CISCO SYSTEMS

Cisco 2600XM **DSL** Router Bundles

Overview

In order to provide customers with easy-to-order solutions to meet their Digital Subscriber Line (DSL) networking needs, six new DSL router bundles are available based on the new Cisco 2600XM modular multiservice router platforms.

**Figure 1**
Cisco 2600XM Series Routers

These DSL bundles greatly simplify customer ordering. Using only one part number, customers can order a Cisco 2600XM router with all the necessary components at a reduced price compared to ordering each component separately. Each DSL bundle can also be ordered with additional WAN Interface Cards (WICs), Network Modules (NMs), and Advanced Integration Modules (AIMs). The DSL bundles are available in both Asymmetric DSL (ADSL) and Single-pair High-bit-rate DSL (SHDSL) versions.

These bundles offer customers the ability to deploy high speed WAN access to businesses while offering advanced services such as Virtual Private Networks (VPNs) and Voice over DSL (VoDSL).

Figure 2

Secure VPN Through the Internet Over DSL
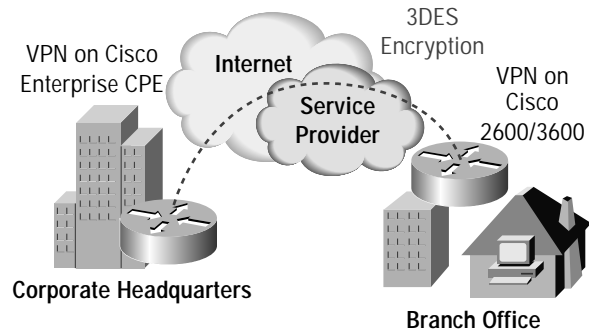
Features at a Glance

Cisco 2611XM-ADSL Router Bundle includes:

- Dual Fast Ethernet Router with 2 WAN Interface Card (WIC) Slots and 1 NM Slot
- Memory upgrade for both Flash and DRAM: (32-MB Flash and 128-MB DRAM)
- Cisco IOS Software: Cisco IOS IP PLUS
- WIC-1ADSL

Cisco 2621XM-ADSL Router Bundle includes:

- Dual Fast Ethernet Router with 2 WAN Interface Card (WIC) Slots and 1 NM Slot
- Memory upgrade for both Flash and DRAM: (32-MB Flash and 128-MB DRAM)
- Cisco IOS Software: Cisco IOS IP PLUS
- WIC-1ADSL

Cisco 2651XM-ADSL Router Bundle includes:

- Dual Fast Ethernet Router with 2 WAN Interface Card (WIC) Slots and 1 NM Slot
- Memory upgrade for both Flash and DRAM: (32-MB Flash and 128-MB DRAM)
- Cisco IOS Software: Cisco IOS IP PLUS
- WIC-1ADSL

Cisco 2611XM-SHDSL Router Bundle includes:

- Dual Fast Ethernet Router with 2 WAN Interface Card (WIC) Slots and 1 NM Slot
- Memory upgrade for both Flash and DRAM: (32-MB Flash and 128-MB DRAM)
- Cisco IOS Software: Cisco IOS IP PLUS
- WIC-1SHDSL

Cisco 2621XM-SHDSL Router Bundle includes:

- Dual Fast Ethernet Router with 2 WAN Interface Card (WIC) Slots and 1 NM Slot
- Memory upgrade for both Flash and DRAM: (32-MB Flash and 128-MB DRAM)
- Cisco IOS Software: Cisco IOS IP PLUS
- WIC-1SHDSL

Cisco 2651XM-SHDSL Router Bundle includes:

- Dual Fast Ethernet Router with 2 WAN Interface Card (WIC) Slots and 1 NM Slot
- Memory upgrade for both Flash and DRAM: (32-MB Flash and 128-MB DRAM)
- Cisco IOS Software: Cisco IOS IP PLUS
- WIC-1SHDSL

These six distinct bundles were created to ease ordering while still giving customers maximum choice in performance, DSL interfaces, memory, and price points. The below table quickly summarizes the differences in the various Cisco 2600XM DSL bundles.

Table 1 DSL 2600XM Bundles

Bundle	Router	IOS Image	WAN Interface Card	Fast Ethernet Ports	Flash (MB)	DRAM (MB)	Router Performance (kpps)
CISCO2611XM-ADSL	2611XM	IP Plus	WIC-1ADSL	2	32	128	20kpps
CISCO2621XM-ADSL	2621XM	IP Plus	WIC-1ADSL	2	32	128	30kpps
CISCO2651XM-ADSL	2651XM	IP Plus	WIC-1ADSL	2	32	128	40kpps
CISCO2611XM-SHDSL	2611XM	IP Plus	WIC-1SHDSL	2	32	128	20kpps
CISCO2621XM-SHDSL	2621XM	IP Plus	WIC-1SHDSL	2	32	128	30kpps
CISCO2651XM-SHDSL	2651XM	IP Plus	WIC-1SHDSL	2	32	128	40kpps

Note: All Bundles come with Cisco IOS Software release 12.2(8)T5 initially.

DSL Bundle Features and Benefits

DSL helps companies reap the benefits of dramatically lowered WAN costs, improved global connectivity, and high reliability, while providing sufficient bandwidth to combine such critical traffic as voice and video with data. Additionally, service providers can increase their subscriber revenues by bundling services and by offering differentiated service levels through Service Level Agreements (SLAs).

Cisco 2600XM Routers

The Cisco 2600XM modular multiservice access routers are ideal for DSL connectivity. They deliver a rich, integrated package of routing, firewall, dial, Packet Voice Gateway and VPN functions. The Cisco 2600 series together with the ADSL or SHDSL WAN Interface Modules (WICs) are the perfect solution for a variety of businesses requiring high-speed business-class DSL connectivity on a secure, high-performance modular platform.

ADSL WIC (WAN Interface Card)

The WIC-1ADSL included with the 2600XM-ADSL Router Bundles is based on the ITU G.992.1 (G.dmt) and ITU G.992.2 (G.lite) standards.   The ADSL WIC operates at speeds of up to 8Mbps downstream and 1.5Mbps upstream. Multiple ADSL WICs can be provisioned per 2600XM to provide even higher bandwidth or WAN backup. The WIC-1ADSL with the 2600XM supports a variety of ATM QoS mechanisms. These included Class of Service (CoS) features Constant Bit Rate (CBR), Variable Bit Rate (VBR) in real time and non real time, and Unspecified Bit Rate (UBR). In late CY'02 support for IP QoS mechanisms will also be available.

SHDSL WIC (WAN Interface Card)

The WIC-1SHDSL included with the 2600XM-SHDSL Router Bundles is based on the ITU G.991.2 standard. The SHDSL WIC operates at symmetric speeds of up to 2.3Mbps over a single copper pair. Multiple SHDSL WICs per 2600XM can be provisioned for extra bandwidth or WAN backup. Additionally, the SHDSL WICs can operate back-to-back for campus environments. The WIC-1SHDSL with the 2600XM supports an identical set of ATM QoS mechanisms as are available with the WIC-1ADSL with the 2600XM.

Integrated Voice and Data over DSL

Service providers and enterprise customers alike continue to expand deployment of voice services to remote customers. While more traditional technologies require separate data and voice systems, advanced QoS mechanisms merged with high-bandwidth WAN links like DSL make it possible to effectively combine voice and data traffic in the same WAN connection without sacrificing quality or reliability. Traffic management is key for this type of deployment. The Cisco 2600XM Series with a DSL WAN Interface Card currently supports ATM QoS mechanisms and will add support for IP QoS mechanisms later this year, providing a scalable and manageable solution for toll-quality voice transmission while still maintaining ample data service. Specific benefits:

- Service providers increase revenue by building differentiated service options based on premium, standard, or best-effort service classes
- Enterprise customers reduce costs and increase service offerings to their remote branch offices by delivering voice connectivity without the high costs of dedicated voice links

Note: IP QoS functionality is currently available on the 2600s in Cisco IOS release 12.2(4)XL. IP QoS support for the 2600XMs will be added later in calendar year 2002.

Note: ADSL technology also inherently allows for the transmission of a single basic telephone service voice connection and traditional data traffic over the same pair of wires without the need for QoS. The WIC-1ADSL supports both splitter and splitterless (G.lite) modes for insertion into almost any ADSL environment when only a single basic phone line is needed.

Business-Class Security

The Cisco 2600XM Series can be optimized for VPNs, which allow for secure use of any shared network incorporating the same policies and levels of security and performance as a private network. VPN security can be delivered through hardware-based encrypted tunneling at 3DES IP Security (IPSec) speeds of up to 40 Mbps. This allows customers to deploy ADSL or SHDSL for secure remote access to corporate networks without the high costs and limitations often associated with point-to-point links. The 2600XM DSL bundles are equipped with extra memory to ease customers to deployment of VPN services.

In addition, the Cisco 2600XM Series incorporate Cisco IOS Firewall technology (CiscoSecure Integrated Software) supporting stateful firewall and intrusion detection. With an always-on DSL connection, Internet security is a critical component in protecting corporate resources from malicious attacks.

Deployment Flexibility

Many businesses today require data and voice connectivity between multiple buildings in a campus environment. Often copper wire is the only means to interconnect each facility to a campus' main building. G.shdsl technology allows customers to link two Cisco 2600/3600s with WIC-1SHDSL cards back-to-back over standard 26 AWG telephone wire and provide up to 2.3-Mbps WAN connectivity between the two sites. This enables deployment of data, voice, and video over existing copper wire without a costly infrastructure upgrade. Multiple WIC-1SHDSL pairs can be used to allow for additional bandwidth between locations.

Figure 3

Back-to-back G.shdsl deployment in a campus environment
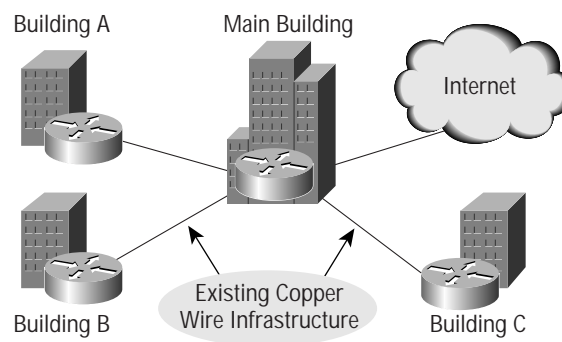
Interoperability

The ADSL WAN interface card is based on the Alcatel DynaMiTe ADSL Chipset and is compatible with the Cisco 6000 series DSLAMs with the Globespan chipset and Alcatel DSLAMs with the Alcatel chipset. (Interoperability with other vendors' DSLAMs that use the Alcatel chipset is expected but not confirmed.)

The G.shdsl WAN Interface Card is based on the Globespan chipset and operates either back-to-back or connected to a Cisco 6160/6260 DSLAM. (Interoperability with other vendors' DSLAMs that use the Globespan chipset is expected, but not confirmed).

Customers can also deploy G.shdsl WAN Interface Cards in a back-to-back configuration to take advantage of existing copper wiring in a building, campus, or neighborhood where DSLAM aggregation equipment is either not needed or financially justified. In back-to-back mode, one side of the connection is configured in Central Office (CO) mode and will provide similar functionality to that of a DSLAM.

DSL Router Bundle Ordering Information

Table 2 DSL Bundle Ordering Information

Cisco Part Number	Description
ADSL WIC Bundles	
CISCO2611XM-ADSL	2611XM ADSL Bundle, WIC-1ADSL, 2FE, IP Plus, 32FLASH, 128DRAM
CISCO2621XM-ADSL	2621XM-ADSL Bundle, WIC-1ADSL, 2FE, IP Plus, 32FLASH, 128DRAM
CISCO2651XM-ADSL	2651XM-ADSL Bundle, WIC-1ADSL, 2FE, IP Plus, 32FLASH, 128DRAM
SHDSL Bundles	
CISCO2611XM-SHDSL	2611XM SHDSL Bundle, WIC-1SHDSL, 2FE, IP Plus, 32FLASH, 128DRAM
CISCO2621XM-SHDSL	2621XM-SHDSL Bundle, WIC-1SHDSL, 2FE, IP Plus, 32FLASH, 128DRAM
CISCO2651XM-SHDSL	2651XM-SHDSL Bundle, WIC-1SHDSL, 2FE, IP Plus, 32FLASH, 128DRAM

Note: All Bundles come with Cisco IOS Software release 12.2(8)T5 initially.

Summary

The Cisco 2600XM bundles allow Enterprise and Service Providers to easily deploy the popular Cisco 2600XMs routers as DSL CPE and to take advantage of the incredible flexibility these platforms offer.

The Cisco 2600XM bundles are a great complement to the Cisco SOHO, 800, and 1700 DSL bundles also available from Cisco extending the range of functionality and price points available to the DSL CPE buyer.

For further information see:

2600XM:

http://www.cisco.com/en/US/products/hw/routers/ps259/index.html

DSL:

http://www.cisco.com/en/US/products/hw/routers/ps259/prod_bulletin09186a00800c3235.html

http://www.cisco.com/en/US/products/hw/routers/ps259/products_data_sheet09186a00800c3263.html

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