

# Cisco 800 Series ISDN Routers

**The Cisco 800 Series ISDN Router offers enhanced network security and reliability through the power of Cisco IOS® technology tailored for small offices and telecommuters.**

Cisco 800 Series ISDN routers extend the power of Cisco IOS technology to small offices and corporate telecommuters. Cisco IOS technology offers enhanced security, reliability, and safe investment with low cost of ownership to enable customers to benefit from the Internet economy by increasing productivity, simplifying communication, and reducing costs. The Cisco 800 Series enables customers to benefit from value-added services such as managed network services, virtual private networks (VPNs), point-of-sale (POS) applications, and secure Internet access (refer to Figure 1).

### Cisco 800 Series Benefits

Taking advantage of its expertise and leadership in Internet solutions, Cisco offers small offices and telecommuters routing

solutions that provide secure and reliable access to the Internet or corporate networks.

### Enhanced Security

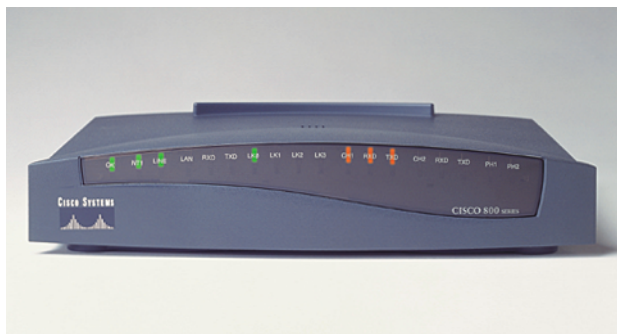
The Cisco 800 Series routers have enhanced security features such as an integrated stateful firewall and IP Security (IPSec) encryption to enable VPNs. These features allow small offices and telecommuters to conduct business over the Internet while protecting valuable resources.

### Support for CAPI 2.0

The Cisco 800 Series can be used to access popular European Internet and telematic such as faxing, file transfer, and online banking. Cisco 800 Series routers now include support Common Application Programming Interface (CAPI) Version 2.0, a feature required for several applications, including:

- Electronic banking and online shopping with Deutsche Telecom's T-Online
- Personal communication applications, such as Symantec's WinFax PRO
- Internet service providers, such as T-Online, CompuServe, and AOL

Figure 1  
 Cisco 800 Series routers give small offices and corporate telecommuters enhanced security, superior reliability, and safe investment with low cost of ownership.





### Easy Setup with 1-2-3 Connect

The Cisco 800 Series ships with Cisco Fast Step™, a router installation utility that enables customers to access the Internet in three simple steps—that make installing the Cisco 800 Series Router easy and fast.

1. Connect the color-coded cables.
2. Insert the installation CD for the Cisco Fast Step utility.
3. Select a German or Austrian Internet service provider (ISP) from the Cisco Fast Step screen and enter a username and password. The user is then connected to the Internet and the router automatically connects to the selected ISP while verifying that the connection is operational.

Cisco Fast Step Release makes installing the Cisco 800 Series Router easy and fast for users without previous routing or networking experience.

### Superior Reliability

Because Cisco 800 Series routers are based on the same proven Cisco IOS technology used throughout the Internet, small offices can depend on them day after day, year after year. In addition, a Cisco 800 Series router provides Internet access to multiple users without being tied to a server or dedicated PC. This means that if a server on the local-area network (LAN) crashes, other users remain connected to the Internet.

### Safe Investment

The Cisco 800 Series routers offer field-upgradable memory options so the latest networking features can be added when necessary. With an advanced processor and memory architecture, these routers can support future applications as customer networking needs expand. Table 1 lists the Cisco 800 Series routers that are available.

**Table 1** Cisco 800 Series Models

Model	Ethernet LAN	WAN	Analog Telephone Ports	Console Port	LAN Ports
Cisco 801	One 10BASE-T (RJ-45)	One ISDN BRI <sup>1</sup> S/T (RJ-45 connector)	None	RJ-45	One Ethernet
Cisco 802	One 10BASE-T (RJ-45)	One ISDN BRI U (RJ-45 connector)	None	RJ-45	One Ethernet
Cisco 803	10BASE-T (RJ-45) 4-port hub	One ISDN BRI S/T (RJ-45 connector)	2 (RJ-11)	RJ-45	4-port Ethernet hub
Cisco 804	10BASE-T (RJ-45) 4-port hub	One ISDN BRI U (RJ-45 connector)	2 (RJ-11)	RJ-45	4-port Ethernet hub

1. Basic Rate Interface



## Low Cost of Ownership

With Cisco IOS Software, customers using the Cisco 800 Series can reduce operational costs for training, management, installation, and deployment. The Cisco 800 Series provides key wide-area network (WAN) and ISDN optimization features, including bandwidth on demand (BoD), dial-on-demand routing (DDR), time of day/access control lists (ACLs), and always-on/dynamic ISDN (AO/DI). The Cisco 803 and 804 routers also offer an all-in-one solution that combines telephone, fax, and data communication on a single access line.

## Product Features

### ISDN Features

The Cisco 800 Series supports ISDN switched, leased-line connections, AO/DI, X.25 over ISDN D channel, Bandwidth Allocation Control Protocol (BACP), Multilink PPP (MLP), Compression Control Protocol (CCP) compression (up to 4:1), and BoD with load balancing for links up to 128 kbps for effective throughput up to 512 kbps. For ISDN cost control, the Cisco 800 Series supports advice of change and dynamic short hold mode. Also new in Cisco Fast Step Release 2.3 is the point-and-click ability to limit connections to one B channel.

### Security

To take advantage of the unprecedented opportunities offered by communications and commerce over the Internet, private information must remain secure. Cisco Secure Integrated Software provides many technologies to build a custom security solution. The elements of security services include perimeter security, identity, monitoring, privacy, firewalls, IPSec encryption, and VPNs.

### Standard Security

Perimeter security refers to the control of traffic entry and exit between network boundaries, such as between private networks, intranets, extranets, or the Internet. Cisco IOS perimeter security technologies provide a highly flexible, superior solution with features such as:

- Standard and extended ACLs
- Lock and Key (dynamic ACLs)
- Router/route authentication, authorization, and accounting (such as Password Authentication Protocol/Challenge Handshake Authentication Protocol [PAP/CHAP]), Microsoft CHAP (MSCHAP)
- Network Address Translation (NAT) (including multi-NAT)
- Token card authentication with Cisco Secure authentication

NAT eliminates the need to readdress all hosts with existing private network addresses and hides internal addresses from public view. For businesses that want to allow selected access to the network, NAT can be configured to allow only certain types of data requests such as Web browsing, e-mail, or file transfers.



## Enhanced Security

- *Dynamic firewall*—Companies increasingly rely on internal networks and servers for accessing company data. To take advantage of the Internet as a key business tool, companies must connect their internal networks to the Internet while keeping sensitive internal data secure. Company data can be protected against unauthorized access with stateful firewalls. The integrated Cisco IOS Firewall Feature Set is a stateful firewall that provides:
  - Stateful (dynamic) ACLs (application/context based)
  - Java blocking
  - Denial-of-service attack detection and prevention
  - Real-time alerts and audit trails

Dynamic firewalls provide these vital enhanced security features. The term firewall is used by many vendors but not uniformly referred to as stateful firewalls. Firewalls that are not dynamic do not provide these enhanced security features.

## Encryption and Tunneling

The Cisco 800 Series routers provide IPSec encryption technology to enable small offices and telecommuters to deploy VPNs. IPSec encryption provides privacy, integrity, and authenticity for transmission of sensitive information over the Internet. The unique end-to-end Cisco offering allows customers to implement IPSec encryption transparently into the network without affecting individual PCs. The Cisco 800 Series with IPSec encryption allows significant cost savings by using the Internet to create secure connections between small offices and teleworkers. As a component of the Cisco VPN solution, the Cisco 800 Series supports:

- IPSec tunneling with 128- or 56-bit Digital Encryption Standard (DES) or Triple DES (3DES)
- Layer 2 Tunneling Protocol (L2TP)
- Generic routing encapsulation (GRE)

## Manageability

Cisco 800 Series routers support management by a wide range of platforms and applications. Cisco ConfigMaker, Cisco Fast Step Software (Windows 95, 98, and NT 4.0), and CiscoView (UNIX) applications provide superior capabilities for configuration and security management, as well as performance and fault monitoring. The Cisco 800 Series supports centralized administration and management via Simple Network Management Protocol (SNMP), Telnet, or local management through the router console port.

## Safe Investment

Small offices with limited time, money, and staff need to know their technology investments are safe. Field-expandable dynamic RAM (DRAM) and Flash memory allow small offices to take advantage of new Cisco IOS feature enhancements. And because the Cisco 800 Series incorporates an advanced processor and memory architecture, it can support future applications as customer networking needs expand.



Companies using the Cisco 800 Series routers can take advantage of Cisco industry-leading support options that ensure that the router stays up and running. These support services include the following:

- Cisco IOS Software updates in features such as protocol, security, and bandwidth
- Full access to Cisco.com for technical assistance and product information
- Twenty-four-hour-a-day access to the industry's largest dedicated technical support staff, with the first 90 days included at no charge

Low Cost of Ownership

### **Bandwidth Optimization Features**

The Cisco 800 Series reduces cost of ownership by providing best-in-class WAN optimization features to reduce networking charges. These features include:

- Dynamic advice-of-charge mode and permanent ISDN connections
- DDR dialing of the ISDN line only when needed, plus automatic termination of the connection at the end of a user session
- MLP for standards-based B-channel aggregation (RFC 1717) and BACP for obtaining BoD
- Snapshot routing for IP and Internetwork Packet Exchange (IPX), which prevents the ISDN line from being dialed only to exchange periodic routing updates
- Industry-standard STAC data compression for throughput of up to 512 kbps on ISDN models
- ACLs by time of day
- Frame Relay-over-ISDN leased lines
- X.25 D-channel packet data for maximum use of all available bandwidth

The Cisco 800 Series supports ITU-compliant X.25 service over the ISDN D channel. With this feature, a Cisco 800 Series router cost-effectively supports transaction-oriented applications such as POS authorizations. In addition, the Cisco 800 Series X.25 feature includes priority queuing to improve the responsiveness of traffic over this link.

### **All-in-One Solution**

The Cisco 803 and 804 models provide an all-in-one solution to reduce equipment requirements and telephone charges in a small office by combining their data, telephone, and fax communications on one device and a single ISDN line. The Cisco 803 and 804 routers also provide the following features:

- Four-port 10BASE-T Ethernet hub for four direct connections to PCs or other network devices such as an Ethernet hub, printer, or fax
- Two RJ-11 interfaces for telephone devices such as telephones, fax machines, and modems
- Support for supplemental telephone features such as call transfer, call conference, call hold, call retrieve, call waiting (if offered by a user's telephone company), and distinctive ringing



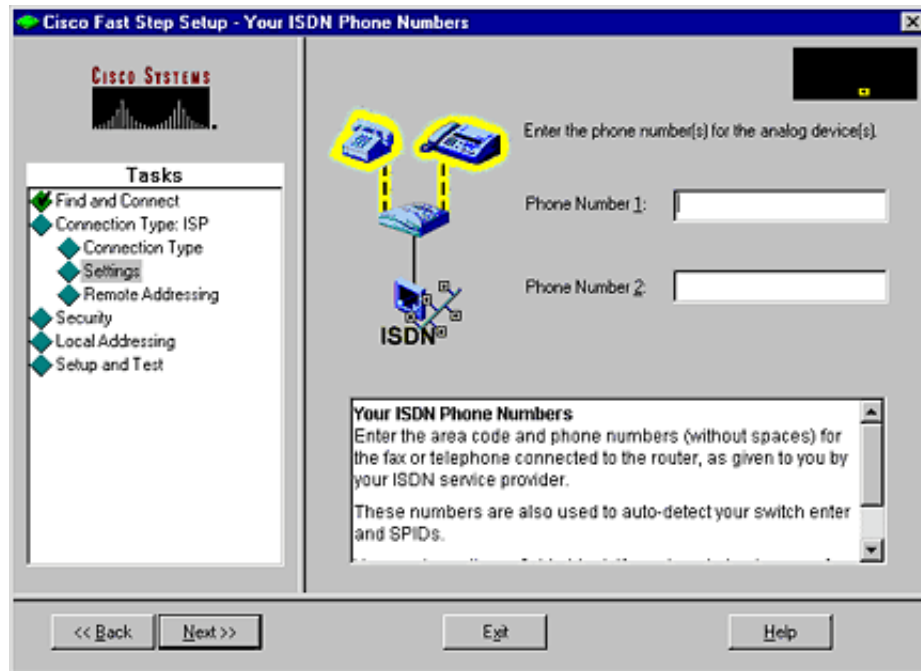
## Installation and Configuration Tools

Each Cisco 800 Series router includes Cisco Fast Step Software to simplify setup, monitoring, and troubleshooting. The Cisco Fast Step application leads users through three easy steps to connect to an ISP or remote corporate network. Cisco Fast Step Software includes the Cisco Fast Step monitor application, which provides users with router LAN and WAN performance statistics, fault alarms, and troubleshooting assistance (refer to Figure 2). Cisco Fast Step Software also supports automatic detection of the ISDN switch to further simplify the setup process in Cisco Fast Step.

For additional setup ease, the Cisco 800 Series routers have color-coded ports and cables to help users make proper connections. Quick reference guide documentation provides easy-to-follow installation instructions.

Figure 2

Cisco Fast Step Software makes it easy for nontechnical users to install a Cisco 800 Series Router.





**Table 2 Key Features and Benefits**

Feature	Benefit
<b>Standard security</b>	
PAP, CHAP, MSCHAP, and ACLs	<ul style="list-style-type: none"> <li>• Protect network from unauthorized access</li> </ul>
Route and router authentication	<ul style="list-style-type: none"> <li>• Accepts routing table updates from only known routers, ensuring that no corrupt information from unknown sources is received</li> </ul>
<b>Enhanced security</b>	
Cisco IOS Firewall feature set	<ul style="list-style-type: none"> <li>• Offers internal users secure, per-application dynamic ACLs for all traffic across perimeters</li> <li>• Defends and protects router resources against denial-of-service attacks</li> <li>• Checks packet headers, dropping suspicious packets</li> <li>• Protects against unidentified, malicious Java applets</li> <li>• Details transactions for reporting on a per-application, per-feature basis</li> </ul>
IPSec encryption (DES and 3DES)	<ul style="list-style-type: none"> <li>• Ensures data integrity and authenticity of origin by using standards-based encryption</li> <li>• Provides security for all users on the LAN without configuring individual PCs</li> </ul>
<b>Superior reliability</b>	
Cisco IOS technology	<ul style="list-style-type: none"> <li>• Offers proven technology throughout the backbone of the Internet</li> </ul>
Standalone router	<ul style="list-style-type: none"> <li>• Provides Internet access to multiple users without being tied to a server or dedicated PC; if one user on the LAN crashes, other users can still access the Internet</li> </ul>
<b>Management</b>	
Cisco ConfigMaker, Cisco Fast Step Software 2.3, SNMP, Security Association Agent, TACAS+	<ul style="list-style-type: none"> <li>• Offer graphical user interface-based windows configuration tools for novice users</li> <li>• Offer remote management and monitoring via SNMP or Telnet and local management via console port</li> </ul>
<b>Safe investment</b>	
Field-expandable memory	<ul style="list-style-type: none"> <li>• Allows customers to add features as networking needs expand</li> </ul>
Advanced processor and memory architecture	<ul style="list-style-type: none"> <li>• Ensures that the platform can support processor-intensive applications</li> </ul>
World-class support	<ul style="list-style-type: none"> <li>• Helps customers keep their Cisco 800 Series routers running all the time</li> </ul>
<b>Low cost of ownership</b>	
Lower operational costs	<ul style="list-style-type: none"> <li>• Allow customers to take advantage of existing knowledge of Cisco IOS Software for installation and manageability</li> </ul>
CAPI	<ul style="list-style-type: none"> <li>• Offers integrated access to popular European Internet and telematic applications (Cisco 801 and 803)</li> </ul>



**Table 2** Key Features and Benefits

Feature	Benefit
<b>Bandwidth optimization</b>	
QoS/WFQ <sup>1</sup>	<ul style="list-style-type: none"> <li>Ensures consistent response times for multiple applications by allocating bandwidth intelligently</li> <li>Gives the most important applications priority use of the WAN line</li> </ul>
Choice of encapsulation (PPP, HDLC <sup>2</sup> , Frame Relay)	<ul style="list-style-type: none"> <li>Ensures compatibility with existing network</li> </ul>
Snapshot routing for IP and IPX	<ul style="list-style-type: none"> <li>Allows efficient use of available bandwidth</li> </ul>
X.25 packet data	<ul style="list-style-type: none"> <li>Permits data transfer over X.25 networks</li> </ul>
<b>Simplified setup and installation</b>	
NAT	<ul style="list-style-type: none"> <li>Lets businesses conserve valuable IP addresses</li> <li>Reduces time and costs by reducing IP address management</li> </ul>
Cisco Fast Step Software 2.3	<ul style="list-style-type: none"> <li>Simplifies installation with easy, step-by-step procedures</li> </ul>
Cisco IOS Easy IP	<ul style="list-style-type: none"> <li>Enables transparently configuration of true mobility-client IP addresses via the Cisco IOS DHCP<sup>3</sup> server each time a client powers up</li> </ul>
Color-coded ports and cables and quick start reference guide	<ul style="list-style-type: none"> <li>Helps users make proper connections</li> <li>Provides easy-to-follow installation instructions</li> </ul>
<b>All-in-one solution (Cisco 803 and 804)</b>	
Four-port Ethernet hub	<ul style="list-style-type: none"> <li>Eliminates the need for a separate hub</li> </ul>
Two analog telephone interfaces	<ul style="list-style-type: none"> <li>Allow voice, fax, and data needs to be combined on one ISDN</li> </ul>

1. Quality of service/Weighted Fair Queuing

2. High-Level Data Link Control

3. Dynamic Host Control Protocol

**Table 3** Hardware Specifications

Model	Cisco 801	Cisco 802	Cisco 803	Cisco 804
<b>Market</b>	Worldwide	North America	Worldwide	North America
<b>Processor</b>	MPC 850	MPC 850	MPC 850	MPC 850
<b>Speed</b>	33 MHz	33 MHz	33 MHz	33 MHz
<b>Default DRAM<sup>1</sup> memory</b>	8 MB	8 MB	8 MB	8 MB
<b>Maximum DRAM memory</b>	12 MB	12 MB	12 MB	12 MB
<b>Default Flash<sup>2</sup> memory</b>	8 MB	8 MB	8 MB	8 MB





**Table 3** Hardware Specifications

Model	Cisco 801	Cisco 802	Cisco 803	Cisco 804
Maximum Flash memory	12 MB	12 MB	12 MB	12 MB
NT1	No	Yes	No	Yes
Analog telephone ports	-	-	Two RJ-11	Two RJ-11
REN	-	-	5.0	5.0
Ethernet	One 10BASE-T	One 10BASE-T	Four-port 10BASE-T	Four-port 10BASE-T
Console	RJ-45	RJ-45	RJ-45	RJ-45
LEDs	11	11	17	17
Support for Kensington-style physical lock	Yes	Yes	Yes	Yes
Stackable	Yes	Yes	Yes	Yes
Crossover hub switch	Yes	Yes	Yes	Yes
Power supply	External/universal	External/universal	External/universal	External/universal

1. DRAM must be obtained from Cisco Systems.
2. Additional Flash memory is Intel "Mini-Card" technology.

### Cisco IOS Software Feature Sets

Five Cisco IOS Software feature sets are available on the Cisco 801 through 804 and Cisco 801-CAPI and 803-CAPI routers (see following list). For details of feature support and memory requirements by model and by Cisco IOS image and version, consult the Cisco Feature Navigator (located on Cisco at [www.Cisco.com](http://www.Cisco.com)) at the following URL or consult your Cisco authorized representative.

- IP
- IP/Plus
- IP/FW
- IP/VPN
- IP/VPN/IPX/Plus

The Cisco Feature Navigator can be found at:

<http://www.cisco.com/warp/public/732/support/fn/index.shtml>



## Physical Specifications

### Dimensions (H x W x D)

- 2.0 x 9.9 x 8.3 in. (5.1 x 24.6 x 21.1 cm)

### Weight

- Cisco 801/2: 1.39 lb (0.63 kg)
- Cisco 803/4: 1.44 lb (0.65 kg)

### Back Panel

- One slot on rear panel for Kensington-style lock
  - Environmental Specifications
- Temperature
  - Operating: 0° to 40°C (32° to 104°F)
  - Storage: -20° to 65°C (-4° to 149°F)
- Humidity
  - Operating: 10 to 85% relative humidity

### Power Supply

- External tabletop power supply:
  - United States: 110 VAC, 60 Hz
  - United Kingdom and Singapore: 240 VAC, 50 Hz
  - Continental Europe: 220 VAC, 50 Hz
  - Japan: 100 VAC, 50-60 Hz

### LEDs

- System: OK, LINE
- Ethernet: LAN, RXD, TXD
- Channel 1: CH1, RXD, TXD
- Channel 2: CH2, RXD, TXD
- Telephone: PH1 and PH2 (Cisco 803/4)
- Link: Four Ethernet links: LK0, LK1, LK2, LK3 (Cisco 803/4)
- Link LED: Back panel (Cisco 801/2)

### Ethernet Support

- One 10BASE-T (RJ-45) with external hub/node switch (Cisco 801/2)
- Four 10BASE-T (RJ-45) with external hub/node switch (Cisco 803/4)



### **Regulatory Approvals**

- CE: IEC 801, 801-3
- CISPRB, CSA, EN 41003, EN 60950
- FCC Part 15 Class B, Part 68
- JATE, ST/PAB/ETR/384, TUV, UL VCCI 2, ACA
- CE, FCC, VCCI2, CISPRB, UL, CSA, TUV-GS, JATE, ACA, IC

### **ISDN BRI Support**

- Two B channels plus one D channel: 2 x 64 kbps (precompressed)
- Interoperable Switched 56: 2 x 56 kbps (precompressed)
- Single- and multipoint configurations
- Compatible with data or voice B-channel ISDN switch types
- CTR3 (ETSI, NET3)
- VN3/4/5 (France)

### **Telephone Support (Cisco 803 and 804 only)**

- Telephones: Dual tone multifrequency (DTMF) only (touch-tone only, no pulse)
- Group III facsimile: V.17, V.27 TER, V.29
- Modems: V.22, V.22bis, V.32, V.32bis, V.34
- Dial tone (400 Hz) provided outside of North America
- Ringer equivalency number (REN) = 5.0

### **Contact Information**

For more information on the Cisco 800 Series, call:

- United States and Canada: 800 553-NETS (6387)
- Europe: 32 2 778 4242
- Australia: 61 2 9935 4107
- Other: 408 526-7209

Or contact your local Cisco office. To locate one near you, visit:

<http://www.cisco.com/offices>.

### **Orderability and Availability**

The Cisco 800 Series routers are orderable and available today.



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