

**NAA**

next available agent. A strategy for selecting an agent to handle a call. The strategy seeks to maintain an equal load across skill groups or services.

NACS

NetWare Asynchronous Communication Services. Novell software that supports Novell's AIO and NASI programming interfaces. NACS promotes the sharing of communications resources, such as modems, asynchronous hosts, and X.25 network services.

NADF

North American Directory Forum. Collection of organizations that offer, or plan to offer, public directory services in North America based on the ITU-T X.500 Recommendations.

NADN

nearest active downstream neighbor. In Token Ring or IEEE 802.5 networks, the closest downstream network device from any given device that is still active.

Nagle's algorithm

Actually two separate congestion control algorithms that can be used in TCP-based networks. One algorithm reduces the sending window; the other limits small datagrams.

NAK

negative acknowledgment. Response sent from a receiving device to a sending device indicating that the information received contained errors. Compare to *acknowledgment*.

NAM

network applications management. In a two-tier service bureau architecture, the ICM that receives route requests from the carrier network and forwards them to a Customer ICM (CICM). A NAM usually contains only a small configuration that allows it to directly route a subset of calls and dispatch the other requests to the appropriate CICM. The NAM receives route responses from the CICMs and forwards them to the carrier network.

Name Binding Protocol

See *NBP*.

name caching

Method by which remotely discovered host names are stored by a router for use in future packet-forwarding decisions to allow quick access.

name resolution

Generally, the process of associating a name with a network location.

name server

Server connected to a network that resolves network names into network addresses.

namespace

Commonly distributed set of names in which all names are unique.

NANOG

North American Network Operator's Group. Primary forum for information exchange among U.S. exchange point participants, Internet service providers, and end users.

NANP

North American Numbering Plan.

NAP

network access point. Location for interconnection of Internet service providers in the United States for the exchange of packets.

NARP

NBMA Address Resolution Protocol. Functional subset of NHRP that returns only the address mappings of nodes that are connected directly to the NBMA network. Compare with *NHRP*.

narrowband

See *baseband*.

Narrowband ISDN

See *N-ISDN*.

NAS

network access server. Cisco platform (or collection of platforms, such as an AccessPath system) that interfaces between the packet world (for example, the Internet) and the circuit world (for example, the PSTN). See also *access device*.

NASI

1. NetWare Asynchronous Support Interface.
2. NetWare Access Server Interface.

NAT

Network Address Translation. Mechanism for reducing the need for globally unique IP addresses. NAT allows an organization with addresses that are not globally unique to connect to the Internet by translating those addresses into globally routable address space. Also known as *Network Address Translator*.

National Bureau of Standards

See *NBS*.

National Institute of Standards and Technology

See *NIST*.

National Research and Education Network

See *NREN*.

National Science Foundation

See *NSF*.

National Science Foundation Network

See *NSFNET*.

native client interface architecture

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

NAU

network addressable unit. SNA term for an addressable entity. Examples include LUs, PUs, and SSCPs. NAUs generally provide upper-level network services. Compare with *path control network*.

NAUN

nearest active upstream neighbor. In Token Ring or IEEE 802.5 networks, the closest upstream network device from any given device that is still active.

NBFCP

NetBIOS Frames Control Protocol. Protocol that establishes and configures NetBIOS over PPP. See also *NetBIOS* and *PPP*.

NBMA

nonbroadcast multiaccess. Term describing a multiaccess network that either does not support broadcasting (such as X.25) or in which broadcasting is not feasible (for example, an SMDS broadcast group or an extended Ethernet that is too large). See also *multiaccess network*.

NBNS

NetBIOS Name Service.

NBP

Name Binding Protocol. AppleTalk transport-level protocol that translates a character string name into the DDP address of the corresponding socket client. NBP enables AppleTalk protocols to understand user-defined zones and device names by providing and maintaining translation tables that map names to their corresponding socket addresses.

NBS

National Bureau of Standards. Organization that was part of the U.S. Department of Commerce. Now known as NIST. See also *NIST*.

NCB

network control byte. Used by host application developers for debugging communications between a controlling host application and the Cisco VCO/4K.

NCIA

See *NCIA* (native client interface architecture) in the “Cisco Systems Terms and Acronyms” section.

NCP

1. Network Control Program. In SNA, a program that routes and controls the flow of data between a communications controller (in which it resides) and other network resources.

2. Network Control Protocol. Series of protocols for establishing and configuring different network layer protocols, such as for AppleTalk over PPP. See also *PPP*.

3. network control point. The process within the AT&T signaling network that sends routing requests to a Customer Routing Point (CRP), such as the network interface controller (NIC) within the ICM.

NCP/Token Ring Interconnection

See *NTRI*.

NCSA

National Center for Supercomputing Applications.

NDE

NetFlow data report.

NDIS

network driver interface specification. Microsoft specification for a generic, hardware- and protocol-independent device driver for NICs.

NDS

Netscape Directory Server. An LDAP server.

NE

network element. In general, an NE is a combination hardware and software system that is designed primarily to perform a telecommunications service function. For example, an NE is the part of the network equipment where a transport entity (such as a line, a path, or a section) is terminated and monitored.

As defined by wavelength routing, an NE is the originating, transient, or terminating node of a wavelength path.

nearest active upstream neighbor

See *NAUN*.

NEARNET

Regional network in New England (United States) that links Boston University, Harvard University, and MIT. Now part of BBN Planet. See also *BBN Planet*.

NEBS

Network Equipment Building Systems. In OSS, the Bellcore requirement for equipment deployed in a central office environment. Covers spatial, hardware, crafts person interface, thermal, fire resistance, handling and transportation, earthquake and vibration, airborne contaminants, grounding, acoustical noise, illumination, EMC, and ESD requirements.

negative acknowledgment

See *NAK*.

neighborhood

A grouping of subscribers, computers, and shared or private cable modems associated with an account administered in the User Registrar Admin UI. A neighborhood contains settings for auto-provisioning modems as shared or private through the User Registrar Subscriber UI.

neighboring routers

In OSPF, two routers that have interfaces to a common network. On multiaccess networks, neighbors are discovered dynamically by the OSPF Hello protocol.

NEMS

Network Element Management Server.

net

Short for *network*.

NET

network entity title. Network addresses, defined by the ISO network architecture, and used in CLNS-based networks.

NetBEUI

NetBIOS Extended User Interface. Enhanced version of the NetBIOS protocol used by network operating systems, such as LAN Manager, LAN Server, Windows for Workgroups, and Windows NT. NetBEUI formalizes the transport frame and adds additional functions. NetBEUI implements the OSI LLC2 protocol. See also *LLC2* and *OSI*.

NetBIOS

Network Basic Input/Output System. API used by applications on an IBM LAN to request services from lower-level network processes. These services might include session establishment and termination, and information transfer.

netflow

A feature of some routers that allows them to categorize incoming packets into flows. Because packets in a flow often can be treated in the same way, this classification can be used to bypass some of the work of the router and accelerate its switching operation.

netiquette

A pun on “etiquette” referring to proper behavior on a network.

NETscout

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

NetView

IBM network management architecture and related applications. NetView is a VTAM application used for managing mainframes in SNA networks. See also *VTAM*.

NetWare

Popular distributed NOS developed by Novell. Provides transparent remote file access and numerous other distributed network services.

NetWare Link Services Protocol

See *NLSP*.

NetWare Loadable Module

See *NLM*.

network

1. Collection of computers, printers, routers, switches, and other devices that can communicate with each other over some transmission medium.
2. The highest level of your signaling controller system. You have only one network, within which you create your sites.

network access point

See *NAP*.

network access server

See *access server* and *NAS*.

network address

Network layer address referring to a logical, rather than a physical, network device. Also called a *protocol address*. Compare with *MAC address*.

Network Address Translation

See *NAT*.

network addressable unit

See *NAU*.

network administrator

Person responsible for the operation, the maintenance, and the management of a network. See also *network operator*.

network analyzer

Hardware or software device offering various network troubleshooting features, including protocol-specific packet decodes, specific preprogrammed troubleshooting tests, packet filtering, and packet transmission.

Network Basic Input/Output System

See *NetBIOS*.

network byte order

Internet-standard ordering of the bytes corresponding to numeric values.

Network Control Program

See *NCP*.

network driver interface specification

See *NDIS*.

network element

See *NE*.

network entity title

See *NET*.

Network File System

See *NFS*.

Network Indicator

Determines the type of call that is being placed: 0 = international, 1 = reserved, 2 = national, and 3 = national spare.

Network Information Center

See *InterNIC*.

Network Information Service

See *NIS*.

network interface

Boundary between a carrier network and a privately owned installation.

network interface card

See *NIC*.

network layer

Layer 3 of the OSI reference model. This layer provides connectivity and path selection between two end systems. The network layer is the layer at which routing occurs. Corresponds roughly with the *path control layer* of the SNA model. See also *application layer*, *data-link layer*, *physical layer*, *PQ*, *session layer*, and *transport layer*.

network management

Generic term used to describe systems or actions that help maintain, characterize, or troubleshoot a network.

Network Management Processor

See *NMP*.

network management system

See *NMS*.

network management vector transport

See *NMVT*.

network node

See *NN*.

network node interface

See *NNI*.

Network Node Server

SNA NN that provides resource location and route selection services for ENs, LEN nodes, and LUs that are in its domain.

network number

Part of an IP address that specifies the network to which the host belongs.

network operating system

See *NOS*.

Network Operations Center

See *NOC*.

network operator

Person who routinely monitors and controls a network, performing such tasks as reviewing and responding to traps, monitoring throughput, configuring new circuits, and resolving problems. See also *network administrator*.

network port

In the context of wavelength routing, a network port is a port that tandems through the node; that is, it is a port on the NE that points to another wavelength router.

network service access point

See *NSAP*.

Network Time Protocol

See *NTP*.

**Network-to-
Network Interface**

See *NNI*.

network-visible entity

See *NVE*.

Next Hop Resolution Protocol

See *NHRP*.

NFAS

Non-Facility Associated Signaling. A classification of signalling protocols that provide the signalling channel in a separate physical line from the bearer channels.

NFS

Network File System. As commonly used, a distributed file system protocol suite developed by Sun Microsystems that allows remote file access across a network. In actuality, NFS is simply one protocol in the suite. NFS protocols include NFS, RPC, XDR, and others. These protocols are part of a larger architecture that Sun refers to as *ONC*. See also *ONC*.

NHRP

Next Hop Resolution Protocol. Protocol used by routers to dynamically discover the MAC address of other routers and hosts connected to an NBMA network. These systems then can communicate directly without requiring traffic to use an intermediate hop, increasing performance in ATM, Frame Relay, SMDS, and X.25 environments.

NHS

Next Hop Server. Server defined by the NHRP protocol that maintains next-hop resolution cache tables containing the IP-to-ATM address mappings of associated nodes and nodes that are reachable through routers served by the NHS.

NIC

1. network interface card. Board that provides network communication capabilities to and from a computer system. Also called an *adapter*. See also *AUI*.
2. Network Information Center. Organization whose functions have been assumed by the InterNIC. See *InterNIC*.

NIS

Network Information Service. Protocol developed by Sun Microsystems for the administration of network-wide databases. The service essentially uses two programs: one for finding an NIS server and one for accessing the NIS databases.

N-ISDN

Narrowband ISDN. Communication standards developed by the ITU-T for baseband networks. Based on 64-kbps B channels and 16- or 64-kbps D channels. Contrast with *BISDN*. See also *BRI*, *ISDN*, and *PRI*.

NIST

National Institute of Standards and Technology. U.S. government organization that supports and catalogs a variety of standards. Formerly the NBS. See also *NBS*.

NLC

node line card. One of the component cards used in the Cisco 6400 universal access controller. These cards provide the interfaces for moving data into and out of the Cisco 6400 system. They can be used as either uplink or downlink interfaces. Different types of line cards support different transmission protocols and data rates.

NLESO

Network-level Extended Security Option. NLESO processing requires that security options be checked against configured allowable information, source, and compartment bit values, and requires that the router be capable of inserting extended security options in the IP header.

NLM

NetWare Loadable Module. Individual program that can be loaded into memory and can function as part of the NetWare NOS.

NLOS

non line of sight. Also known as obstructed path or pathway.

NLRI

Network Layer Reachability Information. BGP sends routing update messages containing NLRI to describe a route and how to get there. In this context, an NLRI is a prefix. A BGP update message carries one or more NLRI prefixes and the attributes of a route for the NLRI prefixes; the route attributes include a BGP next hop gateway address, community values, and other information.

NLSP

1. NetWare Link Services Protocol. Link-state routing protocol based on IS-IS. See also *IS-IS*.
2. Network Layer Security Protocol. OSI protocol (ISO 11577) for end-to-end encryption services at the top of OSI layer 3. NLSP is derived from an SDNS protocol, SP3, but is much more complex.

NMA

Network Management and Analysis. Bellcore OSS providing alarm surveillance and performance monitoring of intelligent network elements.

NME

Network Management Ethernet. The LAN used to control and manage equipment in a central office and branch locations.

NMP

See *NMP* (Network Management Processor) in the “Cisco Systems Terms and Acronyms” section.

NMS

network management system. System responsible for managing at least part of a network. An NMS is generally a reasonably powerful and well-equipped computer, such as an engineering workstation. NMSs communicate with agents to help keep track of network statistics and resources.

NMVT

network management vector transport. SNA message consisting of a series of vectors conveying network management specific information.

NN

1. National Number. Part of a numbering plan.
2. network node. SNA intermediate node that provides connectivity, directory services, route selection, intermediate session routing, data transport, and network management services to LEN nodes and ENs. The NN contains a CP that manages the resources of both the NN itself and those of the ENs and LEN nodes in its domain. NNs provide intermediate routing services by implementing the APPN PU 2.1 extensions. Compare with *EN*. See also *CP*.

NNI

1. Network-to-Network Interface. ATM Forum standard that defines the interface between two ATM switches that are both located in a private network or are both located in a public network. The UNI standard defines the interface between a public switch and a private one. Also, the standard interface between two Frame Relay switches meeting the same criteria. Compare with *UNI*.

2. network node interface.

NNTP

Network News Transfer Protocol. News reader service.

NOA

nature of address.

NOC

network operations center. Organization responsible for maintaining a network.

node

1. Endpoint of a network connection or a junction common to two or more lines in a network. Nodes can be processors, controllers, or workstations. Nodes, which vary in routing and other functional capabilities, can be interconnected by links, and serve as control points in the network. Node sometimes is used generically to refer to any entity that can access a network, and frequently is used interchangeably with *device*. See also *host*.
2. H.323 entity that uses RAS to communicate with the gatekeeper, for example, an endpoint (such as a terminal, a proxy, or a gateway).
3. In SNA, the basic component of a network and the point at which one or more functional units connect channels or data circuits.
4. A node is a point of connectivity, or wavelength router, where multiple fiber links come together into one point, and/or a source or a destination for a wavelength path.

noise

Undesirable communications channel signals.

nonbroadcast multiaccess

See *NBMA*.

nonce

Random or non-repeating value that is included in data exchanged by a protocol, usually for the purpose of guaranteeing liveness and thus detecting and protecting against replay attacks.

none line of sight

See *NLOS*.

nonextended network

AppleTalk Phase 2 network that supports addressing of up to 253 nodes and only 1 zone.

non-repudiation service

Security service that provide protection against false denial of involvement in a communication.

nonreturn to zero

See *NRZ*.

nonreturn to zero inverted

See *NRZI*.

nonseed router

In AppleTalk, a router that must first obtain, and then verify, its configuration with a seed router before it can begin operation. See also *seed router*.

nonstub area

Resource-intensive OSPF area that carries a default route, static routes, intra-area routes, interarea routes, and external routes. Nonstub areas are the only OSPF areas that can have virtual links configured across them, and are the only areas that can contain an ASBR. Compare with *stub area*. See also *ASAM* and *OSPF*.

nonvolatile random-access memory

See *NVRAM*.

normal response mode

See *NRM*.

Northwest Net

NSF-funded regional network serving the Northwestern United States, Alaska, Montana, and North Dakota. Northwest Net connects all major universities in the region as well as many leading industrial concerns.

NOS

network operating system. Generic term used to refer to what are really distributed file systems. Examples of NOSs include LAN Manager, NetWare, NFS, and VINES.

notification code

Defines the severity assigned to a given condition under a specific set of circumstances.

Novell IPX

See *IPX*.

NPA

Numbering Plan Area. The “area code” of a North American Dialing Plan number.

NPI

number plan identification.

NR

Network Registrar; same as CNR. Network Registrar provides Domain Name Server (DNS) and DHCP services. Network Registrar supplies IP addresses and configuration parameters to DOCSIS cable modems and PCs based on network and service policies, and allocates host names for these devices in DNS.

NREN

National Research and Education Network. A component of the HPCC program designed to ensure U.S. technical leadership in computer communications through research and development efforts in state-of-the-art telecommunications and networking technologies. See also *HPCC*.

NRM

normal response mode. HDLC mode for use on links with one primary station and one or more secondary stations. In this mode, secondary stations can transmit only if they first receive a poll from the primary station.

NRZ

nonreturn to zero. Signals that maintain constant voltage levels with no signal transitions (no return to a zero-voltage level) during a bit interval. Compare with *NRZI*.

NRZI

nonreturn to zero inverted. Signals that maintain constant voltage levels with no signal transitions (no return to a zero-voltage level) but interpret the presence of data at the beginning of a bit interval as a signal transition and the absence of data as no transition. Compare with *NRZ*.

NSA

non-service-affecting. A category of conditions that do not interrupt payload traffic; see *service affecting*.

NSAP

network service access point. Network addresses, as specified by ISO. An NSAP is the point at which OSI network service is made available to a transport layer (Layer 4) entity.

NSB

Network Status Byte. A byte returned by the Cisco VCO/4K to the controlling host to indicate the successful completion or error status of command processing.

NSF

National Science Foundation. U.S. government agency that funds scientific research in the United States. The now-defunct NSFNET was funded by the NSF. See also *NSFNET*.

NSFNET

National Science Foundation Network. Large network that was controlled by the NSF and provided networking services in support of education and research in the United States, from 1986 to 1995. NSFNET is no longer in service.

NT-1

network termination 1. In ISDN, a device that provides the interface between customer premises equipment and central office switching equipment.

NTP

Network Time Protocol. Protocol built on top of TCP that ensures accurate local time-keeping with reference to radio and atomic clocks located on the Internet. This protocol is capable of synchronizing distributed clocks within milliseconds over long time periods.

NTRI

NCP/Token Ring Interconnection. Function used by ACF/NCP to support Token Ring-attached SNA devices. NTRI also provides translation from Token Ring-attached SNA devices (PUs) to switched (dial-up) devices.

NTSC

National Television Systems Committee. A United States TV technical standard, named after the organization that created the standard in 1941. Specifies a 6 MHz-wide modulated signal.

NULL encryption algorithm

Algorithm [RFC 2410] that does nothing to transform plaintext data; that is, a no-op. It originated because of IPsec ESP, which always specifies the use of an encryption algorithm to provide confidentiality. The NULL encryption algorithm is a convenient way to represent the option of not applying encryption in ESP (or in any other context where this is needed).

null modem

Small box or cable used to join computing devices directly, rather than over a network.

NVE

network-visible entity. Resource that is addressable through a network. Typically, an NVE is a socket client for a service available in a node.

NVRAM

nonvolatile RAM. RAM that retains its contents when a unit is powered off.

NYSERNet

Network in New York (United States) with a T1 backbone connecting the NSF, many universities, and several commercial concerns.

NZ-DSF

non zero-dispersion-shifted fiber. A dispersion shifted SM fiber that has the zero dispersion point near the 1550 nm window but outside the window actually used to transmit signals.