Glossary

A

AAL

See ATM Adaptation Layer.

ABR

See available bit rate.

absolute congestion

In Frame Relay, a congested condition in the network that occurs when the queue length reaches a third threshold (64 buffers full), and there is no more room on the queue for any packets, regardless of the packet type.

access rate

The data rate of the user access channel. The speed of the access channel determines how quickly (maximum rate) the end user can inject data into the network. See also bandwidth.

active hub

A device that amplifies LAN transmission signals in a network, enabling signals to be sent over a much greater distance than is possible with a passive hub. Compare with passive hub.

address

The logical location or identifier of a network node, terminal, PC, peripheral device, or location in memory where information is stored. See also NavisCore.

address mask

A bit combination used to describe which portion of an SMDS address refers to the network (or subnet) and which part refers to the host. Sometimes referred to as mask. See also subnet mask.

Address Resolution Protocol

IP services uses this protocol to resolve the lack of a hardware address when an IP address of a given destination is known but the destination hardware address (DLCI or VPI/VCI) is not.

administration tool

A system administration utility, such as Solaris, that allows administrators to maintain and monitor system database files, printers, user accounts, and hosts through a graphical user interface (GUI).

AFI

See authority and format identifier.

AIS

See alarm indication signal.

alarm

Message notifying an operator or administrator of a network problem.

alarm indication signal

To maintain transmission continuity to the receiving node, an error or alarm signal transmitted in lieu of the normal signal indicating that there is a transmission fault located either at the sending node or upstream of the sending node.

alterable mark inversion

A signaling format used in T1 lines that provides for the "one" pulses to have an alternating priority. Thus, if the nth-one bit is represented by a positive pulse, the nth T1 line would be a negative pulse.

alternate path

An optional automatic feature of OSPF (Open Shortest Path First) that reroutes the PVC should a trunk fail within a manually defined path.

amber frames

Ascend's own class of packet frames used to identify packets as they travel through the Frame Relay network. The network forwards amber frames with the discard eligible bit set; therefore the packet is eligible for discard if it passes through a congested node.

American National Standards Institute

A private, non-governmental, non-profit organization that develops US standards required for commerce.

American Standard Code for Information Interchange

A code representing characters in binary form.

AMI

See alterable mark inversion.

analog

A method that transmits electrical signals at varying amplitudes. Analog often refers to transmission methods developed to transmit voice signals rather than high-speed digital signals. Compare with digital.

Annex D

A synchronous polling scheme used for the link management of a Frame Relay channel, where the user polls the network to obtain status information on the PVCs configured on the channel. Annex D exchanges this information using DLCI 0.

ANSI

See American National Standards Institute.

area id

See area number.

area number

One of two portions of the SMDS address. Can start at any digit and the length can be up to eight digits (4 bytes long for BCD encoding).

ARP

See Address Resolution Protocol.

AS

See autonomous system.

ASCII

See American Standard Code for Information Interchange.

ASCII text file

A file that contains only text characters from the ASCII character set. An ASCII file can include letters, numbers, and punctuation symbols, but does not contain any hidden text-formatting codes.

asynchronous communications server

A LAN server that enables a network user to dial out of the network into the public-switched telephone system, or to accessed leased lines for asynchronous communications. This device also is called a dial-in/dial-out server or modem server.

Asynchronous Transfer Mode

A method used for transmitting voice, video, and data over high-speed LAN and WAN networks. See also cell relay.

AT command set

A set of standard instructions used to activate features on a modem. Originally developed by Hayes Microcomputer Products, most modem manufacturers now use the AT command set.

ATM

See Asynchronous Transfer Mode.

ATM Adaptation Layer

The standards layer that allows multiple applications to have data converted to and from the ATM cell. A protocol used that translates higher layer services into the size and format of an ATM cell. This layer is divided into four different levels of service:

AAL-1 offers AAL functions in support of constant bit rate, time-dependent traffic, such as voice and video.

AAL-2 is still undefined by the International Standards bodies. It is a place holder for variable bit rate video transmission.

AAL-3/4 functions in support of variable bit rate, delay-tolerant data traffic requiring some sequencing and/or error detection support. Originally, two AAL types existed (connection-oriented and connectionless); these have been combined.

AAL-5 functions in support of variable bit rate, delay-tolerant, connection-oriented data traffic requiring minimal sequencing or error detection support.

ATM Service Interworking Feeder

A service that enables Frame Relay network traffic to be fed into an ATM network, enabling a Frame Relay end user to communicate with an ATM end user.

ATM/DXI trunk

See OPTimum PVC trunk.

ATM/DXI trunk interface

An ATM circuit used as a trunk between two Frame Relay networks that are built with Ascend switches.

attenuation

The decrease in power of a signal over distance, measured in decibels (dB).

authority and format identifier

Part of the network level address header.

autonomous system

A set of routers having a single routing policy running under a single technical administration.

auto-ranging

The ability for a power supply to detect the correct voltage that is being received from the power source.

available bit rate

An ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. A specified flow control mechanism supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. An end-system that adapts its traffic in accordance with the feedback is expected to experience a low cell loss ratio and obtain a fair share of the available bandwidth according to a network specific allocation policy. Cell delay variation is not controlled in this service, although admitted cells are not delayed unnecessarily.

B

B8ZS

See Bipolar with 8 Zero Substitution.

backbone

The part of a network that carries the bulk of the network traffic, for example over Ethernet or fiber-optic cabling.

background diagnostics

Programs that run continuously in the background of the NMS to provide current operating status for all active switches. These programs do not interfere with switch operations.

backward explicit congestion notification

A bit in the Frame Relay header that indicates the frame has passed through a node that is experiencing congestion in the opposite direction from which the frame is traveling. Contrast with forward explicit congestion notification.

balun

A small device used to connect a balanced line (such as a twisted-pair cable) to an unbalanced line (such as a coaxial cable).

bandwidth

The transmission capacity of a computer or a communications channel.

bandwidth-on-demand

A WAN feature that enables users to dial up additional bandwidth as their applications demand.

baud rate

The number of bits per second (bps) on a serial link.

Bc

See committed burst size.

Be

See excess burst.

BECN

See backward explicit congestion notification.

best-effort packets

Packets delivered to the best of the network's ability, after the requirements for delivering the guaranteed packets are met. See also guaranteed packets.

BGP

See Border Gateway Protocol.

B-ICI

See B-ISDN Inter-Carrier Interface.

Bipolar with 8 Zero Substitution

A T1 encoding scheme where eight consecutive zeros are replaced with the sequence 000-+0+-if the preceding pulse was+, and with the sequence 000-+0+-if the preceding value was-, where+ represents a positive pulse, -represents a negative pulse, and 0 represents no pulse.

B-ISDN Inter-Carrier Interface

An ATM Forum-defined specification for the interface between public ATM networks to support user services across multiple public carriers.

bit

A binary unit of measurement, which can be either a one or a zero.

bits per second

The number of bits transmitted every second during a data transfer.

blue alarm

An alarm signal, both on the NMS and switch, indicating that all one pulses are being received.

BNC connector

A small connector with a half-turn locking shell for coaxial cable. Normally used with thin Ethernet cabling.

boot programmable read-only memory

A chip mounted on a printed circuit board used to provide executable boot instructions to a computer device.

boot PROM

See boot programmable read-only memory.

Border Gateway Protocol

A protocol that exchanges routing information between autonomous systems.

bps

See bits per second.

broadband network

A type of network that allows transmitting of large amounts of information, including voice, data, and video over long distances using the same cable.

broadcast

A message that is sent to all users currently logged into the network.

burst mode

A method of data transmission in which information is collected and then sent in a single high-speed transmission, rather than one character at a time.

byte

A series of consecutive binary digits that are operated upon as a unit (for example, an eight-bit byte).

C

CAC

See Connection Admission Control.

Carrier Sense Multiple Access Collision Detect

Media-access mechanism wherein devices ready to transmit data first check the channel for a carrier. If no carrier is sensed for a specific period of time, a device can transmit. If two devices transmit at once, a collision occurs and is detected by all transmitting devices. This collision subsequently delays retransmissions from those devices for some random length of time. CMSA/CD access is used by Ethernet and IEEE 802.3.

CBR

See constant bit rate.

CDVT

See cell delay variation tolerance.

cell

Any fixed-length data packet. For example, ATM uses fixed-length, 53-byte cells. See also cell relay.

cell delay variation tolerance

Parameter defined by the ATM Forum for ATM traffic management. In CBR transmissions, determines the level of jitter that is tolerable for the data samples taken by the PCR queue. See also cell loss priority and peak cell rate.

cell loss priority

A field in the ATM cell header that indicates the eligibility of the cell for discard by the network under congested conditions.

cell loss ratio

A negotiated QoS parameter with network-specific acceptable values. The objective is to minimize CLR, provided the end-system adapts the traffic to the changing ATM layer transfer characteristics. Cell loss ratio is defined for a connection as lost cells/total transmitted cells. The CLR parameter is the value of CLR that the network agrees to offer as an objective over the lifetime of the connection.

cell relay

A form of packet transmission that uses a fixed-length, 53-byte cell over a packet-switched network; also known as Asynchronous Transfer Mode (ATM).

cell switching

An operational feature of cellular networks that enables callers to move from one location to another without losing the call connection. The cellular system is designed to switch calls to a new cell with no noticeable drop in the conversation. Cell switching is sometimes called "handing off." While not noticeable in voice communications, the approximate 300 milliseconds this switching requires can be a problem in data transmission.

channel

Any connecting path that carries information from a sending device to a receiving device. Either a physical medium (e.g., coaxial cable) or a specific frequency within a larger channel.

channel bank

Equipment that converts multiple voice signals to time division multiplexed (TDM) signals for transmission over a T1 or E1 line.

channel service unit

A device that functions as a certified safe electrical circuit, acting as a buffer between the customer's equipment and a public carrier's WAN.

CIDR

See Classless Inter-Domain Routing.

CIR

See committed information rate.

circuit

A communications channel or path between two devices.

circuit switching

A temporary communications connection that is established as needed between a sending node and a receiving node.

Classless Inter-Domain Routing

An interim solution to the scarcity of IP addresses. CIDR allows routers to group routes together. This practice minimizes the quantity of information carried by core routers. CIDR requires that IP addresses and their subnet masks be written as 4 octets, separated by periods, followed by a forward slash (/) and a two-digit number that indicates the subnet mask.

Clear To Send

A hardware signal defined by the RS-232-C standard, indicating that the transmission can proceed.

client

A device that makes use of the services provided by a server.

CLLM

See Consolidated Link Layer Management.

closed user group

A division of all SVC network users into logically linked groups of users. CUGs form one level of security between users of a network, allowing only those users who are members of the CUG to set up calls to each other.

CLP

See cell loss priority.

coldboot

A reboot enabling the user to restart the switch as if it were powered off, then on. Compare with warmboot.

collision detection

See Carrier Sense Multiple Access Collision Detect.

committed burst size

The maximum amount of data, in bits, that the network agrees to transfer under normal conditions, during a time interval Tc. Committed Burst Size is defined for each PVC.

committed information rate

The rate at which the network agrees to transfer information under normal conditions. The rate is averaged over a minimum increment of time, Tc. See also bandwidth.

committed rate measurement interval

The time interval during which the user is allowed to send only Bc committed amount of data and Be excess amount of data. In general, the duration of Tc is proportional to the burstiness of the traffic. Tc is computed from CIR and Bc as Tc=Bc/CIR.

communications protocol

A standard way of communicating between computers, or computers and terminals; also a hardware interface standard, such as RS-232C for communication between DTE and DCE devices.

community names

The name given to an SNMP community for purposes of identification. A member has associated access rights: read-only or read/write. The Ascend switch has the following default community names: public (read-only) and cascade (read/write).

concentrator

A repeater or hub that joins communications channels from several different network nodes. Concentrator devices provide bridging, routing, and other management functions.

congestion

The point at which devices in the network are operating at their highest utilization. Congestion is handled by employing a congestion avoidance mechanism. See also mild congestion, absolute congestion, and severe congestion.

congestion threshold

The point at which devices in the network are operating at their highest utilization. Congestion is handled by employing a congestion avoidance mechanism. See also mild congestion, absolute congestion, and severe congestion.

Connection Admission Control

The Connection Admission Control (CAC) algorithm performs connection admission control for all ATM service classes. The CAC enables you to control circuit creation on physical ports based on QoS objectives.

Connectionless Network Service

OSI network layer service that does not require a circuit to be established before data is transmitted. CLNS routes messages to their destinations independently of any other messages.

connectivity

The degree to which any given computer or application can cooperate with other network components in a shared-resource network environment.

Consolidated Link Layer Management

A type of congestion control that reserves one DLCI address (1007) for transmitting congestion notification.

console commands

SNMP protocol supports three important commands: Get, Set, and Next. Get enables an NMS to query one or more objects or variables in an agent MIB. Set enables an NMS to modify a value of a MIB object or variable and may be used to boot or reboot devices. Next enables an NMS to query agent MIB tables and lists.

constant bit rate

A quality of service class defined by the ATM Forum for ATM networks. CBR is used for connections that depend on precise clocking to ensure undistorted delivery of bits.

control processor

A module that makes up the hardware architecture of a B-STDX 9000 switch. A CP provides network and system management and routing functions in support of the real-time switching functions provided by the multiple, I/O processor modules (IOPs).

CP

See control processor.

crankback

A mechanism for partially releasing an in-progress connection setup that has encountered a failure. This mechanism allows PNNI to perform alternate routing.

CRC

See cyclic redundancy check.

CRC error

A condition that occurs when the CRC in a frame does not agree with the CRC frame received from the network.

CSMA/CD

See Carrier Sense Multiple Access Collision Detect.

CSU

See channel service unit.

CTS

See Clear To Send.

cyclic redundancy check

A calculation method used to check the accuracy of digital transmission over a communications link.

CUG

See closed user group.

D

D4-format

In T1 transmission, 24 channels per T1 line, where channels are assigned sequentially.

daemon

A special type of program that, once activated, starts itself and carries out a specific task without user intervention. Daemons typically handle tasks that run repeatedly, such as printing, mail, and communications.

data bits

In asynchronous transmission, the bits that actually contain the data being sent. Also called "payload" in some transmission methods.

data bus (DB) connector

A cable connector used to connect devices to parallel or serial ports. The number following DB indicates the number of pins in the connector (e.g., DB-25 connectors have 25 pins).

data carrier detect

A hardware signal, defined by the RS-232-C standard, that indicates the device is on-line and ready for transmission.

data communications equipment

Any device that connects a computer or terminal to a communications channel or public network.

data country code

One of two ATM address formats developed by the ATM Forum for use by private networks. Adapted from the subnetwork model of addressing in which the ATM layer is responsible for mapping network layer addresses to ATM addresses. See international code designator.

Data Exchange Interface

A specification, described in RFC 1483, that defines how a network device can be used to convert data for interworking between different network services (i.e., Frame Relay to ATM).

datagram

A message unit that contains source and destination address information, as well as the data itself, which is routed through a packet-switched network.

data link connection identifier

A 10-bit address that identifies PVCs. See also Local Management Interface and globally significant DLCI.

data-link layer

The second of seven layers of the ISO/OSI model for computer-to-computer communications. This layer ensures data flow and timing from one node to another by synchronizing blocks of data and controlling the flow of data.

data packet

One unit of information transmitted as a discrete entity from one network node to another. In packet-switched networks, a data packet is a transmission unit of a fixed maximum length that contains a header, a set of data, and error control information.

data service unit

A device that connects DTE to digital communications lines. A DSU formats the data for transmission on the public carrier WAN, and ensures that the carrier's requirements for data formats are met.

data set ready

A hardware signal, defined by the RS-232-C standard, that indicates the device is ready to operate.

data terminal equipment

Any device, such as a terminal or computer, that is connected to a communications device, channel, or public network.

data terminal ready

A hardware signal, defined by the RS-232 standard, exchanged between devices. For example, an RS-232-C circuit that alerts a DCE device that the DTE device is ready to send and receive data.

data transfer rate

The speed at which data is transferred, usually measured in megabits per second (Mbps) or megabytes (MB) per second.

DCC

See data country code.

DCD

See data carrier detect.

DCE

See data communications equipment.

D-Channel

The data channel in ISDN used for control signals and customer data. In Primary Rate Interface (PRI) ISDN, the D-Channel operates at 64 Kbps.

DE

See discard eligible (DE).

dedicated line

A communications circuit used for one specific purpose, and not used by or shared between other users.

dedicated server

A computer on the network that functions only as a server performing specific network tasks.

define path

A function that allows a manual path to be defined for the PVC, thereby bypassing the OSPF (Open Shortest Path First) algorithm to make PVC routing decisions.

delay

In communications, a pause in activity, representing the time that a message must wait for transmission-related resources to become available.

destination address

The address portion of a packet or datagram that identifies the destination node.

digital

A method of storing, processing, and transmitting information through use of distinct electronic or optical pulses that represent the binary digits (bits) 0 and 1. Digital transmission/switching technologies employ a sequence of discrete, individually distinct pulses to represent information, as opposed to the continuously variable signal of analog technologies. Compare with analog.

Digital Signal (Digital Service)

A classification of digital circuits. The DS defines the level of common carrier digital transmission service. DS-0 = 64 Kbps (Fractional T1), DS-1 = 1.544 Mbps (T1), DS-2 = 6.312 Mbps (T2), DS-3 = 44.736 Mbps (T3), and DS-4 =274-176 Mbps (T4).

DIP switch

See dual in-line position (DIP) switch.

direct Ethernet

A connection method used by the NMS to the network. The NMS communicates directly to the gateway switch through the Ethernet port on the NMS to the Ethernet port on the switch.

discard eligible (DE)

A bit in the Frame Relay header used to indicate that a frame is eligible for discard by a congested node.

disk partitions

A portion of a disk that is configured during software installations on a system or workstation.

Distance Vector Multicast Routing Protocol

A multicast routing protocol that maintains its own unicast routing table by exchanging routing messages with DVMRP neighbors. In this technique, a router that receives a multicast packet needs to know if other multicast routers to which it has connections need to receive the packet. DVMRP sends the packet to all attached routers and waits for a reply. Routers with no group members return a *prune* packet to allow routers to leave a multicast group.

DLCI

See data link connection identifier.

domain

A network community of users sharing the same database information.

DS

See Digital Signal (Digital Service).

DS0

A 64-Kbps channel used in T1 transmission. There are 24 DS0 channels in a T1 line.

DS1

A standard digital transmission facility, operating at 1.544 Mbps.

DSR

See data set ready.

DSU

See data service unit.

DSX-1

A T1 specification that indicates the physical and electrical characteristics of the standard T1 cross-connection.

DTE

See data terminal equipment.

DTR

See data terminal ready.

dual in-line position (DIP) switch

A small switch used to select the operating mode of a device.

duplex channel

The ability to transmit and receive on the same channel at the same time. Also known as full duplex.

DVMRP

See Distance Vector Multicast Routing Protocol.

DXI

See Data Exchange Interface.

dynamic routing

A routing technique that allows a message's route to change "en route" through the network.

E

E.164

A public network addressing standard utilizing up to a maximum of 15 digits. Frame

Relay and ATM use E.164 addressing for public network addressing.

E1

The European counterpart to the North American T1 transmission speed. Adopted by the Conference of European Posts and Telecommunications Administrations, the E1 standard carries data at the rate of 2.048 Mbps.

EDAC

See error detection and correction.

EFCI

See explicit forward congestion indicator.

egress

Frame Relay frames leaving a Frame Relay network toward the destination device. Contrast with ingress.

encapsulation

The wrapping of data in a particular protocol header. For example, Ethernet data is wrapped in a specific Ethernet header before being transmitted. Also, when bridging dissimilar networks, the entire frame from one network is simply placed in the header used by the data link layer protocol of the other network.

environment variable

A system- or user-defined variable that provides information to the UNIX shell about the operating environment.

error detection and correction

A feature used to determine whether transmission errors have occurred, and if so, to correct those errors. See also Carrier Sense Multiple Access Collision Detect.

error rate

In communications, the ratio between the number of bits received incorrectly and the total number of bits in the transmission.

ESF

See Extended Superframe Format.

Ethernet

A popular LAN protocol and cabling scheme with a transfer rate of 10 Mbps.

Ethernet address

A 48-bit number physical address. Each Ethernet address is unique to a specific network card or PC on a LAN, which forms the basis of a network-addressing scheme. Compare with Internet Protocol address.

Ethernet packet

A variable-length unit of data transmitted on an Ethernet LAN.

excess burst

The maximum allowed amount of uncommitted data (in bits) in excess of Bc that the network attempts to deliver during time interval Tc. In general, this data (Be) is delivered with a lower probability than Bc.

explicit forward congestion indicator

EFCI is an indicator in the ATM cell header. A network element in an impending-congested state or a congested state may set EFCI so that the destination end-system can examine this indicator. For example, the end-system may use this indicator to implement a protocol that adaptively lowers the cell rate of the connection during congestion or impending congestion. A network element that is not in a congestion state or an impending congestion state, will not modify the value of this indicator. Impending congestion is the state when a network equipment is operating around its engineered capacity level.

Extended Superframe Format

In Frame Relay, a frame structure that extends the DS1 superframe structure from 12 to 24 frames, for a total of 4632 bits. This format redefines the 8-Kbps channel consisting of framing bits previously used only for terminal and robbed-bit signaling synchronization.

external testing

A loopback test that tests the ability of the port to send and receive data. This test requires an external loopback connector installed on the physical port.

F

fail count

A statistic that displays the number of tests that produced an error condition.

failed LED

A red status indicator that indicates a fatal system fault (such as a system crash).

fault-tolerant PVCs

In Frame Relay, a set of backup ports (Permanent Virtual Circuits) on the B-STDX 9000 switch used to restore connections from a failed data center to the backup data center. When enabled, a fault-tolerant PVC automatically reroutes all affected Frame Relay circuits to the set of backup ports.

FCS

See frame check sequence.

FDDI

See Fiber Distributed Data Interface.

FDM

See frequency-division multiplexing.

FDX

See duplex channel.

FECN

See forward explicit congestion notification.

Fiber Distributed Data Interface

An ANSI standard for fiber-optic links with a data transmission rate up to 100 Mbps.

File Transfer Protocol

A method of transferring information from one computer to another, either over a modem and telephone line, or over a network. FTP is a TCP/IP application utility.

foreground diagnostics

A set of tests used to check for non-fatal errors indicated by background diagnostics or statistics. Foreground tests may also run at start up to test new equipment functions.

forward explicit congestion notification

A bit in the Frame Relay header that indicates the frame has passed through a node that is experiencing congestion in the same direction in which the frame is traveling. Contrast with backward explicit congestion notification.

fractional T1

One channel of a T1 circuit. T1 circuits consist of 24, 64-Kbps channels. Customers can lease as many of these channels as needed; they are not required to lease all 24 channels in one circuit.

FRAD

See Frame Relay assembler/disassembler.

frame

In Frame Relay, a block of data that can be transmitted as a single unit.

frame check sequence

In a frame, a field that contains the standard 16-bit cyclic redundancy check used to detect errors in HDLC and LAPD frames. See also cyclic redundancy check.

Frame Relay

A type of data transmission based on a packet-switching protocol, with transmission rates up to 2 Mbps. Frame Relay provides for bandwidth-on-demand.

Frame Relay assembler/disassembler

A function that enables a logical port to perform Frame Relay encapsulation/de-encapsulation for HDLC/SDLC-based protocols. The FRAD function encapsulates HDLC/SDLC traffic entering an Ascend Frame Relay network and de-encapsulates it upon exiting the network. This function is restricted to one point-to-point PVC.

Frame Relay Network

A telecommunications network based on Frame Relay technology. Data is multiplexed. Contrast with packet-switched network.

Frame Relay RFC 1294 Multi-protocol Encapsulation

A specification allowing for a single circuit to be established between two devices.

frequency-division multiplexing

A method of sharing a transmission channel by dividing the total bandwidth of the circuit into several smaller channels. This is accomplished by allocating specific frequency ranges to each channel. All signals are carried simultaneously. Compare with time division multiplexing.

FTP

See File Transfer Protocol.

full-duplex (FDX)

See duplex channel.

full status reporting

In Frame Relay, a link-management message function that provides the user device with a complete status of all PVCs configured on that link.

G

gateway

A shared connection between a LAN and a larger system (such as a mainframe computer), or a large packet-switched network whose communication protocols differ.

generic flow control

The field in the ATM cell that controls the flow of traffic across the User-Network Interface (UNI) and into the network. The mechanisms for using this field are still under development.

GFC

See generic flow control.

globally significant DLCI

A feature of the Local (or Link) Management Interface (LMI) enhancement to Frame Relay that enables DLCIs to use the same connection-identification scheme across the network (global values) to specify individual end devices.

good LED

A green status indicator on an Ascend switch that indicates normal system status and operation during the system-boot process.

graceful discard

When enabled, this function turns red frames into best-effort frames. When disabled, this function discards frames.

green frames

Ascend's own class of packet frames used to identify packets as they travel through the network. Green frames are never discarded by the network except under extreme circumstances, such as node or link failure.

group addressing

The ability to send a single datagram/packet to multiple locations.

guaranteed packets

Data delivered according to some time constraint with high reliability.

H

Hayes-compatible modem

Any modem that recognizes commands in the industry-standard AT command set.

HDLC

See High-level Data Link Control.

header

The initial part of a data block, packet, or frame, which provides basic information about the handling of the rest of the block, packet or frame.

header error control

In ATM, a feature that provides protection against misdelivery of cells due to addressing errors.

HEC

See header error control.

heartbeat polling process

An exchange of sequence numbers between the network and a user device to ensure that both are operational and communicating.

HELLO

A routing protocol used principally by NSFnet nodes (nodes in the National Science Foundation Network). Hello allows trusting packet switches to discover minimal delay routes.

Hello protocol

Protocol used by OSPF systems for establishing and maintaining neighbor relationships.

heterogeneous network

A network that consists of workstations, servers, network interface cards, operating systems, and applications from many different vendors, all operating together as a single unit. Compare with homogeneous network.

High-level Data Link Control

An international protocol defined by the ISO. In HDLC, messages are transmitted in variable-length units known as frames.

High-Speed Serial Interface

A high-speed interface (up to 52 Mbps full duplex) between a DTE and a DCE. The DCE provides the timing for the interface. HSSI can operate over a 50 ft- (15m) shielded twisted-pair cable.

homogeneous network

A network that consists of one type of workstation, server, network interface card, and operating system, with a limited number of applications, all purchased from a single vendor. All nodes use the same protocol and the same control procedures. Compare with heterogeneous network.

hop (count)

The number of links that must be "jumped" to get from a source node to a destination node.

host name

A unique name identifying a host system.

hot swappable

A feature that allows the user to add, replace, or remove interface processors in an Ascend switch without interrupting switch operations.

HP OpenView

The UNIX-based network management application used with NavisCore on an NMS to manage an Ascend switch network.

HSSI

See High-Speed Serial Interface.

hub

A wiring device that contains multiple connections of network and internetworking modules. Active hubs amplify or repeat signals to extend a LAN (in terms of distance). Passive hubs do not repeat, but split the transmission signal, allowing the administrator to add users to a LAN.

I

ICD

See international code designator.

ICMP

See Internet Control Message Protocol.

IEEE

See Institute of Electrical and Electronic Engineers.

IEEE standards

Various specifications defined by the Institute of Electrical and Electronic Engineers (such as Token Ring, Ethernet) to establish common networking standards among vendors.

IFMP

See Ipsilon Flow Management Protocol.

IGMP

See Internet Group Multicast Protocol.

ILMI

See Interim Local Management Interface.

InARP

See Inverse Address Resolution Protocol.

indirect Ethernet

A LAN topology or an extended LAN where the NMS and the switch reside on different LANs and must use a router for access.

ingress

Frame Relay frames leaving an access device toward the Frame Relay network. Contrast with egress.

initial domain part

The part of a CLNP address that contains an authority and format identifier and a domain identifier.

input/output adapter

A module that connects the various IOP and IOP Plus modules in a switch. IOA configurations vary according to the specific IOP module they support.

input/output processor

A module in a switch that manages the lowest level of a node's trunk or user interfaces. An IOP performs physical data link and multiplexing operations on external trunks and user links.

Institute of Electrical and Electronic Engineers

Professional organization that defines network standards.

Integrated Services Digital Network

A CCITT standard for a worldwide digital communications network, intended to replace all current systems with a completely digital transmission system.

Interim Local Management Interface

Specifications developed by the ATM forum for incorporating network-management capabilities into the ATM UNI.

internal clocking

A hardware function of the Ascend switch that provides the transmit and receive clocks to the user equipment.

internal testing

A hardware diagnostic that performs an internal loopback test on the I/O card and other cards.

international code designator

One of two ATM address formats developed by the ATM Forum for use by private networks. Adapted from the subnetwork model of addressing in which the ATM layer is responsible for mapping network layer addresses to ATM addresses.

International Standards Organization

An international standards group based in Geneva, Switzerland that establishes global standards for communications and information exchange.

International Telecommunication Union Telecommunication Standard Sector

An advisory committee established under the United Nations to recommend worldwide standards for voice and data. One of the four main organizations of the International Telecommunications Union.

Internet Control Message Protocol

The IP portion of TCP that provides the functions used for network layer management and control.

Internet Group Multicast Protocol

An Internet protocol that is used to join or remove a host from a multicast group.

Internet Protocol

The TCP/IP session-layer protocol that regulates packet forwarding. See also Internet Control Message Protocol.

Internet Protocol address

A 32-bit address assigned to hosts using TCP/IP. The address is written as four octets separated with periods (dotted decimal format), which are made up of a network section, an optional subnet section, and a host section.

Inverse Address Resolution Protocol

IP services uses this protocol to resolve the lack of a hardware address when the destination hardware address (DLCI or VPI/VCI) of a given destination is known but the destination IP address is not.

Ipsilon Flow Management Protocol

(RFC 1953). A protocol that communicates route information between controllers in an IP switching environment.

IOA

See input/output adapter.

IOP

See input/output processor.

IP

See Internet Protocol.

IP address

See Internet Protocol address.

ISDN

See Integrated Services Digital Network.

ISDN call setup

A procedure that establishes an ISDN backup trunk.

ISO

See International Standards Organization.

ITU-T

See International Telecommunication Union Telecommunication Standard Sector.

J

jitter

A type of distortion found on analog communications lines, resulting in data transmission errors.

K

KA

See keep-alives.

Kbps

Kilobits per second.

keep-alives

A series of polling messages used in the Local (or Link) Management Interface (LMI) of a Frame Relay port to verify link integrity between devices.

L

LAN

See local area network.

LAP

See Link Access Protocol.

LAP-B

A bit-oriented data-link protocol used to link terminals and computers to packet-switched networks.

LED

See light emitting diode.

light emitting diode

A semiconductor light source that emits light in the optical frequency band (visible light) or the infrared frequency band. A major light source for optical fiber transmission, LEDs are used with multimode optical fiber in applications that require a low-cost light source. See also good LED, marginal LED, and failed LED.

Link Access Protocol

The link-level protocol used for communications between DCE and DTE devices.

Link Management Interface

A set of enhancements to the basic Frame Relay specification. LMI dynamically notifies the user when a PVC is added or deleted. The LMI also monitors each connection to the network through a periodic heartbeat "keep alive" polling process.

Link Management Interface Rev 1

A synchronous polling scheme used for the link management of a Frame Relay channel where the user polls the network to obtain status information of the PVCs configured on the channel. LMI exchanges this information using DLCI 1023.

link-state routing protocol

A sophisticated method of determining the shortest paths through the network. See also Open Shortest Path First.

LMI

See Link Management Interface.

LMI Rev 1

See Link Management Interface Rev 1.

load balancing

A technique that distributes network traffic along parallel paths to maximize the available bandwidth while providing redundancy at the same time.

local area network

Any physical network technology that connects a number of devices and operates at high speeds (10 Mbps through several gigabits per second) over short distances. Compare with wide area network.

Local Management Interface

See Link Management Interface.

locally significant DLCI

In Frame Relay, an identifier or address that specifies a local router, PVC, SVC, or endpoint device. It is reusable at non-overlapping endpoints and allows for scalability. Compare with globally significant DLCI.

logical port

A configured circuit that defines protocol interaction.

loopback test

A diagnostic that directs signals back toward the transmitting source to test a communications path.

loss of frame

A T1 error condition when an out-of-frame condition exists for a normal period of 2 1/2 seconds.

loss of signal

A T1 error condition when j175+_75 consecutive zeros are received.

low level debugger

A state whereby the CP switch is powered on. If both positions on the CP switch are in the OFF position (pointing left), power up diagnostics are bypassed and the system debugger is enabled.

M

MAC Address

A standardized data link layer address that is required for every port or device that connects to a LAN.

management DLCI

A value that specifies a PVC or SVC from a LAN connected via a router to a Ascend switch over a Frame Relay network.

management information base

The set of variables forming a database contained in a CMIP or SNMP-managed node on a network. Network management stations can fetch/store information from/to this database.

management PVC

Provides access to the switching network's management plane, which is IP-based. MPVCs offer an efficient, high performance data path capable of transferring large amounts of management data, such as accounting or bulk statistics files.

marginal LED

An amber status indicator on a switch module that indicates a non-fatal system fault (such as low memory).

maximum burst size

Specifies the largest burst of data above the insured rate that will be allowed temporarily on an ATM PVC, but will not be dropped at the edge by the traffic policing function, even if it exceeds the maximum rate. This amount of traffic will be allowed only temporarily; on average, the traffic source needs to be within the maximum rate. Specified in bytes or cells.

maximum rate

Maximum total data throughput allowed on a given virtual circuit, equal to the sum of the insured and uninsured traffic from the traffic source. The uninsured data might be dropped if the network becomes congested. The maximum rate, which cannot exceed the media rate, represents the highest data throughput the virtual circuit will ever deliver, measured in bits or cells per second.

Mbps

Megabits per second.

MBS

See maximum burst size.

MCR

See minimum cell rate.

MIB

See management information base.

mild congestion

In Frame Relay, the state of a link when the threshold (more than 16 buffers by default) is exceeded.

minimum cell rate

Parameter defined by the ATM Forum for ATM traffic management. MCR is defined only for ABR transmissions, and specifies the minimum value for allowed cell rate.

MLFR

See multilink Frame Relay.

ML member

A type of logical port configuration that can be bound to an MLFR trunk bundle logical port. See also multilink Frame Relay.

mono-class service

A logical port service class type for which all circuits are transmitted using VFR-nrt characteristics.

mount point

A directory in a file hierarchy at which a mounted file system is added to the machine making the mount.

MOSPF

See Multicast Open Shortest Path First.

MPOA

See Multi-protocol over ATM.

MPT

See multipoint-to-point tunneling.

MPVC

See management PVC.

multicast

A type of broadcast transmission that sends copies of the message to multiple stations, but not to all possible stations.

multicast DLCI

A circuit configured to send multiple groups of circuits on the same logical port.

Multicast Open Shortest Path First

A protocol that is designed for use with autonomous systems. MOSPF is an Open Shortest Path First routing protocol that determines the best path through the network to a specific multicast router.

multi-class service

A logical port service class type for which all QoS classes are supported. Multi-class service requires specification of a transmit scheduling mode.

multilink Frame Relay

A method of aggregating available bandwidth on a set of Frame Relay logical links between two networking devices. MLFR requires creation of ML member logical ports, which are then bound to the MLFR trunk bundle logical port. MLFR combines the multiple logical links between two networking devices into a single greater logical connection.

multiplexer (mux)

A device that merges several lower-speed transmission channels into one high-speed channel at one end of the link. Another mux reverses this process at the opposite end.

multiplexing

A technique that transmits several signals over a single communications channel.

multipoint-to-point tunneling

Allows multiple nodes to share the same circuit for transmission to a single destination. An MPT can be thought of as the inverse of the point-to-multipoint virtual circuit used to allow the sending of packets from one source to multiple destinations. Connections of this type are commonly used in multicast applications such as video distribution.

Multi-protocol over ATM

A method for overlaying Layer 3 network routing protocols (like IP) over an ATM switched network environment. MPOA is an ATM Forum specification.

N

name server

A server connected to a network that converts network names into network addresses.

name service

A distributed database service that allows a single set of system configuration files to be maintained for multiple systems on a network.

NavisCore

The UNIX-based graphical user interface used to configure and monitor an Ascend switch network.

NBMA

See nonbroadcast multi-access.

network address

A network layer address refers to a logical, rather than a physical network device; also called protocol address.

network interface card

A card, usually installed in a pc, that enables you to communicate with other users on a LAN; also called adapter.

network management station

The device used to configure and manage the network.

network parameter control

The set of actions taken by the network to monitor and control traffic from the NNI. Its main purpose is to protect network resources from malicious as well as unintentional misbehavior, which can affect the QoS of previously established connections, by detecting violations of negotiated parameters and taking appropriate actions.

Network-to-Network Interface

The standard that defines the interface between ATM switches and between Frame Relay switches. In an SMDS network, an NNI is referred to as Inter-Switching System Interface (ISSI).

Next Hop Resolution Protocol

An address resolution protocol that provides a source station (host or router) with the NBMA address of the next hop to a destination station.

NHRP

See Next Hop Resolution Protocol.

NIC

See network interface card.

NNI

See Network-to-Network Interface.

node

Any device such as a pc, terminal, workstation, etc., connected to a network and capable of communicating with other devices.

node number

A unique number that identifies a device on the network.

noise

Extraneous signals on a transmission channel that degrade the quality or performance of the channel.

nonbroadcast multi-access

A network to which multiple computers and devices are attached, but data is transmitted directly from one computer to another over a virtual circuit or across a switching fabric. ATM and Frame Relay are examples of NBMA media.

NPC

See network parameter control.

O

OAM

See Operation, Administration, and Maintenance.

Open Shortest Path First

A routing protocol that takes into account network loading and bandwidth when routing information over the network. Incorporates least-cost routing, equal-cost routing, and load balancing.

Open Systems Interconnection

An international standard program created by ISO and ITU-T to develop standards for data networking, such as the OSI model, to facilitate multi-vendor operating environments.

Operation, Administration, and Maintenance

ATM Forum specification for cells used to monitor virtual circuits. OAM cells provide a virtual circuit-level loopback in which a router responds to the cells, demonstrating that the circuit is up and that the router is operational.

OPTimum PVC trunk

A logical port configuration that optimizes interoperability in performance and throughput in networks where both ends are connected by Ascend switches.

OPTimum trunking

A software function that allows public data networks based on Frame Relay, SMDS, or ATM to be used as trunk connections between Ascend switches.

OSI

See Open Systems Interconnection.

OSPF

See Open Shortest Path First.

out of frame

A T1 error condition where two or three framing bits of any five consecutive frames are in error.

P

packet

Any block of data sent over a network. Each packet contains sender, receiver, and error-control information in addition to the actual message; sometimes called payload or data bits.

packet assembler/disassembler

A device connected to a packet-switched network that converts a serial data stream from a character-oriented device (e.g., a bridge or router) into packets suitable for transmission. It also disassembles packets into character format for transmission to a character device.

packet processor

The Ascend switch module that performs the frame format validation, routing, queuing and protocol conversion for the STDX switch. This module is not hot swappable.

packet-switched network

A network that consists of a series of interconnected circuits that route individual packets of data over one of several routes and services.

packet switching

Type of networking in which nodes share bandwidth with each other by intermittently sending logical information units (packets). In contrast, a circuit-switching network dedicates one circuit at a time to data transmission.

PAD

See packet assembler/disassembler.

parameter random access memory

The PRAM on a switch that contains the module's downloaded configuration file, and which is stored in battery backup.

pass count

A statistic that displays the number of background diagnostic tests that have passed without error.

passive hub

A wiring device used in some networks to split a transmission signal, allowing additional workstations to be added to the network. Compare with active hub.

path

The complete location of a directory or file in the file system. See define path and alternate path.

payload

The portion of a frame that contains the actual data.

PCR

See peak cell rate.

PDN

See public data network.

PDU

See protocol data unit.

peak cell rate

In ATM transmission, the maximum transmission rate that cells are transmitted. Equivalent to Be for Frame Relay, PCR is measured in cells per second and converted internally to bits per second. PCR defines the shortest time period between two cells.

permanent virtual circuit

A logical connection across a packet-switched network that is always in place and always available along a predetermined network path. See also virtual circuit.

PIM

See Protocol Independent Multicast.

PNNI

See Private Network-to-Network Interface.

Point-to-Point Protocol

A protocol that provides router-to-router and host-to-network connections.

polling

An access control method in which one master device, such as the NMS, polls or queries other network devices, requesting them to transmit one at a time.

PPP

See PIM.

PRAM

See parameter random access memory.

PRI

See Primary Rate Interface.

primary group

The main group to which associated users belong. The system identifies the primary group by the group field in the user account (stored in the /etc/password file) and by the group ID associated with a new file.

Primary Rate Interface

An ISDN interface to primary rate access, which consists of a single 64-Kbps D channel plus 23 (T1) or 30 (E1) B channels for voice or data.

Priority Frame

Provides ATM-like Quality of Service (QoS) for Frame Relay. Priority Frame enables setting QoS parameters for logical ports, which allows selection of bandwidth and routing metrics for the various traffic service classes.

Private Network-to-Network Interface

An ATM routing and signalling protocol jointly designed by member companies of the ATM Forum. It serves as an industry standard for dynamically routing scalable ATM switched Virtual Circuits (SVCs).

protocol

A set of rules governing communication between two entities or systems to provide interoperability between services and vendors. Protocols operate at different layers of the network, e.g., data link, network, and session.

protocol data unit

A unit of data consisting of control information and user data exchanged between peer layers.

Protocol Independent Multicast

A multicast routing protocol that can provide scalable interdomain multicast routing across the Internet, independent of the mechanisms provided by any particular unicast routing protocol. PIM has two operational modes, one for densely distributed multicast groups and one for sparsely distributed multicast groups.

proxy service

A management service provided for one or more devices by another. For example, the Ascend SMDS Access Servers/switches are proxy-managed through the SMDS network.

public data network

Any government-owned or controlled commercial packet-switched network, offering WAN services to data processing users.

PVC

See permanent virtual circuit.

Q

QoS

See quality of service.

quality of service

A statistical report that specifies certain characteristics of network services, sessions, connections, or links. For example, a NavisCore statistics report describes the lost packets and round-trip delay measurements.

R

RADIUS

See Remote Authentication Dial-In User Service.

RAM

See random access memory.

random access memory

The main system memory in a computer used for the operating system, applications, and data.

rate enforcement

A process used to measure the actual traffic flow across a given connection and compare it to the total admissible traffic flow for that connection. Traffic outside of the acceptable level can be tagged and discarded en route if congestion develops. ATM, Frame Relay, and other types of networks use rate enforcement.

reboot

To restart the computer and reload the operating system, usually after a crash.

receive data

A hardware signal, defined by the RS-232-C standard, that carries data from one device to another. Compare with transmit data.

red alarm

A T1 alarm condition indicating a loss of signal or loss of frame at the device's local termination point.

red frames

In Frame Relay, a type of frame to be discarded. Color designators green, amber, and red identify packets as they travel through the network.

redundancy

The duplication of hardware or software within a network to ensure fault-tolerant or back-up operation.

Remote Authentication Dial-In User Service

A Distributed security system that uses an authentication server to solve the security problems associated with remote computing.

remote connection

A workstation-to-network connection made using a modem and telephone line or other WAN services equipment. Remote connections enable you to send and receive data over greater distances than you can with conventional cabling methods.

repeater

A device that receives data on one communication link and transmits it, bit by bit, on another link as fast as it is received without buffering.

Request For Comment

A series of notes and documents available on-line that describe surveys, measurements, ideas, techniques, and observations, as well as proposed and accepted Internet protocol standards, such as Telnet and FTP.

request to send

A hardware signal, defined by the RS-232-C standard, that a device sends to request permission to transmit.

RFC

See Request For Comment.

RFC 1294

A specification documenting multi-protocol access over Frame Relay.

RIP

See Routing Information Protocol.

route recovery

In Frame Relay, an OSPF routing function in the Ascend switch. When a tandem node or trunk is down, new shortest-path routes for those affected PVCs are recalculated immediately at the ingress nodes, due to fast convergence of the link-state updates. The PVCs are then rerouted to the new route. Recovery time is typically under four seconds. The network reports PVC rerouting as an event/alarm.

router

An intelligent LAN-connection device that routes packets to the correct LAN segment destination address(es). The extended LAN segments may or may not use the same protocols. Routers link LAN segments at the ISO/OSI network layer.

routing

The process of directing data from a source node to a destination node.

Routing Information Protocol

A routing protocol that maintains a list of accessible networks and calculates the lowest hop count from a particular location to a specific network.

routing protocol

A protocol that implements routing using a specific routing algorithm. Routing protocols include IGRP, OSPF, and RIP.

RTS

See request to send.

RXD

See receive data.

S

SCR

See sustainable cell rate.

SEAL

See Simple and Efficient Adaption Layer.

Serial Line over Internet Protocol

A protocol that enables point-to-point serial communication over IP using serial lines or telephone connections and modems.

serial management port

A management port on the Packet Processor card in an Ascend switch.

severe congestion

In Frame Relay, a state or condition that occurs when the queue size is greater than a second predetermined threshold (32 buffers full). In this state, the continued forwarding of amber and red packets jeopardize the successful delivery of green packets.

shielded cable

Cable protected against electromagnetic and radio frequency interference.

shortest path routing

A routing algorithm that calculates the path distances to all network destinations. The shortest path is then determined by a cost assigned to each link. See also OSPF.

SIG

See SMDS Interest Group.

Simple and Efficient Adaption Layer

In ATM, an extension of the Type 3 AAL. It simplifies the SAR portion of the Adaption layer to pack all 48 bytes of the cell information field with data. This AAL makes ATM look like high-speed Frame Relay. It also assumes that only one message is crossing the UNI at a time. That is, multiple end users at one location cannot interleave messages on the same virtual circuit, but must queue them for sequential transmission.

Simple Network Management Protocol

A standard network management protocol used to manage and monitor nodes and devices on a network.

SIP

See SMDS Interface Protocol.

SLIP

See Serial Line over Internet Protocol.

smart hub

A concentrator with certain network management features built into the firmware. This capability enables the user to manage LAN configurations.

SMDS

See Switched Multimegabit Data Services.

SMDS in-band network management

The NMS manages SMDS network traffic using SMDS in-band network management. To be managed from this NMS, all SMDS Access Servers/Switches must be in the same IP subnet.

SMDS Interest Group

A consortium of vendors and consultants committed to advancing worldwide SMDS as an open, interoperable solution for high-performance data connectivity.

SMDS Interface Protocol

The protocol defined at the network and end-user interface connection.

SNMP

See Simple Network Management Protocol.

SP

See switch processor.

static route

A route or path that is manually entered into the routing table. Static routes take precedence over routes or paths specified by dynamic routing protocols.

subnet address

An extension of the Internet addressing scheme that allows a site to use a single Internet address for multiple physical networks.

subnet mask

A 32-bit address mask used in IP to specify a particular subnet. See also address mask.

superuser (root)

In UNIX, a user (also known as root) with special privileges. Only the superuser, for example, can change the password file and edit major system administration files in the /etc directory.

sustainable cell rate

The average cell transmission rate in ATM transmission. Equivalent to CIR for Frame Relay, SCR is measured in cells per second and converted internally to bits per second Usually, SCR is a fraction of the peak cell rate. Cells are sent at this rate if there is no credit.

SVC

See Switched Virtual Circuit.

SVCC

See switched virtual channel connection.

SVPC

See switched virtual path connection.

switch processor

A control module present in the CBX 500 switch that controls the switch and interacts with multiple Input/Output Processor (IOP) modules.

Switched Multimegabit Data Services

A high-speed WAN service based on the 802.6 standard for use over T1 or T3 circuits.

Switched Virtual Circuit

A logical connection across a packet-switched network providing as-needed connections to any other node in the network. See also virtual circuit.

switched virtual channel connection

A switched VCC is one which is established and taken down dynamically through control signaling. A VCC is an ATM connection where switching is performed on the VPI/VCI fields of each cell. See also virtual channel connection.

switched virtual path connection

A switched VPC is one which is established and taken down dynamically through control signaling. A VPC is an ATM connection where switching is performed on the VPI field only of each cell. See also virtual path connection.

synchronization

The timing of separate elements or events to occur simultaneously. In communications, hardware and software must be synchronized so that file transfers can occur.

synchronous transmission

A data transmission method that uses a clock signal to regulate data flow.

T

T1

A long-distance, point-to-point circuit that provides 24 channels at 64 Kbps each (for a total of 1.544 Mbps). See also E1.

T3

A long-distance, point-to-point circuit that provides up to 28 T1 channels. T3 can carry 672 channels of 64 Kbps (for a total of 44.736 Mbps).

Tc

See committed rate measurement interval.

TCP

See Transmission Control Protocol.

TDM

See time division multiplexing.

telnet

The Internet standard protocol for remote terminal-connection services.

throughput

The actual speed of the network.

time division multiplexing

A timing mechanism that allocates bandwidth for multiple channels onto one channel based on preassigned time slots.

time interval "T"

The time interval over which the number of bits used to average the number of bits transmitted, is averaged. To calculate **T,** use the following formula: Bc/CIR=T.

topology

The map or configuration design of a network. Physical topology refers to the location of hardware. Logical topology refers to the paths that messages take to get from one node to another.

traffic policing

Process used to measure the actual traffic flow across a given connection and compare it to the total admissible traffic flow for that connection. Traffic outside of the agreed upon flow can be tagged (where the CLP bit is set to 1) and can be discarded en route if congestion develops. Traffic policing is used in ATM, Frame Relay, and other types of networks. Also known as *admission control, rate enforcement,* and UPC (usage parameter control).

traffic shaping

In Frame Relay, a set of rules that describes traffic flow. The sender has a mechanism to ensure that the transmission of its guaranteed packets behaves in a certain way. The network knows what kind of traffic to expect, and can monitor the behavior of the traffic.

transceiver

A device that connects a host interface to a LAN. A transceiver transmits and receives data.

Transmission Control Protocol

The Internet standard, transport-level protocol that provides the reliable, full duplex, stream service on which many application protocols depend.

transmit data

A hardware signal, defined by the RS-232-C standard, used by the DTE to transmit data to the DCE. Compare with receive data.

trap

An unsolicited message generated by an SNMP agent on a network device (e.g. switch) due to a predefined event occurring or alarm threshold being exceeded, which triggers an alarm at the NMS.

trunk

The communications circuit between two switches.

trunk backup

A configuration setting specified by a network operator via the NMS. The network operator can initiate or terminate primary trunk backups at any time via the NMS. Trunk backups take over a connection should the primary trunk fail.

trunk failure

A condition (alarm) that occurs when the Ascend switch status indicates that a trunk is no longer available.

trunk restoration

A process that reroutes the PVCs carried on the backup trunk, and frees up the circuit on the backup trunk.

TXD

See transmit data.

twisted-pair cable

Cable that consists of two or more pairs of insulated wires twisted together. One wire carries the signal, and the other is grounded.

U

UBR

See unspecified bit rate,

UDP

See User Datagram Protocol.

UFR

See unspecified frame rate.

UIO module

See universal input output module.

unshielded cable

Any cable not protected from electromagnetic or radio frequency interference.

UNI

See User-to-Network Interface.

UNI DCE

See user network interface data communications equipment.

UNI DTE

See user network interface data terminal equipment.

universal input output module

In the Ascend switch, a module that has three 80-pin connectors and is used for redundancy, and also as an I/O module for X.21, RS449, V.35, EIA530, and EIA530A interfaces.

unspecified bit rate

QoS class defined by the ATM Forum for ATM networks. UBR allows any amount of data up to a specified maximum to be sent across the network, but there are no guarantees in terms of cell loss rate and delay. Compare with available bit rate, constant bit rate, and variable bit rate.

unspecified frame rate

ATM-like QoS class provided by Priority Frame for Frame Relay networks. UFR is used primarily for LAN traffic.

usage parameter control

See traffic policing.

User Datagram Protocol

An unreliable transport-layer protocol from the TCP/IP protocol suite. It simply acts as an interface to various applications through the use of different ports.

user network interface data communications equipment

A device that performs the Frame Relay DCE functions for link management and expects a Frame Relay DTE device (e.g., Ascend switch) to be attached to it.

user network interface data terminal equipment

A device that performs the Frame Relay DTE functions for link management. The user specifies this option on the NMS to connect to a Frame Relay DCE, where the Ascend switch acts as the DTE.

User-to-Network Interface

A standard defined by the ATM Forum for public and private ATM network access. UNI connects an ATM end system (such as a router) and an ATM switch, and is also used in Frame Relay. UNI is called SNI (Subscriber Network Interface) in SMDS.

V

V.35

A standard module used for communication between a network access device and a packet network. It provides clocking from 19.2 Kbps to 4.0966 Mbps.

variable bit rate

QoS class defined by the ATM Forum for ATM networks. VBR is subdivided into a real time (RT) class and non-real time (NRT) class. VBR-RT is used for connections in which there is a fixed timing relationship between samples. VBR-NRT is used for connections that have no fixed timing relationship between samples, but that still need a guaranteed QoS. Compare with available bit rate, constant bit rate, and unspecified bit rate.

variable frame rate

ATM-like QoS class provided by Priority Frame for Frame Relay networks. VFR is subdivided into a real time (rt) class and non-real time (nrt) class. VFR-rt is used for packaging special delay-sensitive applications, such as packet video, which require low delay variation between endpoints. VFR-nrt handles packaging for transfer of long, bursty data streams over a pre-established connection, or for short, bursty data, such as LAN traffic. VFR-nrt also provides congestion control support.

VBR

See variable bit rate.

VC

See virtual channel; virtual circuit.

VCI

See virtual circuit identifier.

VCL

See virtual channel link.

VFR

See variable frame rate.

virtual bandwidth

Channel capacity calculated to allow for oversubscription of channel usage.

virtual channel

A connection between two communicating ATM networks.

virtual channel connection

A concatenation of VCLs that extends between the points where the ATM service users access the ATM layer. The points at which the ATM cell payload is passed to, or received from, the users of the ATM Layer (i.e., a higher layer or ATM-entity) for processing signify the endpoints of a VCC. VCCs are unidirectional.

virtual channel link

A means of unidirectional transport of ATM cells between the point where a VCI value is assigned and the point where that value is translated or removed.

virtual circuit

A logical circuit set up to ensure reliable communication between two network devices. See also PVC and SVC.

virtual circuit identifier

A 16-bit field in the ATM cell header that is used as an addressing identifier to route cell traffic.

Virtual Network Navigator

The connection-oriented routing technology used in Ascend switches.

virtual path

A group of VCs carried between two points that provides a way to bundle traffic headed in the same direction.

virtual path connection

A concatenation of VPLs between virtual path terminators (VPTs). VPCs are unidirectional.

virtual path identifier

An 8-bit field in the ATM cell header that is used as an addressing identifier to route cell traffic.

virtual path link

A means of unidirectional ATM cell transport between the point where a VPI value is assigned and the point where that value is translated or removed.

virtual private network

A network that provides dedicated bandwidth and guaranteed performance, reliability, and privacy.

VNN

See VP.

VP

See virtual path.

VPC

See virtual path connection.

VPI

See virtual path identifier.

VPL

See virtual path link.

VPN

See virtual private network.

W

WAN

See wide area network.

warmboot

A reboot performed after the operating system has been running for a period of time. Compare with coldboot.

wide area network

A network that usually consists of packet-switching nodes over a large geographical area.

X

X.121

An ITU-T addressing standard used in X.25 networks. X.121 addresses are sometimes referred to as IDNs (International Data Numbers). X.121 addresses consist of 14 ASCII digits. Only number values between 0-9 are valid.

Y

yellow alarm

A T1 alarm that is generated when the interface receives a red alarm signal from the remote end.