IAB

Internet Architecture Board. Board of internetwork researchers who discuss issues pertinent to Internet architecture. Responsible for appointing a variety of Internet-related groups such as the IANA, IESG, and IRSG. The IAB is appointed by the trustees of the ISOC. See also *IANA*, *IESG*, *IRSG*, and *ISOC*.

IANA

Internet Assigned Numbers Authority. Organization operated under the auspices of the ISOC as a part of the IAB. IANA delegates authority for IP address-space allocation and domain-name assignment to the NIC and other organizations. IANA also maintains a database of assigned protocol identifiers used in the TCP/IP stack, including autonomous system numbers. See also *IAB*, *ISOC*, and *NIC*.

ICD

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

ICMP

Internet Control Message Protocol. Network layer Internet protocol that reports errors and provides other information relevant to IP packet processing. Documented in RFC 792.

ICMP Router Discovery Protocol

See *IRDP*.

IDI

initial domain identifier. In OSI, the portion of the NSAP that specifies the domain.

IDN
International Data Number. See *X.121*.

IDP
initial domain part. The part of a CLNS address that contains an authority and format identifier and a domain identifier.

IDPR
Interdomain Policy Routing. Interdomain routing protocol that dynamically exchanges policies between autonomous systems. IDPR encapsulates interautonomous system traffic and routes it according to the policies of each autonomous system along the path. IDPR is currently an IETF proposal. See also *policy routing*.

IDRP
IS-IS Interdomain Routing Protocol. OSI protocol that specifies how routers communicate with routers in different domains.

IEC
International Electrotechnical Commission. Industry group that writes and distributes standards for electrical products and components.

IEEE
Institute of Electrical and Electronics Engineers. Professional organization whose activities include the development of communications and network standards. IEEE LAN standards are the predominant LAN standards today.

IEEE 802.1
IEEE specification that describes an algorithm that prevents bridging loops by creating a spanning tree. The algorithm was invented by Digital Equipment Corporation. The Digital algorithm and the IEEE 802.1 algorithm are not exactly the same, nor are they compatible. See also *spanning tree*, *spanning-tree algorithm*, and *Spanning-Tree Protocol*.

IEEE 802.12

IEEE LAN standard that specifies the physical layer and the MAC sublayer of the data link layer. IEEE 802.12 uses the demand priority media-access scheme at 100 Mbps over a variety of physical media. See also *100VG-AnyLAN*.

IEEE 802.2

IEEE LAN protocol that specifies an implementation of the LLC sublayer of the data link layer. IEEE 802.2 handles errors, framing, flow control, and the network layer (Layer 3) service interface. Used in IEEE 802.3 and IEEE 802.5 LANs. See also *IEEE 802.3* and *IEEE 802.5*.

IEEE 802.3

IEEE LAN protocol that specifies an implementation of the physical layer and the MAC sublayer of the data link layer. IEEE 802.3 uses CSMA/CD access at a variety of speeds over a variety of physical media. Extensions to the IEEE 802.3 standard specify implementations for Fast Ethernet. Physical variations of the original IEEE 802.3 specification include *10Base2*, *10Base5*, *10BaseF*, *10BaseT*, and *10Broad36*. Physical variations for *Fast Ethernet* include *100BaseT*, *100BaseT4*, and *100BaseX*.

IEEE 802.4

IEEE LAN protocol that specifies an implementation of the physical layer and the MAC sublayer of the data link layer. IEEE 802.4 uses token-passing access over a bus topology and is based on the token bus LAN architecture. See also *token bus*.

IEEE 802.5

IEEE LAN protocol that specifies an implementation of the physical layer and MAC sublayer of the data link layer. IEEE 802.5 uses token passing access at 4 or 16 Mbps over STP cabling and is similar to IBM Token Ring. See also *Token Ring*.

IEEE 802.6

IEEE MAN specification based on DQDB technology. IEEE 802.6 supports data rates of 1.5 to 155 Mbps. See also *DQDB*.

IESG

Internet Engineering Steering Group. Organization, appointed by the IAB, that manages the operation of the IETF. See also *IAB* and *IETF*.

IETF

Internet Engineering Task Force. Task force consisting of over 80 working groups responsible for developing Internet standards. The IETF operates under the auspices of ISOC. See also *ISOC*.

IFIP

International Federation for Information Processing. Research organization that performs OSI prestandardization work. Among other accomplishments, IFIP formalized the original MHS model. See also *MHS*.

IGMP

Internet Group Management Protocol. Used by IP hosts to report their multicast group memberships to an adjacent multicast router. See also *multicast router*.

IGP

Interior Gateway Protocol. Internet protocol used to exchange routing information within an autonomous system. Examples of common Internet IGPs include IGRP, OSPF, and RIP. See also *IGRP*, *OSPF*, and *RIP*.

IGRP

Interior Gateway Routing Protocol. IGP developed by Cisco to address the problems associated with routing in large, heterogeneous networks. Compare with *Enhanced IGRP*. See also *IGP*, *OSPF*, and *RIP*.

IIH

IS-IS Hello. Message sent by all IS-IS systems to maintain adjacencies. See also *IS-IS*.

IITA

Information Infrastructure Technology and Applications. Component of the HPCC program intended to ensure U.S. leadership in the development of advanced information technologies. See also *HPCC*.

ILMI
Interim Local Management Interface. Specification developed by the ATM Forum for incorporating network-management capabilities into the ATM UNI.

IMP
interface message processor. Old name for ARPANET packet switches. An IMP is now referred to as a PSN (packet-switch node). See also *PSN (packet-switch node)*.

in-band signaling
Transmission within a frequency range normally used for information transmission. Compare with *out-of-band signaling*.

Industry-Standard Architecture
See *ISA*.

Information Infrastructure Technology and Applications
See *IITA*.

infrared
Electromagnetic waves whose frequency range is above that of microwaves, but below that of the visible spectrum. LAN systems based on this technology represent an emerging technology.

initial domain identifier
See *IDI*.

initial domain part
See *IDP*.

INOC
Internet Network Operations Center. BBN group that in the early days of the Internet monitored and controlled the Internet core gateways (routers). INOC no longer exists in this form.

input/output
See *I/O*.

Institute of Electrical and Electronics Engineers
See *IEEE*.

insured burst

The largest burst of data above the insured rate that will be temporarily allowed on a PVC and not tagged by the traffic policing function for dropping in the case of network congestion. The insured burst is specified in bytes or cells. Compare with *maximum burst*. See also *insured rate*.

insured rate

The long-term data throughput, in bits or cells per second, that an ATM network commits to support under normal network conditions. The insured rate is 100 percent allocated; the entire amount is deducted from the total trunk bandwidth along the path of the circuit. Compare with *excess rate* and *maximum rate*. See also *insured burst*.

insured traffic

Traffic within the insured rate specified for the PVC. This traffic should not be dropped by the network under normal network conditions. See also *CLP* and *insured rate*.

Integrated IS-IS

Routing protocol based on the OSI routing protocol IS-IS, but with support for IP and other protocols. Integrated IS-IS implementations send only one set of routing updates, making it more efficient than two separate implementations. Formerly referred to as *Dual IS-IS*. Compare with *IS-IS*.

Integrated Services Digital Network

See *ISDN*.

interarea routing

Term used to describe routing between two or more logical areas. Compare with *intra-area routing*.

Interdomain Policy Routing

See *IDPR*.

interface

1. Connection between two systems or devices.
2. In routing terminology, a network connection.
3. In telephony, a shared boundary defined by common physical

interconnection characteristics, signal characteristics, and meanings of interchanged signals.
4. The boundary between adjacent layers of the OSI model.

interface message processor
See *IMP*.

interface module
Combination of a line card and an access card that together allow you to connect a LightStream 2020 ATM switch to other devices.

interface processor
Any of a number of processor modules used in the Cisco 7000 series routers. See *AIP*, *CIP*, *EIP*, *FEIP*, *FIP*, *FSIP*, *HIP*, *MIP*, *SIP (Serial Interface Processor)*, and *TRIP*.

interference
Unwanted communication channel noise.

Interim Local Management Interface
See *ILMI*.

Interior Gateway Protocol
See *IGP*.

Interior Gateway Routing Protocol
See *IGRP*.

intermediate routing node
See *IRN*.

Intermediate Session Routing
See *ISR*.

intermediate system
See *IS*.

Intermediate System-to-Intermediate System
See *IS-IS*.

International Code Designator
See *ICD*.

International Data Number
See *X.121*.

International Electrotechnical Commission
See *IEC*.

International Federation for Information Processing
See *IFIP*.

International Organization for Standardization
See *ISO*.

International Standards Organization
Erroneous expansion of the acronym ISO. See *ISO*.

International Telecommunication Union Telecommunication Standardization Sector
See *ITU-T*.

Internet
Term used to refer to the largest global internetwork, connecting tens of thousands of networks worldwide and having a "culture" that focuses on research and standardization based on real-life use. Many leading-edge network technologies come from the Internet community. The Internet evolved in part from ARPANET. At one time, called the *DARPA Internet*. Not to be confused with the general term *internet*. See also *ARPANET*.

internet
Short for internetwork. Not to be confused with the *Internet*. See *internetwork*.

Internet Architecture Board
See *IAB*.

Internet address
See *IP address*.

Internet Assigned Numbers Authority
See *IANA*.

Internet Control Message Protocol
See *ICMP*.

Internet Engineering Steering Group
See *IESG*.

Internet Engineering Task Force
See *IETF*.

Internet Group Management Protocol
See *IGMP*.

Internet Network Operations Center
See *INOC*.

Internet Protocol
See *IP*.

Internet protocol
Any protocol that is part of the TCP/IP protocol stack. See *TCP/IP*.

Internet Research Steering Group
See *IRSG*.

Internet Research Task Force
See *IRTF*.

Internet Society
See *ISOC*.

internetwork
Collection of networks interconnected by routers and other devices that functions (generally) as a single network. Sometimes called an *internet*, which is not to be confused with the *Internet*.

internetworking
General term used to refer to the industry that has arisen around the problem of connecting networks together. The term can refer to products, procedures, and technologies.

Internetwork Packet Exchange
See *IPX*.

interoperability
Ability of computing equipment manufactured by different vendors to communicate with one another successfully over a network.

Inter-Switching System Interface
See *ISSI*.

intra-area routing
Term used to describe routing within a logical area. Compare with *interarea routing*.

Inverse Address Resolution Protocol
See *Inverse ARP*.

Inverse ARP
Inverse Address Resolution Protocol. Method of building dynamic routes in a network. Allows an access server to discover the network address of a device associated with a virtual circuit.

I/O
input/output.

IOS
See *Cisco IOS software*.

IP
Internet Protocol. Network layer protocol in the TCP/IP stack offering a connectionless internetwork service. IP provides features for addressing, type-of-service specification, fragmentation and reassembly, and security. Documented in RFC 791.

IP address
32-bit address assigned to hosts using TCP/IP. An IP address belongs to one of five classes (A, B, C, D, or E) and is written as 4 octets separated with periods (dotted decimal format). Each address consists of a network number, an optional subnetwork number, and a host number. The network and subnetwork numbers together are used for routing, while the host number is used to address an individual host within the network or subnetwork. A subnet mask is used to extract network and subnetwork information from the IP address. Also called an *Internet address*. See also *IP* and *subnet mask*.

IP multicast
Routing technique that allows IP traffic to be propagated from one source to a number of destinations or from many sources to many destinations. Rather than sending one packet to each destination, one packet is sent to a multicast group identified by a single IP destination group address.

IP Security Option
See *IPSO*.

IPSO
IP Security Option. U.S. government specification that defines an optional field in the IP packet header that defines hierarchical packet security levels on a per interface basis.

IPX
Internetwork Packet Exchange. NetWare network layer (Layer 3) protocol used for transferring data from servers to workstations. IPX is similar to IP and XNS.

IPXWAN
Protocol that negotiates end-to-end options for new links. When a link comes up, the first IPX packets sent across are IPXWAN packets negotiating the options for the link. When the IPXWAN options have been successfully determined, normal IPX transmission begins. Defined by RFC 1362.

IRDP
ICMP Router Discovery Protocol. Enables a host to determine the address of a router that it can use as a default gateway. Similar to ES-IS, but used with IP. See also *ES-IS*.

IRN
intermediate routing node. In SNA, a subarea node with intermediate routing capability.

IRSG
Internet Research Steering Group. Group that is part of the IAB and oversees the activities of the IRTF. See also *IAB* and *IRTF*.

IRTF
Internet Research Task Force. Community of network experts that consider Internet-related research topics. The IRTF is governed by the IRSG and is considered a subsidiary of the IAB. See also *IAB* and *IRSG*.

IS
intermediate system. Routing node in an OSI network.

ISA
Industry-Standard Architecture. 16-bit bus used for Intel-based personal computers. See also *EISA*.

isarithmic flow control
Flow control technique in which permits travel through the network. Possession of these permits grants the right to transmit. Isarithmic flow control is not commonly implemented.

ISDN
Integrated Services Digital Network. Communication protocol, offered by telephone companies, that permits telephone networks to carry data, voice, and other source traffic. See also *BISDN*, *BRI*, *N-ISDN*, and *PRI*.

IS-IS
Intermediate System-to-Intermediate System. OSI link-state hierarchical routing protocol based on DECnet Phase V routing whereby ISs (routers) exchange routing information based on a single metric to determine network topology. Compare with *Integrated IS-IS*. See also *ES-IS* and *OSPF*.

IS-IS Hello
See *IIH*.

IS-IS Interdomain Routing Protocol
See *IDRP*.

ISO
International Organization for Standardization. International organization that is responsible for a wide range of standards, including those relevant to networking. ISO developed the OSI reference model, a popular networking reference model.

ISO 3309
HDLC procedures developed by ISO. ISO 3309:1979 specifies the HDLC frame structure for use in synchronous environments. ISO 3309:1984 specifies proposed modifications to allow the use of HDLC in asynchronous environments as well.

ISO 9000
Set of international quality-management standards defined by ISO. The standards, which are not specific to any country, industry, or product, allow companies to demonstrate that they have specific processes in place to maintain an efficient quality system.

ISOC
Internet Society. International nonprofit organization, founded in 1992, that coordinates the evolution and use of the Internet. In addition, ISOC delegates authority to other groups related to the Internet, such as the IAB. ISOC is headquartered in Reston, Virginia, U.S.A. See also *IAB*.

isochronous transmission
Asynchronous transmission over a synchronous data link. Isochronous signals require a constant bit rate for reliable transport. Compare with *asynchronous transmission*, *plesiochronous transmission*, and *synchronous transmission*.

ISODE
ISO development environment. Large set of libraries and utilities used to develop upper-layer OSI protocols and applications.

ISO development environment
See *ISODE*.

ISR
Intermediate Session Routing. Initial routing algorithm used in APPN. ISR provides node-to-node connection-oriented routing. Network outages cause sessions to fail because ISR cannot provide nondisruptive rerouting around a failure. ISR has been replaced by HPR. Compare with *HPR*. See also *APPN*.

ISSI
Inter-Switching System Interface. Standard interface between SMDS switches.

ITU-T
International Telecommunication Union Telecommunication Standardization Sector. International body that develops worldwide standards for telecommunications technologies. The ITU-T carries out the functions of the former CCITT. See also *CCITT*.