F

failure domain

Area in which a failure has occurred in a Token Ring, defined by the information contained in a beacon. When a station detects a serious problem with the network (such as a cable break), it sends a beacon frame that includes the station reporting the failure, its NAUN, and everything in between. Beaconing in turn initiates a process called autoreconfiguration. See also *autoreconfiguration*, *beacon*, and *NAUN*.

fan-out unit

Device that allows multiple devices on a network to communicate using a single network attachment.

fantail

Panel of I/O connectors that attaches to an equipment rack, providing easy access for data connections to a LightStream 2020 ATM switch. See also *applique*.

Fast Ethernet

Any of a number of 100-Mbps Ethernet specifications. Fast Ethernet offers a speed increase ten times that of the 10BaseT Ethernet specification, while preserving such qualities as frame format, MAC mechanisms, and MTU. Such similarities allow the use of existing 10BaseT applications and network management tools on Fast Ethernet networks. Based on an extension to the IEEE 802.3 specification. Compare with *Ethernet*. See also *100BaseFX*, *100BaseT*, *100BaseT4*, *100BaseTX*, *100BaseT4*, and *IEEE 802.3*.

Fast Ethernet Interface Processor

See FEIP.

Fast Sequenced Transport

See FST.

Fast Serial Interface Processor

See FSIP.

fast switching

Cisco feature whereby a route cache is used to expedite packet switching through a router. Contrast with *slow switching*.

fault management

One of five categories of network management defined by ISO for management of OSI networks. Fault management attempts to ensure that network faults are detected and controlled. See also *accounting management*, *configuration management*, *performance management*, and *security management*.

FCC

Federal Communications Commission. U.S. government agency that supervises, licenses, and controls electronic and electromagnetic transmission standards.

fcload

function card load. Low-level software module in the LightStream 2020 ATM switch that is invoked by higher-level modules to load software from the NP to a function card.

FCS

frame check sequence. Refers to the extra characters added to a frame for error control purposes. Used in HDLC, Frame Relay, and other data link layer protocols.

FDDI

Fiber Distributed Data Interface. LAN standard, defined by ANSI X3T9.5, specifying a 100-Mbps token-passing network using fiber-optic cable, with transmission distances of up to 2 km. FDDI uses a dual-ring architecture to provide redundancy. Compare with *CDDI* and *FDDI II*.

FDDI II

ANSI standard that enhances FDDI. FDDI II provides isochronous transmission for connectionless data circuits and connection-oriented voice and video circuits. Compare with *FDDI*.

FDDI Interface Processor

See FIP.

FDM

frequency-division multiplexing. Technique whereby information from multiple channels can be allocated bandwidth on a single wire based on frequency. Compare with *ATDM*, *statistical multiplexing*, and *TDM*.

FECN

forward explicit congestion notification. Bit set by a Frame Relay network to inform DTE receiving the frame that congestion was experienced in the path from source to destination. DTE receiving frames with the FECN bit set can request that higher-level protocols take flow-control action as appropriate. Compare with *BECN*.

Federal Communications Commission

See FCC.

Federal Networking Council

See FNC.

FEIP

Fast Ethernet Interface Processor. Interface processor on the Cisco 7000 series routers. The FEIP supports up to two 100-Mbps 100BaseT ports.

FEP

front-end processor. Device or board that provides network interface capabilities for a networked device. In SNA, typically an IBM 3745 device.

FF

See frame forwarding.

Fiber Distributed Data Interface

See FDDI.

fiber-optic cable

Physical medium capable of conducting modulated light transmission. Compared with other transmission media, fiber-optic cable is more expensive, but is not susceptible to electromagnetic interference, and is capable of higher data rates. Sometimes called *optical fiber*.

fiber-optic interrepeater link

See FOIRL.

FID0

format indicator 0. One of several formats that an SNA TH can use. An FID0 TH is used for communication between an SNA node and a non-SNA node. See also *TH*.

FID1

format indicator 1. One of several formats that an SNA TH can use. An FID1 TH encapsulates messages between two subarea nodes that do not support virtual and explicit routes. See also *TH*.

FID2

format indicator 2. One of several formats that an SNA TH can use. An FID2 TH is used for transferring messages between a subarea node and a PU 2, using local addresses. See also *TH*.

FID3

format indicator 3. One of several formats that an SNA TH can use. An FID3 TH is used for transferring messages between a subarea node and a PU 1, using local addresses. See also *TH*.

FID4

format indicator 4. One of several formats that an SNA TH can use. An FID4 TH encapsulates messages between two subarea nodes that are capable of supporting virtual and explicit routes. See also *TH*.

field-replaceable unit

See FRU.

file transfer

Popular network application that allows files to be moved from one network device to another.

File Transfer, Access, and Management See *FTAM*.

File Transfer Protocol

See FTP.

filter

Generally, a process or device that screens network traffic for certain characteristics, such as source address, destination address, or protocol, and determines whether to forward or discard that traffic based on the established criteria.

FIP

FDDI Interface Processor. Interface processor on the Cisco 7000 series routers. The FIP supports SASs, DASs, dual homing, and optical bypass, and contains a 16-mips processor for high-speed (100-Mbps) interface rates. The FIP complies with ANSI and ISO FDDI standards.

firewall

Router or access server, or several routers or access servers, designated as a buffer between any connected public networks and a private network. A firewall router uses access lists and other methods to ensure the security of the private network.

firmware

Software instructions set permanently or semipermanently in ROM.

flapping

Routing problem where an advertised route between two nodes alternates (flaps) back and forth between two paths due to a network problem that causes intermittent interface failures.

Flash memory

Technology developed by Intel and licensed to other semiconductor companies. Flash memory is nonvolatile storage that can be electrically erased and reprogrammed. Allows software images to be stored, booted, and rewritten as necessary.



flash update

Routing update sent asynchronously in response to a change in the network topology. Compare with *routing update*.

fldsup account

One of the four default user accounts that are created in the factory on each LightStream 2020 ATM switch. The fldsup account is for the use of field service personnel. Its default interface is the bash shell. See also *bash*.

flooding

Traffic passing technique used by switches and bridges in which traffic received on an interface is sent out all of the interfaces of that device except the interface on which the information was originally received.

flow

Stream of data traveling between two endpoints across a network (for example, from one LAN station to another). Multiple flows can be transmitted on a single circuit.

flow control

Technique for ensuring that a transmitting entity, such as a modem, does not overwhelm a receiving entity with data. When the buffers on the receiving device are full, a message is sent to the sending device to suspend the transmission until the data in the buffers has been processed. In IBM networks, this technique is called *pacing*.

FΜ

frequency modulation. Modulation technique in which signals of different frequencies represent different data values. Compare with *AM* and *PAM*. See also *modulation*.

FNC

Federal Networking Council. Group responsible for assessing and coordinating U.S. federal agency networking policies and needs.

FOIRL

fiber-optic interrepeater link. Fiber-optic signaling methodology based on the IEEE 802.3 fiber-optic specification. FOIRL is a precursor of the 10BaseFL specification, which is designed to replace it. See also *10BaseFL*.

format indicator 0

See FID0.

format indicator 1 See *FID1*.

format indicator 2

See FID2.

format indicator 3 See *FID3*.

See FID3.

format indicator 4

See FID4.

forward channel

Communications path carrying information from the call initiator to the called party.

forward delay interval

Amount of time an interface spends listening for topology change information after that interface has been activated for bridging and before forwarding actually begins.

forward explicit congestion notification

See FECN.

forwarding

Process of sending a frame toward its ultimate destination by way of an internetworking device.

forwarding priority

See transmit priority.

Fourier transform

Technique used to evaluate the importance of various frequency cycles in a time series pattern.

four-part dotted notation

See dot address.

fractional T1

See channelized T1.

FRAD

Frame Relay access device. Any network device that provides a connection between a LAN and a Frame Relay WAN. See also *Cisco FRAD* and *FRAS*.

fragment

Piece of a larger packet that has been broken down to smaller units.

fragmentation

Process of breaking a packet into smaller units when transmitting over a network medium that cannot support the original size of the packet. See also *reassembly*.

frame

Logical grouping of information sent as a data link layer unit over a transmission medium. Often refers to the header and trailer, used for synchronization and error control, that surround the user data contained in the unit. The terms *datagram*, *message*, *packet*, and *segment* are also used to describe logical information groupings at various layers of the OSI reference model and in various technology circles.

frame check sequence

See FCS.

frame forwarding

Interface on the LightStream 2020 ATM switch that allows any traffic based on HDLC or SDLC frames to traverse the ATM network. Frame forwarding circuits are port-to-port, and only one PVC is

allowed between a pair of ports. Frame forwarding is supported by the low-speed interface module, which offers V.35, EIA/TIA-449, or X.21 physical interfaces. Sometimes abbreviated *FF*.

Frame Relay

Industry-standard, switched data link layer protocol that handles multiple virtual circuits using HDLC encapsulation between connected devices. Frame Relay is more efficient than X.25, the protocol for which it is generally considered a replacement. See also X.25.

Frame Relay Access Device

See FRAD.

Frame Relay Access Support

See FRAS.

Frame Relay bridging

Bridging technique, described in RFC 1490, that uses the same spanning-tree algorithm as other bridging functions, but allows packets to be encapsulated for transmission across a Frame Relay network.

frame switch

See LAN switch.

FRAS

Frame Relay Access Support. Cisco IOS software feature that allows SDLC, Token Ring, Ethernet, and Frame Relay-attached IBM devices to connect to other IBM devices across a Frame Relay network. See also *FRAD*.

free-trade zone

Part of an AppleTalk internetwork that is accessible by two other parts of the internetwork that are unable to directly access one another.

frequency

Number of cycles, measured in hertz, of an alternating current signal per unit time.

frequency-division multiplexing See *FDM*.

frequency modulation

See FM.

from switch unit See FSU.

front end

Node or software program that requests services of a back end. See also *back end*, *client*, and *server*.

front-end processor

See FEP.

FRU

field-replaceable unit. Hardware component that can be removed and replaced by Cisco-certified service providers. Typical FRUs include cards, power supplies, and chassis components.

FSIP

Fast Serial Interface Processor. The default serial interface processor for Cisco 7000 series routers. The FSIP provides four or eight high-speed serial ports.

FST

Fast Sequenced Transport. Connectionless, sequenced transport protocol that runs on top of the IP protocol. SRB traffic is encapsulated inside of IP datagrams and is passed over an FST connection between two network devices (such as routers). Speeds up data delivery, reduces overhead, and improves the response time of SRB traffic.

FSU

from switch unit. Subsystem of each line card on a LightStream 2020 ATM switch that accepts calls from the switch card, verifies their checksums, and passes them to the reassembly unit. The FSU selectively drops cells if the network becomes congested.

FTAM

File Transfer, Access, and Management. In OSI, an application layer protocol developed for network file exchange and management between diverse types of computers.

FTP

File Transfer Protocol. Application protocol, part of the TCP/IP protocol stack, used for transferring files between network nodes. FTP is defined in RFC 959.

full duplex

Capability for simultaneous data transmission between a sending station and a receiving station. Compare with *half duplex* and *simplex*.

full mesh

Term describing a network in which devices are organized in a mesh topology, with each network node having either a physical circuit or a virtual circuit connecting it to every other network node. A full mesh provides a great deal of redundancy, but because it can be prohibitively expensive to implement, it is usually reserved for network backbones. See also *mesh* and *partial mesh*.

function card

Line card or an NP card in a LightStream 2020 ATM switch.

function card load

See fcload.

Fuzzball

Digital Equipment Corporation LSI-11 computer system running IP gateway software. The NSFnet used these systems as backbone packet switches.