1- and 2-Port Fast Ethernet High-Speed WAN Interface Cards for Cisco 1841, 2800, and 3800 Series Integrated Services Routers

Overview

The Layer 3 Cisco® 1- and 2-Port Fast Ethernet High-Speed WAN interface cards (HWICs) (see Figures 1 and 2) supported on the Cisco 1841, Cisco 2800, and Cisco 3800 Series Integrated Services Routers offer small-to-large-sized businesses and enterprise branch-office customers the option to add Layer 3 routed ports with many advanced features, including quality-of-service (QoS) and rate-limiting capabilities.

Note: The 2-port (HWIC-2FE) card is offered on the Cisco 3800 Series Routers only. The 2-port card is not supported on the Cisco 1841 nor the Cisco 2800 Series Integrated Services Routers.

Figure 1. Cisco 2-Port Fast Ethernet Layer 3 HWIC for Cisco 3825 and 3845 Integrated Services Routers

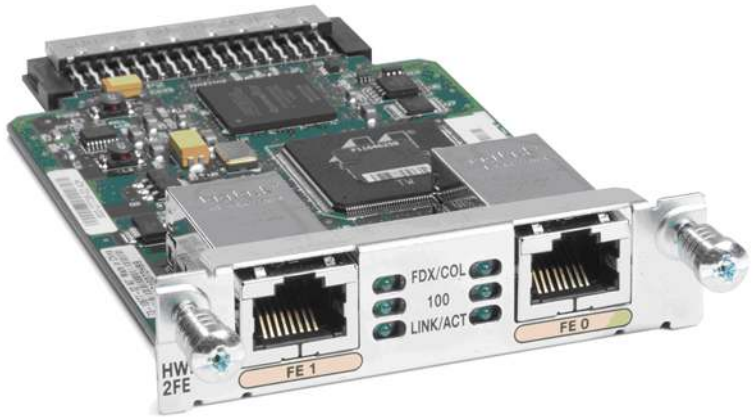


Figure 2. Cisco 1-Port Fast Ethernet Layer 3 HWIC for Cisco 1841, Cisco 2800, and Cisco 3800 Series Integrated Services Routers

Table 1 provides router support information for the HWIC cards.

Table 1. Platform Support

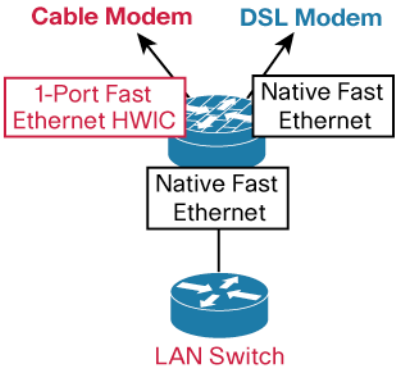
Router	Maximum No. of Cards per Chassis		Maximum No. of Additional Layer 3 Fast Ethernet Ports
	Cisco 1-Port Fast Ethernet HWIC	Cisco 2-Port Fast Ethernet HWIC	
Cisco 1841	1	0	1
Cisco 2801	2	0	2
Cisco 2811	2	0	2
Cisco 2821	2	0	2
Cisco 2851	2	0	2
Cisco 3825	4	2	6
Cisco 3845	4	4	8

Note: For the HWIC-1FE and HWIC-2FE the minimum level is Cisco IOS 12.4(15)T.

Applications

The new HWICs provide additional Layer 3 routed ports with features equivalent to those on the motherboard of the integrated services routers. These Fast Ethernet interfaces can be used for physical LAN segregation, creation of a demilitarized zone (DMZ), or as a WAN interface. Broadband customers can use them to connect to an alternate provider that delivers service on an Ethernet port.

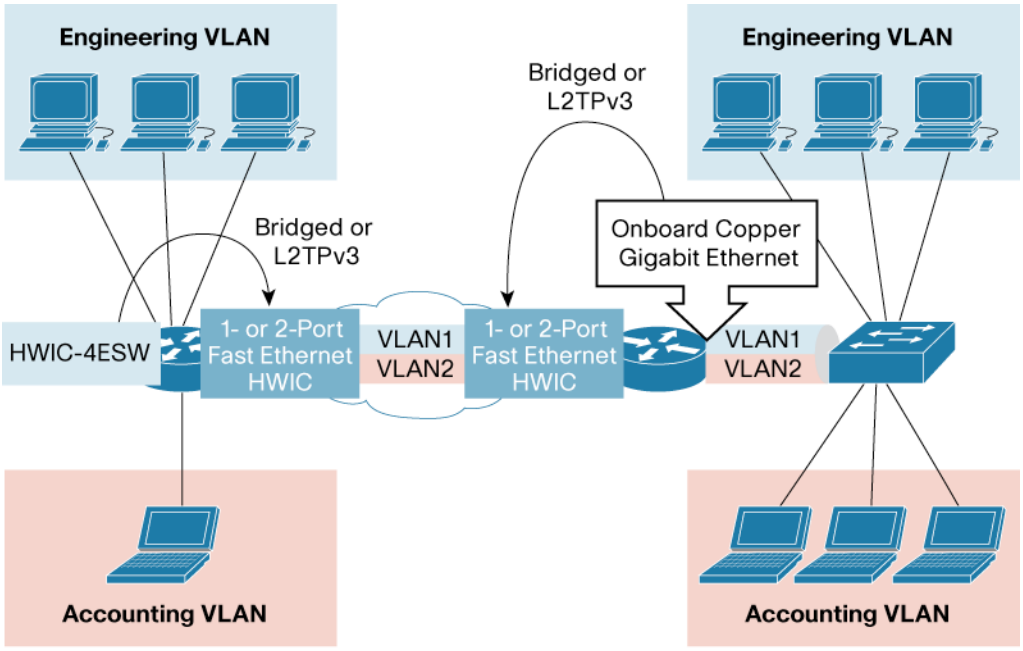
Figure 3. The Fast Ethernet HWIC Enables Branch Offices to Cost-Effectively Use High-Speed Broadband Uplinks in Numerous Environments



Additional Broadband Access with Full QoS and Rate Limiting, HSRP, and Other Capabilities

In a branch office, the Cisco 1-Port Fast Ethernet HWIC provides a high-speed broadband uplink (Figure 4).

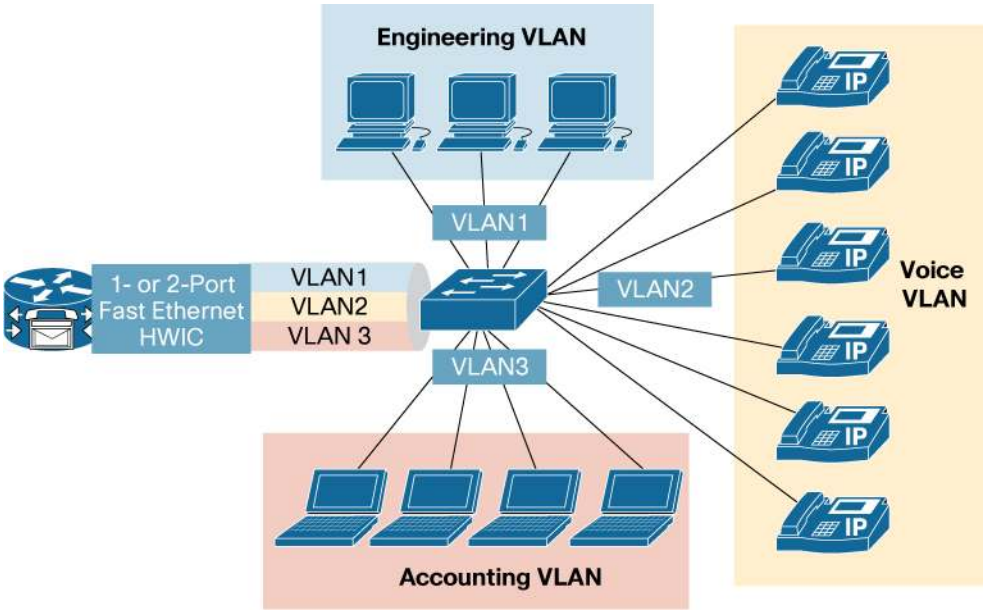
Figure 4. Broadband Access with Additional Layer 3-Port Fast Ethernet HWIC



Cisco IOS® Software Enables Advanced QoS Applications Such as HQoS, Traffic Shaping, and Network-Based Application Recognition (NBAR), as well as Reliability and Remote Troubleshooting

Figure 5 shows the HWIC being used to bridge nonroutable protocols while providing Layer 3 connectivity. The HWIC is also useful in situations that require IEEE 802.1q inter-VLAN.

Figure 5. VLAN Trunking Application—LAN Segmentation with Layer 3 Fast Ethernet Switch HWIC



Summary

The Cisco Fast Ethernet HWICs are singlewide interface cards, available as a 1-port HWIC (HWIC-1FE) and as a 2-port HWIC (HWIC-2FE), that provide Cisco modular and integrated services routers with additional Layer 3 routed ports.

Specifications

Feature Highlights

The Fast Ethernet routed ports on the HWICs have the same characteristics and features as the onboard LAN interfaces for the integrated-services-router platforms. Along with Layer 3 connectivity, such as per-port access control lists (ACLs), routing, and IP addressing, these HWICs provide functions equivalent to those of onboard Fast Ethernet routed ports. The following is a partial list of features supported in Cisco IOS® Software for the Fast Ethernet HWICs:

Ethernet and VLAN Features

- IEEE802.3 with IEEE802.2 Service Advertising Protocol (SAP)
- IEEE802.3 with IEEE802.2 and Subnetwork Access Protocol (SNAP)
- IEEE 802.1Q VLAN tagging
- Flow control (802.3x)
- Autosensing, autonegotiation, and automatic media-dependent interface crossover (Auto-MDIX)
- Unique MAC address (not shared with any other interface on the router), assigned MAC address to interface, and subinterfaces
- Network Management Features
- CiscoWorks
- Simple Network Management Protocol (SNMP) support
- Cisco NetFlow accounting

QoS Features

- Weighted Random Early Detection (WRED)
- Precedence setting and mapping (802.1p)
- Committed access rate (CAR)
- ACLs
- MAC address filtering
- Extended ACLs
- Voice and remaining QoS features, per platform and per Cisco IOS Software release

Additional Features

- Cisco Group Management Protocol and Internet Group Management Protocol (IGMP) for multicasting
- High availability, supporting Hot Standby Router Protocol (HSRP), Virtual Router Redundancy Protocol (VRRP), and Gateway Load Balancing Protocol (GLBP)
- MPLS features as supported by platform
- Generic routing encapsulation (GRE)
- IPv6

- IP Security (IPsec) (crypto map)
- Layer 2 Tunneling Protocol Version 3 (L2TPv3) tunnel termination
- Dynamic Host Configuration Protocol (DHCP) client and server
- Network Address Translation (NAT)
- Generic Traffic Shaping (GTS)
- Media Gateway Control Protocol (MGCP) bind
- IBM features
- Point-to-Point Protocol over Ethernet (PPPoE) client
- Bridging

MIBs supported by the HWIC-1FE and HWIC-2FE

- ENTITY-MIB
- IF-MIB
- OLD-CISCO-CHASSIS-MIB
- RMON-MIB
- ETHERLIKE-MIB
- CISCO-ENT-ASSET-MIB
- CISCO-ENTITY-FRU-CONTROL-MIB

Note: These two HWIC modules do not support Jumbo Frames.

Agency Approvals

- UL 1950 (United States)
- CSA-C22.2 #950 (Canada)
- EN60950 (Europe)
- TUV GS (Germany)
- IEC 950 (International)

Immunity

- EN300386
- EN55024 and CISPR24
- EN50082-1

Emissions

- FCC Part 15
- Class AICES-003
- Class AEN55022
- Class ACISPR22
- Class AAS and NZS 3548
- Class AVCCI
- Class AEN 300386EN61000-3-3EN61000-3-2

Physical Specifications

Form Factor

- Singlewide HWIC form factor

Dimensions (W x D x H)

- 3.08 x 4.74 x 0.76 in.

Weight

- 1-Port: 0.14 lbs or 2.24 oz.
- 2-Port: 0.16 lbs or 2.56 oz.

Environmental Specifications

- Operating temperature: 32 to 104°F (0 to 40°C)
- Storage temperature: –4 to 149°F (–20 to 65°C)

Relative humidity: 10 to 90%, noncondensing

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