Cisco 1000 Series

This chapter provides information on the Cisco 1000 series products. The information is organized into the following sections:

- Product Overview
- Cisco 1001 LAN Extender
  - Standard Features
  - Options
  - Software
- Cisco 1003 and Cisco 1004 ISDN Routers
  - Standard Features
  - Options
  - Software
- Cisco 1005 Serial Router
  - Standard Features
  - Options
  - Software

Note Documentation for the Cisco 1000 series is available in two forms: on a CD-ROM called Cisco Connection Documentation, Enterprise Series, and printed books. A CD and hard-copy installation documentation ship with each chassis, and a configuration note ships with each component ordered. All configuration notes are available on the CD. Additional CDs and a subscription CD update service are also available.

You can also access Cisco technical documentation on the World Wide Web URL http://www.cisco.com. For more information, see the chapter "Documentation" at the end of the catalog.

Product Overview

The Cisco 1000 series LAN extenders and routers are easy-to-install, inexpensive, multiprotocol access products designed for small offices and other remote sites.

There are currently four Cisco 1000 series models:

- Cisco 1001 LAN extender
  - One Ethernet port with AUI (DB-15) and 10BaseT (RJ-45) interfaces
  - One synchronous serial WAN port that supports V.35 (Winchester)
- Cisco 1003 ISDN router
  - One 10BaseT Ethernet port (RJ-45)
  - One ISDN BRI WAN port (RJ-45)
  - One console port (RJ-45)
  - One Type-2 PCMCIA slot for Flash ROM card
- Cisco 1004 ISDN router
  - One 10BaseT Ethernet port (RJ-45)
  - One ISDN BRI WAN port (RJ-45), with an integrated NT1 device
  - One console port (RJ-45)
  - One Type-2 PCMCIA slot for Flash ROM card
- Cisco 1005 serial router
  - One 10BaseT Ethernet port (RJ-45)
  - One serial WAN port (DB-60) that supports asynchronous serial communications up to 115.2 kbps (EIA/TIA-232 interface) and synchronous serial such as leased lines, Frame Relay, switched 56 kbps, SMDS, and X.25 up to 2.048 Mbps (EIA/TIA-232, EIA/TIA-449, V.35, X.21, and EIA-530)
  - One console port (RJ-45)
  - One Type-2 PCMCIA slot for Flash ROM card

Cisco 1001 LAN Extender

The Cisco 1001 LAN extender supports Cisco's LAN extension software, which provides a seamless connection between a remote-site LAN and a central-site LAN. The Cisco 1001 at the remote site connects to Cisco host routers at the central site using permanent synchronous serial lines running at up to T1/E1 speeds (2.048 Mbps).

All configuration and management for the Cisco 1001 LAN extender is performed at the central site through the Cisco router. The LAN extender can connect to a Cisco 2500 series, Cisco 4000 series, Cisco 7000 series, or AGS+ router running Cisco IOS Release 10.2(2) or later.

Figure 90 Cisco 1001 LAN Extender Front Panel

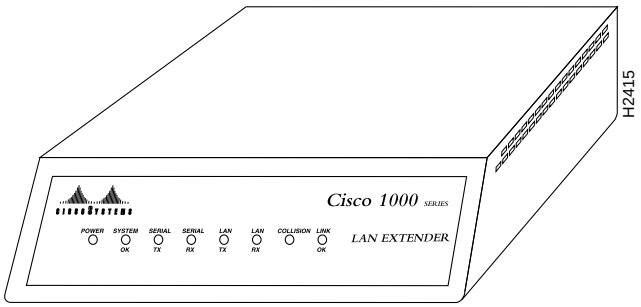


Figure 91 Cisco 1001 LAN Extender Rear Panel

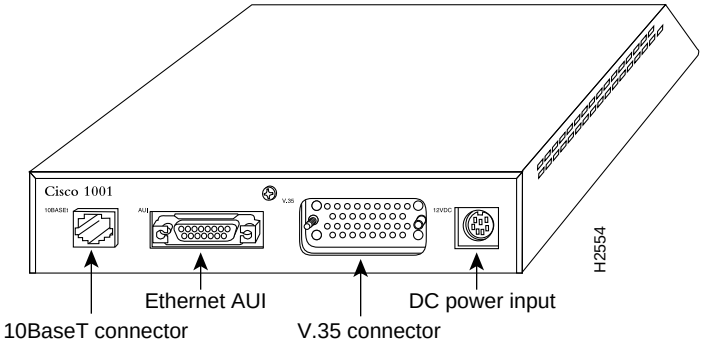


Table 187 Cisco 1001 LAN Extender Summary of Features

Characteristic	Features
Model 1001 interfaces	1 Ethernet: AUI[1] (IEEE 802.3 DB-15) 10BaseT (RJ-45) 1 V.35 synchronous serial (Winchester connector)
Processor type	MC68360
Software	Ships with the LAN extender
Dimensions (H x W x D)	1.75 x 8.0 x 8.3" (4.4 x 20.3 x 21 cm)
Weight	6.0 lb (2.7 kg) shipping weight
Product number	CISCO1001

1. AUI = attachment unit interface.

Table 188 Cisco 1001 LAN Extender Environmental Specifications

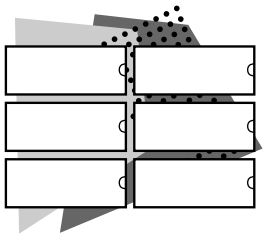
Description	Specification
Input power	12 VDC External power supply: 100 to 240 VAC at 50 to 60 Hz
Power dissipation	12W (maximum) 135.5 Btu/hr
Frequency	50 to 60 Hz

Description	Specification
Operating temperature range	32 to 104°F (0 to 40°C)
Nonoperating temperature range	–40 to 185°F (–40 to 85°C)
Humidity (noncondensing)	10 to 90%

Standard Features

The Cisco 1001 LAN extender includes the following features:

- AC-to-DC power supply
- Six-foot AC power cord
- MAC address on shipping carton label
- Easy installation—LAN extension software ships with the LAN extender



Software

Table 189 lists the LAN software for the Cisco 1001 LAN extender.

Table 189 Cisco 1001 LAN Extender Software Features

Category	Description
LAN support	LAN extension
WAN services	PPP
WAN optimization	Priority queuing, protocol filtering
Management	At central site on host router

Options

Table 190 lists the options for the Cisco 1001 LAN extender. If a product number ends with an equal sign (=), the item can be ordered only as a spare. If a product number does not end with an equal sign, the item can be ordered as a spare or as a configurable part of a system order.

Table 190 Cisco 1001 LAN Extender Options

Description	Product Number
DTE V.35 cable (shielded 3-meter, male-to-male)	CAB-V35MTS
AC power supply	PWR-1000-AC1=

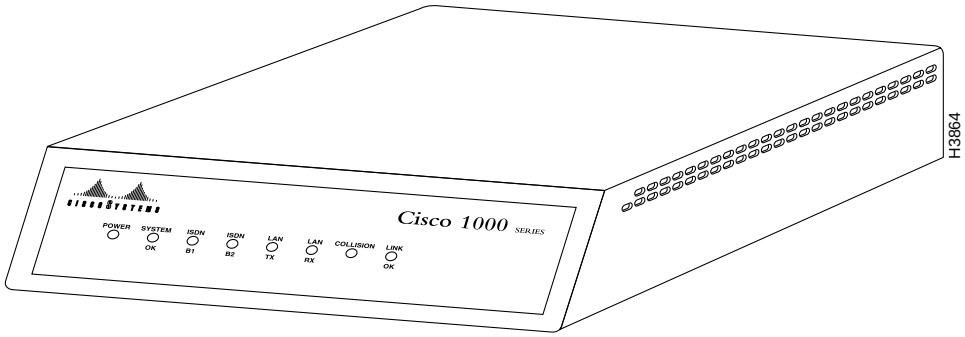
Cisco 1003 and Cisco 1004 ISDN Routers

The Cisco 1003 and Cisco 1004 routers are small, desktop routers that connect small, remote sites with Ethernet LANs to ISDN WANs.

The main difference between the two routers is that the Cisco 1004 router includes an integrated network termination 1 (NT1) device and the Cisco 1003 router does not. The ISDN service provider supplies the NT1 connection worldwide, except in North America, where the NT1 device is supplied by the customer. Therefore, the Cisco 1004 router is for use in North America, and the Cisco 1003 router is applicable worldwide.

The front view of the routers looks the same.

Figure 92 Cisco 1003 and Cisco 1004 Front Panel



The rear view of the routers looks the same except for the following differences:

- The BRI port on the Cisco 1003 is labeled “ISDN S/T,” and “Cisco 1003” is stamped on the upper left corner of the chassis (not illustrated).
- The BRI port on the Cisco 1004 is labeled “ISDN U,” and “Cisco 1004” is stamped on the upper left corner of the chassis (not illustrated).

Figure 93 Cisco 1003 and Cisco 1004 Rear Panel

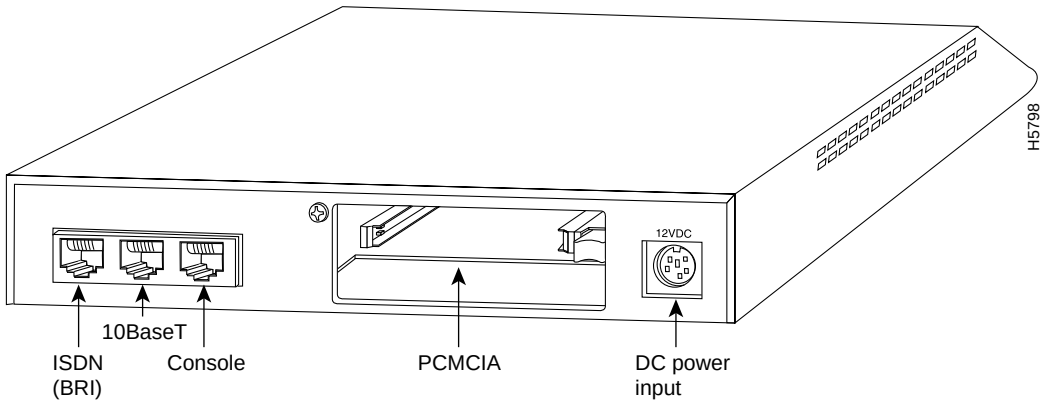


Table 191 Cisco 1003 and Cisco 1004 Summary of Features

Characteristic	Feature
Supported network interfaces	ISDN BRI (RJ-45)[1] Ethernet 10BaseT (RJ-45) Console port (RJ-45) (EIA/TIA-232)
Processor type	Motorola 68360
Software	IP, IPX, AppleTalk routing and bridging over ISDN. See Table 196 and Table 198.
Dimensions (H x W x D)	1.75 x 8.0 x 8.3" (4.4 x 21 x 20.3 cm)
Weight	6.0 lb (2.7 kg) shipping weight
Product numbers	CISCO1003 and CISCO1004

1. The ISDN BRI port is labeled “ISDN S/T” on the Cisco 1003 router and “ISDN U” on the Cisco 1004 router. The Cisco 1004 router includes an integrated NT1 device.

Table 192 Cisco 1003 and Cisco 1004 Environmental Specifications

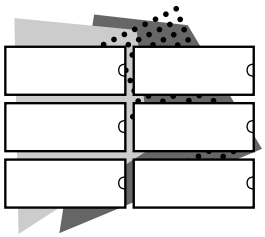
Description	Specification
Power	Cisco 1003 and Cisco 1004: 12 VDC output, minimum 0.5 A Desktop external power supply: 100 to 240 VAC at 50 to 60 Hz, 1.0A input Wall-mount external power supply: 120 VAC at 60 Hz input (for Cisco 1004 routers used in North America only)
Operating temperature range	32 to 104°F (0 to 40°C)
Nonoperating temperature range	–40 to 185°F (–40 to 85°C)
Operating humidity (noncondensing)	10 to 90%

Standard Features

The Cisco 1003 and Cisco 1004 routers include the following standard features:

- One Ethernet 10BaseT port with an RJ-45 connector
- One ISDN BRI port with an RJ-45 connector (the Cisco 1004 router includes an integrated NT1 device)
- One console port with an RJ-45 connector
- Console cable kit and power supply
- One external PCMCIA slot for optional Type-2 Flash memory card
- Software booting over an Ethernet LAN using TFTP
- Optional Flash memory card to store software image and configuration files, allowing network-independent booting and software updates over the WAN or LAN connections
- LAN-to-LAN DDR routing over ISDN lines

- IP, IPX, and AppleTalk routing
- Transparent bridging
- IPX and SPX spoofing
- PPP compression and bandwidth-on-demand with load balancing for throughput up to 512 kbps
- HDLC and standards-based PPP
- Increased security with CHAP, PAP, packet filters, local password, and CLI/ANI
- Network management and monitoring through the console port or over the network using SNMP or Telnet

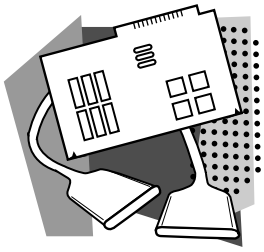


Software

The Cisco 1003 and Cisco 1004 routers support the following Cisco IOS releases:

- Cisco IOS Release 11.2, 11.1, 11.0, 10.3, and 10.2 feature sets (see Table 196)
- Cisco IOS product numbers and minimum memory requirements (see Table 198)

The software is available on 2-MB or 4-MB Flash ROM cards or on diskettes.



Options

Table 193 lists the options for the Cisco 1003 and Cisco 1004 routers. If a product number ends with an equal sign (=), the item can be ordered only as a spare. If a product number does not end with an equal sign, the item can be ordered as a spare or as a configurable part of a system order.

Table 193 Cisco 1003 and Cisco 1004 Options

Option	Product Number
Console cable	CAB-1000-CON=
AC power supply	PWR-1000-AC1=
4-MB to 8-MB DRAM upgrade	MEM-1003-8MD (Cisco 1003) MEM-1004-8MD (Cisco 1004)
8-MB DRAM SIMM	MEM-1000-8MD=

Cisco 1005 Serial Router

The Cisco 1005 router is a small, desktop router that connects small, remote sites with Ethernet LANs to synchronous WANs at speeds up to 2.048 Mbps or to asynchronous WANs at speeds up to 115.2 kbps.

Figure 94 Cisco 1005 Front Panel

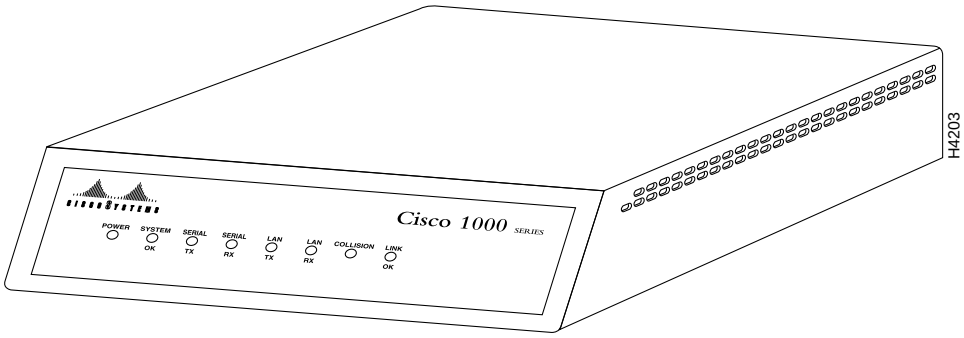


Figure 95 Cisco 1005 Rear Panel

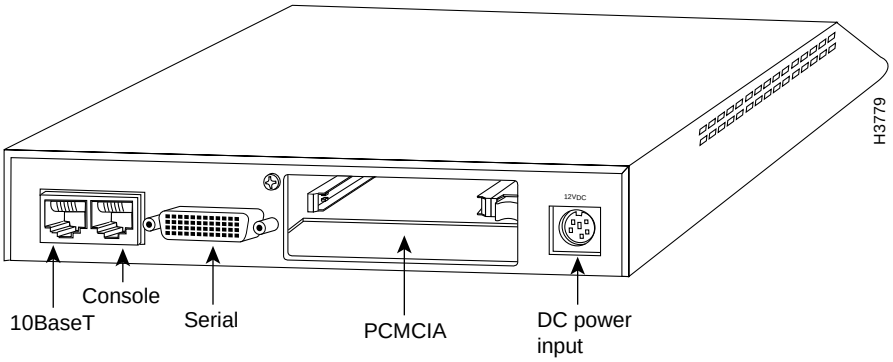


Table 194 Cisco 1005 Summary of Features

Characteristic	Feature
Supported network interfaces	Serial port (DB-60)[1] Ethernet 10BaseT (RJ-45) Console port (RJ-45) (EIA/TIA-232)
Processor type	MC68360
Software	IP, IPX, AppleTalk routing and bridging over leased lines, Frame Relay, Switched 56, SMDS, and X.25. IP/IPX routing over asynchronous WAN links. See Table 196 and Table 198.
Dimensions (H x W x D)	1.75 x 8.0 x 8.3" (4.4 x 21 x 20.3 cm)
Weight (average shipping)	6.0 lb (2.7 kg)
Product number	CISCO1005

1. The serial port supports asynchronous communications through an EIA/TAI-232 interface and synchronous communications through the following interfaces: EIA/TIA-232, EIA/TIA-449, V.35, X.21, and EIA-530.

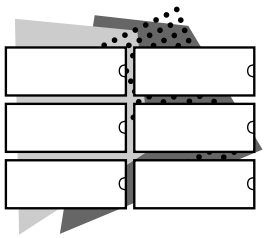
Table 195 Cisco 1005 Environmental Specifications

Description	Specification
Power	12 VDC output, minimum 0.5A External power supply: 100 to 240 VAC at 50 to 60 Hz, 1.0A input
Operating temperature range	32 to 104°F (0 to 40°C)
Nonoperating temperature range	–40 to 185°F (–40 to 85°C)
Operating humidity (noncondensing)	10 to 90%

Standard Features

The Cisco 1005 router includes the following features:

- One Ethernet 10BaseT port (RJ-45)
- One console port (RJ-45)
- Console cable kit and power supply
- One serial port (DB-60) that supports permanent and switched synchronous WAN links up to 2.048 Mbps and asynchronous WAN links up to 115.2 kbps
- One slot for an optional PCMCIA Flash memory card
- Software boot using TFTP over an Ethernet LAN connection or by using the optional Flash memory card
- IP, IPX, and AppleTalk routing
- Transparent bridging (over synchronous WAN links only)
- Support for the following synchronous WAN encapsulations: HDLC, LAPB, Frame Relay, SMDS, and X.25
- Support for the following asynchronous WAN encapsulations: PPP and SLIP
- Router management through the console port or over the network using SNMP or Telnet
- AutoInstall for downloading configuration files automatically over a WAN



Software

The Cisco 1005 router supports the following software releases:

- Cisco IOS Release 11.2, 11.1, 11.0, 10.3, and 10.2 feature sets (see Table 196)
- Cisco IOS Release 11.2, 11.1, and 11.0 platform-specific feature sets (see Table 197)
- Cisco IOS product numbers and minimum memory requirements for Cisco IOS Release 11.2 for the Cisco 1003 and Cisco 1004 (see Table 198) and the Cisco 1005 (see Table 199)
- Cisco IOS product numbers and minimum memory requirements for Cisco IOS Release 11.1, 11.0, 10.3, and 10.2 (see Table 200)

The Cisco IOS Releases 11.0 and 11.1 feature sets support the asynchronous services, which provide dial-on-demand routing over asynchronous basic telephone lines on the Cisco 1005 router. Unlike other Cisco IOS feature sets available for the Cisco 1005 router, these asynchronous images do not support bridging.

The software is available on 2-MB or 4-MB Flash ROM cards or on diskettes.

With the introduction of Cisco IOS Release 11.2, feature sets have been updated to make it easier to select the exact feature sets you need. Feature sets names are simplified and are more consistent across Cisco hardware platforms. In addition, you can add options to the standard feature set offerings. These options provide additional features and value based on the hardware platform selected. Cisco also continues to offer specialized feature sets for key applications.

The Cisco 1000 series routers offer the following types of feature sets:

- Basic. The basic feature set for the hardware platform.
- Plus. The basic feature set plus additional features.
- Plus 40. The basic feature set, plus features, and 40-bit data encryption.
- Plus 56. The basic feature set, plus features, and 56-bit data encryption.

Cisco IOS images with 40-bit Data Encryption Standard (DES) support may legally be distributed to any party eligible to receive Cisco IOS software. 40-bit DES is not a cryptographically strong solution and should not be used to protect sensitive data.

Cisco IOS images with 56-bit DES are subject to International Traffic in Arms Regulations (ITAR) controls and have a limited distribution. Images to be installed outside the U.S. require an export license. Orders may be denied or subject to delays due to U.S. Government regulations. Contact your sales representative or distributor for more information, or send e-mail to export@cisco.com.

The new tables use the following conventions to identify features:

- : the feature is o**f**fered in the basic feature set
- – : the feature is not offered in the feature set
- Plus : the feature is offered only in the Plus feature sets
- Encrypt : the feature is in the Encryption feature sets

Table 196 Cisco IOS Release 11.2, 11.1, 11.0, 10.3, and 10.2 Feature Sets—Cisco 1003, Cisco 1004, and Cisco 1005

	Cisco 1003, Cisco 1004, and Cisco 1005 Feature Sets[1]													
Features	**IP Routing[2]**				**IP/IPX Routing[2, 3]**			**IP/Appletalk Routing[2, 3]**			**IP/IPX/Appletalk Routing[4]**			
Cisco IOS Releases	**11.2**	**11.1**	**11.0**	**10.3**	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.0**	**10.3**
LAN Support														
AppleTalk 1 and 2[5]	–	–	–	–	–	–	–							
GRE														
Integrated routing and bridging (IRB)[6]		–	–	–		–	–		–	–		–	–	–
IP														
Novell IPX[7]	–	–	–	–				–	–	–				
Transparent and translational bridging[8]														
WAN Services[9]														
Dialer profiles		–	–	–		–	–		–	–		–	–	–
Frame Relay (Cisco 1005 only)														
Frame Relay SVC Support (DTE) (Cisco 1005 only)	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
Frame Relay traffic shaping (Cisco 1005 only)		–	–	–		–	–		–	–		–	–	–
HDLC														
ISDN (Cisco 1003 and Cisco 1004) [10]														
PPP														
SMDS (Cisco 1005 only)														
Switched 56 (Cisco 1005 only)														
X.25(Cisco 1005 only)														
SLIP (Cisco 1005 only)			–	–			–	–	–	–	–	–	–	–
WAN Optimization														
Bandwidth-on-demand (Cisco 1003 and Cisco 1004)														
Custom and priority queuing														
Dial backup														
Dial-on-demand[11]														
Header[12] and link compression[13]														–
Payload compression (Cisco 1005 only)[14]														
Snapshot routing[15]														
Weighted fair queuing				–										–

	Cisco 1003, Cisco 1004, and Cisco 1005 Feature Sets[1]													
Features	**IP Routing[2]**				**IP/IPX Routing[2, 3]**			**IP/Appletalk Routing[2, 3]**			**IP/IPX/Appletalk Routing[4]**			
Cisco IOS Releases	**11.2**	**11.1**	**11.0**	**10.3**	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.0**	**10.3**
IP Routing														
Enhanced IGRP														
Enhanced IGRP Optimizations		–	–	–		–	–		–	–		–	–	–
IGRP														
Network Address Translation Table (NAT)	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
On Demand Routing (ODR)		–	–	–		–	–		–	–		–	–	–
OSPF	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
OSPF Not-So-Stubby-Areas (NSSA)	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
OSPF On Demand Circuit (RFC 1793)	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
PIM	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
RIP														
RIP Version 2			–	–			–			–			–	–
Other Routing														
AURP	–	–	–	–	–	–	–	Plus	–	–	Plus	–	–	–
IPX RIP	–	–	–	–				–	–	–				–
NLSP	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
SMRP	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
RTMP	–	–	–	–	–	–	–							
Multimedia and Quality of Service														
Random Early Detection (RED)	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
Resource Reservation Protocol (RSVP)	Plus	–	–	–	Plus	–	–	Plus	–	–	Plus	–	–	–
Management														
ClickStart			–	–			–			–			–	–
HTTP Server			–	–			–			–			–	–
SNMP														
Telnet														

	Cisco 1003, Cisco 1004, and Cisco 1005 Feature Sets[1]													
Features	**IP Routing[2]**				**IP/IPX Routing[2, 3]**			**IP/Appletalk Routing[2, 3]**			**IP/IPX/Appletalk Routing[4]**			
Cisco IOS Releases	**11.2**	**11.1**	**11.0**	**10.3**	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.0**	**10.3**
Security														
Access lists														
Access security														
Extended access lists														
Lock and key			–	–			–			–			–	–
Network-layer encryption (export controlled 40-bit and 56-bit DES)	Encrypt	–	–	–	Encrypt	–	–	Encrypt	–	–	Encrypt	–	–	–
Router authentication	Encrypt	–	–	–	Encrypt	–	–	Encrypt	–	–	Encrypt	–	–	–
TACACS+[16]		–	–	–		–	–		–	–		–	–	–

1. This table lists feature sets that are common to the Cisco 1003, Cisco 1004, and Cisco 1005. For Cisco 1005 platform-specific feature sets, see Table 197.
2. The IP, IP/IPX, and IP/Appletalk feature sets are not available with Plus, Plus 40, or Plus 56 feature set options in Cisco IOS Release 11.2.
3. The IP/IPX and IP/Appletalk feature sets are available with Cisco IOS Release 11.0(4) and later releases.
4. In Cisco IOS Release 10.3, for the Cisco 1005, the IP/IPX/Appletalk feature set offers three feature set options: Option 1 includes HDLC, PPP, SDMS, and Frame Relay, but not X.25, and is available on all feature sets; Option 2 includes X.25 only, and is available with the IP/IPX, IP/Appletalk, and IP/IPX/Appletalk feature sets; and Option 3 includes Asynch, PPP, and SLIP and is available with the IP, IP/IPX features sets. In Cisco Release 11.0, only Option 1 and Option 2 were available.
5. Appletalk load balancing is available in Cisco IOS Release 11.2.
6. IRB supports IP, IPX, and AppleTalk; it is supported for transparent bridging, but not for SRB; it is supported on all media-type interfaces except X.25 and ISDN bridged interfaces; and IRB and concurrent routing and bridging (CRB) cannot operate at the same time.
7. In Cisco IOS Release 11.2, the Novell IPX feature includes display SAP by name, IPX Access Control List violation logging, and plain-English IPX access lists.
8. With Cisco IOS Release 11.2, transparent and translational bridging is fast switched. This enhancement is on by default, but can be disabled.
9. In Cisco IOS Release 11.1 and later releases, Cisco 1005 "WAN Services" offers three feature set options: Option 1 includes HDLC, PPP, SDMS, and Frame Relay, but not X.25, and is available on all feature sets; Option 2 includes X.25 only, and is available with the IP/IPX, IP/Appletalk, and IP/IPX/Appletalk feature sets; and Option 3 includes Asynch, PPP, and SLIP and is available with the IP, IP/IPX features sets. In Cisco Release 11.0, only Option 1 and Option 2 were available. For Cisco IOS Release 10.3, see footnote 4 above.
10. ISDN support includes calling line identification (CLI/ANI), ISDN subaddressing, and applicable WAN optimization features.
11. Dial-on-demand is available for the Cisco 1005 with "WAN Services" Option only. See footnote 9 above.
12. IPX header compression (RFC 1553) is available in the feature sets that support IPX in Cisco IOS Release 11.1(1) and later releases.
13. X.25 and Frame Relay payload compression. Frame Relay payload compression is available in Cisco IOS Release 11.0(4) and later releases for the Cisco 1005.
14. The IP/Appletalk feature set in Cisco IOS Release 10.3 for the Cisco 1005 supports header and link compression, but not header, link and payload compression.
15. Snapshot routing is not included in Cisco IOS Release 11.1 and later releases for the Cisco 1005.
16. With Cisco IOS Release 11.2, TACACS+ Single Connection and TACACS+ SENDAUTH enhancements are supported.

Table 197 Cisco IOS Release 11.2, 11.1, and 11.0 Feature Sets—Cisco 1005 Platform-Specific

	Cisco 1005 Platform-Specific Feature Sets						
Features	**IP/OSPF/PIM Routing[1]**			**IP/Asynch[1]**		**IP/IPX/Asynch[1]**	
Cisco IOS Releases	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.2**	**11.1**
LAN Support							
AppleTalk 1 and 2	–	–	–	–	–	–	–
GRE							
Integrated routing and bridging (IRB)[2]		–	–		–		–
IP							
Novell IPX[3]	–	–	–	–	–		
Transparent and translational bridging[4]							
WAN Services[5]							
Asynch	–	–	–				
Dialer profiles		–	–		–		–
Frame Relay				–	–	–	–
Frame Relay traffic shaping		–	–	–	–	–	–
HDLC				–	–	–	–
PPP[6]							
SMDS				–	–	–	–
Switched 56				–	–	–	–
X.25[7]				–	–	–	–
SLIP	–	–	–				
WAN Optimization							
Custom and priority queuing							
Dial-on-demand[8]							
Header[9], link and payload compression [10]							
Snapshot routing[11]							
Weighted fair queuing							
IP Routing							
Enhanced IGRP							
Enhanced IGRP Optimizations	–	–	–				
IGRP							
On Demand Routing (ODR)		–	–		–		–
OSPF				–	–	–	–
OSPF Not-So-Stubby-Areas (NSSA)		–	–	–	–	–	–
OSPF On Demand Circuit (RFC 1793)		–	–	–	–	–	–
PIM				–	–	–	–
RIP							
RIP Version 2			–				

	Cisco 1005 Platform-Specific Feature Sets						
Features	**IP/OSPF/PIM Routing[1]**			**IP/Asynch[1]**		**IP/IPX/Asynch[1]**	
Cisco IOS Releases	**11.2**	**11.1**	**11.0**	**11.2**	**11.1**	**11.2**	**11.1**
Other Routing							
IPX RIP	–	–	–	–	–		
Management							
ClickStart		–	–		–		–
HTTP Server		–	–		–		–
SNMP							
Telnet							
Security							
Access lists							
Access security							
Extended access lists							
Kerberos V client support	–	–	–	–	–	–	–
Lock and key			–				
TACACS+[12]		–	–		–		–

1. These feature sets are not available with the Plus, Plus 40, or Plus 56 feature set options in Cisco IOS Release 11.2.
2. IRB supports IP, IPX, and AppleTalk; it is supported for transparent bridging, but not for SRB; it is supported on all media-type interfaces except X.25 and ISDN bridged interfaces; and IRB and concurrent routing and bridging (CRB) cannot operate at the same time.
3. In Cisco IOS Release 11.2, the Novell IPX feature includes display SAP by name, IPX Access Control List violation logging, and plain-English IPX access lists.
4. With Cisco IOS Release 11.2, transparent and translational bridging is fast switched. This enhancement is on by default, but can be disabled.
5. In Cisco IOS Release 11.1 and later releases, Cisco 1005 “WAN Services” offers three feature set options: Option 1 includes HDLC, PPP, SDMS, and Frame Relay, but not X.25, and is available on all feature sets; Option 2 includes X.25 only, and is available with the IP/IPX, IP/Appletalk, and IP/IPX/Appletalk feature sets; and Option 3 includes Asynch, PPP, and SLIP and is available with the IP, IP/IPX features sets. In Cisco Release 11.0, only Option 1 and Option 2 were available. In Cisco IOS Release 10.3, see footnote 2 above.
6. PPP includes support for LAN protocols supported by the feature set, address negotiation, PAP and CHAP authentication, and PPP compression. Multilink PPP is included with Cisco IOS Release 11.0(4) and later releases.
7. X.25 is available for the Cisco 1005 only and is available by itself in “WAN Services” Option 2 in Cisco IOS Release 11.0 and later releases for the following feature sets: IP/IPX, IP/Appletalk, IP/IPX/AppleTalk, and IP/OSPF/PIM.
8. Dial-on-demand is available for the Cisco 1005 with “WAN Services” Option only. See footnote 5 above.
9. IPX header compression (RFC 1553) is available in the feature sets that support IPX in Cisco IOS Release 11.1(1) and later releases.
10. X.25 and Frame Relay payload compression. Frame Relay payload compression is available in Cisco IOS Release 11.0(4) and later releases.
11. Snapshot routing is not included in Cisco IOS Release 11.1 and later releases for the Cisco 1005.
12. With Cisco IOS Release 11.2, TACACS+ Single Connection and TACACS+ SENDAUTH enhancements are supported.

Cisco IOS Feature Set Upgrades

Cisco IOS Release 11.2 allows software upgrades that cross multiple feature sets. This will require you to order multiple feature set licenses. The following is an example:

You have a Cisco 1003 router with a 4 MB Flash memory card, running the Cisco IOS Release 11.1 IP Routing (basic) feature set. You want to upgrade to the Cisco IOS Release 11.2 IP/IPX/Appletalk Plus 56 feature set. You are crossing two feature sets: one to get from IP to IP/IPX/Appletalk, and one to get to IP/IPX/Appletalk Plus 56 (basic to plus). To complete the upgrade, use the following guidelines:

- If you subscribe to SMARTnet Maintenance, you need to do the following:
  - Order FL1003CA= (IP to IP/IPX/Appletalk upgrade license, no charge)
  - Order FL1003-Y= (Plus 56 upgrade license, charged item)
  - Order DRAM (if you do not have the minimum required DRAM for the new feature set)
  - Download the new software feature set from CCO
- If you do not subscribe to SMARTnet Maintenance, you need to order the following:
  - FL1003CA= (IP to IP/IPX/Appletalk upgrade license, no charge)
  - FL1003-Y= (Plus 56 upgrade license, charged item)
  - DRAM (if you do not have the minimum required DRAM for the new feature set)
  - SW1003AY-11.2.1= (Cisco 1003/1004 IP/IPX/Appletalk software on diskette, charged item)

Note In Cisco IOS Release 11.2, the software product numbers for the Cisco 1003 and Cisco 1004 routers were combined as shown in Table 198. The product numbers for the Cisco 1005 are listed in Table 199. Prior to Cisco IOS Release 11.2, the software product numbers for these routers differed as shown in Table 200.

Table 198 Cisco IOS Product Numbers and Minimum Memory Requirements for Cisco IOS Release 11.2—Cisco 1003, and Cisco 1004

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing
Software Product Numbers for the Cisco 1003 and Cisco 1004[2]:				
Flash memory required[3]	2 MB	2 MB	2 MB	2 MB
DRAM memory	4 MB (Basic IP only) 8 MB (all Plus feature sets)	8 MB	8 MB	8 MB
2-MB Flash ROM card	SF-1003C2-xx.x.x or SF-1003C2-xx.x.x=	SF-1003B2-xx.x.x or SF-1003B2-xx.x.x=	SF-1003E2-xx.x.x or SF-1003E2-xx.x.x=	SF-1003A2-xx.x.x or SF-1003A2-xx.x.x=
2-MB Flash ROM card Plus feature set	SF-1003CP2-xx.x.x or SF-1003CP2-xx.x.x=	–	–	SF-1003AP2-xx.x.x or SF-1003AP2-xx.x.x=

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing
2-MB Flash ROM card Plus 40 feature set	SF-1003CW2-xx.x.xor SF-1003CW2-xx.x.x=	–	–	SF-1003AW2-xx.x.x or SF-1003AW2-xx.x.x=
2-MB Flash ROM card Plus 56 feature set	SF-1003CY2-xx.x.x or SF-1003CY2-xx.x.x=	–	–	SF-1003AY2-xx.x.x or SF-1003AY2-xx.x.x=
4-MB Flash ROM card	SF-1003C4-xx.x.x or SF-1003C4-xx.x.x=	SF-1003B4-xx.x.x or SF-1003B4-xx.x.x=	SF-1003E4-xx.x.x or SF-1003E4-xx.x.x=	SF-1003A4-xx.x.x SF-1003A4-xx.x.x=
4-MB Flash ROM card Plus feature set	SF-1003CP4-xx.x.x or SF-1003CP4-xx.x.x=	–	–	SF-1003AP4-xx.x.x or SF-1003AP4-xx.x.x=
4-MB Flash ROM card Plus 40 feature set	SF-1003CW4-xx.x.x or SF-1003CW4-xx.x.x=	–	–	SF-1003AW4-xx.x.x or SF-1003AW4-xx.x.x=
4-MB Flash ROM card Plus 56 feature set	SF-1003CY4-xx.x.x or SF-1003CY4-xx.x.x=	–	–	SF-1003AY4-xx.x.x or SF-1003AY4-xx.x.x=
DOS diskette	SW-1003C-xx.x.x or SW-1003C-xx.x.x=	SW-1003B-xx.x.x or SW-1003B-xx.x.x=	SW-1003E-xx.x.x or SW-1003E-xx.x.x=	SW-1003A-xx.x.x or SW-1003A-xx.x.x=
DOS diskette Plus feature set	SW-1003CP-xx.x.x or SW-1003CP-xx.x.x=	–	–	SW-1003AP-xx.x.x or SW-1003AP-xx.x.x=
DOS diskette Plus 40 feature set	SW-1003CW-xx.x.x or SW-1003CW-xx.x.x=	–	–	SW-1003AW-xx.x.x or SW-1003AW-xx.x.x=
DOS diskette Plus 56 feature set	SW-1003CY-xx.x.x or SW-1003CY-xx.x.x=	–	–	SW-1003AY-xx.x.x or SW-1003AY-xx.x.x=
Upgrade Licenses for the Cisco 1003 and Cisco 1004[4]				
IP or IP/IPX/Appletalk Plus	FL1003-P=[4]	–	–	FL1003-P=[4]
IP or IP/IPX/Appletalk Plus 40	FL1003-W=[4]	–	–	FL1003-W=[4]
IP or IP/IPX/Appletalk Plus 56	FL1003-Y=[4]	–	–	FL1003-Y=[4]
IP to IP/IPX/AT	FL1003CA=[4]	–	–	–
IP to IP/IPX	FL1003CB=[4]	–	–	–
IP to IP/Appletalk	FL1003CE=[4]	–	–	–
IP/IPX to IP/IPX/Appletalk	–	FL-1003BA=[4]	–	–
IP/Appletalk to IP/IPX/Appletalk	–	–	FL-1003EA=[4]	–

1. These feature sets are available with Cisco IOS Release 11.0(4) and later releases.
2. Product numbers that start with “SW” are for floppy diskettes and require a TFTP server. Product numbers that start with “SF” are for Flash memory cards and do not require a TFTP server. Substitute the Cisco IOS release number for xx.x.x in the product number (for example, SF-1003C2-11.2.1).
3. Flash memory is optional. If you do not order Flash memory, the router must boot the software from a TFTP server on the Ethernet LAN.
4. If you subscribe to SMARTnet Maintenance, you only need to order the upgrade license (FL-). If you do not subscribe to SMARTnet Maintenance, you also need to order the upgrade media product number. You may order the media portion of an upgrade on diskette, 2-MB-, or 4-MB Flash cards. Use the appropriate SW- or SF- product numbers shown that end with an equal sign (=). See the example in the section “Cisco IOS Feature Set Upgrades” earlier in this chapter.

Table 199 Cisco IOS Product Numbers and Minimum Memory Requirements for Cisco IOS Release 11.2—Cisco 1005

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing	IP/OSF/PIM Routing
Software Product Numbers for the Cisco 1005[2]					
Flash memory required[3]	2 MB	2 MB	2 MB	2 MB	2 MB
DRAM memory	4 MB (Basic IP and IP/ Asynch only) 8 MB (all Plus feature sets)	8 MB	4 MB	8 MB	8 MB
2-MB Flash ROM card	SF-1005C2-xx.x.x or SF-1005C2-xx.x.x=	SF-1005B2-xx.x.x or SF-1005B2-xx.x.x=	SF-1005E2-xx.x.x or SF-1005E2-xx.x.x=	SF-1005A2-xx.x.x or SF-1005A2-xx.x.x=	SF1005M2-xx.x.x or SF1005M2-xx.x.x or=
2-MB Flash ROM card Plus feature set	SF-1005CP2-xx.x.x or SF-1005CP2-xx.x.x=	–	–	SF-1005AP2-xx.x.x or SF-1005AP2-xx.x.x=	–
2-MB Flash ROM card Plus 40 feature set	SF-1005CW2-xx.x.x or SF-1005CW2-xx.x.x=	–	–	SF-1005AW2-xx.x.x or SF-1005AW2-xx.x.x=	–
2-MB Flash ROM card Plus 56 feature set	SF-1005CY2-xx.x.x or SF-1005CY2-xx.x.x=	–	–	SF-1005AY2-xx.x.x or SF-1005AY2-xx.x.x=	–
4-MB Flash ROM card	SF-1005C4-xx.x.x or SF-1005C4-xx.x.x=	SF-1005B4-xx.x.x or SF-1005B4-xx.x.x=	SF-1005E4-xx.x.x or SF-1005E4-xx.x.x=	SF-1005A4-xx.x.x SF-1005A4-xx.x.x=	SF1005M4-xx.x.x or SF1005M4-xx.x.x or=
4-MB Flash ROM card Plus feature set	SF-1005CP4-xx.x.x or SF-1005CP4-xx.x.x=	–	–	SF-1005AP4-xx.x.x or SF-1005AP4-xx.x.x=	–
4-MB Flash ROM card Plus 40 feature set	SF-1005CW4-xx.x.x or SF-1005CW4-xx.x.x=	–	–	SF-1005AW4-xx.x.x or SF-1005AW4-xx.x.x=	–
4-MB Flash ROM card Plus 56 feature set	SF-1005CY4-xx.x.x or SF-1005CY4-xx.x.x=	–	–	SF-1005AY4-xx.x.x or SF-1005AY4-xx.x.x=	–
DOS diskette	SW-1005C-xx.x.x or SW-1005C-xx.x.x=	SW-1005B-xx.x.x or SW-1005B-xx.x.x=	SW-1005E-xx.x.x or SW-1005E-xx.x.x=	SW-1005A-xx.x.x or SW-1005A-xx.x.x=	SF1005M-xx.x.x or SF1005M-xx.x.x or=
DOS diskette Plus feature set	SW-1005CP-xx.x.x or SW-1005CP-xx.x.x=	–	–	SW-1005AP-xx.x.x or SW-1005AP-xx.x.x=	–
DOS diskette Plus 40 feature set	SW-1005CW-xx.x.x or SW-1005CW-xx.x.x=	–	–	SW-1005AW-xx.x.x or SW-1005AW-xx.x.x=	–
DOS diskette Plus 56 feature set	SW-1005CY-xx.x.x or SW-1005CY-xx.x.x=	–	–	SW-1005AY-xx.x.x or SW-1005AY-xx.x.x=	–

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing	IP/OSF/PIM Routing
Upgrade Licenses for the Cisco 1005[4]					
IP or IP/IPX/Appletalk Plus	FL1005-P=	–	–	FL1005-P=	–
IP or IP/IPX/Appletalk Plus 40	FL1005-W=	–	–	FL1005-W=	–
IP or IP/IPX/Appletalk Plus 56	FL1005-Y=	–	–	FL1005-Y=	–
IP to IP/IPX/AT	FL1005CA=	–	–	–	–
IP to IP/IPX	FL1005CB=	–	–	–	–
IP to IP/Appletalk	FL1005CE=	–	–	–	–
IP/IPX to IP/IPX/Appletalk	–	FL-1005BA=	–	–	–
IP/Appletalk to IP/IPX/Appletalk	–	–	FL-1005EA=	–	–
Platform-Specific Feature Sets for the Cisco 1005	**IP/Asynch**	**IP/IPX/Asynch**			
2-MB Flash ROM card	SF1005H2-xx.x.x or SF1005H2-xx.x.x=	SF1005J2-xx.x.x or SF1005J2-xx.x.x=	–	–	–
4-MB Flash ROM card	SF1005H4-xx.x.x or SF1005H4-xx.x.x=	SF1005J2-xx.x.x or SF1005J2-xx.x.x=	–	–	–
DOS diskette	SW1005H-xx.x.x or SW1005H-xx.x.x=	SW1005J-xx.x.x or SW1005J-xx.x.x=	–	–	–

1. These feature sets are available with Cisco IOS Release 11.0(4) and later releases.
2. Product numbers that start with “SW” are for floppy diskettes and require a TFTP server. Product numbers that start with “SF” are for Flash memory cards and do not require a TFTP server. Substitute the Cisco IOS release number for xx.x.x in the product number (for example, SF-1003C2-11.2.1).
3. Flash memory is optional. If you do not order Flash memory, the router must boot the software from a TFTP server on the Ethernet LAN.
4. If you subscribe to SMARTnet Maintenance, you only need to order the upgrade license (FL-). If you do not subscribe to SMARTnet Maintenance, you also need to order the upgrade media product number. You may order the media portion of an upgrade on diskette, 2-MB-, or 4-MB Flash cards. Use the appropriate SW- or SF- product numbers shown that end with an equal sign (=). See the example in the section “Cisco IOS Feature Set Upgrades” earlier in this chapter.

Table 200 Cisco IOS Product Numbers and Minimum Memory Requirements for Cisco IOS Releases 11.1, 11.0, 10.3, and 10.2—Cisco 1003, Cisco 1004, and Cisco 1005 Routers

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing	IP/OSF/PIM Routing (1005 only)[2]
Software Product Numbers for the Cisco 1003[3]:					
Flash memory required[4]	2 MB	2 MB	2 MB	2 MB	–
DRAM memory	4 MB	4 MB	4 MB	8 MB 4 MB–Cisco IOS Release 10.3 and 10.2	–
2-MB Flash ROM card	SF-1003C2-xx.x.x SF-1003C2-xx.x.x=	SF-1003B2-xx.x.x SF-1003B2-xx.x.x=	SF-1003E2-xx.x.x SF-1003E2-xx.x.x=	SF-1003A2-xx.x.x SF-1003A2-xx.x.x=	–
4-MB Flash ROM card	SF-1003C4-xx.x.x SF-1003C4-xx.x.x=	SF-1003B4-xx.x.x SF-1003B4-xx.x.x=	SF-1003E4-xx.x.x SF-1003E4-xx.x.x=	SF-1003A4-xx.x.x SF-1003A4-xx.x.x=	–
DOS diskette	SW-1003C-xx.x.x SW-1003C-xx.x.x=	SW-1003B-xx.x.x SW-1003B-xx.x.x=	SW-1003E-xx.x.x SW-1003E-xx.x.x=	SW-1003A-xx.x.x SW-1003A-xx.x.x=	–
Upgrade to IP/IPX	–	SW-1003B-xx.x.x=	–	–	–
Upgrade to IP/AppleTalk	–	–	SW-1003E-xx.x.x=	–	–
Upgrade to IP/IPX/AppleTalk	–	–	–	SW-1003CA-xx.x.x=	–
Software Product Numbers for the Cisco 1004[3]					
Flash memory Required[4]	2 MB	2 MB	2 MB	2 MB	–
Total DRAM memory	4 MB	4 MB	4 MB	8 MB 4 MB–Cisco IOS Releases 10.3 and 10.2	–
2-MB Flash ROM card	SF-1004C2-xx.x.x or SF-1004C2-xx.x.x=	SF-1004B2-xx.x.x or SF-1004B2-xx.x.x=	SF-1004E2-xx.x.x or SF-1004E2-xx.x.x=	SF-1004A2-xx.x.x or SF-1004A2-xx.x.x=	–
4-MB Flash ROM card	SF-1004C4-xx.x.x or SF-1004C4-xx.x.x=	SF-1004B4-xx.x.x or SF-1004B4-xx.x.x=	SF-1004E4-xx.x.x or SF-1004E4-xx.x.x=	SF-1004A4-xx.x.x or SF-1004A4-xx.x.x=	–
DOS diskette	SW-1004C-xx.x.x or SW-1004C-xx.x.x=	SW-1004B-xx.x.x or SW-1004B-xx.x.x=	SW-1004E-xx.x.x or SW-1004E-xx.x.x=	SW-1004A-xx.x.x or SW-1004A-xx.x.x=	–
Upgrade to IP/IPX	–	SW-1004B-xx.x.x=	–	–	–
Upgrade to IP/AppleTalk	–	–	SW-1004E-xx.x.x=	–	–
Upgrade to IP/IPX/AppleTalk	–	–	–	SW-1004CA-xx.x.x=	–

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing	IP/OSF/PIM Routing (1005 only)[2]
Software Product Numbers for the Cisco 1005		**IP/IPX WAN Option 1[5]**	**IP/AppleTalk WAN Option 1[5]**	**IP/IPX/AppleTalk WAN Option 1[5]**	–
Flash Memory Required[4]	2 MB	2 MB with or without X.25	2 MB with or without X.25	2 MB with or without X.25	–
DRAM Memory	4 MB	4 MB with or without X.25	4 MB with or without X.25	8 MB with or without X.25 8 MB without X.25 4 MB–Cisco IOS Releases 10.3 and 10.2	–
2-MB Flash ROM card	SF-1005C2-xx.x.x or SF-1005C2-xx.x.x=	SF-1005B2-xx.x.x or SF-1005B2-xx.x.x=	SF-1005E2-xx.x.x or SF-1005E2-xx.x.x=	SF-1005A2-xx.x.x or SF-1005A2-xx.x.x=	SF-1005M2-xx.x.x or SF-1005M2-xx.x.x=
4-MB Flash ROM card	SF-1005C4-xx.x.x or SF-1005C4-xx.x.x=	SF-1005B4-xx.x.x or SF-1005B4-xx.x.x=	SF-1005E4-xx.x.x or SF-1005E4-xx.x.x=	SF-1005A4-xx.x.x or SF-1005A4-xx.x.x=	SF-1005M4-xx.x.x or SF-1005M4-xx.x.x=
DOS diskette	SW-1005C-xx.x.x or SW-1005C-xx.x.x=	SW-1005B-xx.x.x or SW-1005B-xx.x.x=	SW-1005E-xx.x.x or SW-1005E-xx.x.x=	SW-1005A-xx.x.x or SW-1005A-xx.x.x=	SW-1005M-xx.x.x or SW-1005M-xx.x.x=
Upgrade to IP/IPX	–	SW-1005B-xx.x.x=	–	–	–
Upgrade to IP/AppleTalk	–	–	SW-1005E-xx.x.x=	–	–
Upgrade to IP/IPX/AppleTalk	–	–	–	SW-1005CA-xx.x.x=	–
Software Product Numbers for the Cisco 1005[3]:		**IP/IPX WAN Option 2[6]**	**IP/AppleTalk WAN Option 2[6]**	**IP/IPX/AppleTalk WAN Option 2[6]**	–
2-MB Flash ROM card	SF-1005C2-xx.x.xor SF-1005C2-xx.x.x=	SF-1005G2-xx.x.x or SF-1005G2-xx.x.x=	SF-1005F2-xx.x.x or SF-1005F2-xx.x.x=	SF-1005D2-xx.x.x or SF-1005D2-xx.x.x=	–
4-MB Flash ROM card	SF-1005C4-xx.x.x or SF-1005C4-xx.x.x=	SF-1005G4-xx.x.x or SF-1005G4-xx.x.x=	SF-1005F4-xx.x.x or SF-1005F4-xx.x.x=	SF-1005D4-xx.x.x or SF-1005D4-xx.x.x=	–
DOS diskette	SW-1005C-xx.x.x or SW-1005C-xx.x.x=	SW-1005G-xx.x.x or SW-1005G-xx.x.x=	SW-1005F-xx.x.x or SW-1005F-xx.x.x=	SW-1005D-xx.x.x or SW-1005D-xx.x.x=	–
Upgrade to IP/IPX	–	SW-1005G-xx.x.x==	–	–	–
Upgrade to IP/AppleTalk	–	–	SW-1005F-xx.x.x=	–	–
Upgrade to IP/IPX/AppleTalk	–	–	–	SW-1005CA-xx.x.x=	–

Category	IP Routing	IP/IPX Routing[1]	IP/AppleTalk Routing[1]	IP/IPX/AppleTalk Routing	IP/OSF/PIM Routing (1005 only)[2]
Software Product Numbers for the Cisco 1005[3]:	**IP/Async WAN Option 3[7]**	**IP/IPX Async WAN Option 3[7]**			
2-MB Flash ROM card	SF-1005H2-xx.x.x or SF-1005H2-xx.x.x=	SF-1005J2-xx.x.x or SF-1005J2-xx.x.x=	–	–	–
4-MB Flash ROM card	SF-1005H4-xx.x.x or SF-1005H4-xx.x.x=	SF-1005J4-xx.x.x or SF-1005J4-xx.x.x=	–	–	–
DOS diskette	SW-1005H-xx.x.x or SW-1005H-xx.x.x=	SW-1005J-xx.x.x or SW-1005J-xx.x.x=	–	–	–
Upgrade to IP/IPX	–	SW-1005J-xx.x.x=	–	–	–

1. These feature sets are available with Cisco IOS Release 11.0(4) and later releases.
2. The IP/OSF/PIM feature set is available for the Cisco 1005 only, with Cisco IOS Release 11.0 and later releases. It includes the current IP image with the OSPF routing protocol and Protocol Independent Multicast (PIM) protocol.
3. Product numbers that start with "SW" are for floppy diskettes and require a TFTP server. Product numbers that start with "SF" are for Flash memory cards and do not require a TFTP server. Substitute the Cisco IOS release number for xx.x.x in the product number (for example, SF-1003C2-11.1.1).
4. Flash memory is optional. If you do not order Flash memory, the router must boot the software from a TFTP server on the Ethernet LAN.
5. This feature set is available with HDLC, PPP, SMDS, and Frame Relay, but without X.25 for Cisco IOS Release 11.1 only.
6. This feature set is available with X.25 and supported by Cisco IOS Release 11.1 only.
7. This feature set is supported by Cisco IOS Release 11.1 only.

Options

Options for the Cisco 1005 are listed in Table 201. If a product number ends with an equal sign (=), the item can be ordered only as a spare. If a product number does not end with an equal sign, the item can be ordered as a spare or as a configurable part of a system order.

Table 201 Cisco 1005 Options

Option	Product Number
Console cable	CAB-1000-CON=
AC power supply	PWR-1000-AC1=
EIA/TIA-232 male DTE interface, 10' (3 m)	CAB-232MT
EIA/TIA-449 male DTE interface, 10' (3 m)	CAB-449MT
EIA-530 male DTE interface, 10' (3 m)	CAB-530MT
V.35 male DTE interface, 10' (3 m)	CAB-V35MT
X.21 male DTE interface, 10' (3 m)	CAB-X21MT
4-MB to 8-MB DRAM upgrade	MEM-1005-8MD
8-MB DRAM SIMM	MEM-1000-8MD=