

# Integrated Services Routers in the Small Office

**Cisco extends integrated services routers with new models and integrated wireless across the portfolio.**



**PERFORMANCE PUNCH** New models in the Cisco integrated services router line bring concurrent services, such as security and wireless LAN, at wire speed to small offices and enterprise teleworker sites.

**By David Barry**

Following up on the successful launch in September 2004 of the integrated services router line (see *Packet* magazine, Fourth Quarter 2004), Cisco recently announced availability of new models and capabilities to these routers that extend its powerful integration into small and remote offices. These models satisfy a market demand for platforms that deliver greater performance for deploying services such as security and wireless LAN (WLAN) capabilities to the enterprise branch and small and mid-sized businesses—platforms that are easy to deploy and cost effective to manage.

The new Cisco 800 and 1800 Series integrated services routers offer concurrent services including firewall, virtual private networks (VPNs), and WLANs at an attractive price point for small offices. These Cisco IOS-based platforms also deliver centralized management features that make them ideal for small office or teleworker sites as part of an enterprise or service provider network.

“These new models extend the benefits of the [integrated services router] line to small offices for both enterprise and small and medium-sized business customers,” says Marc Bresniker, product manager in the Premises Communications Business Unit at Cisco. “Their strong performance allows businesses to layer on new services, such as security, QoS [quality of service] for voice, or wireless LANs, while taking full advantage of DSL and cable broadband speeds. And for those customers who want to use the newer and faster DSL standards, such as ADSL2+ [more than 20-Mbit/s downstream speeds] and multipair symmetric DSL [G.SHDSL], the DSL models in the portfolio will support these new standards.”

**Cisco 1800 Series: Greater Performance and Services Integration**  
The most highly integrated of the fixed-configuration integrated services routers is the Cisco 1800 Series. These models include a full suite of advanced security features: firewall, IP Security (IPSec) VPNs, and support for intrusion prevention and Cisco

## WLAN Capabilities Added to Integrated Services Routers

Cisco's integrated services routers now offer WLAN capabilities across the entire portfolio. The recently launched fixed-configuration 800 and 1800 Series integrated services routers include 11 factory-configured wireless models with antennas. Also included in this launch is a high-speed wireless interface card (HWIC) for the modular integrated services router platforms. Installing the HWIC into a slot on the Cisco 1841 or the Cisco 2800 or 3800 Series routers enables businesses to integrate a wireless access point onto their access router.

"Most exciting about the new wireless capabilities is that they further build on the compelling premise of the integrated services router line—delivering secure data, voice, and video services to wired and wireless users to maximize productivity," says Sunny Mahant, product marketing manager in the Multiservice Customer Edge Business Unit at Cisco. "Not only can these models run multiple services such as security, voice, and VPNs without degrading broadband connections, now they can also run wireless, all from one integrated platform."

Offices that need to support survivable IEEE 802.1X local authentication can combine a modular integrated services router with a wireless HWIC or with several Cisco Aironet access points. "This allows the router to act as a local authentication server to authenticate wireless clients when the AAA [authentication, authorization, and accounting] server is not available," says Mahant.

### Fixed and Modular Access Points

With support for 802.11 Wi-Fi Certified Access on both the fixed and modular integrated services routers, Cisco provides a low-cost entry point for companies that want to add WLAN connectivity to their branch or small office. These routers eliminate the requirement for dedicated wireless appliances at each site when only one access point is needed—simplifying wireless access deployment and management. No changes are required to the existing wired infrastructure.

Network Admission Control (NAC) for security policy control and protection against viruses and worms. Also included are models with options for fully integrated ISDN BRI, an analog modem, and dual Fast Ethernet ports for redundant WAN links and load balancing.

With the increased availability and affordability of broadband DSL and cable, some companies are looking to use dual broadband WAN ports; for example, they are contracting with separate broadband providers to ensure automatic failover if either service experiences congestion or failure. An integrated internal power supply on the Cisco 1800 Series also makes it easy to deploy with fewer cords to set up.

The 1800 Series models with an integrated 8-port switch are targeted for small offices. With support for advanced QoS and multiple virtual LANs (VLANs), businesses can configure and segment their network for application performance and security.

Further integration of the Cisco 1800 Series is achieved with an option for Power over Ethernet (PoE) support. PoE is especially beneficial for companies that deploy a Cisco 1800 Series model with

IP phones or external wireless access points and want to eliminate the need for separate power supplies for those devices.

The Cisco 1800 Series models include an option for integrated wireless access points, providing secure WLAN services in a single device—and helping businesses reduce their total cost of ownership with simplified WLAN deployment and management capabilities while maintaining network security. The integrated wireless access point can support IEEE 802.11b/g and 802.11a simultaneously to provide added flexibility in high-speed wireless applications. The removable, replaceable antennas allow choices for mounting in different locations to place wireless coverage where needed. For instance, a retail store that deploys a Cisco 1800 Series Integrated Services Router behind the front counter or in a utility room can mount the antennas elsewhere for better wireless coverage.

### Cisco 800 Series: Small but Powerful

The Cisco 800 Series has several models targeted for small remote offices and teleworkers, each providing a cost-effective solution for delivering secure WAN

Both the fixed and modular integrated access points deliver robust, predictable 802.11 wireless coverage with strong radio sensitivity and superior performance, notes Mahant. They support Wi-Fi Protected Access (WPA) for per-user IEEE 802.1X mutual authentication with an Extensible Authentication Protocol (EAP) such as Cisco LEAP. They also support 802.11e for QoS, Wi-Fi Multimedia (WMM), VLANs, and multiple service set identifiers (SSID).

### Scaling Wireless and Deploying Advanced Services with Aironet Access Points

In situations where only a single access point is needed, businesses gain the full benefits of integration and cost effectiveness by choosing a fixed-configuration integrated services router with a built-in access point or by installing the HWIC into a modular model. Depending on the integrated services router and whether it operates in single mode (802.11 b/g) or dual mode (802.11 a/b/g), the router will support up to 20 or 50 users, respectively.

For companies or sites that require more than one access point either immediately or in the future, Cisco Aironet access points are recommended, says Mahant. The modular integrated services router platforms presently support either the Cisco Aironet access points or the modular platform access points with HWIC, not both options.

Cisco Aironet access points deliver high security with WPA2 and high-capacity wireless access for offices and challenging RF environments. These robust access points are perfect for single access point deployments that require flexible, secure installation options, or for enterprise deployments that require more than one access point.

To learn more about new wireless capabilities of the Cisco integrated services routers, visit [cisco.com/go/isr](http://cisco.com/go/isr).

connectivity with optional integrated IEEE 802.11b/g for WLANs in a single device (see sidebar, “WLAN Capabilities Added to Integrated Services Routers”). In addition, the Cisco 800 Series is easy to set up and deploy using the Web-based configuration tool, Cisco Router and Security Device Manager (SDM)—ideal for small offices with minimal local technical resources.

The Cisco 870 Series includes hardware-assisted encryption for VPNs. Integrated security features are further enhanced with support for intrusion prevention and Cisco NAC for security policy control and virus and worm protection. Each model also has 802.11b/g WLAN capabilities with removable, replaceable dual diversity antennas.

The Cisco 870 Series offers advanced QoS support which, along with its increased performance for encryption, makes it ideal for teleworker or remote call agent applications. Users can connect an IP phone to the router’s switch port to act as an enterprise extension and give voice traffic precedence over data applications.

The Cisco 850 Series, with four 10/100 Mbit/s ports and 10/100 Fast Ethernet or ADSL connections, supports up to 10 users and offers a basic set of security features, including stateful inspection firewall and

VPN encryption. Each model has an option for integrated wireless, the Cisco 851W and Cisco 857W, and come equipped with a single, fixed antenna and 802.11b/g WLAN support.



Affordable broadband access is changing the way businesses communicate with customers, suppliers, and employees. WLANs can further extend the effectiveness of business applications. To take advantage of these high-speed connections, small offices must have the same level of security enjoyed by their larger counterparts. With its new line of fixed-configuration integrated services routers, Cisco is delivering the right combination of integrated services with the performance punch small offices need. ■

#### FURTHER READING

- Cisco Integrated Services Routers home page [cisco.com/go/isr](http://cisco.com/go/isr)