



## Novell IPX Overview

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Note

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Effective with Cisco IOS Release 15.1(3)S, 15.2(2)T, 15.1(1)SY, and 15.2(1)E, this feature is not supported in Cisco IOS software.

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### Feature History

Release	Modification
Cisco IOS	For information about feature support in Cisco IOS software, use Cisco Feature Navigator.
Cisco IOS XE Release 2.1	This feature was introduced on Cisco ASR 1000 Series Routers.

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The Cisco IOS software supports a variety of routing protocols. The *Cisco IOS Novell IPX Configuration Guide* discusses Novell IPX network protocols; it contains these sections:

- Novell IPX
- Configuring Novell IPX
- Novell IPX Configuration Examples

The *Cisco IOS IP Configuration Guide* discusses the following network protocols:

- IP
- IP Routing

This overview chapter provides a high-level description of Novell IPX. For configuration information, see the appropriate section in this publication.

For the latest feature information and caveats, see the release notes for your platform and software release. Additionally, use Cisco Feature Navigator to find information about feature, platform, and software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>.



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# Novell IPX

This section offers background information and briefly describes the Cisco implementation of Novell IPX.

## Background on Novell IPX

Novell Internetwork Packet Exchange (IPX) is derived from the Xerox Network Systems (XNS) Internet Datagram Protocol (IDP). IPX and XNS have the following differences:

- IPX and XNS do not always use the same Ethernet encapsulation format.
- IPX uses the Novell proprietary Service Advertising Protocol (SAP) to advertise special network services. File servers and print servers are examples of services that typically are advertised.
- IPX uses delay (measured in ticks) while XNS uses hop count as the primary metric in determining the best path to a destination.

## The Cisco Implementation of Novell IPX

The Cisco implementation of the Novell IPX protocol is certified to provide full IPX routing functionality.

### IPX MIB Support

Cisco supports the IPX MIB (currently, read-only access is supported). The IPX Accounting group represents one of the local Cisco-specific IPX variables we support. This group provides access to the active database that is created and maintained if IPX accounting is enabled on a router or access server.

### IPX Enhanced IGRP Support

Cisco IOS software supports IPX Enhanced IGRP, which provides the following features:

- Automatic redistribution—IPX Routing Information Protocol (RIP) routes are automatically redistributed into Enhanced IGRP, and Enhanced IGRP routes are automatically redistributed into RIP. If desired, you can turn off redistribution. You also can completely turn off Enhanced IGRP and IPX RIP on the device or on individual interfaces.
- Increased network width—With IPX RIP, the largest possible width of your network is 15 hops. When Enhanced IGRP is enabled, the largest possible width is 224 hops. Because the Enhanced IGRP metric is large enough to support thousands of hops, the only barrier to expanding the network is the transport layer hop counter. Cisco works around this problem by incrementing the transport control field only when an IPX packet has traversed 15 routers, and the next hop to the destination was learned via Enhanced IGRP. When a RIP route is being used as the next hop to the destination, the transport control field is incremented as usual.
- Incremental SAP updates—Complete SAP updates are sent periodically on each interface until an Enhanced IGRP neighbor is found, and thereafter only when changes are made to the SAP table. This procedure works by taking advantage of the Enhanced IGRP reliable transport mechanism, which means that an Enhanced IGRP peer must be present for incremental SAPs to be sent. If no peer exists on a particular interface, periodic SAPs will be sent on that interface until a peer is found. This functionality is automatic on serial interfaces and can be configured on LAN media.

## LANE Support

Cisco IOS software supports routing IPX between Ethernet-emulated LANs and Token Ring-emulated LANs. For more information on emulated LANs and routing IPX between them, refer to the “Configuring LAN Emulation” chapter of the *Cisco IOS Switching Services Configuration Guide*.

## VLAN Support

Cisco IOS software supports routing IPX between VLANs. Users with Novell NetWare environments can configure any one of the four IPX Ethernet encapsulations to be routed using ISL encapsulation across VLAN boundaries. For more information on VLANs and routing IPX between them over ISL, refer to the “Configuring Routing Between VLANs with ISL Encapsulation” chapter of the *Cisco IOS Switching Services Configuration Guide*.

## Multilayer Switching Support

Cisco IOS software supports IPX Multilayer Switching (MLS). For more information on IPX MLS, refer to the “Multilayer Switching” chapter of the *Cisco IOS Switching Services Configuration Guide*.

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