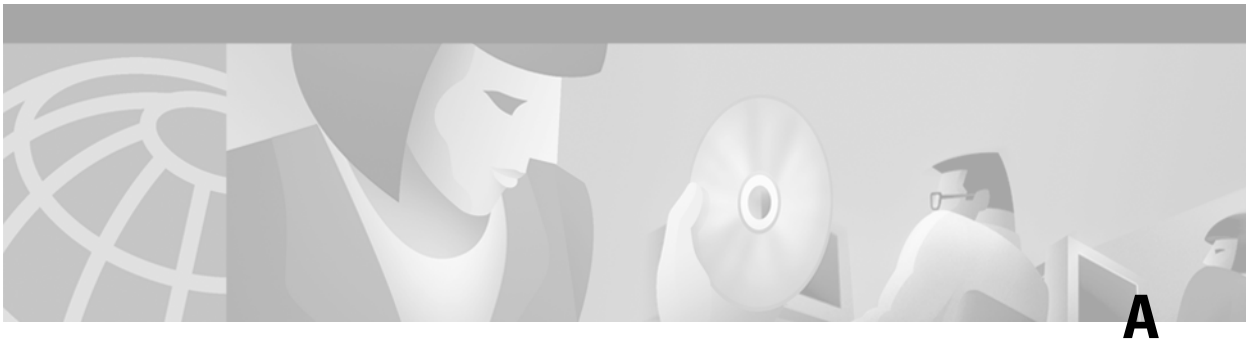

A

A

amperes.

A&B bit signaling

Procedure used in T1 transmission facilities in which each of the 24 T1 subchannels devotes 1 bit of every sixth frame to the carrying of supervisory signaling information. Also called *24th channel signaling*.

A/D

analog to digital conversion.

AAA

authentication, authorization, and accounting. Pronounced “triple a.”

AAL

ATM adaptation layer. Service-dependent sublayer of the data link layer. The AAL accepts data from different applications and presents it to the ATM layer in the form of 48-byte ATM payload segments. AALs consist of two sublayers: CS and SAR. AALs differ on the basis of the source-destination timing used (CBR or VBR) and whether they are used for connection-oriented or connectionless mode data transfer. At present, the four types of AAL recommended by the ITU-T are AAL1, AAL2, AAL3/4, and AAL5. See also *AAL1*, *AAL2*, *AAL3/4*, *AAL5*, *ATM*, *ATM layer*, *CS*, and *SAR*.

AAL1

ATM adaptation layer. One of four AALs recommended by the ITU-T. AAL1 is used for connection-oriented, delay-sensitive services requiring constant bit rates, such as uncompressed video and other isochronous traffic. See also *AAL*.

AAL2

ATM adaptation layer 2. One of four AALs recommended by the ITU-T. AAL2 is used for connection-oriented services that support a variable bit rate, such as some isochronous video and voice traffic. See also *AAL*.

AAL3/4

ATM adaptation layer 3/4. One of four AALs (merged from two initially distinct adaptation layers) recommended by the ITU-T. AAL3/4 supports both connectionless and connection-oriented links but is used primarily for the transmission of SMDS packets over ATM networks. See also *AAL*.

AAL5

ATM adaptation layer 5. One of four AALs recommended by the ITU-T. AAL5 supports connection-oriented VBR services and is used predominantly for the transfer of classical IP over ATM and LANE traffic. AAL5 uses SEAL and is the least complex of the current AAL recommendations. It offers low bandwidth overhead and simpler processing requirements in exchange for reduced bandwidth capacity and error-recovery capability. See also *AAL* and *SEAL*.

AARP

AppleTalk Address Resolution Protocol. A protocol in the AppleTalk protocol stack that maps a data-link address to a network address.

AARP probe packets

Packets transmitted by AARP that determine whether a randomly selected node ID is being used by another node in a nonextended AppleTalk network. If the node ID is not being used, the sending node uses that node ID. If the node ID is being used, the sending node chooses a different ID and sends more AARP probe packets. See also *AARP*.

ABCD signaling

4-bit telephony line signaling coding in which each letter represents 1 of the 4 bits. This often is associated with CAS or robbed-bit signaling on a T1 or E1 telephony trunk.

ABM

1. Asynchronous Balanced Mode. HDLC (and derivative protocol) communication mode supporting peer-oriented, point-to-point communications between two stations, where either station can initiate the transmission.

2. Accunet Bandwidth Manager.

ABR

1. available bit rate. QoS class defined by the ATM Forum for ATM networks. ABR is used for connections that do not require timing relationships between source and destination. ABR provides no guarantees in terms of cell loss or delay, providing only best-effort service. Traffic sources adjust their transmission rate in response to information they receive describing the status of the network and its capability to successfully deliver data. Compare with *CBR*, *UBR*, and *VBR*.

2. area border router. Router located on the border of one or more OSPF areas that connects those areas to the backbone network. ABRs are considered members of both the OSPF backbone and the attached areas. They therefore maintain routing tables describing both the backbone topology and the topology of the other areas

ABRD

automatic baud rate detection.

ABS

application bridge server. Software module that allows the ICM to share the application bridge interface from an Aspect ACD with other applications.

Abstract Syntax Notation One

See *ASN.1*.

AC

alternating current.

access device

The hardware component used in the signaling controller system: access server or mux.

access list

A list kept by routers to control access to or from the router for a number of services (for example, to prevent packets with a certain IP address from leaving a particular interface on the router).

access method

1. Generally, the way in which network devices access the network medium.

2. Software within an SNA processor that controls the flow of information through a network.

access server

Communications processor that connects asynchronous devices to a LAN or WAN through network and terminal emulation software. Performs both synchronous and asynchronous routing of supported protocols. Sometimes called a *network access server.* See also *communication server*.

access unit

See *AU*.

Access-Accept

Response packet from the RADIUS server notifying the access server that the user is authenticated. This packet contains the user profile, which defines the specific AAA functions assigned to the user.

Access-Challenge

Response packet from the RADIUS server requesting that the user supply additional information before being authenticated.

Access-Request

Request packet sent to the RADIUS server by the access server requesting authentication of the user.

accounting management

One of five categories of network management defined by ISO for the management of OSI networks. Accounting management subsystems are responsible for collecting network data relating to resource usage. See also *configuration management*, *fault management*, *performance management*, and *security management*.

ACD

1. automatic call distributor. Programmable device at a call center that routes incoming calls to targets within that call center. After the ICM determines the target for a call, the call is sent to the ACD associated with that target. The ACD must then complete the routing as determined by the ICM.

2. automatic call distribution. Device or service that automatically reroutes calls to customers in geographically distributed locations served by the same CO. See also *CO*.

ACELP

algebraic code excited linear prediction.

ACF

Advanced Communications Function. A group of SNA products that provides distributed processing and resource sharing. See also *ACF*.

ACF/NCP

Advanced Communications Function/Network Control Program. The primary SNA NCP. ACF/NCP resides in the communications controller and interfaces with the SNA access method in the host processor to control network communications. See also *ACF* and *NCP*.

ACK

See *acknowledgment*.

acknowledgment

Notification sent from one network device to another to acknowledge that some event occurred (for example, the receipt of a message). Sometimes abbreviated *ACK*. Compare to *NAK*.

ACO

alarm cutoff. Feature that allows the manual silencing of the office audible alarm. (Subsequent new alarm conditions might reactivate the audible alarm.)

ACOM

Term used in G.165, "General Characteristics of International Telephone Connections and International Telephone Circuits: Echo Cancellers." ACOM is the combined loss achieved by the echo canceller, which is the sum of the echo return loss, echo return loss enhancement, and nonlinear processing loss for the call.

ACR

allowed cell rate. A parameter defined by the ATM Forum for ATM traffic management. ACR varies between the MCR and the PCR, and is controlled dynamically using congestion control mechanisms. See also *MCR* and *PCR*.

ACS

asynchronous communications server.

ACSE

association control service element. The OSI convention used to establish, maintain, or terminate a connection between two applications.

Activation

The process of enabling a subscriber device for network access and privileges on behalf of a registered account.

active discovery packet

The type of packet used by PPPoE during the discovery stage.

active hub

A multiported device that amplifies LAN transmission signals.

active monitor

The device responsible for managing a Token Ring. A network node is selected to be the active monitor if it has the highest MAC address on the ring. The active monitor is responsible for such management tasks as ensuring that tokens are not lost, or that frames do not circulate indefinitely. See also *ring monitor* and *standby monitor*.

active nonvolatile memory

See *ANVM*.

ActiveX

Microsoft's Windows-specific non-Java technique for writing applets. ActiveX applets take considerably longer to download than the equivalent Java applets; however, they more fully exploit the features of Windows 95. ActiveX sometimes is said to be a superset of Java. See also *applet* and *Java*.

ACU

automatic calling unit.

ACUTA

Association of College and University Telecomm Administrators.

AD

administrative domain. A group of hosts, routers, and networks operated and managed by a single organization.

adapter

See *NIC*.

adaptive differential pulse code modulation

See *ADP*.

adaptive routing

See *dynamic routing*.

ADC

analog to digital converter.

ADCCP

Advanced Data Communications Control Protocol. ANSI standard bit-oriented data link control protocol.

Add Path request

A request made by the network to add a path using the Add Path packet, which establishes a multi-hop path between two network nodes. Although the two nodes are usually the source and destination nodes of a VWP, there are cases in which other nodes might want to establish a path between them. Unlike the Restore Path request, the Add Path request is never flooded; it is instead forwarded using information carried in the path itself (source routing).

add/drop multiplexer

See *ADM*.

address

Data structure or logical convention used to identify a unique entity, such as a particular process or a network device.

address mapping

A technique that allows different protocols to interoperate by translating addresses from one format to another. For example, when routing IP over X.25, the IP addresses must be mapped to the X.25 addresses so that the IP packets can be transmitted by the X.25 network. See also *address resolution*.

address mask

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

address resolution

Generally, a method for resolving differences between computer addressing schemes. Address resolution usually specifies a method for mapping network layer (Layer 3) addresses to data link layer (Layer 2) addresses. See also *address mapping*.

Address Resolution Protocol

See *ARP*.

address translation gateway

See *ATG* in the “Cisco Systems Terms and Acronyms” section.

addressed call mode

A mode that permits control signals and commands to establish and terminate calls in V.25bis. See also *V.25bis*.

ADF

adapter description file.

adjacency

A relationship formed between selected neighboring routers and end nodes for the purpose of exchanging routing information. Adjacency is based upon the use of a common media segment.

adjacent channel

A channel or frequency that is directly above or below a specific channel or frequency.

adjacent nodes

1. In SNA, nodes that are connected to a given node with no intervening nodes.

2. In DECnet and OSI, nodes that share a common network segment (in Ethernet, FDDI, or Token Ring networks).

ADM

add/drop multiplexer. Digital multiplexing equipment that provides interfaces between different signals in a network.

ADMD

Administration Management Domain. X.400 Message Handling System public carrier. The ADMDs in all countries worldwide together provide the X.400 backbone. See also *PRMD*.

administrative distance

Rating of the trustworthiness of a routing information source. Administrative distance often is expressed as a numerical value between 0 and 255. The higher the value, the lower the trustworthiness rating.

Administrative Domain

See *adapter*.

administrative weight

See *AW* and *PTSP*.

administrator

The person who queries the User Registrar to analyze individual subscriber status and problems and to generate aggregate statistics.

admission control

See *traffic profile*.

admissions confirmation

An RAS message sent as an admissions confirmation.

ADP

automatic data processing.

ADPCM

adaptive differential pulse code modulation. The process by which analog voice samples are encoded into high-quality digital signals.

ADSL

asymmetric digital subscriber line. One of four DSL technologies. ADSL is designed to deliver more bandwidth downstream (from the central office to the customer site) than upstream. Downstream rates range from 1.5 to 9 Mbps, whereas upstream bandwidth ranges from 16 to 640 kbps. ADSL transmissions work at distances up to 18,000 feet (5,488 meters) over a single copper twisted pair. See also *HDSL*, *SDSL*, and *VDSL*.

ADSP

AppleTalk Data Stream Protocol.

ADSU

ATM DSU. Terminal adapter used to access an ATM network via an HSSI-compatible device. See also *DSU*.

ADTS

automated digital terminal system.

Advanced Communications Function

See *ACF*.

Advanced Communications Function/Network Control Program

See *ACF/NCP*.

Advanced CoS Management

advanced class of service management. Essential for delivering the required QoS to all applications. Cisco switches contain per-VC queuing, per-VC rate scheduling, multiple CoS queuing, and egress queuing. This enables network managers to refine connections to meet specific application needs. Formerly called FairShare and OptiClass.

Advanced Data Communications Control Protocol

See *AEP*.

Advanced Intelligent Network

See AIN.

Advanced Peer-to-Peer Networking

See *APPN*.

Advanced Program- to-Program Communication

See *APPC*.

Advanced Research Projects Agency

See *ARPA*.

Advanced Research Projects Agency Network

See *ARPANET*.

advanced voice busyout

See *AVBO*.

advertising

The router process in which routing or service updates are sent at specified intervals so that other routers on the network can maintain lists of usable routes.

AE

application entity.

AEP

AppleTalk Echo Protocol. Used to test the connectivity between two AppleTalk nodes. One node sends a packet to another node and receives a duplicate, or echo, of that packet.

AERM

SS7 MTP 2 function that provides monitoring of link alignment errors.

AFC

See *admissions confirmation*.

AFCEA

Armed Forces Communications and Electronics Association.

affinity

Requirements of an MPLS traffic engineering tunnel on the attributes of the links it will cross. The tunnel's affinity bits and affinity mask bits of the tunnel must match the attribute bits of the various links carrying the tunnel.

AFI

authority and format identifier. The part of an NSAP-format ATM address that identifies the type and the format of the IDI portion of an ATM address. See also *IDI* and *NSAP*.

AFNOR

Association Francaise de Normalisation.

AFP

AppleTalk Filing Protocol. Presentation-layer protocol that allows users to share data files and application programs that reside on a file server. AFP supports AppleShare and Mac OS File Sharing.

AFS

Andrew File System.

agent

1. Generally, software that processes queries and returns replies on behalf of an application.

2. In NMSs, a process that resides in all managed devices and reports the values of specified variables to management stations.

aggressive mode

The connection mode that eliminates several steps during IKE authentication negotiation (phase 1) between two or more IPSec peers. Aggressive mode is faster than main mode but not as secure.

AH

Authentication Header. A security protocol that provides data authentication and optional anti-replay services. AH is embedded in the data to be protected (a full IP datagram).

AHT

average handle time. The average time it takes for calls to a service or a skill group to be handled. Handle time includes talk time plus after-call work time.

AI

1. artificial intellegence.

2. access interface.

AIM

asynchronous interface module.

AIN

Advanced Intelligent Network. In SS7, an expanded set of network services made available to the user, and under user control, that requires improvement in network switch architecture, signaling capabilities, and peripherals. See also *SS7*.

AIO

Asynchronous input/output.

AIP

See *AIP* in the "Cisco Systems Terms and Acronyms" section.

Airline Control Protocol

Data link layer polled protocol that runs in full-duplex mode over synchronous serial (V.24) lines and uses the binary-coded decimal (BCD) character set.

Airline Product Set

See *ALPS* in the in the "Cisco Systems Terms and Acronyms" section.

airline protocol

Generic term that refers to the airline reservation system data and the protocols, such as P1024B (ALC), P1024C (UTS), and MATIP, that transport the data between the mainframe and the ASCUs.

Airline X.25

See *AX.25*.

AIS

1. alarm indication signal. In a T1 transmission, an all-ones signal transmitted in lieu of the normal signal to maintain transmission continuity and to indicate to the receiving terminal that there is a transmission fault that is located either at, or upstream from, the transmitting terminal. See also *T1*.

2. automatic intercept system.

AIX

advanced interface executive.

alarm

Notification that the traffic signal has degraded or failed or equipment is malfunctioning. An SNMP message notifying an operator or an administrator of a network problem. See also *event* and *trap*.

alarm cutoff

See *ACO*.

alarm indication signal

See *AIS*.

alarm indication signal

See *ALS*.

a-law

ITU-T companding standard used in the conversion between analog and digital signals in PCM systems. A-law is used primarily in European telephone networks and is similar to the North American mu-law standard. See also *companding* and *mu-law*.

algorithm

Well-defined rule or process for arriving at a solution to a problem. In networking, algorithms commonly are used to determine the best route for traffic from a particular source to a particular destination.

alias

See *entity*.

Alien Port Adapter

A dual-wide port adapter for the Cisco 7200 router. The Alien Port Adapter is ABR-ready and supports traffic shaping.

alignment error

In IEEE 802.3 networks, an error that occurs when the total number of bits of a received frame is not divisible by eight. Alignment errors usually are caused by frame damage due to collisions.

alignment error rate monitor

See *AERM*.

A-link

SS7 access link. A dedicated SS7 signaling link not physically associated with any particular link carrying traffic.

allowed cell rate

See *ACOM*.

all-rings explorer packet

See *local explorer packet*.

all-routes explorer packet

An explorer packet that traverses an entire SRB network, following all possible paths to a specific destination. Sometimes called *all-rings explorer packet.* See also *explorer packet*, *local explorer packet*, and *spanning explorer packet*.

ALO transaction

An ATP transaction in which the request is repeated until a response is received by the requester or until a maximum retry count is reached. This recovery mechanism ensures that the transaction request is executed at least once. See also *ATP*.

ALPS

See *ALPS* in the "Cisco Systems Terms and Acronyms" section.

ALPS circuit

A communication path across a TCP connection between a host reservation system and an ASCU. When MATIP encapsulation is used on an ALPS circuit, it is equivalent to a MATIP session.

ALPS Tunneling Protocol

See *ATP*.

ALS

active line state.

alternate mark inversion

See *AMI*.

AM

amplitude modulation. A modulation technique whereby information is conveyed through the amplitude of the carrier signal. Compare with *FM* and *PAM*. See also *modulation*.

AMA

Automatic Messaging Accounting. In OSS, the automatic collection, recording, and processing of information relating to calls for billing purposes.

AMADNS

AMA Data Networking System. In OSS, the next generation (formerly Bellcore) system for the collection and the transport of AMA data from central office switches to a billing system. See also *AMA*.

AMATPS

AMA Teleprocessing System. In OSS, the Bellcore legacy system for collecting and transporting AMA data from central office switches to a billing system. The AMATPS consists of an AMA transmitter and a collector. See also *AMA*.

American National Standards Institute

See *ANP*.

American Standard Code for Information Interchange

See *ASCII*.

AMI

alternate mark inversion. Line-code type used on T1 and E1 circuits. In AMI, zeros are represented by 01 during each bit cell, and ones are represented by 11 or 00, alternately, during each bit cell. AMI requires that the sending device maintain ones density. Ones density is not maintained independently of the data stream. Sometimes called *binary coded alternate mark inversion*. Compare with *bipolar 8-zero substitution*. See also *ones density*.

amplitude

The maximum value of an analog waveform or a digital waveform. The magnitude or strength of a varying waveform. Typically represented as a curve along the x-axis of a graph.

amplitude modulation

See *AM*.

AMRL

adjusted main ring lenth.

analog signal

The representation of information with a continuously variable physical quantity, such as voltage. Because of this constant changing of the wave shape with regard to its passing a given point in time or space, an analog signal might have a virtually indefinite number of states or values. This contrasts with a digital signal that is expressed as a square wave and therefore has a very limited number of discrete states.

analog transmission

Signal transmission over wires or through the air in which information is conveyed through the variation of some combination of signal amplitude, frequency, and phase.

ANI

automatic number identification. SS7 (signaling system 7) feature in which a series of digits, either analog or digital, are included in the call, identifying the telephone number of the calling device. In other words, ANI identifies the number of the calling party. See also *CLID*.

anonymous FTP

Allows a user to retrieve documents, files, programs, and other archived data from anywhere on the Internet without having to establish a userid and password. By using the special userid of anonymous, the network user bypasses local security checks and can access publicly accessible files on the remote system. See also *FTP*.

ANP

automatic numbering plan.

ANSI

American National Standards Institute. A voluntary organization composed of corporate, government, and other members that coordinates standards-related activities, approves U.S. national standards, and develops positions for the United States in international standards organizations. ANSI helps develop international and U.S. standards relating to, among other things, communications and networking. ANSI is a member of the IEC and the ISO. See also *IEC* and *ISO*.

ANSI X3T9.5

See *X3T9.5*.

answer supervision template

The sequence of autonomous responses to the detection of specific signaling events for outbound calls from the Cisco VCO/4K switch. See also *inpulse rule*, *outpulse rule*.

answer-mode

Specifies that the router should not attempt to initiate a trunk connection, but should wait for an incoming call before establishing the trunk.

antenna

A device for transmitting or receiving a radio frequency (RF). Antennas are designed for specific and relatively tightly defined frequencies and are quite varied in design. An antenna for a 2.5 GHz (MMDS) system does not work for a 28 GHz (LMDS) design.

antenna gain

The measure of an antenna assembly performance relative to a theoretical antenna, called an isotropic radiator (radiator is another term for antenna). Certain antenna designs feature higher performance relative to vectors or frequencies.

anti-replay

Security service where the receiver can reject old or duplicate packets in order to protect itself against replay attacks. IPSec provides this optional service by use of a sequence number combined with the use of data authentication.

ANVM

active nonvolatile memory. Memory that contains the software currently used by the network element.

ANW

advanced netware.

anycast

In ATM, an address that can be shared by multiple end systems. An anycast address can be used to route a request to a node that provides a particular service.

AOW

Asia and Oceania Workshop. One of the three regional OSI Implementors Workshops. See also *EWOS*.

AP

1. application process.

2. application processor.

APA

all points addressable.

APAD

asynchronous packet assembler/disassembler.

APaRT

See *APaRT* in the "Cisco Systems Terms and Acronyms" section.

APC

adjacent point code. The point code of the next hop in the system for the bearer channels; usually it is the STP (signal transfer point).

APDU

application protocol data unit.

API

application program interface. The means by which an application program talks to communications software. Standardized APIs allow application programs to be developed independently of the underlying method of communication. A set of standard software interrupts, calls, and data formats that computer application programs use to initiate contact with other devices (for example, network services, mainframe communications programs, or other program-to-program communications). Typically, APIs make it easier for software developers to create the links that an application needs to communicate with the operating system or with the network.

APN

access point name. Identifies a PDN that is configured on and accessible from a GGSN in a GPRS network.

APNIC

Asia Pacific Network Information Center. Nonprofit Internet registry organization for the Asia Pacific region. The other Internet registries are currently IANA, RIPE NCC, and InterNIC.

Apollo Domain

Proprietary network protocol suite developed by Apollo Computer for communication on proprietary Apollo networks.

APPC

Advanced Program-to-Program Communication. IBM SNA system software that allows high-speed communication between programs on different computers in a distributed computing environment. APPC establishes and tears down connections between communicating programs. It consists of two interfaces: programming and data-exchange. The programming interface replies to requests from programs requiring communication; the data-exchange interface establishes sessions between programs. APPC runs on LU 6.2 devices. See also *LU 6.2*.

applet

A small program, often used in the context of a Java-based program, that is compiled and embedded in an HTML page. See also *ActiveX* and *Java*.

AppleTalk

A series of communications protocols designed by Apple Computer consisting of two phases. Phase 1, the earlier version, supports a single physical network that can have only one network number and be in one zone. Phase 2 supports multiple logical networks on a single physical network and allows networks to be in more than one zone. See also *zone*.

AppleTalk Address Resolution Protocol

See *AARP*.

AppleTalk Echo Protocol

See *AEP*.

AppleTalk Filing Protocol

See *AFP*.

AppleTalk Remote Access

See *ARA*.

AppleTalk Session Protocol

See *ASP*.

AppleTalk Transaction Protocol

See *ATP*.

AppleTalk Update-Based Routing Protocol

See *AURP*.

AppleTalk zone

See *zone*.

application

A program that performs a function directly for a user. FTP and Telnet clients are examples of network applications.

application layer

Layer 7 of the *OSI reference model*. This layer provides services to application processes (such as e-mail, file transfer, and terminal emulation) that are outside the OSI model. The application layer identifies and establishes the availability of intended communication partners (and the resources required to connect with them), synchronizes cooperating applications, and establishes an agreement on the procedures for error recovery and the control of data integrity. Corresponds roughly with the *transaction services layer* in the SNA model. See also *data-link layer*, *network layer*, *physical layer*, *PQ*, *session layer*, and *transport layer*.

application programming interface

See *API*.

APPN

Advanced Peer-to-Peer Networking. Enhancement to the original IBM SNA architecture. APPN handles session establishment between peer nodes, dynamic transparent route calculation, and traffic prioritization for APPC traffic. Compare with *APPN+*. See also *APPC*.

APPN+

Next-generation APPN that replaces the label-swapping routing algorithm with source routing. Also called *high-performance routing*. See also *APPN*.

APS

automatic protection switching. A method that allows transmission equipment to recover automatically from failures, such as a cut cable.

APSB

automatic protection switching byte (failure-condition code).

AR

Access Registrar. Provides RADIUS services to DOCSIS cable modems for the deployment of high-speed data services in a one-way cable plant requiring telco-return for upstream data.

ARA

AppleTalk Remote Access. A protocol that provides Macintosh users direct access to information and resources at a remote AppleTalk site.

ARC

ATM Research Consortium.

Archie

A system that provides lists of anonymous FTP archives. See also *Gopher*, *WAIS*, and *World Wide Web*.

architecture

The overall structure of a computer or communication system. The architecture influences the capabilities and limitations of the system.

ARCnet

Attached Resource Computer Network. 2.5-Mbps token-bus LAN developed in the late 1970s and early 1980s by Datapoint Corporation.

area

A logical set of network segments (CLNS-, DECnet-, or OSPF-based) and their attached devices. Areas usually are connected to other areas via routers, making up a single autonomous system. See also *autonomous system*.

area border router

See *ABR*.

ARIN

American Registry for Internet Numbers. A nonprofit organization established for the purpose of administrating and registrating IP numbers to the geographical areas currently managed by Network Solutions (InterNIC). Those areas include, but are not limited to, North America, South America, South Africa, and the Caribbean.

ARL

adjusted ring length.

ARM

asynchronous response mode. HDLC communication mode involving one primary station and at least one secondary station, where either the primary or one of the secondary stations can initiate transmissions. See also *primary station* and *secondary station*.

ARP

Address Resolution Protocol. Internet protocol used to map an IP address to a MAC address. Defined in RFC 826. Compare with *RARP*. See also *proxy ARP*.

ARPA

Advanced Research Projects Agency. Research and development organization that is part of DoD. ARPA is responsible for numerous technological advances in communications and networking. ARPA evolved into DARPA, and then back into ARPA again (in 1994). See also *DARPA*.

ARPANET

Advanced Research Projects Agency Network. Landmark packet-switching network established in 1969. ARPANET was developed in the 1970s by BBN and funded by ARPA (and later DARPA). It eventually evolved into the Internet. The term ARPANET was retired officially in 1990. See also *ARPA*, *BBN*, *DARPA*, and *Internet*.

ARQ

automatic repeat request. A communication technique in which the receiving device detects errors and requests retransmissions.

ARU

alarm relay unit.

AS

A collection of networks under a common administration sharing a common routing strategy. Autonomous systems are subdivided by areas. An autonomous system must be assigned a unique 16-bit number by the IANA. Sometimes abbreviated as *AS*. See also *area* and *IANA*.

ASA

average speed of answer. Average answer wait time for calls to a service or a route.

ASAM

ATM subscriber access multiplexer. A telephone central office multiplexer that supports SDL ports over a wide range of network interfaces. An ASAM sends and receives subscriber data (often Internet services) over existing copper telephone lines, concentrating all traffic onto a single high-speed trunk for transport to the Internet or the enterprise intranet. This device is similar to a DSLAM (different manufacturers use different terms for similar devices).

ASBR

autonomous system boundary router. ABR located between an OSPF autonomous system and a non-OSPF network. ASBRs run both OSPF and another routing protocol, such as RIP. ASBRs must reside in a nonstub OSPF area. See also *ABR*, *nonstub area*, and *OSPF*.

ASCII

American Standard Code for Information Interchange. 8-bit code for character representation (7 bits plus parity).

ASCU

agent-set control unit.

ASD

automated software distribution.

ASE

1. amplified spontaneous emissions. Noise that is added to an optical signal when it is amplified. This noise (or ASE) accumulates and builds in optical spans that have multiple optical amplifiers between regenerators.

2. application service element.

ASI

ATM Service Interface.

ASIC

application-specific integrated circuit.

ASIST

Application Software Integration Support Tools. A set of C-language application development tools designed to facilitate the creation of host-controlled applications by Cisco VCO/4K customers.

ASN

auxiliary signal network.

ASN.1

Abstract Syntax Notation One. OSI language for describing data types independent of particular computer structures and representation techniques. Described by ISO International Standard 8824. See also *BER, basic encoding rules*.

ASP

1. AppleTalk Session Protocol. A protocol that uses ATP to provide session establishment, maintenance, and teardown, as well as request sequencing. See also *ATP*.

2. Auxiliary signal path. In telecommunications, link between TransPaths that allows them to exchange signaling information that is incompatible with the PSTN backbone network; used to provide feature transparency.

ASPI

advanced ssci programming interface.

assigned numbers

RFC [STD2] documents the currently assigned values from several series of numbers used in network protocol implementations. This RFC is updated periodically, and current information can be obtained from the IANA. If you are developing a protocol or an application that requires the use of a link, a socket, a port, a protocol, and so on, contact the IANA to receive a number assignment. See also *IANA* and *STD*.

association control service element

See *ACSE*.

associative memory

Memory that is accessed based on its contents, not on its memory address. Sometimes called *content addressable memory (CAM)*.

AST

automatic spanning tree. A function that supports the automatic resolution of spanning trees in SRB networks, providing a single path for spanning explorer frames to traverse from a given node in the network to another. AST is based on the IEEE 802.1 standard. See also *IEEE 802.1* and *SRB*.

ASTA

Advanced Software Technology and Algorithms. Component of the HPCC program intended to develop software and algorithms for implementation on high-performance computer and communications systems. See also *HPCC*.

async

Subset of tty.

Asynchronous Balanced Mode

See *ABM*.

asynchronous response mode

See *ARM*.

asynchronous time-division multiplexing

See *ATDM*.

Asynchronous Transfer Mode

See *ATM*.

asynchronous transmission

Term describing digital signals that are transmitted without precise clocking. Such signals generally have different frequencies and phase relationships. Asynchronous transmissions usually encapsulate individual characters in control bits (called start and stop bits) that designate the beginning and the end of each character. Compare with *isochronous transmission*, *plesiochronous transmission*, and *synchronous transmission*.

AT

advanced technology.

ATB

all trunks busy. The state of a trunk group when all trunks are in use. The trunk group cannot accept any new inbound or outbound calls in this state. The ICM tracks the amount of time during which all trunks in a trunk group are busy.

ATCP

AppleTalk Control Protocol. The protocol that establishes and configures AppleTalk over PPP, as defined in RFC 1378. See also *PPP*.

ATDM

asynchronous time-division multiplexing. A method of sending information that resembles normal TDM, except that time slots are allocated as needed rather than preassigned to specific transmitters. Compare with *FDM*, *statistical multiplexing*, and *TDM*.

ATG

See *ATG* in the "Cisco Systems Terms and Acronyms" section.

ATH

attention hangup.

at-least-once transaction

See *ALO transaction*.

ATM

Asynchronous Transfer Mode. The international standard for cell relay in which multiple service types (such as voice, video, or data) are conveyed in fixed-length (53-byte) cells. Fixed-length cells allow cell processing to occur in hardware, thereby reducing transit delays. ATM is designed to take advantage of high-speed transmission media, such as E3, SONET, and T3.

ATM adaptation layer

See *AAL*.

ATM adaptation layer 1

See *AAL1*.

ATM adaptation layer 2

See *AAL2*.

ATM adaptation layer 3/4

See *AAL3/4*.

ATM adaptation layer 5

See *AAL5*.

ATM ARP server

A device that provides address-resolution services to LISs when running classical IP over ATM. See also *LIS*.

ATM data service unit

See *ADSU*.

ATM edge LSR

A router that is connected to the ATM-LSR cloud through LSC-ATM interfaces. The ATM edge LSR adds labels to unlabeled packets and strips labels from labeled packets.

ATM endpoint

The point in an ATM network where an ATM connection is initiated or terminated. ATM endpoints include ATM-attached workstations, ATM-attached servers, ATM-to-LAN switches, and ATM routers.

ATM Forum

International organization jointly founded in 1991 by Cisco Systems, NET/ADAPTIVE, Northern Telecom, and Sprint that develops and promotes standards-based implementation agreements for ATM technology. The ATM Forum expands on official standards developed by ANSI and ITU-T, and develops implementation agreements in advance of official standards.

ATM network interface card

See *ATM network interface card* in the "Cisco Systems Terms and Acronyms" section.

ATM interface processor

See *AIS*.

ATM layer

Service-independent sublayer of the data link layer in an ATM network. The ATM layer receives the 48-byte payload segments from the AAL and attaches a 5-byte header to each, producing standard 53-byte ATM cells. These cells are passed to the physical layer for transmission across the physical medium. See also *AAL*.

ATM Lite

Entry-level port adapter (higher performance than the AIP) for Cisco 7500 and 7200 routers. The Cisco ATM Lite port adapter does not support traffic shaping or ABR.

ATM management

See *ATMM*.

ATM network

See *ATM network* in the "Cisco Systems Terms and Acronyms" section.

ATM NIC

See *ATM network interface card* in the "Cisco Systems Terms and Acronyms" section.

ATM service interface

See *ASCU*.

ATM UNI

See *UNI*.

ATM user-user connection

A connection created by the ATM layer to provide communication between two or more ATM service users, such as ATMM processes. Such communication can be unidirectional, using one VCC, or bidirectional, using two VCCs. See also *ATM layer*, *ATMM*, and *VCC*.

ATM-LSR

A label switch router with several LSC-ATM interfaces. The router forwards the cells among these interfaces using labels carried in the VPI/VCI field of the cells.

ATMM

ATM management. A process that runs on an ATM switch that controls VCI translation and rate enforcement. See also *ATM* and *VCD*.

ATP

1. ALPS Tunneling Protocol. A protocol used to transport ALPS data across a TCP/IP network between an ALC/UTS router and an AX.25/EMTOX router. It consists of a set of messages (or primitives) to activate and deactivate ALPS ATP circuits and to pass data.

2. AppleTalk Transaction Protocol. A transport-level protocol that provides a loss-free transaction service between sockets. The service allows exchanges between two socket clients in which one client requests the other to perform a particular task and to report the results. ATP binds the request and the response together to ensure the reliable exchange of request-response pairs.

Attached Resource Computer Network

See *ARCnet*.

attachment unit interface

See *AUI*.

attenuation

Loss of communication signal energy.

attribute

Form of information items provided by the X.500 Directory Service. The directory information base consists of entries, each containing one or more attributes. Each attribute consists of a type identifier together with one or more values.

AU

access unit. A device that provides ISDN access to PSNs. See also *PSN*.

AUI

attachment unit interface. IEEE 802.3 interface between an MAU and a NIC. The term AUI also can refer to the rear panel port to which an AUI cable might attach. Also called *transceiver cable*. See also *IEEE 802.3*, *MAU*, and *NIC*.

AUP

acceptable use policy. Many transit networks have policies that restrict the use to which the network can be put. The enforcement of AUPs varies with the network.

AURP

AppleTalk Update-Based Routing Protocol. A method of encapsulating AppleTalk traffic in the header of a foreign protocol, allowing the connection of two or more discontiguous AppleTalk internetworks through a foreign network (such as TCP/IP) to form an AppleTalk WAN. This connection is called an AURP tunnel. In addition to its encapsulation function, AURP maintains routing tables for the entire AppleTalk WAN by exchanging routing information between exterior routers. See also *AURP* and *exterior router*.

AURP tunnel

A connection created in an AURP WAN that functions as a single, virtual data link between AppleTalk internetworks physically separated by a foreign network (a TCP/IP network, for example). See also *AURP*.

AUSM

ATM user service module.

authentication

In security, the verification of the identity of a person or a process.

authority zone

Associated with DNS, an authority zone is a section of the domain-name tree for which one name server is the authority. See also *DNS*.

authorization

The method for remote access control, including one-time authorization or authorization for each service, per-user account list and profile, user group support, and support of IP, IPX, ARA, and Telnet.

Automated Packet Recognition

Translation

See *APaRT* in the "Cisco Systems Terms and Acronyms" section.

automatic call distribution

See *ACD*.

automatic call reconnect

Feature permitting automatic call rerouting away from a failed trunk line.

automatic protection switching

See *APS*.

automatic repeat request

See *ARQ*.

Automatic Routing Management

Formerly AutoRoute. The connection-oriented mechanism used in Cisco WAN switches to provide connectivity across the network. Switches perform a connection admission control (CAC) function on all types of connections in the network. Distributed network intelligence enables the CAC function to route and reroute connections automatically over optimal paths while guaranteeing the required QoS.

automatic spanning tree

See *AST*.

autonomous confederation

A group of autonomous systems that rely on their own network reachability and routing information more than they rely on that received from other autonomous systems or confederations.

autonomous switching

See *autonomous switching* in the "Cisco Systems Terms and Acronyms" section.

autonomous system

See *AS*.

autonomous system boundary router

See *ASAM*.

autoreconfiguration

The process performed by nodes within the failure domain of a Token Ring network. Nodes automatically perform diagnostics in an attempt to reconfigure the network around the failed areas. See also *failure domain*.

availability

The amount of time that a telephone system or other device is *operational*—that is, how long it is processing telephone calls or other transactions. Availability is represented as the ratio of the total time a device is operational during a given time interval to the length of that interval. Compare with reliability.

available bit rate

See *ABR*.

AVBO

advanced voice busyout. The local voice busyout feature that provides a way to busy out a voice port or a DS0 group (time slot) if a state change is detected in a monitored network interface (or interfaces). When a monitored interface changes to a specified state, to out-of-service, or to in-service, the voice port presents a seized/busyout condition to the attached PBX or other customer premises equipment (CPE). The PBX or other CPE can then attempt to select an alternate route. AVBO adds the following functionality to the local voice busyout feature:

- For Voice over IP (VoIP), monitoring of links to remote, IP-addressable interfaces by the use of a real time reporter (RTR).
- Configuration by voice class to simplify and speed up the configuration of voice busyout on multiple voice ports.
- Local voice busyout is supported on analog and digital voice ports using channel-associated signalling (CAS).

average rate

Average rate, in kilobits per second (kbps), at which a given virtual circuit can transmit.

AVM

ATM voice multiplexer.

AW

1. administrative weight. The value set by the network administrator to indicate the desirability of a network link. One of four link metrics exchanged by PTSPs to determine the available resources of an ATM network.

2. admin workstation. A personal computer used to monitor the handling of calls in the ICM system. The AW also can be used to modify the system configuration or scripts.

AX.25

X.25 implementation based on a CCITT 1984 recommendation using permanent virtual circuits (PVCs) only. There is one nonstandard aspect of this protocol: packets can be sent with the m-bit set, but the size of the packet is less than the maximum packet size for the virtual circuit.