



B

B channel

Bearer channel. DS0 time slot that carries analog voice or digital data over ISDN. In ISDN, a full-duplex, 64-kbps channel used to send user data. Compare with *D channel*, *E channel*, and *H channel*.

B8ZS

binary 8-zero substitution. Line-code type, used on T1 and E1 circuits, in which a special code is substituted whenever eight consecutive zeros are sent over the link. This code then is interpreted at the remote end of the connection. This technique guarantees ones density independent of the data stream. Sometimes called *bipolar 8-zero substitution*. Compare with *AMI*. See also *ones density*.

back end

Node or software program that provides services to a front end. See also *client*, *FRF.11*, and *server*.

back pressure

Propagation of network congestion information upstream through an internetwork.

backbone

Part of a network that acts as the primary path for traffic that is most often sourced from, and destined for, other networks.

backhaul

A scheme where telephony signalling is reliably transported from a gateway to a Media Gateway Controller across a packet-switched network.

backhauling

A scheme, also called signal tunneling, where telephony signals are passed from a gateway to a separate control for processing. The gateway need not interpret the signalling information.

backoff

The (usually random) retransmission delay enforced by contentious MAC protocols after a network node with data to transmit determines that the physical medium is already in use.

backplane

The physical connection between an interface processor or card and the data buses and the power distribution buses inside a chassis.

backward explicit congestion notification

See *BECN*.

backward indicator bit

See *BIB*.

backward learning

Algorithmic process used for routing traffic that surmises information by assuming symmetrical network conditions. For example, if node A receives a packet from node B through intermediate node C, the backward-learning routing algorithm assumes that A can reach B through C optimally.

backward sequence number

See *BSN*.

BAF

Bellcore AMA Format. System of abstract syntax and semantics that supports coding of AMA data into records.

balanced configuration

In HDLC, a point-to-point network configuration with two combined stations.

balanced, unbalanced

See *balun*.

balun

balanced, unbalanced. Device used for matching impedance between a balanced and an unbalanced line, usually twisted-pair and coaxial cable.

bandwidth

The difference between the highest and lowest frequencies available for network signals. The term also is used to describe the rated throughput capacity of a given network medium or protocol. The frequency range necessary to convey a signal measured in units of hertz (Hz). For example, voice signals typically require approximately 7 kHz of bandwidth and data traffic typically requires approximately 50 kHz of bandwidth.

bandwidth allocation

See *bandwidth reservation*.

bandwidth reservation

The process of assigning bandwidth to users and applications served by a network. Involves assigning priority to different flows of traffic based on how critical and delay-sensitive they are. This makes the best use of available bandwidth, and if the network becomes congested, lower-priority traffic can be dropped. Sometimes called *bandwidth allocation*. See also *call leg*.

Banyan VINES

See *VINES*.

BARRNet

Bay Area Regional Research Network. Regional network serving the San Francisco Bay Area. The BARRNet backbone is composed of four University of California campuses (Berkeley, Davis, Santa Cruz, and San Francisco), Stanford University, Lawrence Livermore National Laboratory, and NASA Ames Research Center. BARRNet is now part of BBN Planet. See also *BBN Planet*.

baseband

Characteristic of a network technology where only one carrier frequency is used. Ethernet is an example of a baseband network. Also called narrowband. Contrast with *broadband*.

baseline report

Compares two similar time ranges in a report format. A baseline time range is protected against purge action so that baseline data is available at report time. The baseline time range can be 1 to 30 days

bash

Bourne-again shell. Interactive UNIX shell based on the traditional Bourne shell, but with increased functionality. See also *root account*.

basic encoding rules

See *BER*.

Basic Rate Interface

See *BRI*.

Basic Research and Human Resources

See *BRHR*.

baud

Unit of signaling speed equal to the number of discrete signal elements transmitted per second. Baud is synonymous with bits per second (bps) if each signal element represents exactly 1 bit.

Bay Area Regional Research Network

See *BARRNet*.

BBN

Bolt, Beranek, and Newman, Inc. High-technology company located in Massachusetts that developed and maintained the ARPANET (and later, the Internet) core gateway system. See also *BBN Planet*.

BBN Planet

Subsidiary company of BBN that operates a nationwide Internet access network composed in part by the former regional networks BARRNet, NEARNET, and SURAnet. See also *BARRNet*, *BBN*, *NEARNET*, and *SURAnet*.

Bc

committed burst. Negotiated tariff metric in Frame Relay internetworks. The maximum amount of data (in bits) that a Frame Relay internetwork is committed to accept and transmit at the CIR. See also *Be* and *CIR*.

BCP

Best Current Practices. The newest subseries of RFCs that are written to describe BCPs in the Internet. Rather than specifying a protocol, these documents specify the best ways to use the protocols and the best ways to configure options to ensure interoperability between various vendors' products.

BDCS

Broadband Digital Cross-Connect System. SONET DCS capable of cross-connecting DS-3, STS-1 and STS-3c signals. See also *DCS*.

Be

excess burst. Negotiated tariff metric in Frame Relay internetworks. The number of bits that a Frame Relay internetwork attempts to transmit after Bc is accommodated. Be data, in general, is delivered with a lower probability than Bc data because Be data can be marked as DE by the network. See also *Bc* and *DE*.

beacon

Frame from a Token Ring or FDDI device indicating a serious problem with the ring, such as a broken cable. A beacon frame contains the address of the station assumed to be down. See also *failure domain*.

bearer channel

See *B channel*.

Because It's Time Network

See *BITNET*.

BECN

backward explicit congestion notification. Bit set by a Frame Relay network in frames traveling in the opposite direction of frames encountering a congested path. DTE receiving frames with the BECN bit set can request that higher-level protocols take flow control action as appropriate. Compare with *FE*.

Bell Communications Research

See *Bellcore*.

Bell operating company

See *BOC*.

Bellcore

Bell Communications Research. Organization that performs research and development on behalf of the RBOCs.

Bellman-Ford routing algorithm

See *distance vector routing algorithm*.

BER

1. bit error rate. Ratio of received bits that contain errors.
2. basic encoding rules. Rules for encoding data units described in the ISO ASN.1 standard. See also *ASN.1*.

Berkeley Internet Name Domain

See *BIND*.

Berkeley Standard Distribution

See *BSD*.

BERT

bit error rate tester. Device that determines the BER on a given communications channel. See also *BER (bit error rate)*.

best-effort delivery

Describes a network system that does not use a sophisticated acknowledgment system to guarantee reliable delivery of information.

BGP

Border Gateway Protocol. Interdomain routing protocol that replaces EGP. BGP exchanges reachability information with other BGP systems. It is defined by RFC 1163. See also *BGP4* and *EGP*.

BGP4

BGP Version 4. Version 4 of the predominant interdomain routing protocol used on the Internet. BGP4 supports CIDR and uses route aggregation mechanisms to reduce the size of routing tables. See also *BGP* and *CIDR*.

BIA

burned-in MAC address.

BIB

Part of an SS7 MSU that when toggled signals a negative acknowledgment by the remote signaling point.

BIC

International Telecommunication Union Telecommunication Standardization Sector (ITU-T) standard that defines the protocols and procedures needed for establishing, maintaining, and terminating broadband switched virtual connections between public networks. Also abbreviated BICI.

BICI

Broadband Inter-Carrier Interface. ITU-T standard that defines the protocols and procedures needed for establishing, maintaining, and terminating broadband switched virtual connections between public networks. See also *BIC*.

bidirectional PIM

See *bidir-PIM*.

bidir-PIM

A variant of the Protocol Independent Multicast (PIM) suite of routing protocols for IP multicast. In PIM, packet traffic for a multicast group is routed according to the rules of the mode configured for that multicast group.

BIGA

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

big-endian

Method of storing or transmitting data in which the most significant bit or byte is presented first. Compare with *little-endian*.

binary

Numbering system characterized by ones and zeros (1 = on, 0 = off).

binary 8-zero substitution

See *B8ZS*.

binary coded alternate mark inversion

See *AMI*.

binary synchronous communication

See *BSC*.

Binary Synchronous Communication Protocol

See *bisync*.

BIND

Berkeley Internet Name Domain. Implementation of DNS developed and distributed by the University of California at Berkeley (United States). Many Internet hosts run BIND, which is the ancestor of many commercial BIND implementations.

BinHex

Binary Hexadecimal. A method for converting binary files into ASCII for transmission by applications, such as e-mail, that can handle only ASCII.

BIP

bit interleaved parity. In ATM, a method used to monitor errors on a link. A check bit or word is sent in the link overhead for the previous block or frame. Bit errors in the payload then can be detected and reported as maintenance information.

biphase coding

Bipolar coding scheme originally developed for use in Ethernet. Clocking information is embedded into and recovered from the synchronous data stream without the need for separate clocking leads. The biphase signal contains no direct current energy.

bipolar

Electrical characteristic denoting a circuit with both negative and positive polarity. Contrast with *unipolar*.

bipolar 8-zero substitution

See *B8ZS*.

bipolar violation

See *BPV*.

BISDN

Broadband ISDN. ITU-T communication standards designed to handle high-bandwidth applications, such as video. BISDN currently uses ATM technology over SONET-based transmission circuits to provide data rates from 155 to 622 Mbps and beyond. Contrast with *N-ISDN*. See also *BRI*, *ISDN*, and *PRI*.

bisync

Binary Synchronous Communication Protocol. Character-oriented data-link protocol for applications. Contrast with Synchronous Data Link Control (*SDLC*).

bit

Binary digit used in the binary numbering system. Can be 0 or 1.

bit error rate

See *BER*.

bit error rate tester

See *BERT*.

bit interleaved parity

See *BIP*.

bit rate

Speed at which bits are transmitted, usually expressed in bits per second.

BITNET

“Because It’s Time” Networking Services. Low-cost, low-speed academic network consisting primarily of IBM mainframes and 9600-bps leased lines. BITNET is now part of CREN. See also *CREN*.

BITNET III

Dial-up service providing connectivity for members of CREN. See also *CREN*.

bit-oriented protocol

Class of data link layer communication protocols that can transmit frames regardless of frame content. Unlike byte-oriented protocols, bit-oriented protocols provide full-duplex operation and are more efficient and reliable. Compare with *byte-oriented protocol*.

BITS

building integrated timing supply. A clock in a central office that supplies DS1 and/or composite clock timing references to all synchronous network elements in that office.

bits per second

Abbreviated *bps*. See also *bit rate*.

black hole

Routing term for an area of the internetwork where packets enter, but do not emerge, due to adverse conditions or poor system configuration within a portion of the network.

block multiplexer channel

IBM-style channel that implements the FIPS-60 channel, a U.S. channel standard. This channel also is referred to as *OEMI channel* and *370 block mux channel*.

block serial tunnel

See *BSS*.

blocking

In a switching system, a condition in which no paths are available to complete a circuit. The term also is used to describe a situation in which one activity cannot begin until another is completed.

blower

An internal cooling fan used in larger router and switch chassis.

BLSR

bidirectional line switch ring. SONET ring architecture that provides working and protection fibers between nodes. If the working fiber between nodes is cut, traffic is routed automatically onto the protection fiber. See also *SONET*.

BNC connector

The standard connector used to connect IEEE 802.3 10Base2 coaxial cable to an MAU.

BNI

Broadband Network Interface.

BNM

Broadband Network Module.

BNN

boundary network node. In SNA terminology, a subarea node that provides boundary function support for adjacent peripheral nodes. This support includes sequencing, pacing, and address translation. Also called *boundary node*.

BOBI

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

BOC

Bell operating company. Twenty-two local phone companies formed by the breakup of AT&T. See also *RBOC*.

Bolt, Beranek, and Newman, Inc.

See *BBN*.

boot helper

Minimum-function Cisco IOS image that serves only to boot the full-function, operational Cisco IOS image. Also known as *rxboot*.

boot programmable read-only memory

See *boot PROM*.

boot PROM

boot programmable read-only memory. A chip mounted on a printed circuit board used to provide executable boot instructions to a computer device.

bootflash

Separate Flash memory device used primarily to store the Cisco IOS boot helper image, operational Cisco IOS images, and system configuration information.

BOOTP

Bootstrap Protocol. The protocol used by a network node to determine the IP address of its Ethernet interfaces to affect network booting.

Bootstrap Protocol

See *BOOTP*.

border gateway

A router that communicates with routers in other autonomous systems.

Border Gateway Protocol

See *BGP*.

border node

Node in one zone that connects with one or more nodes in other zones.

boundary function

Capability of SNA subarea nodes to provide protocol support for attached peripheral nodes. Typically found in IBM 3745 devices.

boundary network node

See *BNN*.

boundary node

See *BNN*.

Bpdu

Bridge Protocol Data Unit. Spanning-Tree Protocol hello packet that is sent out at configurable intervals to exchange information among bridges in the network. See also *PDU*.

BPI

baseline privacy interface.

bps

bits per second.

BPV

bipolar violation. A one (1) in a bipolar signal that has the same polarity as the preceding one. See also *coding violation*.

BPX Service Node

See *BPX Service Node* in the “Cisco Systems Terms and Acronyms” section.

BRA

basic rate access. Two 64 kbps B channels + one 16 kbps D channel (2B + D), carrying user traffic and signaling information respectively to the user via twisted pair local loop.

break-out/break-in

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

BRF

bridge relay function.

BRHR

Basic Research and Human Resources. Component of the HPCC program designed to support research, training, and education in computer science, computer engineering, and computational science. See also *HPCC*.

BRI

Basic Rate Interface. ISDN interface composed of two B channels and one D channel for circuit-switched communication of voice, video, and data. Compare with *PRI*. See also *BISDN*, *ISDN*, and *N-ISDN*.

bridge

Device that connects and passes packets between two network segments that use the same communications protocol. Bridges operate at the data link layer (Layer 2) of the OSI reference model. In general, a bridge filters, forwards, or floods an incoming frame based on the MAC address of that frame. See also *relay*.

bridge forwarding

A process that uses entries in a filtering database to determine whether frames with a given MAC destination address can be forwarded to a given port or ports. Described in the IEEE 802.1 standard. See also *IEEE 802.1*.

bridge group

A bridging feature that assigns network interfaces to a particular spanning-tree group. Bridge groups can be compatible with the IEEE 802.1 or the DEC specification.

bridge number

A number that identifies each bridge in an SRB LAN. Parallel bridges must have different bridge numbers.

Bridge Protocol Data Unit

See *Bpdu*.

bridge static filtering

The process in which a bridge maintains a filtering database consisting of static entries. Each static entry equates a MAC destination address with a port that can receive frames with this MAC destination address and a set of ports on which the frames can be transmitted. Defined in the IEEE 802.1 standard. See also *IEEE 802.1*.

bridge virtual interface

See *BVI*.

bridge-group

A group of interfaces bridged together to emulate a multiport bridge.

broadband

Describes facilities or services that operate at the DS3 rate and above. For example, a Broadband DCS makes cross-connections at the DS3, STS-1, and STS-Nc levels. Similarly, Broadband ISDN provides about 150 Mb/s per channel of usable bandwidth.

broadband

1. Transmission system that multiplexes multiple independent signals onto one cable.
2. Telecommunications terminology: Any channel having a bandwidth greater than a voice-grade channel (4 kHz).
3. LAN terminology: A coaxial cable on which analog signaling is used. An RF system with a constant data rate at or above 1.5 Mbps. Also called *wideband*. Contrast with *baseband*.

broadband inter-carrier interface

See *BIC*.

Broadband ISDN

See *BISDN*.

Broadband Network Interface

See *BNI*.

Broadband Network Module

See *BNM*.

broadband switch module

See *BXM*.

broadcast

Data packet that are sent to all nodes on a network. Broadcasts are identified by a broadcast address. Compare with *multicast* and *unicast*. See also *broadcast*.

broadcast address

A **special** address reserved for sending a message to all stations. Generally, a broadcast address is a MAC destination address of all ones. Compare with *multicast address* and *unicast address*. See also *broadcast*.

broadcast and unknown server

See *BUS*.

broadcast domain

Set of all devices that receive broadcast frames originating from any device within the set. Broadcast domains typically are bounded by routers because routers do not forward broadcast frames.

broadcast search

The propagation of a search request to all network nodes if the location of a resource is unknown to the requester. See also *directed search*.

broadcast storm

An undesirable network event in which many broadcasts are sent simultaneously across all network segments. A broadcast storm uses substantial network bandwidth and, typically, causes network time-outs.

brouter

Concatenation of “bridge” and “router.” Used to refer to devices that perform both bridging and routing functions.

browser

GUI-based hypertext client application, such as Internet Explorer, Mosaic, and Netscape Navigator, used to access hypertext documents and other services located on innumerable remote servers throughout the WWW and Internet. See also *hypertext*, *Internet*, *Mosaic*, and *WWW*.

BSC

1. binary synchronous communication. Character-oriented data link layer protocol for half-duplex applications. A form of telecommunication line control that uses a standard set of transmission control characters and control character sequences, for the binary synchronous transmission of binary-coded data between stations.

2. base station controller. In wireless, provides the control functions and physical links between the MSC and BTS in a GSM mobile wireless network. The BSC controls the interface between the SGSN and the BTS in a GPRS network. The BSC is a high-capacity telephony switch that provides handsoff functions and cell configuration data, and controls radio frequency power levels in BTSs. The combined functions of the BSC and the BTS are referred to as the BSS.

BSD

Berkeley Standard Distribution. A term used to describe any of a variety of UNIX-type operating systems based on the UC Berkeley BSD operating system.

BSN

Part of an SS7 MSU that acknowledges the receipt of signal units by the remote signalling point. Contains the sequence number of the signal unit being acknowledged.

BSS

base station subsystem. Refers to the radio-related functions provided by the BTS and BSC in a GSM mobile wireless network.

BSTUN

Block Serial Tunnel.

Note: Do not use bisync serial tunnel or BSC tunnel as synonyms.

BT

burst tolerance. A parameter defined by the ATM Forum for ATM traffic management. For VBR connections, BT determines the size of the maximum burst of contiguous cells that can be transmitted. See also *VBR*.

BTA

Basic Trading Area. An area or “footprint” in which an entity is licensed to transmit their frequencies. BTAs were established by Rand McNally and are defined as county lines. Rand McNally licensed their mapping data to the FCC for ease of designation for site licenses.

BTS

base transceiver station. A land-based station in a GSM mobile wireless network that consists of transceivers and antennas, which handle the radio interface to a mobile station. A BSC controls one or more BTSs. The combined functions of the BTS and the BSC are referred to as the BSS.

BTU

British thermal units.

BTW

by the way. One of many short-hand phrases used in chat sessions and e-mail conversations. See also *IMHO*.

buffer

A storage area used for handling data in transit. Buffers are used in internetworking to compensate for differences in processing speed between network devices. Bursts of data can be stored in buffers until they can be handled by slower processing devices. Sometimes referred to as a *packet buffer*.

build

To create flat files that are ready for use by the signaling controller database.

building integrated timing supply

See *BITS*.

burst

In data communications, a sequence of signals counted as one unit in accordance with some specific criterion or measure.

burst tolerance

See *BT*.

bursty traffic

A data communications term referring to an uneven pattern of data transmission.

bus

1. Common physical signal path composed of wires or other media across which signals can be sent from one part of a computer to another. Sometimes called a highway.
2. See *bus topology*.

BUS

broadcast and unknown server. Multicast server used in ELANs that is used to flood traffic addressed to an unknown destination and to forward multicast and broadcast traffic to the appropriate clients. See also *ELAN*.

bus and tag channel

IBM channel, developed in the 1960s, incorporating copper multiwire technology. Replaced by the ESCON channel. See also *ESCON channel* and *parallel channel*.

Bus Interface Gate Array

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

bus topology

Linear LAN architecture in which transmissions from network stations propagate the length of the medium and are received by all other stations. Compare with *ring topology*, *star topology*, and *tree topology*.

BVI

Bridge Group Virtual Interface. Logical Layer 3–only interface associated with a bridge group when IRB is configured.

BX.25

AT&T implementation of X.25. See also *X.25*.

BXM

broadband switch module. ATM port card for the Cisco BPX switch.

bypass mode

The operating mode on FDDI and Token Ring networks in which an interface has been removed from the ring.

bypass relay

Allows a particular Token Ring interface to be shut down and thus effectively removed from the ring.

byte

A term used to refer to a series of consecutive binary digits that are operated upon as a unit (for example, an 8-bit byte).

byte reversal

The process of storing numeric data with the least-significant byte first. Used for integers and addresses on devices with Intel microprocessors.

byte-oriented protocol

A class of data-link communications protocols that use a specific character from the user character set to delimit frames. These protocols largely have been replaced by bit-oriented protocols. Compare with *bit-oriented protocol*.

