOS software acts as a secure firewall, preventing intruders on the public Internet from accessing the internal IPX network.

The gateway software is a client/server solution that comes already loaded on the router. The gateway router is the server that connects to both the service provider's WAN services (via ISDN, Frame Relay, leased-line, or asynchronous) and the NetWare Ethernet LAN. The gateway software comes loaded on the router. Depending on the Novell LAN's complexity, this installation can be completed in minutes rather than hours. There is no need to shut down services or LANs and the process is transparent to users.

The client software (PCs) can be distributed easily by leveraging the file-sharing functions of the LAN server. By downloading the Netscape Navigator software from the server to a PC Windows 95 or Windows 3.1 environment, Novell users can easily access the Internet. Refer to Appendix B for additional information on the client software configuration.

Figure 1

Mixed IPX and IP Traffic

ISP — Internet

TCP/IP

IPX Clients with TCP/IP Apps

IPeXchange 1000 Series

WAN Connectivity Choices
Cisco 1003: ISDN with No NT1
Cisco 1004: ISDN with NT1
Cisco 1005: Frame Relay, 56K, T1

1. IPX Nodes Run TCP/IP Applications without Having TCP/IP at the Desktop

2. IP Node Traffic Is Forwarded to the Default Route (ISP)

In summary, the Easy Connection Package for NetWare is an Internet gateway that provides IPX-to-IP gateway functionality, LAN-to-WAN connectivity, and firewall security, making these integrated solutions simple to install, secure, and easy to manage. The Easy Connection Package for NetWare provides direct access to resources on the Internet such as the WWW, news, and Telnet and performs File Transfer Protocol (FTP), with no changes to the user's workstation protocol stack. Refer to Appendix C for additional information on the package configuration.

Components of Solution Package

- Cisco 1003, 1004, or 1005 routers
- Netscape Navigator for PCs
- IPeXchange gateway software (Cisco IOS-based)
- Choice of 20- or 50-concurrent-user licenses

Solution Benefits and Features

- The firewall security inherent to IPeXchange isolates the NetWare server and client workstations from the Internet; IP security features for IP clients include Password Authentication Protocol (PAP), Challenge Handshake Authentication Protocol (CHAP), packet filters, and local passwords to prevent unauthorized access
- "Plug-and-play" installation reduces deployment costs—just plug in the LAN, WAN, and power and configure using Cisco's browser-based ClickStart technology; installation is complete in minutes with no network downtime
- High-Level Data Link Control (HDLC) and standards-based Point-to-Point Protocol (PPP) for interoperability with the widest set of Internet providers
- Up to 4:1 compression, queuing, and other WAN bandwidth optimization features for getting the best performance out of your WAN link at the lowest price

- Cisco IOS software technology provides straightforward upgrade and migration path to future Cisco IOS implementations, thus providing for future flexibility
- Single IP address for the entire desktop PC client population saves on ongoing maintenance
- IP packet routing ensures that mixed IP and IPX workstations can access the Internet through the gateway hardware
- Supports Novell and non-Novell IPX networks (such as Windows for Workgroups)
- Includes a fully supported 20- or 50-user license of Netscape Navigator
- Multiple units can be stacked for scalability, load sharing, and fault tolerance

Architecture

Cisco IOS software and Cisco hardware provide the foundation architecture for this solution, minimizing complexity and time to install, integrate, test, and operate an IPX-to-IP gateway environment.

The Cisco 1000 series routers provide Novell users LAN, WAN, and gateway connectivity to the Internet without changing the local PC environment. The IPeXchange gateway software comes loaded on the router ready to be connected to Novell LANs as well as to the service provider WAN service of choice. This software allows users to gain access to the Internet in minutes.

The Cisco 1000 series Internet gateway feature set includes the IPeXchange server functionality, access to TCP/IP services over IPX networks as well as WAN connectivity, and firewall security between local and remote networks. Other IPX-to-IP gateway software products typically require an expensive, dedicated PC or a NetWare server.

The IPeXchange gateway software is available in both 20- and 50-concurrent-user licenses in three different models:

- The Cisco 1003 router, which supports Ethernet-to-ISDN without a Network Termination 1 (NT1) port, should be used when the ISDN line may be shared with other applications such as voice or fax and in areas where the local telephone carrier supplies the NT1 such as Europe and the Pacific Rim
- The Cisco 1004 router, which supports Ethernet-to-ISDN with an NT1 port, should be used when the ISDN line is going to be dedicated to this application
- The Cisco 1005 router, which supports Ethernet-to-Frame Relay or Ethernet-to-leased line or asynchronous line connectivity, should be used where non-ISDN service is required

Hence, with the Easy Connection Package for NetWare, customers and service providers have a choice of ISDN, Frame Relay, 56K, or T1, eliminating the need for additional servers or routers. The client software comes in two floppies and consists of a client-install Windows 95 or Windows 3.1 setup program and a system communication file. The installation process is easy. To avoid installing the client files on every computer, client files should be distributed by using the existing NetWare file server sharing functions. Place the files in a public folder that all NetWare users can map in order to use the IPX-to-IP gateway via Netscape Navigator software. Refer to Appendix D for additional information on PC LAN support.

The Easy Connection Package for NetWare installation is simple and flexible. Users access the Internet through the use of Netscape Navigator for Windows, minimizing the cost of supporting a TCP/IP stack protocol at the desktop, maximizing the performance of a dedicated router gateway, and preventing intruders from accessing the Novell LAN through router firewall functionality.

WAN Service Issues

When ordering an ISDN line, ensure that the provider discloses the ISDN switch information in order to set up and complete the router configuration procedure. Refer to Appendix E for more information regarding ISDN switch types.

Support

Standard support that includes a 90-day warranty on both hardware and software applies to this package. To execute the warranty, the customer notifies the Cisco Technical Assistance Center (TAC) at 800 553-2447 in the United States or tac@cisco.com.

A customized support package can be designed and given a product number based on customer requirements.

For More Information

Contact a Cisco sales representative or call Cisco Systems in San Jose, California, at 800 553-2447 in the United States.

Appendix A

Router Configuration Instructions Using ClickStart

ClickStart is a Cisco IOS software feature that allows users to configure the IPeXchange Internet gateway software using a Web browser such as Netscape. For configuration examples, refer to the *IPeXchange Internet Gateway User Guide*.

To use ClickStart to configure the router software, follow these steps:

Step 1   Start Netscape on one of the PCs on the IPX network.

Step 2   In the browser's location field, enter http://new-router.cisco.com to get to the router home page located on the IPeXchange Internet gateway router.

Step 3   Select EZ Setup. This link displays the EZ Setup form, which is used to configure the IPeXchange router software.

Step 4   Complete the section on the EZ Setup form that configures the router name and password.

Step 5   Complete the section on the EZ Setup form that configures the WAN interface in the router.

For ISDN interface, use the remote router name, remote phone number, remote CHAP password, ISDN password, ISDN switch type, ISDN interface speed, and Service Provider Identifiers (SPIDs) given by the service provider or network administrator.

For Frame Relay interface, use the IP address, netmask, and data-link connection identifier (DLCI) given by the service provider or network administrator.

Step 6   Complete the section of the EZ Setup form that configures IPX on the router—the router learns the local IPX network number, IPX internal network number, and frame type. These values are entered on the EZ Setup form.

Step 7   Complete the section of the EZ Setup form that configures the IP address of the default router. The default router can direct packets to their destinations if the local router does not know the destination path. Commonly, enter the IP address of a router located at the remote end of the WAN connection.

Step 8   Complete the section of the EZ Setup form that configures IP addresses.

Enter the IP address and netmask of the Ethernet interface on the router. Use the IP address and netmask given by the network administrator or service provider; if the router has a Frame Relay interface, note that the IP address and netmask are different.

Enter or validate the IP address on a Domain Naming Server (DNS).

Step 9   Click the **submit** button to configure the IPeXchange Internet gateway router; after clicking **submit**, quit from Netscape and restart it in order to continue accessing the router home page.

Appendix B

Client Software Components
- Netscape Navigator
- Client DLL and EXE files

PC Requirements
- Microsoft Windows 3.x
- Windows for Workgroups 3.x
- Windows 95

Network
- Novell NetWare 3 or NetWare 4
- Any other IPX-based network (such as Windows for Workgroups)

Appendix C

Decision Matrix

The following questions will help position and select the appropriate Easy Connection for NetWare bundle. There is a choice of Cisco 1000 series hardware with either 4M RAM or 8M RAM (for 20- or 50-concurrent-user Internet access).

Decision Matrix

1) Do you have a Novell Ethernet LAN?

   Yes: Continue to the next question

   No: An Ethernet Novell LAN is required

2) Do you have less than or equal to 20 Novell client users?

   Yes: Continue to the next question

   No: Go to question number 5

3) Is the WAN connectivity ISDN?

   Yes: Continue to the next question

   No: Go to question number 5

4) Will the ISDN be shared with multiple applications (for example, voice, data, fax)?

   Yes: Select the Cisco 1003 router with a 20-user license and 8MB of memory

   No: Select the Cisco 1004 router with an NT1 port, a 20-user license, and 8MB of memory

5) Is the WAN connectivity a Frame Relay or dedicated leased line or asynchronous line?

   Yes: Select the Cisco 1005 router with a 50-user license and 8MB of memory

   No: Easy Connection Package for NetWare is not appropriate

Appendix D

Client Software Configuration

This section briefly describes how to install the client software on the attached Novell PC LANs.

   Prerequisites for installation:

1) PC with one of the following operating systems:

- Windows 3.1, enhanced mode
- Windows for Workgroups 3.11
- Windows 95

2) IPX/Sequenced Packet Exchange (SPX) driver software (versions and files required)

3) IPXODI Version 3.0 or later (located nwclient)

4) LSL Version 2.12 or later (located/nwclient)

5) NWIPXSPX.DLL Version 4.10 or later (located/windows or windows/system)

6) VIPX.386 Version 1.19 or later (located/windows or windows/system)

Note: Make sure that the IPX/SPX frame type and the NWLINK frame type are set to the same value by viewing the file called net.cfg. If the frame types are the same, close the file and proceed to the "Run the Setup Program." For more information on frame types, check the *IPeXchange User's Guide.*

   Start the installation of the client software by typing:

```
A: SETUP
Select: Express Setup
```
   To avoid installing the client files on every computer, install them on the NetWare file server. Place the files in a public folder that is on the search path, such as F:\public.

This program creates the icons and program group required for the IPeXchange client software. It also makes some changes to system files such as win.ini to ensure adequate allocation of computer resources during program execution. Refer to the *IPeXchange User's Guide* for more information.

Once this process is complete, Novell users will have access to the Netscape Navigator via a Windows 95 and Windows 3.1 environment. Netscape Navigator will be installed as a Windows application. A Windows icon will be available automatically on each PC user's environment. Users click on the Netscape Windows icon to access the WWW and Internet services that the Easy Connection Package for NetWare offers.

Appendix E

ISDN Switch Types

Table 1 lists some of the ISDN switch types around the world. Depending on the ISDN provider's equipment type, the information helps determine the ISDN switch type in order to complete the router configuration global parameters.

Table 1

ISDN Switch Type	Description
None	Switch type not defined
Australia	
Basic-ts013	Australian TS013
Europe	
Basic-ltr6	German 1TR6 ISDN switches
Basic-nwnet3	Norwegian NET3 ISND switches
Basic-net3	NET3 ISDN (UK and others)
vn2	French VN2
vn3	French VN3
Japan	
ntt	Japanese NTT ISDN
North America	
Basic-5ess	AT&T basic rate
Basic-dms 100	NT DMS-100 basic rate
Basic-nil	National ISDN-1
New Zealand	
Basic-nznet3	New Zealand NET3

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