

# Cisco Fibre Channel over IP Port Adapter Interface for Cisco 7200 and 7400 Series Routers

## Integrated SAN/WAN Connectivity for Business Continuity and SAN Extension Applications

### Overview

Enterprise IT organizations are moving toward consolidating storage and servers into large data center deployments by converting direct-attached storage (DAS) into storage area networks (SANs). The value of the data consolidated into these data centers is driving demand for business continuity applications such as disk mirroring and remote tape backup over geographically dispersed sites. The Cisco Fibre Channel over IP Port Adapter Interface, using the industry standard Fibre Channel over IP (FCIP) protocol, delivers connectivity between these data center SANs over a WAN infrastructure at speeds as low as fractional T1 up to OC3 (155 megabits per second [Mbps]).

### Business Continuity via SAN Extension

Many IT organizations have been tasked with delivering business continuity solutions for their most critical business applications. Many of these business continuity requirements involve the replication of data resources across geographically dispersed sites. Replicating data resources involves a variety of applications that provide disk mirroring, snapshots, or remote tape backup capabilities. By using the Cisco Fibre Channel over IP Port Adapter Interface, SAN administrators can extend these mission-critical storage backup services over a WAN or MAN.

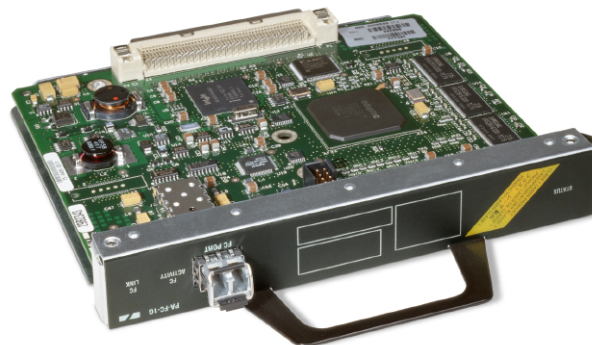
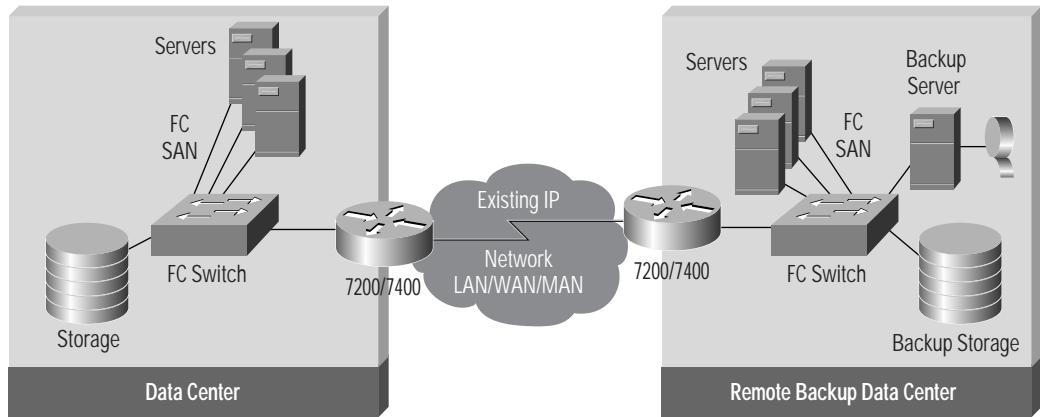




Figure 1  
SAN Extension Application with the Fibre Channel Port Adapter



### Advanced Networking Services for SAN Extension

Unique among SAN Extension solutions, the Cisco Fibre Channel over IP Port Adapter Interface provides advanced networking services such as data compression, encryption, access control lists, firewalls, and quality of service using Cisco IOS® Software to enable highly available and secure SAN extension solutions. These services can be provided in software features in Cisco IOS Software or by using the Cisco Fibre Channel over IP Port Adapter Interface in combination with the Cisco VPN Acceleration Module, which provides high-performance, hardware-assisted encryption, key generation, and compression services.

### FCIP for Standards-Based SAN Extension

The FCIP protocol encapsulates Fibre Channel packets within an IP datagram allowing Fibre Channel SANs, Fibre Channel attached storage arrays, or Fibre Channel attached tape libraries to communicate across an IP network. FCIP is different from the Internet Small Computer System Interface (iSCSI) specification in that it allows connectivity across an IP data network to applications that use nonstandard SCSI commands. Applications that use nonstandard SCSI commands include common applications for disk or volume replication provided by leading storage array vendors. The Cisco Fibre Channel over IP Port Adapter Interface uses FCIP as the base protocol for SAN extension. FCIP is on the IETF standards track as a standard for SAN-to-SAN connectivity across an IP infrastructure.



## Specifications

### Product Platforms and Cisco IOS Software Releases Supported

Platform Support	Information
Cisco 7200 Series and Cisco 7200VXR Series, Cisco 7401, NPE-400 Network Processing Engine and NSE-1	The Cisco Fibre Channel over IP Port Adapter Interface is currently supported on only these platforms
Form factor	Single-width port adapter occupying one port adapter slot
Initial Cisco IOS Software release support	Cisco IOS Software Release 12.2(13)ZD
Product number	PA-FC-1G

### Regulatory Compliance

#### Safety

UL 1950 (third edition)

CSA C22.2 No. 950-95

EN60950 (1992 including Amendments 1 to 4 and 11)

CE marking

IEC 950 (second edition including Amendments 1 to 4)

AS/NZS3260 (1993 including Amendments 1 to 4)

#### EMI

FCC Part 15 Class A

ICES-003 Class A

VCCI Class B

EN55022 Class B

CISPR22 Class B

CE marking

AS/NZS3548 Class B

### Environmental Specifications

Operating temperature: 0 to 40°C (32 to 104°F)

Storage temperature: -20 to 65°C (-4 to 149°F)

Relative humidity: 10 to 90% noncondensing

Altitude: 0 to 9843 ft (3000 m)

Vibration: IEC 68-2

Shock: IEC 68-2

## Power Requirements

Power consumption: 7 Watts

## Network Connectors

Speed: 1 Gb Fibre Channel

Connector type: LC-Duplex

Optical compliance: FC-PI 100/200-M6-SN-I

Transmission distance: 500 m for 50/125 micron multimode fiber, 300 m for 62.5/125 micron multimode fiber

## LEDs

LED	Information
Enabled	<ul style="list-style-type: none"><li>• Green—Port adapter powered and enabled</li><li>• Off—Port adapter not recognized</li></ul>
FC port link status	<ul style="list-style-type: none"><li>• Green—Link up</li><li>• Amber—Port offline, fabric parameters incompatible</li><li>• Off—No SFP module, fiber not plugged in</li></ul>
FC activity	<ul style="list-style-type: none"><li>• Green—Transmission and reception on port</li><li>• Off—No port activity</li></ul>



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