

Subinterfaces

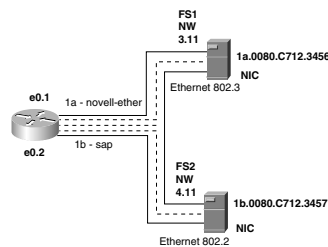
Subinterfaces allow a single physical interface to support multiple logical subinterfaces or networks. Novell IPX subinterfaces have the following characteristics:

- Each subinterface must have a distinct network number and encapsulation type.
- All clients and servers using the same network number must also have the same encapsulation type.
- An interface can have multiple encapsulation types only if multiple network numbers are assigned to that interface.

You can assign multiple network numbers to a single interface using subinterfaces or by assigning primary and secondary networks on the interface. In the figure, the router is configured with two subinterfaces, allowing it to communicate with two servers using different encapsulation types. The two servers cannot communicate with each other directly, because they use different encapsulation types (the router can provide connectivity).

Here's the procedure for configuring IPX:

```
RouterA>enable
RouterA#config term
RouterA(config)#ipx routing
RouterA(config)#ipx maximum-paths 2
RouterA(config)#interface ethernet 0.1
RouterA(config-if)#ipx network 9e encapsulation novell-ether
RouterA(config-if)#exit
RouterA(config)#exit
RouterA#show ipx interface
```



Troubleshooting IPX Routing

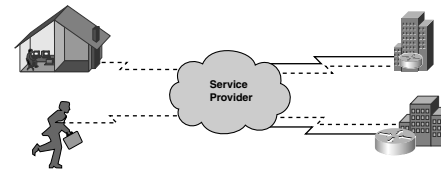
The following commands can be used to troubleshoot IPX routing:

- **debug ipx routing activity**—Displays information about IPX routing update packets
- **debug ipx sap**—Displays information about IPX SAP packets
- **ping ipx**—Checks IPX host reachability and network connectivity

Configuring IPX Routing Summary

- The three major commands used to configure IPX routing are **ipx routing**, **ipx maximum-paths**, and **ipx network**.
- Subinterfaces allow a single interface to support multiple logical networks and enable multiple encapsulations per interface.

WAN Concepts and Terminology



Wide-area networks (WANs) connect networks, users, and services across broad geographic areas. Companies use WANs to connect company sites for information exchange.

Three WAN Connection Types

WAN services are generally leased from service providers on a subscription basis. There are three main types of WAN connections (services):

- **Leased-line**—Provides a preestablished connection through the service provider's network (WAN) to a remote network. Leased lines provide a reserved connection for the client but are costly. Leased-line connections are typically synchronous serial connections with speeds up to 45 Mbps (E3).
- **Circuit-switched**—Provides a dedicated circuit path between sender and receiver for the duration of the "call." Circuit switching is used for basic telephone service or Integrated Services Digital Network (ISDN). Circuit-switched connections are best for clients that require only sporadic WAN usage.

