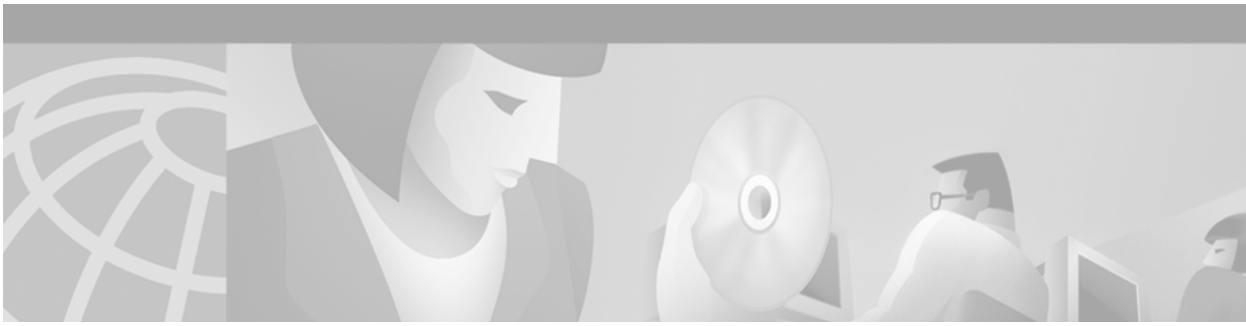

Release Notes for the SOHO 70 Series Routers and the Cisco 800 Series Routers for Cisco IOS Release 12.2(1)XE

February 13, 2002

These release notes for the Cisco 800 Series Routers and the SOHO 70 Series Routers describe the enhancements provided in Cisco IOS Release 12.2(1)XE2. These release notes are updated as needed. Use these release notes with *Cross-Platform Release Notes for Cisco IOS Release 12.2* located on Cisco.com and the Documentation CD-ROM.

For a list of the software caveats that apply to Cisco IOS Release 12.2(1)XE2, see the "Caveats" section on page 15 and *Caveats for Cisco IOS Release 12.2 T*. The caveats document is updated for every maintenance release and is located on Cisco.com and the Documentation CD-ROM.

Contents

These release notes discuss the following topics:

CISCO SYSTEMS

Corporate Headquarters:
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System Requirements

This section describes the system requirements for Release 12.2(1)XE2 and includes the following sections:

Memory Requirements

Table 1 and Table 2 provide the memory requirements for the Cisco IOS feature sets supported by Cisco IOS Release 12.2(1)XE2 on the SOHO 70 Series Routers and the Cisco 800 Series Routers.

Table 1 Memory Requirements for the SOHO 70 Series Routers

Platforms	Image Name	Image	Required Flash Memory	Required DRAM Memory	Runs From
SOHO 78 routers	SOHO 78 Series IOS IP	soho78-y1-mz	8 MB	16 MB	RAM

Table 2 Memory Requirements for the Cisco 800 Series Routers

Platforms	Image Name	Image	Required Flash Memory	Required DRAM Memory	Runs From
Cisco 806 routers	Cisco 806 Series IOS IP	c806-y6-mz	8 MB	16 MB	RAM
	Cisco 806 Series IOS IP Plus	c806-sy6-mz	8 MB	16 MB	RAM
	Cisco 806 Series IOS IP/FW	c806-oy6-mz	8 MB	16 MB	RAM
	Cisco 806 Series IOS IP/FW Plus IPSec 3DES	c806-k9osy6-mz	8 MB	20 MB	RAM
Cisco 828 routers	Cisco 828 Series IOS IP	c828-y6-mz	8 MB	16 MB	RAM
	Cisco 828 Series IOS IP Plus	c828-sy6-mz	8 MB	20 MB	RAM
	Cisco 828 Series IOS IP/FW	c828-oy6-mz	8 MB	20 MB	RAM
	Cisco 828 Series IOS IP/FW Plus IPSec 3DES	c828-k9osy6-mz	8 MB	24 MB	RAM

Hardware Supported

Cisco IOS Release 12.2(1)XE2 supports the following Cisco routers:

- SOHO 78
- Cisco 806
- Cisco 828

For detailed descriptions of new hardware features, see New Hardware Features in Release 12.2(1)XE, page 11.

Cisco 806 Router

The Cisco 806 router provides the following key hardware features:

- Provides connection to 10BaseT (10-Mbps) Ethernet networks and is compatible with 10/100-Mbps devices.
- Flash memory: The Cisco IOS uses the current default of 8 MB for loading Cisco IOS images.
- Webflash: 2 MB of Flash memory reserved for use by the Cisco Router Web Setup software.
- Cisco 806 Router Dynamic RAM: Default is 16 MB of DRAM and is expandable to 32 MB, using 4-MB, 8-MB, and 16-MB DIMM cards.
- The central processing unit is a 50 MHz MPC 855T RISC processor.
- Supports Cisco IOS software.
- Color-coded ports and cable reduce the chance of cabling errors.
- Routers can be stacked or mounted on a wall.
- Cable lock for physically securing the router.
- The routers provide locking power connectors and a Kensington-compatible locking slot.

Table 3 summarizes Cisco 806 router ports.

Table 3 Cisco 806 Router Ports

Port Type	Description
Ethernet Port	One 10BaseT (RJ-45). Connects to broadband modem or Ethernet switch.
Ethernet Hubbed Ports	Four 10BaseT (RJ-45). Connect to Ethernet network devices.
Console Port	One (RJ-45).

SOHO 78 and Cisco 828 Routers

The SOHO 78 and Cisco 828 routers provide the following key hardware features:

- Provide connection to 10BaseT (10-Mbps) Ethernet networks and is compatible with 10/100-Mbps devices.
- Provide connection to G.991.2 (digital-encoding standard) symmetrical high-speed digital subscriber line (G.SHDSL) networks.
- Flash memory: The Cisco IOS uses the current default of 8 MB for loading Cisco IOS images, upgradable by an additional 8 MB.

- Webflash: 2 MB of Flash memory reserved for use by the Cisco Router Web Setup software.
- Dynamic RAM: Default is 16 MB of DRAM and is expandable to 32 MB, using 4-MB, 8-MB, and 16-MB DIMM cards.
- The central processing unit is a 50 MHz MPC 855T RISC processor.
- Support Cisco IOS software.
- Color-coded ports and cables, which reduce the chance of cabling errors.
- Support router stacking or mounting on a wall.
- Accept a cable lock for physically securing the routers.
- Provide locking power connectors.

Table 3 summarizes SOHO 78 and Cisco 828 router ports.

Table 4 Cisco SOHO 78 and Cisco 828 Router Ports

Port Type	Description
Ethernet Hubbed Ports	Four 10BaseT (RJ-45). Connect to Ethernet network devices.
G. SHDSL Port	One (RJ-11). Provides connection to G. SHDSL networks.
Console Port	One (RJ-45).

Determining the Software Version

To determine the version of Cisco IOS software running on your SOHO 78, Cisco 806 or Cisco 828 router, log in to the router and enter the **show version** EXEC command. The following sample displays command output from a Cisco 806 router running Release 12.2(1)XE2:

```
Router> show version
Cisco Internetwork Operating System Software
IOS (tm) 12.2 Software (c806-y6-mz), Version 12.2(1)XE2, RELEASE SOFTWARE
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, see Upgrading the Cisco IOS Software Release in Cisco Routers and Modems located at:
http://www.cisco.com/warp/public/620/6.html

Feature Set Tables

The Cisco IOS software is packaged in feature sets consisting of software images—depending on the platform. Each feature set contains a specific set of Cisco IOS features. Release 12.2(1)XE2 supports the same feature sets as Releases 12.2 T, but Release 12.2(1)XE2 can include new features supported by the SOHO 70 Series Routers and the Cisco 800 Series Routers. Table 5 and Table 6 list the feature sets supported by the SOHO 70 Series Routers and the Cisco 800 Series Routers.

Table 5 Feature Set Supported by the SOHO 78 Routers

Image Name	Feature Set	Software Image	Platform
SOHO 78 Series IOS IP	IP	soho78-y1-mz	SOHO 78 routers

Table 6 Feature Sets Supported by the Cisco 806 and 828 Routers

Image Name	Feature Set	Software Image	Platform
Cisco 806 Series IOS IP	IP	c806-y6-mz	Cisco 806 routers
Cisco 806 Series IOS IP Plus	IP, Plus	c806-sy6-mz	
Cisco 806 Series IOS IP/FW	IP, FW	c806-oy6-mz	
Cisco 806 Series IOS IP/FW Plus IPSec 3DES	IP, FW, Plus, IPSec 3DES	c806-k9osy6-mz	
Cisco 828 Series IOS IP	IP	c828-y6-mz	Cisco 828 routers
Cisco 828 Series IOS IP Plus	IP, Plus	c828-sy6-mz	
Cisco 828 Series IOS IP/FW	IP, FW	c828-oy6-mz	
Cisco 828 Series IOS IP/FW Plus IPSec 3DES	IP, FW, Plus, IPSec 3DES	c828-k9osy6-mz	

Table 7 lists the features and feature sets supported by the SOHO routers in Cisco IOS Release 12.2(1)XE2. Table 8 lists the features and feature sets supported by the Cisco 806 routers in Cisco IOS Release 12.2(1)XE2 and Table 9 lists the features and feature sets supported by the Cisco 828 routers in Cisco IOS Release 12.2(1)XE2. The tables use the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.

Note These feature set tables only contain a selected list of features. These tables are not cumulative—nor do they list all the features in each image.

Table 7 Feature List by Feature Set for the SOHO 78 Routers

	Feature Sets
Features	**IP**
Address Conservation	
DHCP Client Address Negotiation	Yes
DHCP Server, Relay Agent	Yes
IPCP Address Negotiation	Yes
NAT Many to One (PAT)	Yes
NAT Many to Many (Multi-NAT)	Yes
Bandwidth Optimization	
NetBIOS Name Caching	No
STAC Compression	Yes

Table 7 Feature List by Feature Set for the SOHO 78 Routers (continued)

Features	Feature Sets IP
Business-Class Quality of Service	
ATM TX Ring Programming	Yes
CBR, VBRnrt, UBR Traffic Classes	No
Class-Based Weighted Fair Queuing	No
LFI/LLQ	No
Per-Virtual Circuit Queuing	No
Per-Virtual Circuit Shaping	No
Weighted Random Early Detection	No
Business-Class Security	
GRE Tunneling	No
IP Basic and Extended Access Lists	Yes
NetBIOS Access Lists	No
PAP/CHAP Authentication	Yes
Route and Router Authentication	No
Ease of Use and Deployment	
Cisco Router Web Setup (CRWS)	Yes
Fast Switching	Yes
Easy IP Phase I and II	Yes
HTTP Server	Yes
NTP Server, NTP Client	No
PPPoE MTU Adjustment	Yes
Enhanced Security	
Cisco IOS Firewall	No
Context-Based Access Control Lists	No
Denial-of-Service Detection	No
IPSec Encryption with 3DES	No
Java Blocking	No
RADIUS	No
Real-Time Alerts	No
TACACS+ (also a management feature)	No
LAN	
IP	Yes
Transparent Bridging	Yes

Table 7 Feature List by Feature Set for the SOHO 78 Routers (continued)

Features	Feature Sets IP
Management	
CiscoView	Yes
DNS Resolver	Yes
OpenDSL	No
SNTP	Yes
SNMP, Telnet, Console Port	Yes
SSH Telnet	No
Syslog	Yes
TFTP Client and Server	Yes
Performance	
Service Assurance Agent (SSA)	No
Routing	
IP Enhanced IGRP	No
IP Multicast (relay only)	No
IP-Policy Routing	No
RIP/SAP WAN	No
Policy-based Routing	No
PPPoE Termination-End Routing (over Ethernet)	Yes
RIP, RIPv2	Yes

Table 8 Feature List by Feature Set for the Cisco 806 Routers

Features	Feature Sets IP	IP Plus	IP/FW	IP/FW Plus IPSec 3DES
Address Conservation				
DHCP Client Address Negotiation	Yes	Yes	Yes	Yes
DHCP Server, Relay Agent	Yes	Yes	Yes	Yes
IPCP Address Negotiation	Yes	Yes	Yes	Yes
NAT Many to One (PAT)	Yes	Yes	Yes	Yes
NAT Many to Many (Multi-NAT)	Yes	Yes	Yes	Yes
Bandwidth Optimization				
NetBIOS Name Caching	No	No	No	No
STAC Compression	Yes	Yes	Yes	Yes

Table 8 Feature List by Feature Set for the Cisco 806 Routers (continued)

Features	Feature Sets			
	IP	IP Plus	IP/FW	IP/FW Plus IPSec 3DES
Business-Class Quality of Service				
Class-Based Weighted Fair Queuing	No	No	No	No
LFI/LLQ	No	No	No	No
Per-Virtual Circuit Queuing	No	No	No	No
Weighted Random Early Detection	No	No	No	No
Business-Class Security				
GRE Tunneling	No	Yes	No	Yes
IP Basic and Extended Access Lists	Yes	Yes	Yes	Yes
NetBIOS Access Lists	No	No	No	No
PAP/CHAP Authentication	Yes	Yes	Yes	Yes
Route and Router Authentication	Yes	Yes	Yes	Yes
Ease of Use and Deployment				
Cisco Router Web Setup (CRWS)	Yes	Yes	Yes	Yes
Fast Switching	Yes	Yes	Yes	Yes
Easy IP Phase I and II	Yes	Yes	Yes	Yes
HTTP Server	Yes	Yes	Yes	Yes
NTP Server, NTP Client	No	Yes	No	Yes
PPPoE MTU Adjustment	Yes	Yes	Yes	Yes
Enhanced Security				
Cisco IOS Firewall	No	No	Yes	Yes
Context-Based Access Control Lists	No	No	Yes	Yes
Denial-of-Service Detection	No	No	Yes	Yes
IPSec Encryption with 3DES	No	No	No	Yes
Java Blocking	No	No	Yes	Yes
RADIUS	No	Yes	No	Yes
Real-Time Alerts	No	No	Yes	Yes
TACACS+ (also a management feature)	No	Yes	No	Yes
LAN				
IP	Yes	Yes	Yes	Yes
Transparent Bridging	Yes	Yes	Yes	Yes
Management				
CiscoView	Yes	Yes	Yes	Yes
DNS Resolver	Yes	Yes	Yes	Yes
OpenDSL	No	No	No	No

Table 8 Feature List by Feature Set for the Cisco 806 Routers (continued)

Features	Feature Sets			
	IP	IP Plus	IP/FW	IP/FW Plus IPSec 3DES
SNTP	Yes	Yes	Yes	Yes
SNMP, Telnet, Console Port	Yes	Yes	Yes	Yes
SSH Telnet	No	Yes	No	Yes
Syslog	Yes	Yes	Yes	Yes
TFTP Client and Server	Yes	Yes	Yes	Yes
Performance				
Service Assurance Agent (SSA)	No	Yes	No	Yes
Routing				
IP Enhanced IGRP	No	Yes	No	Yes
IP Multicast (relay only)	No	Yes	No	Yes
IP-Policy Routing	No	Yes	No	Yes
IPX RIP/SAP IPX WAN	No	No	No	No
Policy-based Routing	No	Yes	No	Yes
PPPoE Termination-End Routing (over Ethernet)	Yes	Yes	Yes	Yes
RIP, RIPv2	Yes	Yes	Yes	Yes

Table 9 Feature List by Feature Set for the Cisco 828 Routers

Features	Feature Sets			
	IP	IP Plus	IP Firewall	IP/IPX Firewall Plus IPSec 3DES
Routing/Bridging				
IP	Yes	Yes	Yes	Yes
PPPoE, PPPoA, RFC1483 routed or bridged	Yes	Yes	Yes	Yes
Transparent Bridging	Yes	Yes	Yes	Yes
Routing Protocols				
IP Enhanced IGRP	No	Yes	No	Yes
IP Multicast (relay only)	No	Yes	No	Yes
IP-Policy Routing (also listed in QoS)	No	Yes	No	Yes
RIP, RIPv2	Yes	Yes	Yes	Yes
Business-Class Security				
GRE Tunneling	No	Yes	No	Yes
IP Basic and Extended Access Lists, Named Access Lists	Yes	Yes	Yes	Yes

Table 9 Feature List by Feature Set for the Cisco 828 Routers

Features	Feature Sets			
	IP	IP Plus	IP Firewall	IP/IPX Firewall Plus IPSec 3DES
IPSec 56 Bit & 3DES Encryption	No	No	No	Yes
PAP, CHAP, Local Password	Yes	Yes	Yes	Yes
Route and Router Authentication	Yes	Yes	Yes	Yes
SSH	No	No	No	Yes
Stateful Firewall	No	No	Yes	Yes
Business-Class Quality of Service				
CBR, VBRnrt, UBR Traffic Classes	Yes	Yes	Yes	Yes
IP Policy Routing	Yes	Yes	Yes	Yes
LFI, LLQ	No	Yes	No	Yes
Per-VC Queuing	Yes	Yes	Yes	Yes
Per-VC Shaping	Yes	Yes	Yes	Yes
Weighted Random Early Detection	Yes	Yes	Yes	Yes
Bandwidth Optimization				
STAC Compression	Yes	Yes	Yes	Yes
Ease of Use and Deployment				
Easy IP Phase I and II	Yes	Yes	Yes	Yes
Web based configuration tool – Cisco Router Web Set Up tool	Yes	Yes	Yes	Yes
Management				
CiscoView Support	Yes	Yes	Yes	Yes
NTP Server, NTP Client	No	No	No	No
SA Agent	No	Yes	No	Yes
SNTP	Yes	Yes	Yes	Yes
SNMP, Telnet, Console Port	Yes	Yes	Yes	Yes
Syslog	No	Yes	No	Yes
TACACS+ (also a security feature)	Yes	Yes	Yes	Yes
TFTP Client and Server	Yes	Yes	Yes	Yes
Address Conservation				
NAT Many to One (PAT)	Yes	Yes	Yes	Yes
NAT Many to Many (Multi-NAT)	Yes	Yes	Yes	Yes
IPCP Address and Subnet Mask Negotiation	Yes	Yes	Yes	Yes
DHCP Client Address Negotiation	Yes	Yes	Yes	Yes
DHCP Server	Yes	Yes	Yes	Yes
DHCP Server Import	Yes	Yes	Yes	Yes

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 800 series for Release 12.2(1)XE2 and above:

New Hardware Features in Release 12.2(1)XE1

The following sections list the new hardware features supported by the Cisco 800 Series Routers for Release 12.2(1)XE1.

Cisco 828 and Cisco 78 Routers

The Cisco 828 and Cisco 78 routers connect corporate telecommuters and small offices to corporate LANs and the Internet through Internet Service Providers (ISPs), using symmetrical high-data-rate digital subscriber lines (SHDSLs). The routers provides bridging and multiprotocol routing between LAN and WAN ports.

New Hardware Features in Release 12.2(1)XE

The following sections list the new hardware features supported by the Cisco 800 Series Routers for Release 12.2(1)XE.

Cisco 806 Router

The Cisco 806 router connects corporate telecommuters and small offices to corporate LANs and the Internet through Internet Service Providers (ISPs), using a broadband or Ethernet connection. The router provides bridging and multiprotocol routing between LAN and WAN ports.

New Software Features in Release 12.2(1)XE1

The following sections list the new software features supported by the Cisco 800 Series Routers for Release 12.2(1)XE1.

Digital Subscriber Line Features on the Cisco 828 Router

The Cisco 828 business-class G.shdsl router provides business-class functionality for small offices and telecommuters by supporting business-class security, differentiated classes of service, and managed network services. G.shdsl is the latest version of digital subscriber line (DSL) technology and provides businesses a symmetrical service for bandwidth intensive applications.

G.shdsl supports upstream and downstream speeds up to 2.3 MB per second, and reaches customers up to 28,000 feet from a Telco or Post, Telephone, and Telegraph (PTT) Office. G.shdsl is a standards-based technology and the Cisco 828 router supports the ITU G.991.2 standard.

The DSL features on the Cisco 828 router introduce new command line interface (CLI) commands. These ATM interface commands set the DSL line rate speed and specify whether the Cisco 828 router is customer premises equipment (CPE) or central office (CO) equipment. In addition, two associated new debug commands are available for troubleshooting.

New Software Features in Release 12.2 T

For information regarding the features supported in Cisco IOS Release 12.2 T, refer to the Cross-Platform Release Notes and New Feature Documentation links at the following location on Cisco.com:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/index.htm

This URL is subject to change without notice. If it changes, point your web browser to Cisco.com, and click on the following path:

Service & Support: **Technical Documents**: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **Cisco IOS Release 12.2**

Limitations and Restrictions

Cisco 806 Router Limitations

boot system flash *imagename* Command Not Supported

Although the **boot system flash** command is supported in Release 12.2(1)XE2, the configuration command **boot system flash** *imagename* is not supported.

boot system tftp Command Not Supported

The configuration command **boot system tftp** is not supported in Release 12.2(1)XE2.

IPSec Unavailable When Fast-Switching Enabled

For some interfaces, if fast-switching is enabled, IPSec does not function. For example, the dialer interface, used for PPPoE configuration, does not support fast-switching and IPSec simultaneously.

Important Notes

The following sections contain important notes about Cisco IOS Release 12.2(1)XE2. (Also, see the "Caveats" section on page 15.)

Configuring PPPoE on a Cisco 806 Router

When specifying the method of authentication while configuring PPPoE and connecting to a Service Provider, the *optional* argument might be required to successfully authenticate the connection. For example:

```
interface Dialer0
 ppp authentication pap optional
```

or

```
interface Dialer0
 ppp authentication chap optional
```

Cisco 806 Router Supported MIBs

The following MIBs are supported on the Cisco 806 router:

- ENTITY-MIB
- IF-MIB
- SNMPv2-MIB
- TCP-MIB
- UDP-MIB
- CISCO-IMAGE-MIB
- CISCO-SYSLOG-MIB
- CISCO-MEMORY-POOL-MIB

Cisco 828 Router Supported MIBs

The Cisco 828 routers support the MIBs listed in the following sections:

Standard MIBs

- ATM-MIB.my
- ENTITY-MIB.my
- IF-MIB.my
- IGMP-MIB.my
- INT-SERV-GUARANTEED-MIB.my
- INT-SERV-MIB.my

- IPMROUTE-MIB.my
- PIM-MIB.my
- RFC1213-MIB.my
- RFC1381-MIB
- RFC1398-MIB.my (ETHERMIB)
- RSVP-MIB.my
- SNMPv2-MIB.my
- TCP-MIB.my
- UDP-MIB.my

Cisco MIBs

- CISCO-AAL5-MIB.my
- CISCO-ATM-EXT-MIB.my
- CISCO-BULK-FILE-MIB.my
- CISCO-CAR-MIB.my
- CISCO-FLASH-MIB.my
- CISCO-IETF-ATM2-PVCTRAP-MIB.my
- CISCO-IMAGE-MIB.my
- CISCO-IP-STAT-MIB.my
- CISCO-IPMROUTE-MIB.my
- CISCO-MEMORY-POOL-MIB.my
- CISCO-PING-MIB.my
- CISCO-QUEUE-MIB.my
- CISCO-SNAPSHOT-MIB.my
- CISCO-SYSLOG-MIB.my
- CISCO-TCP-MIB.my
- OLD-CISCO-CHASSIS-MIB.my
- OLD-CISCO-CPU-MIB.my
- OLD-CISCO-INTERFACES-MIB.my
- OLD-CISCO-IP-MIB.my
- OLD-CISCO-MEMORY-MIB.my
- OLD-CISCO-SYSTEM-MIB.my
- OLD-CISCO-TCP-MIB.my

New MIBs:

Cisco 828 routers support the SDSL-LINE-MIB with the G.shdsl extension.

Caveats

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats, severity 2 caveats are less serious, and severity 3 caveats are the least serious of these three severity levels.

Caveats in Cisco IOS Releases 12.2 and 12.2 T are also in Cisco IOS Release 12.2(1)XE2. For information on caveats in Cisco IOS Release 12.2, see *Caveats for Cisco IOS Release 12.2*. For information on caveats in Cisco IOS Release 12.2 T, see *Caveats for Cisco IOS Release 12.2 T*. These two documents list severity 1 and 2 caveats and are located on CCO and the Documentation CD-ROM.

Note If you have an account with Cisco.com, you can also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in toCisco.com and click **Service & Support**: **Technical Assistance Center**: **Tool Index**: **Bug Toolkit**. Another option is to go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Resolved Caveats - Release 12.2(1)XE2

This section describes unexpected behavior that is fixed in Release 12.2(1)XE2.

Management

CSCdw65903

An error can occur with management protocol processing. Please use the following URL for further information:

http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903

Caveats for Release 12.2(1)XE

This section describes possibly unexpected behavior by software Release 12.2(1)XE.

Miscellaneous

- CSCdr36952

  A defect in Cisco IOS software causes a Cisco router or switch to halt and reload if Cisco IOS HTTP service is enabled and a user attempts to browse to “http: //<router-ip>/%%”. This defect can be exploited to produce a denial of service (DoS) attack.

  The vulnerability, affects virtually all mainstream Cisco routers and switches running Cisco IOS Releases 11.1 through 12.1, as well as Release 12.2(1)XE. The vulnerability has been corrected, and Cisco is making fixed releases available to replace all affected Cisco IOS releases. Customers are urged to upgrade to releases that are not vulnerable to this defect as shown in detail below.

To mitigate the vulnerability, disable the Cisco IOS HTTP server using an access list on an interface in the path to the router to prevent unauthorized network connections to the HTTP server or apply an access-class option directly to the HTTP server itself. The IOS HTTP server is enabled by default only on Cisco 1003, 1004, and 1005 routers that are not configured. In all other cases, the Cisco IOS HTTP server must be explicitly enabled in order to exploit this defect.

The complete advisory, including software fixes and workarounds, is available at: http://www.cisco.com/warp/public/707/ioshttpserver-pub.shtml.

- CSCdt74776

  When the IP address of a DHCP client BVI interface is configured manually (using the command **ip address x.x.x.x s.s.s.s**), the DHCPRELEASE command does not clear the current DHCP binding between the DHCP client and DHCP server. This is evident when you enable the command **debug dhcp detail**. To work around this problem, release the current IP address by using the command **no ip address** before assigning a static IP address to a DHCP client BVI interface with the command **ip address x.x.x.x s.s.s.s**.

- CSCdt97537

  If you modify filtering configurations in IPSec with access lists, the sequence order of access list configuration commands you enter or remove might cause an unintended outcome due to the access lists not working properly. Consequently, ISAKMP negotiation and IPSec negotiation fail for traffic intended to be encrypted. Use the configuration scenarios described below to work around this problem.

  To change the parameters of the current access list referenced in the encryption map, leave the access list in the encryption map and modify the access-list definition in global configuration mode as follows:

```
Router> no access-list 100
Router> access-list 100 permit ip host 2.0.1.26 host 4.0.1.25
```

  To assign a different access list to the encryption map, follow the steps below:

Step 1 Remove the old access list assigned to the existing encryption map:

```
Router> crypto map map1 10 ipsec-isa
Router> no match address 100
```

Step 2 Before defining the new access list, assign the new access list to the encryption map:

```
Router> crypto map map1 10 ipsec-isa
Router> match address 110
```

Step 3 If the newly-configured access list in the encryption map is already defined, remove the access list from the encryption map prior to defining the new access list.

```
Router> no access-list 110ex
```

Step 4 Define the new access list and ensure it is referenced in the encryption map.

```
Router> access-list 110 permit ip host 2.0.1.26 host 4.0.1.25
```

Step 5 After modifying access list parameters, clear any existing IPSec and ISAKMP SAs:

```
Router> clear crypto isakmp
Router> clear crypto sa
```

- CSCdu00267

  When checking the firewall audit for TFTP, the number of bytes transferred is not shown correctly in the TFTP data session responder log.

- CSCdu22758

  Enabling fast switching has no effect when using PPPoE. The router continues to process-switch all traffic. To work around this problem, specify **dialer-group 1** under the dialer interface to allow packets to be fast switched correctly for PPPoE. For example:

```
interface Dialer0
ip address 2.2.2.1 255.255.255.0
encapsulation ppp
mtu 1492
dialer pool 1
dialer-group 1
```

Documentation Updates

This section contains updates to the *Cisco 806 Router Software Configuration Guide*.

Omissions

Point-to-Point Protocol Remote System Authentication

The *Cisco 806 Router Software Configuration Guide* documents the configuration of Point-to-Point Protocol over Ethernet (PPPoE) support in the section "Configuring PPPoE Support," that begins on page 3-16. There are two types of authentication used with PPPoE. Challenge Handshake Authentication Protocol (CHAP), and Password Authentication Protocol (PAP). Either protocol is usable, but the Cisco 806 router and the remote system must both use the same authentication protocol.

Both CHAP and PAP authenticate a remote system by comparing the username and password offered by the remote system with the username and password in the local configuration file. The administrators for both ends of a connection must provide each other with the usernames and passwords for their respective systems before administrators can place the usernames and passwords for remote systems in local configuration files.

To enter the username and password for a remote system to use during authentication, enter the following command on the Cisco 806 router, in global configuration mode:

```
Router(config)#username username password password
```

where *username* and *password* are the username and password of a remote system requiring authentication.

Challenge Handshake Authentication Protocol Configuration

The *Cisco 806 Router Software Configuration Guide* documents the configuration of the Challenge Handshake Authentication Protocol (CHAP) for the Point-To-Point Protocol (PPP) in the section "Configuring PPPoE Support," that begins on page 3-16. Step 19 on page 3-17 shows you one method of specifying the CHAP authentication protocol, as follows:

Step 19 Set the PPP authentication method.

```
Router(config-if)#ppp authentication chap
```

However, when CHAP is configured in this way, the Cisco 806 router uses its own local hostname and enable password to authenticate itself with the service provider network or corporate network. To use a different hostname and password when the router is authenticated, add them to the CHAP configuration.

To provide an alternate hostname and password to use during CHAP authentication, perform the following steps after step 19:

Step 20 Enter the hostname that you want to use during CHAP authentication.

```
Router(config-if)#ppp chap hostname hostname
```

Step 21 Enter the password that you want to use during CHAP authentication.

```
Router(config-if)#ppp chap password password
```

Step 22 Exit router configuration mode.

```
Router(config-if)#end
```

Configuring One-Way Authentication Using CHAP

When two devices use CHAP authentication, each side sends out a challenge and the opposite sides respond by sending out their username and password. Each side authenticates the other independently. To operate with non-Cisco routers that do not support authentication by the calling router, use the command **ppp authentication chap callin**. When using the **callin** keyword, the Cisco 806 router only challenges the remote system when the remote system initiates the call.

Use the following procedure to configure one-way authentication. It begins at step 19 on page 3-17 of the *Cisco 806 Router Software Configuration Guide.*

Step 19 Set the PPP authentication method to CHAP callin.

```
Router(config-if)#ppp authentication chap callin
```

Note The **callin** keyword is added to the **ppp authentication chap** command for this example.

Step 20 Enter the hostname to use during CHAP authentication.

```
Router(config-if)#ppp chap hostname hostname
```

Step 21 Enter the password to use during CHAP authentication.

```
Router(config-if)#ppp chap password password
```

Step 22 Exit router configuration mode.

```
Router(config-if)#end
```

Example Configuration

The following configuration example shows a PPPoE configuration. It contains an entry for a remote system that the Cisco 806 router would authenticate after receiving a call initiated by the remote system. This example also shows the use of one-way CHAP authentication with an alternate hostname and password to answer a challenge from a remote system. It includes the Ethernet 0 and Ethernet 1 configurations as well as the Dialer configuration.

```
username remote1 password 0 70703204E42081B
!
vpdn enable
vpdn-group 1
 request-dialin
  protocol pppoe
!
interface Ethernet0
 ip address 192.168.1.1 255.255.255.0
 ip tcp adjust-mss 1452
!
interface Ethernet1
 no ip address
 ip tcp adjust-mss 1452
 pppoe enable
 pppoe-client dial-pool-number 1
!
!
interface Dialer0
 ip address negotiated
 encapsulation ppp
 dialer pool 1
 dialer group 1
 ppp authentication chap callin
 ppp chap hostname sanjose5
 ppp chap password 43655E9782
!
```

Related Documentation

The following sections describe the documentation available for the Cisco 800 Series Routers. Typically, these documents consist of hardware and software installation guides, Cisco IOS configuration and command references, system error messages, feature modules, and other documents.

Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online on Cisco.com and the Documentation CD-ROM.

Use these release notes with the documents listed in the following sections:

- Release-Specific Documents
- Platform-Specific Documents

- Feature Modules
- Cisco IOS Software Documentation Set

Release-Specific Documents

The following documents are specific to Release 12.2 and apply to Release 12.2(1)XE2. They are located on Cisco.com and the Documentation CD-ROM:

- *Release Notes for Cisco IOS Release 12.2*
  - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.2* from Cisco.com, click on this path (under the heading **Service & Support**):

    Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **Release Notes**: **Cross-Platform Release Notes**
  - To reach the *Cross-Platform Release Notes for Cisco IOS Release 12.2* on the Documentation CD-ROM, click on this path:

    Cisco Product Documentation: Cisco IOS Software Configuration: **Cisco IOS Release 12.2**: **Release Notes**: **Cross-Platform Release Notes**
- Product bulletins, field notices, and other release-specific documents

  To reach these documents from Cisco.com, click on this path (under the heading **Service & Support**):

  Technical Documents: **Product Bulletins**
- *Caveats for Cisco IOS Release 12.2 and 12.2 T*

  The *Caveats for Cisco IOS Release 12.2* and *Caveats for Cisco IOS Release 12.2 T* documents contain caveats applicable to all platforms for all maintenance releases of Release 12.2.
  - To reach the caveats document from Cisco.com, click on this path (under the heading **Service & Support**):

    Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **Caveats**
  - To reach the caveats document on the Documentation CD-ROM, click on this path:

    Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **Caveats**

Note If you have an account with Cisco.com, you can also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in toCisco.com and click **Service & Support**: **Technical Assistance Center**: **Tool Index**: **Bug Toolkit**. Another option is to go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Platform-Specific Documents

The following documents are available for the Cisco 800 Series Routers on Cisco.com and the Documentation CD-ROM:

Cisco 806 Router

The following documents are available for the Cisco 806 router:

- *Cisco 806 Router Cabling and Setup Quick Start Guide*
- *Cisco 806 Router Hardware Installation Guide*
- *Cisco 806 Router Software Configuration Guide*
- *Regulatory Compliance and Safety Information for the Cisco 806 Router*

On Cisco.com at:

Technical Documents: **Documentation Home Page**: **Access Servers and Access Routers**: **Fixed Configuration Access Routers**: **Cisco 806 Router**

On the Documentation CD-ROM at:

Cisco Product Documentation: **Access Servers and Access Routers**: **Fixed Configuration Access Routers**: **Cisco 806 Router**

Cisco 828 and SOHO 78 Routers

These documents are available for the Cisco 828 and SOHO 78 routers on Cisco.com and the Documentation CD-ROM:

- *Quick Start Guide - Setting up the Cisco 828 Router*
- *Cisco 828 Router and SOHO 78 Router Hardware Installation Guide*
- *Cisco 828 Router and SOHO 78 Router Software Configuration Guide*
- *Configuration Note for Cisco SOHO Series Routers*
- *Regulatory Compliance and Safety Information for the Cisco 828 Router and SOHO 78 Router*
- *Release Notes for Cisco 828 and SOHO 78 Routers*

On Cisco.com at:

Technical Documents: **Documentation Home Page**: **Access Servers and Access Routers**: **Fixed Configuration Access Routers**: **Cisco 828 and SOHO 78 Routers**

On the Documentation CD-ROM at:

Cisco Product Documentation: **Access Servers and Access Routers**: **Fixed Configuration Access Routers**: **Cisco 828 and SOHO 78 Routers**

Software Configuration

This document is available for the Cisco 800 Series and SOHO 70 Series routers on Cisco.com and the Documentation CD-ROM: *Cisco Router Web Setup User Guide*.

On Cisco.com at:

Technical Documents: **Router Configuration Tools**: **Cisco Router Web Setup**

On the Documentation CD-ROM at:

Cisco Product Documentation: **Router Configuration Tools**: **Cisco Router Web Setup**

Feature Modules

Feature modules describe new features supported by Release 12.2 and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated in the next printing of the Cisco IOS documentation set.

To reach the Release 12.2 feature modules:

- From Cisco.com, click on this path (under the heading **Service & Support**):

  Technical Documents: **Documentation Home Page**: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **New Feature Documentation**: **New Features in 12.2-Based Limited Lifetime Releases**: **New Features in 12.2X Releases**

- From the Documentation CD-ROM, click on this path:

  Cisco Product Documentation: **Cisco IOS Software Configuration**: **Cisco IOS Release 12.2**: **New Feature Documentation**: **New Features in 12.2-Based Limited Lifetime Releases**: **New Features in 12.2X Releases**

Feature Navigator

Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a particular set of features and which features are supported in a particular Cisco IOS image. Feature Navigator is available 24 hours a day, 7 days a week.

To access Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, e-mail the Contact Database Administration group at cdbadmin@cisco.com. If you do not have an account on Cisco.com, go to http://www.cisco.com/register and follow the directions to set up an account.

To use Feature Navigator, you must have a JavaScript-enabled web browser such as Netscape 3.0 or later, or Internet Explorer 4.0 or later. Internet Explorer 4.0 always has JavaScript enabled. To enable JavaScript for Netscape 3.x or Netscape 4.x, follow the instructions provided with the web browser. For JavaScript support and enabling instructions for other browsers, check with the browser vendor.

Feature Navigator is updated when major Cisco IOS software releases and technology releases occur. You can access Feature Navigator at the following URL:

http://www.cisco.com/go/fn

Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents. The Cisco IOS software documentation set is shipped with your order in electronic form on the Documentation CD-ROM—unless you specifically ordered the printed versions.

Documentation Modules

Each module in the Cisco IOS documentation set consists of one or more configuration guides and one or more corresponding command references. Chapters in a configuration guide describe protocols, configuration tasks, and Cisco IOS software functionality, and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Use each configuration guide with its corresponding command reference. The Cisco IOS software documentation set is available on Cisco.com and on the Documentation CD-ROM.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.2: Configuration Guides and Command References

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2: Configuration Guides and Command References

Release 12.2 Documentation Set

Table 10 lists the contents of the Cisco IOS Release 12.2 software documentation set, which is available in both electronic and printed form.

Note You can find the most current Cisco IOS documentation on Cisco.com and the Documentation CD-ROM. These electronic documents may contain updates and modifications made after the hard-copy documents were printed.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.2

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.2

Table 10 Cisco IOS Release 12.2 Documentation Set

Books	Major Topics
• *Cisco IOS Configuration Fundamentals Configuration Guide* • *Cisco IOS Configuration Fundamentals Command Reference*	Cisco IOS User Interfaces File Management System Management
• *Cisco IOS Bridging and IBM Networking Configuration Guide* • *Cisco IOS Bridging and IBM Networking Command Reference, Volume 1 of 2* • *Cisco IOS Bridging and IBM Networking Command Reference, Volume 2 of 2*	Transparent Bridging SRB Token Ring Inter-Switch Link Token Ring Route Switch Module RSRB DLSw+ Serial Tunnel and Block Serial Tunnel LLC2 and SDLC IBM Network Media Translation SNA Frame Relay Access NCIA Client/Server Airline Product Set DSPU and SNA Service Point SNA Switching Services Cisco Transaction Connection Cisco Mainframe Channel Connection CLAW and TCP/IP Offload CSNA, CMPC, and CMPC+ TN3270 Server
• *Cisco IOS Dial Technologies Configuration Guide* • *Cisco IOS Dial Technologies Command Reference*	Preparing for Dial Access Modem and Dial Shelf Configuration and Management ISDN Configuration Signaling Configuration Dial-on-Demand Routing Configuration Dial Backup Configuration Dial Related Addressing Service Virtual Templates, Profiles, and Networks PPP Configuration Callback and Bandwidth Allocation Configuration Dial Access Specialized Features Dial Access Scenarios
• *Cisco IOS Interface Configuration Guide* • *Cisco IOS Interface Command Reference*	LAN Interfaces Serial Interfaces Logical Interfaces
• *Cisco IOS IP Configuration Guide* • *Cisco IOS IP Command Reference, Volume 1 of 3: Addressing and Services* • *Cisco IOS IP Command Reference, Volume 2 of 3: Routing Protocols* • *Cisco IOS IP Command Reference, Volume 3 of 3: Multicast*	IP Addressing and Services IP Routing Protocols IP Multicast
• *Cisco IOS AppleTalk and Novell IPX Configuration Guide* • *Cisco IOS AppleTalk and Novell IPX Command Reference*	AppleTalk Novell IPX

Table 10 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
• *Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide* • *Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference*	Apollo Domain Banyan VINES DECnet ISO CLNS XNS
• *Cisco IOS Voice, Video, and Fax Configuration Guide* • *Cisco IOS Voice, Video, and Fax Command Reference*	Voice over IP Call Control Signaling Voice over Frame Relay Voice over ATM Telephony Applications Trunk Management Fax, Video, and Modem Support
• *Cisco IOS Quality of Service Solutions Configuration Guide* • *Cisco IOS Quality of Service Solutions Command Reference*	Packet Classification Congestion Management Congestion Avoidance Policing and Shaping Signaling Link Efficiency Mechanisms
• *Cisco IOS Security Configuration Guide* • *Cisco IOS Security Command Reference*	AAA Security Services Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options Supported AV Pairs
• *Cisco IOS Switching Services Configuration Guide* • *Cisco IOS Switching Services Command Reference*	Cisco IOS Switching Paths NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
• *Cisco IOS Wide-Area Networking Configuration Guide* • *Cisco IOS Wide-Area Networking Command Reference*	ATM Broadband Access Frame Relay SMDS X.25 and LAPB
• *Cisco IOS Mobile Wireless Configuration Guide* • *Cisco IOS Mobile Wireless Command Reference*	General Packet Radio Service

Table 10 Cisco IOS Release 12.2 Documentation Set (continued)

Books	Major Topics
• *Cisco IOS Terminal Services Configuration Guide* • *Cisco IOS Terminal Services Command Reference*	ARA LAT NASI Telnet TN3270 XRemote X.28 PAD Protocol Translation
• *Cisco IOS Configuration Guide Master Index* • *Cisco IOS Command Reference Master Index* • *Cisco IOS Debug Command Reference* • *Cisco IOS Software System Error Messages* • New Features in 12.2-Based Limited Lifetime Releases • New Features in Release 12.2 T • Release Notes (Release note and caveat documentation for 12.2-based releases and various platforms)	

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

The most current Cisco documentation is available on the World Wide Web at http://www.cisco.com. Translated documentation can be accessed at http://www.cisco.com/public/countries_languages.shtml.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

If you are reading Cisco products documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

You can e-mail your comments to bug-doc@cisco.com.

For your convenience, many documents contain a response card behind the front cover for submitting your comments by mail. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.
Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

The following sections provide sources for obtaining technical assistance from Cisco Systems.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

http://www.cisco.com/tac

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

http://www.cisco.com/register/

Cisco.com registered users who cannot resolve a technical issue by using the TAC online resource can open a case online by using the TAC Case Open tool at the following website:

http://www.cisco.com/tac/caseopen

Contacting TAC by Telephone

If you have a priority level 1(P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.