APPENDIX A

Cisco IOS Software Interoperability with the Cisco 700 Series Routers

This appendix lists several interoperability issues that exist between Cisco Internetwork Operating System (Cisco IOS) software and the Cisco 700 series routers. These issues must be considered if you are connecting your Cisco 700 series router to a router running Cisco IOS software.

This appendix contains the following sections:

- Combinet Packet Protocol
- Multilink PPP Encapsulation
- IP Control Protocol and IPX Control Protocol
- Dynamic Routing Protocols
- Compression
- Bridging to a Router Running Cisco IOS Software

Combinet Packet Protocol

The default ISDN packet encapsulation protocol for the Cisco 700 series routers is Combinet Packet Protocol (CPP). If you are connecting to a router running Cisco IOS software, you must change the encapsulation to Point-to-Point Protocol (PPP). Use the **set encapsulation** command to change the encapsulation protocol for a profile:

```
765:2505> set encapsulation ppp
```

Multilink PPP Encapsulation

The Cisco 700 series routers implement multilink PPP, which is available in Cisco IOS Release 11.0(3) or later. You must disable multilink PPP in the following two environments:

- You are connecting your Cisco 700 series router to a router running a Cisco IOS release prior to 11.0(3).
- You are connecting your Cisco 700 series router to a router running a Cisco IOS release 11.0(3) or later, *and* you are not using multilink PPP.

Use the **set ppp multilink** command at the system level to disable multilink PPP, as follows:

```
766> set ppp multilink off
```

IP Control Protocol and IPX Control Protocol

When you configure a Cisco 700 series router for connection to a router running Cisco IOS software using IP routing, it must be configured for Internet Protocol Control Protocol (IPCP).

If you are connecting to a router running Cisco IOS software with Internetwork Packet Exchange Protocol (IPX) routing, you must configure the router for Internetwork Packet Exchange Control Protocol (IPXCP).

Use the **set ip framing** or the **set ipx framing** command to enable IPCP or IPXCP for individual profiles. In both cases, this is accomplished by setting IP or IPX framing to none.

The following example illustrates IPCP enabled by disabling IP framing:

```
766:2503> set ip framing none
```

The following example illustrates IPXCP enabled by disabling IPX framing:

```
766:2503> set ipx framing none
```

Note Do not set the **ip framing** or the **ipx framing** commands to **none** when configuring a LAN profile.

Dynamic Routing Protocols

The Cisco 700 series routers implement RIP Version 2 and demand RIP. These two proposed standards are not implemented in Cisco IOS software. If you are connecting your router to a router running Cisco IOS software, and you want to use dynamic routing protocol, you must configure the Cisco 700 series routers for RIP Version 1 and disable demand RIP.

Use the **set ip rip** command as follows to set the dynamic routing to use RIP version 1:

```
766> set ip rip version 1
```

Use the **set ip rip update** command as follows to disable demand RIP:

```
766> set ip rip update periodic
```

Compression

Cisco 700 series routers using software versions prior to Software Release 3.2 support compression over CPP. Routers using Software Release 3.2 and later support compression over both CPP and compression control devices that support CCP, including routers running Cisco IOS software.

Bridging to a Router Running Cisco IOS Software

It is possible to bridge data over ISDN to and from Cisco ISDN routers. Depending on your network environment, this might be an ideal solution. Bridging offers configuration simplicity with few concerns regarding network address space limitations and unroutable protocols. Bridging also offers compatibility with other products that need to bridge.

When bridging, you do not have the same ISDN line control that routing access lists provide. When bridging protocols such as Novell IPX, AppleTalk, or NetBIOS, it is possible for the ISDN line to remain connected for long periods of time. This can result in high ISDN usage charges. If bridging is the only solution for your environment, we recommend monitoring the ISDN line connection.

Cisco IOS Software Release 11.1 and earlier limits the number of simultaneous ISDN bridge sessions to one per interface.