FastHub 100+ Series Hubs

This chapter provides information on the FastHub 100+ series hubs. The information is organized into the following sections:

- Product Overview
- Standard Features
- Supported Applications
- Product Numbers

Note Documentation for the Cisco FastHub 100+ series is available in two forms: on a CD-ROM called Cisco Connection Documentation, Enterprise Series and printed books. A CD and hard-copy installation documentation ship with each chassis, and a configuration note ships with each component ordered. All configuration notes are available on the CD. Additional CDs and a subscription CD update service are also available.

You can also access Cisco technical documentation on the World Wide Web URL http://www.cisco.com. For more information, see the chapter "Documentation" at the end of the catalog.

Product Overview

The FastHub 100+ series of 100BaseT hubs combines all the benefits of stackable hubs with unmatched configuration flexibility, exceptional affordability, and integrated Cisco IOS software functionality. Alone or in conjunction with Cisco routers and switches, these cost-effective hubs deliver ten times the performance of 10BaseT hubs in a scaleable, manageable, and resilient solution.

The FastHub 100+ series hubs are ideal high-performance alternatives to 10BaseT hubs, delivering affordable 100-megabits-per-second performance to workgroups and server farms. The FastHub 116T+ comes equipped with 16 100BaseTX ports for connecting your workstations and servers with inexpensive unshielded-twisted pair wiring; the FastHub 116C+ has 15 100BaseTX ports and 1 100BaseFX port for linking unshielded twisted-pair (UTP) devices to a fiber Fast Ethernet backbone.

Both hubs expand easily to 32 ports within a single unit by simply installing a 100BaseTX/16 port module in an expansion slot. The module is hot-swappable, so you can add users without powering down the network and disrupting existing users. Up to four fully configured FastHub 100+ series hubs can be interconnected using a hub expansion cable to create a single, 128-port logical repeater. For the ultimate in expandability, the hub's unique Class II design lets you connect two of these 128-port stacks directly together—other hub stacks may require an intermediate switch or router.

Each FastHub also has a second expansion slot for a hot-swappable network management module (NMM), so you don't have to sacrifice adding users to add management. Only one module is needed to manage an entire FastHub 100+ series stack. SNMP, Telnet, Remote Monitoring (RMON), and an out-of-band management console are all supported for comprehensive management and simplified troubleshooting on a per-port, per-hub, and per-stack basis. And an extensive array of mode-selectable LEDs offers a convenient visual display of each port's status and the overall traffic load.

For management redundancy, a second NMM can be added to the stack. An optional redundant power supply will also be available to keep the network up and running for your mission-critical applications.

The FastHub 100+ series hubs provide the following key benefits:

- Standards-based 100-Mbps performance—high-speed network performance, using standards-based Fast Ethernet technology, reduces network congestion and delivers 10 times the performance of 10BaseT hubs, while ensuring interoperability with 100BaseT devices from multiple vendors.
- Configuration flexibility—two base units are available, one with 16 100BaseTX ports and one with 15 100BaseTX and 1 100BaseFX ports. Each base unit has two expansion slots for the addition of management and a 16-port module, resulting in a total of 32 managed ports within a single unit.
- Scalability—the FastHub 100+ series design easily expands the network to serve a larger number of users. Up to four base units can be stacked, creating a single logical repeater of 128 users. The FastHub 100+ series hubs are Class II repeaters, allowing two stacks to be directly interconnected to create a single collision domain of 254 users. In addition, the FastHub 100+ series hubs support longer cable distances than Class I and other Class II repeaters for greater network topology flexibility.
- Manageability—an optional Network Management Module (NMM) provides comprehensive manageability and simplified troubleshooting on a per-port, per-hub and per-stack basis using SNMP, Telnet, RMON or an out-of-band VT-100 menu interface. Only one management module is required to manage an entire stack of up to 128 ports.
- Resiliency—a redundant power supply will be available as a future option to supply up to four units with power. A second NMM can also be added to a stack to ensure continued management in the unlikely case of the failure of the primary NMM or its base unit.

Figure 139 FastHub 116T+ Front View

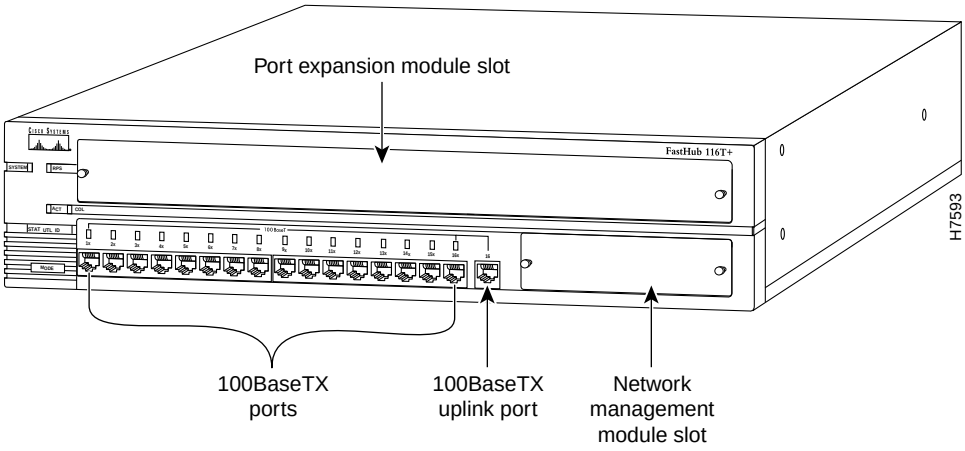

Figure 140 116C+ Front View

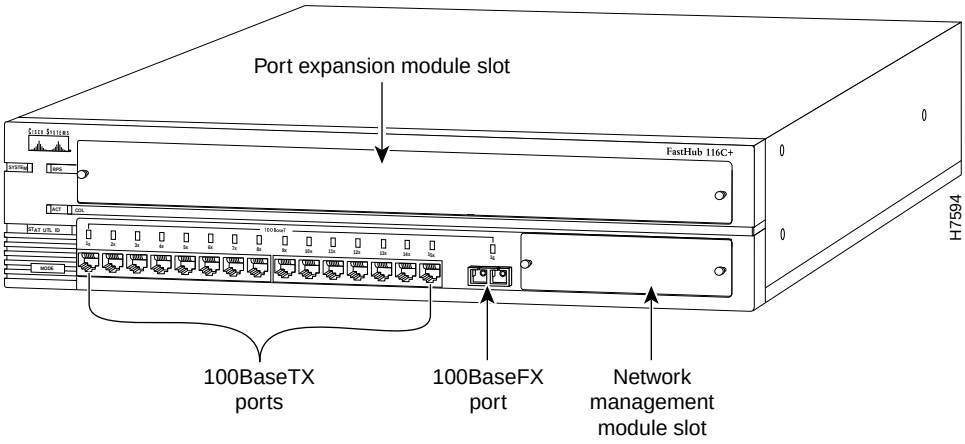

Figure 141 FastHub 100+ Series Units in a Rack

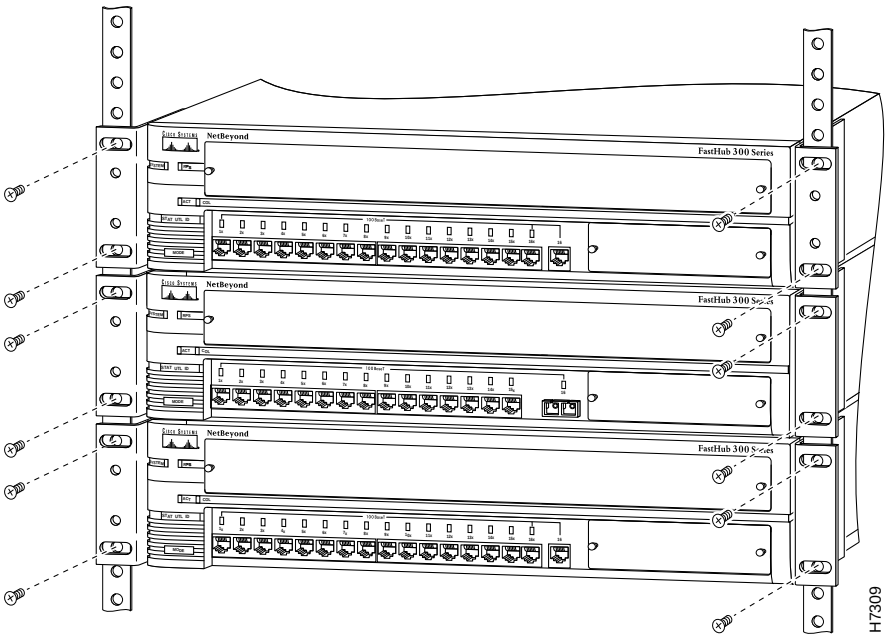

Figure 142 FastHub Stack Rear View (Expansion Cable Connections)

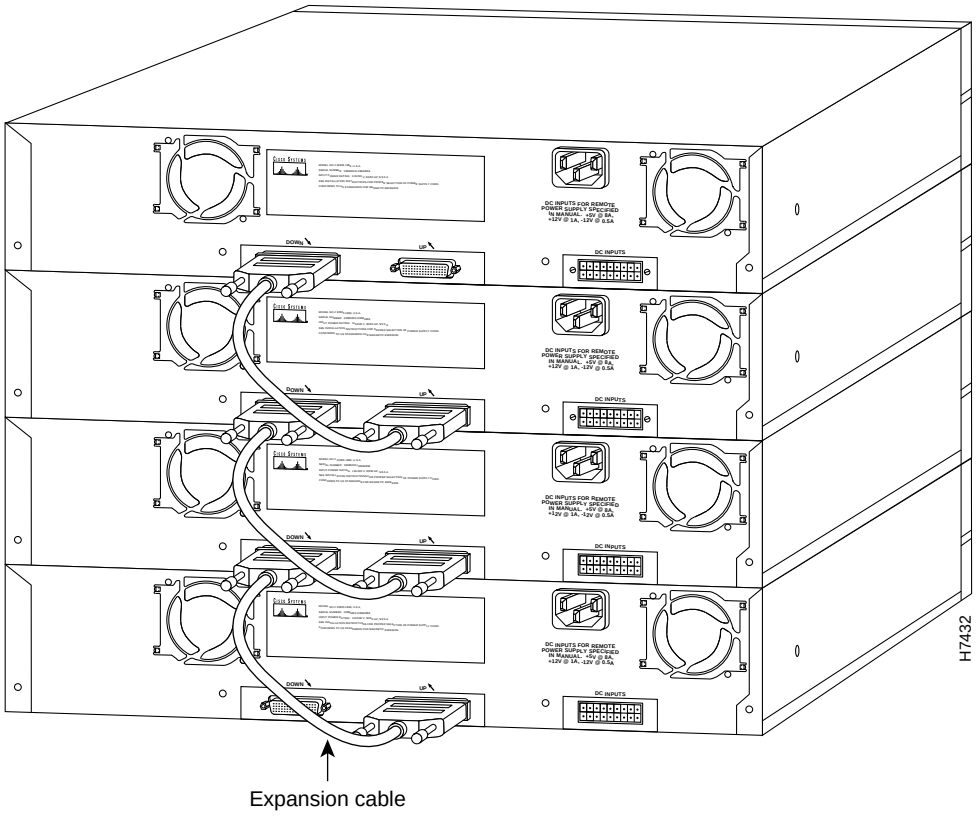

Table 279 FastHub 100+ Series Summary of Features

Characteristics	Description
Configuration guidelines	1043 ft (318 m) maximum cable distance between any two end stations with one FastHub 100+ hub in the path using a combination of UTP and fiber cabling 731 ft (223 m) maximum cable distance between any two end stations with two FastHub 100+ hubs in the path using UTP wiring only 774 ft (236 m) maximum cable distance between any two end stations with two FastHub 100+ hubs in the path using a combination of UTP and fiber cabling 702 ft (214 m) maximum cable distance between any two end stations with one FastHub 100+ hub and one third-party 100BaseT Class II hub in the path using UTP wiring only 741 ft (226 m) maximum cable distance between any two end stations with one FastHub 100+ hub and one third-party 100BaseT Class II hub in the path using a combination of UTP and fiber cabling 328 ft (100 m) maximum cable distance between a 100BaseTX port and an end node using UTP wiring only
Indicators	Per-port LEDs indicate Link Integrity, Receive Activity, and Enabled/Disabled status Per hub activity meter and Collision LEDs gauge network load Hub ID and hub status LEDs Redundant power supply status
Cabling requirements	100BaseTX ports: Integrated 100BaseTX media interface for use with two-pair Category 5 UTP cabling Standard RJ-45 connectors 100BaseFX port: Integrated 100BaseFX media interface for use with 62.5/125- or 50/125-micron multimode optical fiber Standard SC connector
Network management support	SNMP MIB II, SNMP MIB extensions, Ethernet Interface MIB, Repeater MIB, and RS-232 MIB Manageable under CiscoWorks and other SNMP management systems IP address assignment via Dynamic Host Control Protocol (DHCP) or Bootstrap Protocol (BOOTP) Cisco device discovery support using the Cisco Discovery Protocol (CDP) and the CDP MIB Remote Monitoring (RMON) MIB (EtherHistory, EtherStats, Alarms, and Thresholds) Telnet VT100-based out-of-band management console
Dimensions (H x W x D)	3.43 x 17.75 x 12.00" (8.7 x 45.1 x 30.5 cm)
Weight	15 lbs. (6.8kg)
Agency approvals	UL 1950 CE CSA 950 EN 60950 IEC 950
Electromagnetic emissions certifications	VCCI II EN 55022B CE Marking FCC Class A

Table 280 FastHub 100+ Series Environmental Specifications

Description	Specification
Power consumption	80 watts
Input voltage	90 to 250 volts, 50 to 60 Hz
Operating temperature	23˚ to 113˚ F (–5 to 45˚ C)
Storage temperature	–25 to 70°F (-32˚ to 21˚ C)
Operating humidity	10% to 85% noncondensing
Operating altitude	up to 9843 ft (3000 m)

Standard Features

The FastHub 100+ series hubs include the following features:

- Standards-based 100-Mbps performance
  - 100-Mbps peak and aggregate throughput provide high-performance data transfers for workgroups and server farms
  - 10 times the performance of a 10BaseT hub
  - Compatible with IEEE 802.3u standard for interoperability with other 100BaseT products
  - Extensive application-specific integrated circuit (ASIC) integration ensures exceptional performance, reliability and affordability
- Configuration flexibility and scalability
  - Two 16-port base configuration options:
    16 100BaseTX ports (FastHub 116T+)
    15 100BaseTX ports and one 100BaseFX port (FastHub 116C+)
  - Two expansion slots for adding users and management in a single hub
  - Up to four fully configured FastHub 100+ series hubs can be interconnected in a stack for a single 128-port logical repeater
  - 100BaseT Class II repeater design increases network topology flexibility by allowing two FastHub 100+ hubs or FastHub 100+ stacks to be directly interconnected to create a single collision domain of up to 254 ports
  - Support for extended cable distances provides greater network topology flexibility.
  - Hot-swap feature enables the addition or removal of users and FastHub 100+ modules in the stack while fully powered

- Management and redundancy
  - A single management module provides management for an entire stack
  - An optional second management module can be installed in the stack for redundancy
  - Support for SNMP, Telnet, RMON, and terminal-based out-of-band management console provides comprehensive management and simplified troubleshooting
  - Manageable by CiscoWorks and other SNMP-based management systems on a per-port, per-hub, and per-stack basis
  - Works with future Cisco redundant power supply to ensure maximum uptime
- Part of an integrated Cisco solution
  - Part of the Cisco Fast Ethernet line of products that includes switches, routers, hubs, and RMON probes
  - Incorporates Cisco IOS software features allowing consistent and integrated management of the hubs across a Cisco network

Supported Applications

The FastHub 100+ series support the following applications:

- 100-Mbps workgroups

  FastHub 100+ series hubs can be used to create a 100-Mbps workgroup of 16 to 254 users. The hubs can be attached to a 100BaseT port on a Cisco 4500, 4700, 7000, or 7500 series router, or Catalyst 5000, 3000, 2900, 2820, or 1900 switch using unshielded twisted-pair (UTP) or fiber cabling.
- Server farms

  With FastHub 100+ series hubs, network managers can affordably build decentralized or centralized, high-performance server farms attached to 100BaseT-enabled Cisco routers or Catalyst switches.

Product Numbers

Table 281 lists the product numbers you can use to order the FastHub 100+ series products.

Table 281 FastHub 100+ Series Product Numbers

Description	Product Numbers
FastHub 116T+ (100BaseTX base unit)	WS-C116T+
FastHub 116C+ (100BaseT/FX base unit)	WS-C116C+
100BaseTX/16 (16-port 100BaseTX module)	WS-X116
NMM (network management module)	WS-C116-NMM
Expansion cable (hub stacking cable)	WS-C116-CAB-EXP