

Cisco 1800 Series Integrated Services Routers: Cisco 1841 Router (Modular)

Cisco Systems® is redefining best-in-class enterprise and small- to-medium-sized business routing with a new line of integrated services routers that are optimized for the secure, wire-speed delivery of concurrent data, voice, and video services. Founded on 20 years of leadership and innovation, the modular Cisco® 1800 Series of integrated services routers (refer to Figure 1) intelligently embed data and security into a single, resilient system for fast, scalable delivery of mission-critical business applications. The best-in-class Cisco 1800 Series architecture has been specifically designed to meet requirements of small-to-medium-sized businesses, small enterprise branch offices, and service provider-managed services applications for delivery of concurrent services at wire-speed performance. The integrated secure systems architecture of the Cisco 1800 Series delivers maximum business agility and investment protection.

Product Overview

Cisco 1800 Series integrated services routers are the next evolution of the award-winning Cisco 1700 Series modular access routers. The Cisco 1841 router (Figure 1) is designed for secure data connectivity and provides significant additional value compared to prior generations of Cisco 1700 Series routers by offering more than a fivefold performance increase and integrated hardware-based encryption enabled by an optional Cisco IOS® Software security image. The Cisco 1841 dramatically increase interface card slot performance and density over the Cisco 1700 Series while maintaining support for more than 30 existing WAN interface cards (WICs) and multiflex trunk cards (voice/WICs [VWICs]-for data only on the Cisco 1841 router).

The Cisco 1841 router features secure, fast, and high-quality delivery of multiple, concurrent services for small-to-medium-sized businesses and small enterprise branch offices. The Cisco 1841 router offers embedded hardware-based encryption enabled by an optional Cisco IOS Software security image; further enhancement of VPN performance with an optional VPN acceleration module; an intrusion prevention system (IPS) and firewall functions; interfaces for a wide range of connectivity requirements, including support for optional integrated switch ports; plus sufficient performance and slot density for future network expansion and advanced applications as well as an integrated real-time clock.

Support of high-density WICs (HWICs) is optional.

Figure 1. Cisco 1800 Series Integrated Services Routers

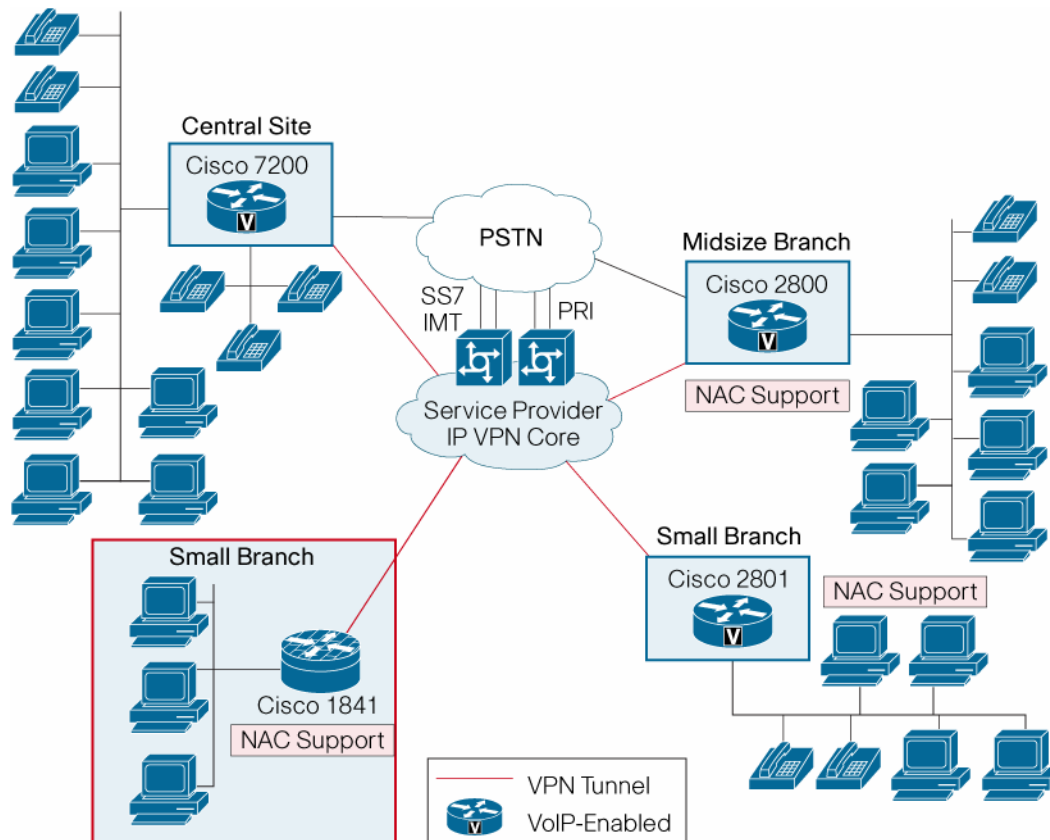


Applications

Secure Network Connectivity for Data

Security has become a fundamental building block of any network, and Cisco routers play an important role in embedding security at the customer's access edge. The Cisco IOS Software security feature sets for the Cisco 1841 router that enable the hardware-based encryption on the motherboard provide a robust array of features such as Cisco IOS Firewall, IPS support, IP Security (IPSec) VPNs (Digital Encryption Standard [DES], Triple DES [3DES], and Advanced Encryption Standard [AES]), SSL Web VPN, Dynamic Multipoint VPN (DMVPN), Group Encrypted Transport (GET) VPN, and Easy VPN, Network Admissions Control (NAC) for antivirus defense, Secure Shell (SSH) Protocol Version 2.0, and Simple Network Management Protocol (SNMP) in one solution set. In addition, the Cisco 1841 router offers bundled network security solutions with IPSEC and SSL VPN encryption-acceleration modules, making it the industry's most robust and adaptable security solution available for small-to-medium-sized businesses and small enterprise branch offices. As Figure 2 demonstrates, the Cisco 1800 Series routers help enable customers to deliver high-performance, concurrent, mission-critical data applications with integrated, end-to-end security.

Figure 2. Secure Network Connectivity with Cisco 1841 Router



Integrated Services

The new, high-performance and secure integrated services architecture of the Cisco 1841 router (as shown in Figure 2) enables customers to deploy simultaneous services such as secured data communications with traditional IP routing at wire-speed performance. By offering a hardware-based encryption on the motherboard that can be enabled with an optional Cisco IOS Software security image and the flexibility to integrate a wide array of services, modules, and interface cards, the Cisco 1841 router helps enable businesses to incorporate the functions of a standalone secure data solution.

Primary Features and Benefits

Architecture Features and Benefits

The Cisco 1841 modular architecture has been specifically designed to meet requirements of small to medium-sized businesses and small enterprise branch offices as well as service provider-managed applications for concurrent services at wire-speed performance. The Cisco 1841 router, together with other Cisco integrated services routers such as the Cisco 2800 Series, provide the broadest range of secure connectivity options in the industry combined with availability and reliability features. In addition, Cisco IOS Software provides support for a complete suite of transport protocols, quality of service (QoS), and security. Table 1 gives the architecture features and benefits of the Cisco 1841 router.

Table 1. Architecture Features and Benefits of Cisco 1841 Router

Feature	Benefit
High-Performance Processor	<ul style="list-style-type: none"> Supports concurrent deployment of high-performance, secure data services with headroom for future applications
Modular Architecture	<ul style="list-style-type: none"> Offers wide variety of LAN and WAN options; network interfaces are field-upgradable to accommodate future technologies Provides many types of slots to add connectivity and services in the future on an “integrate-as-you-grow” basis Supports more than 30 modules and interface cards, including existing WAN (WIC) and multiflex (VWIC) interface cards (for data support only on the Cisco 1841 router) and advanced integration modules (AIMs)
Integrated Hardware-Based Encryption Acceleration	<ul style="list-style-type: none"> Offers cryptography accelerator as standard integrated hardware that can be enabled with an optional Cisco IOS Software for 3DES and AES encryption support Provides enhanced feature set of security performance through support of optional VPN acceleration card for VPN 3DES or AES encryption
Ample Default Memory	<ul style="list-style-type: none"> Provides 32 MB of Flash and 128 MB of synchronous dynamic RAM (SDRAM) memory to support deployment of concurrent services
Integrated Dual High-Speed Ethernet LAN Ports	<ul style="list-style-type: none"> Helps enable connectivity speeds up to 100BASE-T Ethernet technology without the need for cards and modules Allows segmentation of the LAN
Support for Cisco IOS 12.3T, 12.4, 12.4T Feature Sets and Beyond	<ul style="list-style-type: none"> Supports the Cisco 1841 router starting with Cisco IOS Software Release 12.3T Helps enable end-to-end solutions with support for latest Cisco IOS Software-based QoS, bandwidth management, and security features
Integrated Standard Power Supply	<ul style="list-style-type: none"> Provides for easier installation and management of the router platform

Modularity Features and Benefits

The Cisco 1841 router provides enhanced modular capabilities while protecting customer investments. The modular architecture has been designed to provide the increased bandwidth and performance required to support concurrent, secure applications. Most existing WICs, multi-flex trunk interface cards (for data only), and Advanced Integration Modules (AIMs) are supported in the Cisco 1841. Table 2 lists the modularity features and benefits of the Cisco 1841 router.

Table 2. Modularity Features and Benefits of Cisco 1841 Router

Feature	Benefit
HWIC Slots	<ul style="list-style-type: none"> The modular architecture on the Cisco 1841 router supports HWIC slots. The newly designed high-speed WAN interface slots significantly increase the data-throughput capability (up to 800-Mbps aggregate). Table 6 lists the High Speed WAN Interface cards supported on the Cisco 1841. Both slots on the Cisco 1841 router are HWIC slots and provide compatibility with WICs and multiflex trunk (VWICs) interface cards (for data only).
AIM Slots (internal)	<ul style="list-style-type: none"> The Cisco 1841 router supports hardware-accelerated encryption through AIM modules (AIM-VPN/SSL-1) and intrusion prevention through AIM-IPS-K9 module The Cisco 1841 router has one internal AIM slot.

Secure Networking Features and Benefits

The Cisco 1800 Series features a built-in hardware-accelerated encryption on the motherboard that can be enabled with an optional Cisco IOS Software security image. The onboard hardware-based encryption acceleration offloads the encryption processes to provide greater IPsec 3DES and AES throughput. With the integration of optional VPN AIMS, NAC for antivirus defense, and Cisco IOS Software-based firewall and IPS support, Cisco offers the industry's leading robust and adaptable security solution for small to medium-sized businesses and small enterprise branch offices. Table 3 outlines router-integrated security features and benefits.

Table 3. Features and Benefits of Secure Networking

Feature	Benefit
Hardware-Based Encryption on Motherboard	<ul style="list-style-type: none"> Support for hardware-based encryption on the Cisco 1841 can be enabled through an optional Cisco IOS Software security image.
AIM-Based VPN Acceleration	<ul style="list-style-type: none"> Support for an optional dedicated VPN AIM can deliver two to three times the performance of embedded encryption capabilities.
SSL Web VPN	<ul style="list-style-type: none"> Allows businesses to securely and transparently extend their networks to any Internet-enabled location using SSL VPN; the Cisco IOS WebVPN supports clientless access to applications such as HTML-based intranet content, e-mail, network file shares, and Citrix and to the Cisco SSL VPN Client, enabling full network access remotely to virtually any application
AIM-Based SSL VPN	<ul style="list-style-type: none"> An optional dedicated SSL VPN AIM module provides SSL VPN acceleration and supports two times the number of tunnels when compared to embedded IOS based SSL VPN capabilities. The SSL VPN AIM module also supports IPSEC VPN and IP Payload Compression Protocol in hardware.
NAC	<ul style="list-style-type: none"> NAC allows network access only to compliant and trusted endpoint devices for antivirus defense.
IPS Support	<ul style="list-style-type: none"> Flexible support is provided with Cisco IOS Software. New intrusion-detection-system (IDS) signatures can be dynamically loaded independent of the Cisco IOS Software release.
Cisco Easy VPN Remote and Server Support	<ul style="list-style-type: none"> This feature eases administration and management of point-to-point VPNs by actively pushing new security policies from a single headend to remote sites.
Dynamic Multipoint VPN (DMVPN)	<ul style="list-style-type: none"> DMVPN is a Cisco IOS Software solution for building IPsec + generic routing encapsulation (GRE) VPNs in an easy and scalable manner.
Group Encrypted Transport (GET) VPN	<ul style="list-style-type: none"> GET VPN is a Cisco IOS Software solution that simplifies securing large Layer 2 or MPLS networks requiring partial or full-mesh connectivity by providing tunnel-less VPN connectivity
Cisco IOS Firewall, Including URL Filtering	<ul style="list-style-type: none"> URL filtering support is available with optional Cisco IOS Security Software.
Real-Time Clock Support	<ul style="list-style-type: none"> Real-time clock support keeps an accurate value of date and time for applications that require an accurate time stamp-such as logging, debugging, and digital certificates.
Cisco Security Device Manager	<ul style="list-style-type: none"> An intuitive, easy-to-use, Web-based device management tool embedded within the Cisco IOS Software access routers can be accessed remotely for faster and easier deployment of Cisco routers for both WAN access and security features. Cisco SDM helps resellers and customers to quickly and easily deploy, configure, and monitor a Cisco access router without requiring knowledge of the Cisco IOS Software command-line interface.
USB Port (1.1)	<ul style="list-style-type: none"> The integrated USB port is configurable with an optional USB token for secure configuration distribution and off-platform storage of VPN credentials.

Cost of Ownership and Ease of Use

The Cisco 1841 router continues the heritage of offering versatility, integration, and power to small-to-medium-sized businesses and small enterprise branch offices. It offers many enhancements to support the deployment of multiple integrated services in the branch office. Key features and benefits that lower the cost of ownership and improve ease of use are outlined in Table 4.

Table 4. Cost of Ownership and Ease of Use-Features and Benefits

Feature	Benefit
Integrated Channel Service Unit (CSU)/Data Service Unit (DSU)	<ul style="list-style-type: none"> This feature consolidates typical communications equipment found in branch-office wiring closets into a single, compact unit. This space-saving solution provides better manageability.
USB Port (1.1)	<ul style="list-style-type: none"> The integrated USB peripheral port is provided to allow support for enhanced provisioning and simplified image distribution as well as other functions. These enhancements aid in reducing support costs and downtime.
Enhanced Setup Feature	<ul style="list-style-type: none"> An optional setup wizard with context-sensitive questions guides the user through the router configuration process, allowing faster deployment.
CiscoWorks, CiscoWorks VPN/Security Management Solution (VMS) and Cisco IP Solution Center (ISC) Support	<ul style="list-style-type: none"> Advanced management and configuration capabilities are offered through a Web-based GUI.
Cisco AutoInstall	<ul style="list-style-type: none"> This feature configures remote routers automatically across a WAN connection to save the cost of sending technical staff to the remote site.

Summary and Conclusion

As companies increase their security requirements and their need for integrated services, more intelligent office solutions are required. The best-in-class Cisco 1800 Series architecture has been specifically designed to meet these requirements for secure concurrent services at wire-speed performance. The Cisco 1841 Router offers the opportunity to consolidate the functions of separate devices into a single, compact solution that can be remotely managed. By providing integrated services, as well as great modular density and high performance, the Cisco 1841 router provides security, versatility, scalability, and flexibility for multiple applications to the small-to-medium-sized office and small enterprise branch office, and the service provider customer edge. The Cisco 1841 router easily accommodates a wide variety of network applications, such as secure branch-office data access including NAC for antivirus defense, VPN access and firewall protection, business-class DSL, IPS support, inter-VLAN routing, and serial device concentration. The Cisco 1841 router provides customers with the industry's most flexible, secure, and adaptable infrastructure to meet both today's and tomorrow's business requirements for maximum investment protection.

Specifications

Table 5 gives product specifications of the Cisco 1841 Router.

Table 5. Product Specifications of Cisco 1841 Router

Cisco 1800 Series	Cisco 1841
Target Applications	Secure data
Chassis	
Form Factor	Desktop, 1-rack-unit (1RU) height (4.75 cm high with rubber feet)
Chassis	Metal
Wall-Mountable	Yes
Rack-Mountable	Yes (Optional Rackmount kit: ACS-1841-RM-19=)
Dimensions (W x D)	<ul style="list-style-type: none"> • 13.5 x 10.8 in. (34.3 x 27.4 cm) • Height without rubber feet: 1.73 in. (4.39 cm) • Height with rubber feet: 1.87 in. (4.75 cm)
Weight	<ul style="list-style-type: none"> • Maximum: 6.2 lb (2.8 kg); with interface cards and modules • Minimum: 6.0 lb (2.7 kg) (no interface cards and modules)
Architecture	
DRAM	Synchronous dual in-line memory module (DIMM) DRAM
DRAM Capacity	<ul style="list-style-type: none"> • Default: 128 MB • Maximum: 384 MB
Flash Memory	External compact Flash
Flash Memory Capacity	<ul style="list-style-type: none"> • Default: 32 MB • Maximum: 128 MB
Modular Slots-Total	Two
Modular Slots for WAN Access	Two
Modular Slots for HWICs	Two
Modular Slots for Voice Support	None-The Cisco 1841 does not support voice
Analog and Digital Voice Support	No
VoIP Support	Voice-over-IP (VoIP) pass-through only
Onboard Ethernet Ports	Two 10/100
Onboard USB Ports	One (1.1)
Console Port	One-up to 115.2 kbps
Auxiliary Port	One-up to 115.2 kbps
Onboard AIM Slots	One (internal)
Packet-Voice-DSP-Module (PVDM) Slots on Motherboard	None-The Cisco 1841 does not support voice
Integrated Hardware-based Encryption on Motherboard	Yes
Encryption Support in Software and Hardware by Default	DES, 3DES, AES 128, AES 192, AES 256
Power Supply Specifications	
Internal Power Supply	Yes
Redundant Power Supply	No
DC Power Support	No
AC Input Voltage	100 to 240 VAC
Frequency	50 to 60 Hz
AC Input Current	1.5A maximum
Output Power	50W (maximum)

Cisco 1800 Series	Cisco 1841
System Power Dissipation	
	153 BTU/hr
Software Support	
First Cisco IOS Software Release	12.3(8)T
Cisco IOS Software default Image, Release	IP BASE, 12.4(15)T
Environmental	
Operating Temperature	32 to 104°F (0 to 40°C)
Operating Humidity	10 to 85% noncondensing operating; 5 to 95% noncondensing, nonoperating
Nonoperating Temperature	-4 to 149°F (-25 to 65°C)
Operating Altitude	10,000 feet (3000 meters) @ 77°F (25°C)
Noise Level	Normal operating temperature: <ul style="list-style-type: none"> • <78°F/26°C: 34 dBA • >78°F/26°C through <104°F/40°C: 37 dBA • >104°F/40°C: 42 dBA
Regulatory Compliance	
Safety	<ul style="list-style-type: none"> • UL60950-1 • CAN/CSA 60950-1 • AS 3260 • EN60950-1
EMI	<ul style="list-style-type: none"> • EN 55022, 1998, class A • CISPR22, 1997, class A • CFR47, Part 15, Subpart B, 1995, class A • EN61000-3-2 Harmonic Current Emission (only for equipment >75W but <16A) • EN61000-3-3 Voltage Fluctuation and Flicker (only for equipment ≤16A)
Immunity	<ul style="list-style-type: none"> • CISPR24, 1997 ITE-Immunity characteristics, Limits and methods of measurement • EN 55024, 1998 ITE-Immunity characteristics, Limits and methods of measurement • EN50082-1, 1997 Electromagnetic compatibility-Generic immunity standard, Part 1 • EN 300 386, 1997 Telecommunications network equipment EMC requirements • The requirements are covered by the following standards: • IEC 61000-4-2:1995 Immunity to Electrostatic Discharges • IEC 61000-4-3:1995 Immunity to Radio Frequency Electromagnetic Fields • IEC 61000-4-4:1995 Immunity to Electrical Fast Transients • IEC 61000-4-5:1995 Immunity to Power Line Transients (Surges) • IEC 61000-4-6:1996 Immunity to Radio Frequency Induced Conducted Disturbances • IEC 61000-4-11:1995 Immunity to Voltage Dips, Voltage Variations, and Short Voltage Interruptions
Network Homologation	<ul style="list-style-type: none"> • USA-TIA-968-A, T1.TRQ.6-2001 • Canada-CS-03 • European Union-RTTE Directive 5/99 • Argentina-CTR 21 • Australia-AS/ACIF S002, S003, S016, S031, 3043 • Brazil-225-540-788, CTR3, 225-100-717 Edition 3, NET 001/92 1990 • China-ITU-G.992.1, ITU-G.992.1, ITU-G.991.2, CTR3, ITU I.431 1993 • Hong Kong-HKTA 2033, HKTA 2033, HKTA 2014, HKTA 2017 Issue 3 2003, HKTA 2011 Issue 1, HKTA 2011 Issue 2, HKTA 2013 Issue 1 • India-I_DCA_18_02_Jun_99-199, S/ISN-01/02 Issue 1999 S/ISN-02 1 1998, IR/PRI-01/02 Issue 1 1998, S/INT-2W/02 MAY 2001, S/INT-2W/02 MAY 2001 • Israel-U.S. approval accepted • Japan-Technical condition (DoC acceptance in process) • Korea-U.S. approval accepted • Mexico-U.S. approval accepted • New Zealand-PTC 270/272, CTR 3, ACA 016 Revision 4 1997, PTC 200 • Singapore-IDA TS ADSL1 Issue 1, IDA TS ADSL 2, IDA TS HDSL, IDA TS ISDN 1 Issue 1 1999, IDA TS ISDN 3 Issue 1 1999, IDA TS PSTN 1 Issue 4, IDA TS PSTN 1 Issue 4, IDA TS PSTN 1 Issue 4 • South Africa-U.S. approval accepted

Cisco 1800 Series	Cisco 1841
	<ul style="list-style-type: none"> Taiwan-U.S. approval accepted

Modular Support

For a complete list of modules and interfaces supported on Cisco 1841, please visit

http://www.cisco.com/en/US/products/ps5853/products_relevant_interfaces_and_modules.html

Ordering Information

The Cisco 1841 is currently orderable at the [Cisco Ordering Home Page](#).

For more information about the Cisco 1800 Series, including Cisco 1700 Series to Cisco 1800 Series migration aids, visit <http://www.cisco.com/go/1800>.

Table 6 gives ordering information for the Cisco 1841 Router.

Table 6. Ordering Information for Cisco 1841 Router

Product Number	Product Description
Configurable Base Chassis	
Cisco 1841	Modular router with 2 WAN slots, desktop form factor chassis, IP BASE Cisco IOS Software image, 2 Fast Ethernet slots, 32-MB Flash, and 128-MB DRAM
Bundles	
CISCO1841-T1	1841 bundle w/WIC-1DSU-T1-V2, IP Base, 32FL/128DR
Security Bundles	
CISCO1841-SEC/K9	1841 Security Bundle, Adv. Security, 64FL/256DR
CISCO1841-HSEC/K9	1841 Bundle w/AIM-VPN/SSL-1, Adv. IP Svcs, 10 SSL lic, 64F/256D
CISCO1841-T1SEC/K9	1841 Security Bundle w/ WIC-1DSU-T1-V2, Adv. Sec., 64FL, 256DR
Broadband Bundles	
CISCO1841-ADSL2	1841 bundle, HWIC-1ADSL, IP BB, 32F/128D
CISCO1841-ADSL2-B	1841 bundle, HWIC-ADSL-B/ST, IP BB, 32F/128D
CISCO1841-ADSL	1841 ADSLoPOTS Bdle, IP Broadband, 32FL/128DR
CISCO1841-ADSL2-I	1841 ADSLoSDN bdle, HWIC-1ADSLI, IP Base, 32F/128D
CISCO1841-ADSL2-M	1841 bundle, HWIC-1ADSL-M, IP Base, 64F/128D
CISCO1841-SHDSL-V3	1841 bundle, WIC-1SHDSL-V3, IPBB, 32F/128D
CISCO1841-2SHDSL	1841 2-pair G.SHDSL bundle, HWIC-2SHDSL, IP Base, 64F/128D
CISCO1841-4SHDSL	1841 4-pair G.SHDSL bundle, HWIC-4SHDSL, IP Base, 64F/128D
3G Bundles	
C1841-3G-G	1841 bundle w/HWIC-3G-GSM, IP Base, 64FL/128DR
C1841-3G-V	1841 bundle w/HWIC-3G-CDMA-V, IP Base, 64FL/128DR
C1841-3G-S	1841 bundle w/HWIC-3G-CDMA-S, IP Base, 64FL/128DR
C1841-3G-G-SEC/K9	Cisco1841, HWIC-3G-GSM, 64MB FL /256MB DRAM, Adv Security
C1841-3G-V-SEC/K9	Cisco 1841, HWIC-3G-CDMA-V, 64MB FL /256MB DRAM, Adv Security
C1841-3G-S-SEC/K9	Cisco 1841, HWIC-3G-CDMA-S, 64MB FL /256MB DRAM, Adv Security

For other bundle solutions, contact your Cisco representative or go to <http://www.cisco.com/go/1800>.

To download the Cisco IOS Software for the Cisco 1800 Series, visit the [Cisco Software Center](#).

Table 7 gives the Cisco IOS Software images for the Cisco 1841 router.

Table 7. Cisco IOS Software Images for the Cisco 1841 Router in 12.4(T)

Cisco 1841	List of Supported Images in 12.4(T)
Default image: c1841-ipbase-mz	IP BASE W/O CRYPTO
C1841-ipbasek9-mz	IP BASE
C1841-advsecurityk9-mz	ADVANCED SECURITY
C1841-broadband-mz	BROADBAND
C1841-entbase-mz	ENTERPRISE BASE W/O CRYPTO
C1841-entbasek9-mz	ENTERPRISE BASE
C1841-entservices-mz	ENTERPRISE SERVICES W/O CRYPTO
C1841-entservicesk9-mz	ENTERPRISE SERVICES
C1841-advipservicesk9-mz	ADVANCED IP SERVICES
C1841-adventerprisek9-mz	ADVANCED ENTERPRISE SERVICES
C1841-spservicesk9-mz	SP SERVICES

Service and Support

Leading-edge technology deserves leading-edge support. Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business.

Cisco SMARTnet[®] technical support for the Cisco 1800 integrated services routers is available on a one-time or annual contract basis. Support options range from help-desk assistance to proactive, onsite consultation.

All support contracts include:

- Major Cisco IOS Software updates in protocol, security, bandwidth, and feature improvements
- Full access rights to Cisco.com technical libraries for technical assistance, electronic commerce, and product information
- Twenty-four-hour-a-day access to the industry's largest dedicated technical support staff

For more information about Cisco Services, refer to [Cisco Technical Support Services](#) or [Cisco Advanced Services](#).

For More Information

For more information about the Cisco 1800 Series Integrated Services Router, visit <http://www.cisco.com/go/1800> or contact your local account representative.

For more information about Cisco products, contact:

- United States and Canada: 800 553-NETS (6387)
- Europe: 32 2 778 4242
- Australia: 612 9935 4107
- Other: 408 526-7209
- Web: <http://www.cisco.com>



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