Glossary

This Glossary provides definitions associated with the Cisco 6400 Service Connection Manager.

A

Address Mask A bit mask used to select bits from an Internet address for subnet addressing. The mask is 32 bits long and selects the network portion of the Internet address and one or more bits of the local portion. Sometimes called subnet mask.

AAL5 ATM Adaption Layer. This layer maps higher layer user data into ATM cells, making the data suitable for transport through the ATM network.

ADSL Asymmetric Digital Subscriber Line. A digital subscriber line (DSL) technology in which the transmission of data from server to client is much faster than the transmission from the client to the server.

ADSLAM Advanced Digital Subscriber Line Access Multiplexer. Concentrates and multiplexes signals at the telephone service provider location to the broader wide area network.

ADSL Forum An organization of competing companies that sponsors an Internet Web site (http://www.adsl.com/adsl_home.html) containing information about the applications, the technology, the systems, the market, the trials, the tariffs related to ADSL technology.

alarm Notification that a threshold (rising or falling) set has been met.

alert A message sent to all IP addresses defined in the trap community string.

ANSI American National Standards Institute. An organization that develops standards for many things, only some having to do with computers. ANSI is a member of the International Standards Organization (ISO). See ISO.

Asynchronous Communications A method of transmitting data in which each transmitted character is sent separately. The character has integral start and stop bits so that the character can be sent at an arbitrary time, and separate from any other character.

ATM Asynchronous Transfer Mode. A cell-based data transfer technique in which channel demand determines packet allocation. ATM offers fast packet technology, real time, demand led switching for efficient use of network resources.

Authentication A security feature that allows access to information to be granted on an individual basis.

B

Bandwidth
The range of frequencies a transmission line or channel can carry: the greater the bandwidth, the greater the information-carrying capacity of a channel. For a digital channel this is defined in bits. For an analog channel it is dependent on the type and method of modulation used to encode the data.

Bps
Bits per second. A standard measurement of digital transmission speeds.

Bridge
A device that connects two or more physical networks and forwards packets between them. Bridges can usually be made to filter packets, that is, to forward only certain traffic. Related devices are: repeaters which simply forward electrical signals from one cable to the other, and full-fledged routers which make routing decisions based on several criteria. See repeater and router.

Broadband
Characteristic of any network that multiplexes independent network carriers onto a single cable. This is usually done using frequency division multiplexing (FDM). Broadband technology allows several networks to coexist on one single cable; traffic from one network does not interfere with traffic from another since the "conversations" happen on different frequencies in the "ether" rather like the commercial radio system.

Broadband Remote Access Server
Device that terminates remote users at the corporate network or Internet users at the Internet Service Provider (ISP) network, such as the NetSpeed FireRunner product that provides firewall, authentication, and routing services for remote users.

Broadcast
A packet delivery system where a copy of a given packet is given to all hosts attached to the network, for example, Ethernet.

C

cell
An ATM unit of segmented data that consists of 53 bytes or octets. Of these, five constitute the header and the remaining 48 carry the data payload. Cell-switching gives maximum utilization of the physical resources.

Cell Relay
Generic term for a protocol based on small fixed packet sizes capable of supporting voice, video and data at very high speeds. Information is handled in fixed length cells of 53 octets.

Central Office
Refers to equipment located at a Telco or service provider's office.

Cisco Discovery Protocol Media (CDP)
The protocol-independent, device-discovery protocol that runs on all Cisco-manufactured equipment including routers, access servers, bridges, and switches. Using CDP, a device can advertise its existence to other devices and receive information about other devices on the same LAN or on the remote side of a WAN. Runs on all media that support SNAP, including LANs, Frame Relay, and ATM.

CLI
Command Line Interface.

Client-Server Model
A common way to describe network services and the processes (programs) of those services. Examples include the name-server/name-resolver paradigm of the DNS and file-serve/file-client relationships such as NFS and diskless hosts.

command-line interface	The TrafficDirector command-line interface on UNIX. Accessible at the shell prompt on UNIX; accessible at the DOS prompt on Microsoft Windows. When invoked, displays CLI usage options.
committed information rate (CIR)	The committed rate, in bits per second, at which the incoming interface trunk and outgoing interface trunk of a Frame Relay network transfers information under normal conditions to the destination Frame Relay end system.
Connection	A connection links a Subscriber to a Service Instance.
Connectionless Network	The transport of a single datagram or packet of information from one network node to a destination node or multiple nodes without establishing a network connection.
Connection-Oriented Network	The transport of packets of information from one network node to a destination node following an established network connection.
Containment Tree	CEMF uses Containment Trees to model hierarchical relationships between objects (physical and logical).Objects are named by Containment Trees. Objects can exist in multiple trees simultaneously (by reference).
Channel Service Unit/Data Service Unit (CSU/DSU)	A digital interface unit that connects end user equipment to the local digital telephone loop.
Customer Premise	Refers to equipment located in a user premises.

D

Daemon A program that is not invoked explicitly, but lies dormant waiting for some condition(s) to occur.

Dial-Up Network Lets computer users dial up a service provider's computer using a modem.

Distributed Processing An approach that allows one application program to execute on multiple computers linked together by a network. The networked computers share the work between them.

Dotted Decimal Notation The syntactic representation for a 32-bit integer that consists of four 8-bit numbers written in base 10 with periods (dots) separating them. Used to represent IP addresses in the Internet as in: 221.34.64.32.

Downstream Rate The line rate for return messages or data transfers from the network machine to the user's customer's premise machine.

DRAM Dynamic Random Access Memory. A type of semiconductor memory in which the information is stored in capacitors on a metal oxide semiconductor integrated circuit.

DSLAM Digital Subscriber Line Access Multiplexer.

E

EIA Electronics Industry Association. A standards organization made up of electronics industry organizations. EIA is responsible for The RS-232C and RS-422 standards.

Encapsulation The technique used by layered protocols in which a layer adds header information to the protocol data unit (PDU) from the layer above. As an example, in Internet terminology, a packet would contain a header from the physical layer, followed by a header from the network layer (IP), followed by a header from the transport layer (TCP), followed by the application protocol data.

Error Detection A process used during file transfer to discover discrepancies between transmitted and received data. Some file transfer programs only detect errors, others detect errors and attempt to fix them (called error correction).

Ethernet One of the most common local area network (LAN) wiring schemes. Ethernet has a transmission rate of 10 Megabits per second; a newer standard called Fast Ethernet will carry 100 Megabits per second.

ETSI A European standards body established in 1988 by a decision of the European Conference of Postal and Telecommunications Administrations (CEPT). It has taken over the work of the CEPT the area of developing the *Net-Normes Europeene de Telecommunication*, Net standards.

F

FCC
Federal Communications Commission. A U.S. government agency that regulates interstate and foreign communications. The FCC sets rates for communication services, determines standards for equipment, and controls broadcast licensing.

FCAPS
Fault, Configuration, Accounting, Performance and Security.

Finger Daemon
A software tool that allows a client to query a server for information on users.

Firewall
A method for protecting Internet-connected enterprise networks from break-ins by unauthorized persons outside the network.

Frame
A packet as it is transmitted over a serial line. The term derives from character oriented protocols where special start-of-frame and end-of-frame characters were added when transmitting packets.

FTP
File Transfer Protocol. The Internet protocol (and program) used to transfer files between hosts.

G

Gateway
A system which does translation from some native format to another. Examples include X.400 to/from RFC 822 electronic mail gateways. See router.

GUI
Graphical User Interface. User environment that uses pictorial as well as textual representations of the input and output of applications and the data structure in which information is stored. Conventions such as buttons, icons, and windows are typical, and many actions are performed by means of a pointing device, such as a mouse.

H

Handshake
Part of the procedure to set up a data communications link. The handshake can be part of the protocol itself or an introductory process. The computers wishing to talk to each other set out the conditions they can operate under. Sometimes, the handshake is just a warning that a communication is imminent.

Hop Count
A measure of distance between two points on the Internet. It is equivalent to the number of gateways that separate the source and destination.

HTML
Hypertext Markup Language. The page-coding language for the World Wide Web.

HTML Browser
A browser used to traverse the Internet, such as Netscape or Microsoft Internet Explorer.

http
Hypertext Transfer Protocol. The protocol used to carry world-wide web (www) traffic between a www browser computer and the www server being accessed.

I

ICMP   Internet Control Message Protocol. The protocol used to handle errors and control messages at the IP layer. ICMP is actually part of the IP protocol.

IEEE   Institute of Electrical and Electronic Engineers. A U.S. publishing and standards organization responsible for many LAN standards.

Internet Address   An IP address assigned in blocks of numbers to user organizations accessing the Internet. These addresses are established by the United States Department of Defense's Network Information Center. Duplicate addresses can cause major problems on the network, but the NIC trusts organizations to use individual addresses responsibly. Each address is a 32-bit address in the form of x.x.x.x where *x* is an eight- bit number from 0 to 255. There are three classes: A, B and C, depending on how many computers on the site are likely to be connected.

Internet   A collection of networks interconnected by a set of routers which allow them to function as a single, large virtual network. When written in upper case, Internet refers specifically to the DARPA (Defense Advanced Research Projects Agency) Internet and the TCP/IP protocols it uses.

Internet Protocol (IP)   The network layer protocol for the Internet protocol suite.

IOS   Internet Operating System.

IP   See Internet Protocol.

IP Address   The 32-bit address assigned to hosts that want to participate in a TCP/IP Internet.

IP Datagram   The fundamental unit of information passed across the Internet. It contains source and destination addresses along with data and a number of fields that define such things as the length of the datagram, the header checksum, and flags to say whether the datagram can be or has been fragmented.

ISA   Industry Standard Architecture. The bus used in standard IBM-compatible PCs to provide power to add-in boards and to the motherboard (into which the boards plug). Typical maximum transfer speed of 1 to 2.5Mbps (variables include other devices, memory, and buffering) but designed for up to 16Mbps.

ISO   International Standards Organization. A voluntary, non-treaty organization founded in 1946, responsible for creating international standards in many areas, including computers and communications.

ISP   Internet Service Provider. A company that allows home and corporate users to connect to the Internet.

ITU-T   International Telecommunications Union, Standardization Sector. ITU-T is the telecommunication standardization sector of the ITU and is responsible for making technical recommendations about telephone and data (including fax) communications systems for service providers and suppliers.

L

L2TP   Layer 2 Tunnelling Protocol. Protocol allowing PPP sessions to be tunnelled across an arbitrary media to a 'home gateway' at an ISP or corporation. The Cisco 6400 aggregates user PPP sessions into L2TP tunnels.

LAN   Local Area Network. A limited distance (typically under a few kilometers or a couple of miles) high-speed network (typically 4 to 100 Mbps) that supports many computers (typical two to thousands).

LCP   Link Control Protocol.

LED   Light Emitting Diode. The lights indicating status or activity on electronic equipment.

Line Concentration   Functionality performed by a type of multiplexer that combines multiple channels onto a single transmission medium in such a way that all the individual channels can be simultaneously active. For example, ISPs use concentrators to combine their dial-up modem connections onto faster T-1 lines that connect to the Internet.

Line Rate   The speed by which data is transferred over a particular line type, express in bits per second (bps).

Link   A link on a map is a graphical symbol which represents managed objects in the network or abstracted objects. Links can only exist as a connection between two nodes.

Logical Port   A logical entry to a server machine. These ports are mostly invisible, though you may occasionally see a URL with a port number included in it. These ports do not refer to physical locations; they are set up by server administrators for network trafficking.

Loopback   A diagnostic test that returns the transmitted signal back to the sending device after it has passed through a network or across a particular link. The returned signal can then be compared to the transmitted one. The discrepancy between the two help to trace the fault. When trying to locate a faulty piece of equipment, loopbacks will be repeated, eliminating satisfactory machines until the problem is found.

M

MAC	Media Access Control Layer. A sub-layer of the Data Link Layer (Level Two) of the ISO OSI Model responsible for media control.
MIB	Management Information Base. A collection of objects that can be accessed via a network management protocol, such as SNMP and CMIP (Common Management Information Protocol).
mapObjectContainment	This containment is used to reflect the relationship between maps and displays a schematic representation of the Shelf information.
Multicast	A special form of broadcast where copies of the packet are delivered to only a subset of all possible destinations. See broadcast.
Multiplexer	A device that can send several signals over a single line. They are then separated by a similar device at the other end of the link. This can be done in a variety of ways: time division multiplexing, frequency division multiplexing and statistical multiplexing. Multiplexers are also becoming increasingly efficient in terms of data compression, error correction, transmission speed and multi-drop capabilities.

N

Network Layer	The OSI layer that is responsible for routing, switching, and subnetwork access across the entire OSI environment.
NLC	See Node Line Card.
Node	A general term used to refer to a computer or related device; often used to refer to a networked computer or device. A node on a map is a graphical symbol which represents a managed object in the network or abstracted objects. A node has an iconic representation while a link has a vector representation. Links can only exist as a connection between two nodes.
Node Line Card (NLC)	One of the component cards used in the Cisco 6400 UAC. 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.
Node Route Processor (NRP)	One of the component modules used in the Cisco 6400 UAC. This module is the Layer 3 element for the Cisco 6400 responsible for implementing the routing function.
Node Switch Processor (NSP)	One of the component modules used in the Cisco 6400 UAC. This module is responsible for implementing the routing function.
NRP	See Node Route Processor.
NSP	See Node Switch Processor.

O

OAM&P   Operations, Administration, Maintenance and Provisioning.

Octet   A networking term that identifies 8 bits. In TCP/IP, it is used instead of *byte,* because some systems have bytes that are not 8 bits.

OSI   Open Systems Interconnection. An international standardization program to facilitate communications among computers from different manufacturers. See ISO.

P

Packet   The unit of data sent across a packet switching network.

PAP   Password Authentication Protocol.

Permanent Virtual Connection (PVC)   A fixed virtual circuit between two users: the public data network equivalent of a leased line. No call setup or clearing procedures are needed.

physicalContainment   This containment reflects the physical relationship of objects and is used to provide the relevant information to draw the maps.

Physical Layer   Handles transmission of raw bits over a communication channel. The physical layer deals with mechanical, electrical, and procedural interfaces.

Physical Port   A physical connection to a computer through which data flows. An "Ethernet port", for example, is where Ethernet network cabling plugs into a computer.

Private Network-to-Network Interface (PNNI)   A dynamic routing protocol that provides quality of service (QoS) routes to signaling based on the QoS requirements specified in the call setup requests.

Port   The abstraction used by Internet transport protocols to distinguish among multiple simultaneous connections to a single destination host. See selector.

POTS   Plain Old Telephone Service.

PPP   Point-To-Point-Protocol. The successor to SLIP, PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits. See SLIP.

Profile   A profile can be in a way of quickly applying a set of parameters to a number of similar type objects without the need for entering the same data numerous times. See Available Service Profile.

Protocol   A formal description of messages to be exchanged and rules to be followed for two or more systems to exchange information.

PVC   See Permanent Virtual Connection.

Q

QoS   Quality of Service. A characteristic of data transmission that measures how accurately and how quickly a message or data is transferred from a source computer to a destination computer over a network.

QoS Profile   A QoS Profile provides all the necessary QoS parameter information needed for the specified QoS Category. The QoS Profile can then be applied to one or more Subscriber QoS associated with the Subscriber.

R

Remote Address   The IP address of a remote server.

Remote Server   A network computer that allows a user to log onto the network from a distant location.

RFC   Request for Comment. The document series, begun in 1969, which describes the Internet suite of protocols and related experiments. Not all RFCs describe Internet standards, but all Internet standards are written up as RFCs.

Route   The path that network traffic takes from its source to its destination. The route a datagram may follow can include many gateways and many physical networks. In the Internet, each datagram is routed separately.

Router   A system responsible for making decisions about which of several paths network (or Internet) traffic will follow. To do this, it uses a routing protocol to gain information about the network and algorithms to choose the best route based on several criteria known as "routing metrics." See bridge and repeater.

Routing Table   Information stored within a router that contains network path and status information. It is used to select the most appropriate route to forward information along.

Rx   Receiver.

S

SCM   Service Connection Manager software developed to manage the Cisco 6400 Universal Access Concentrators (UACs).

Serial Line   A serial line is used to refer to data transmission over a telephone line via a modem or when data goes from a computer to a printer or other device.

Service   A Service represents a physical service offered by a Service Provider, for example, aol.gold.

Service Instance A Service Instance is a service that has been deployed on a single Cisco 6400.

**serviceInstance   A Service Instance exists on a port (either an NRP or a Line Card). A service instance has a
Containment**   number of dynamically created connections which are related to the service instance by this containment.

Service Profile	This profile will capture the relevant information for a service instance of a particular service category. The profile can then be applied to one or more service instances, and the data edited if necessary. See profile.
SNMP	Simple Network Management Protocol. The network management protocol of choice for TCP/IP-based internets.
Socket	(1) The Berkeley Unix mechanism for creating a virtual connection between processes. (2) IBM term for software interfaces that allow two Unix application programs to talk via TCP/IP protocols.
Spanning-Tree Bridge Protocol (STP)	Spanning-Tree Bridge Protocol (STP). Part of an IEEE standard. A mechanism for detecting and preventing loops from occurring in a multi-bridged environment. When three or more LAN segments are connected by bridges, a loop can occur. Because a bridge forwards all packets which are not recognized as being local, some packets can circulate for long periods of time, eventually degrading system performance. This algorithm ensures only one path connects any pair of stations, selecting one bridge as the "root" bridge, with the highest priority one as identifier, from which all paths should radiate.
Spoofing	A method of fooling network end stations into believing that keep-alive signals have come from and return to the host. Polls are received and returned locally at either end of the network and are transmitted only over the open network if there is a condition change.
STP	See Spanning-Tree Bridge Protocol.
subscriberContainment	A Subscriber has a number of connection objects which are related to the Subscriber by this containment.
Subscriber QoS	A Quality of Service associated with a Subscriber which can be used when the Subscriber is connected to a service.
Subnet	For routing purposes, IP networks can be divided into logical sub nets by using a subnet mask. Values below those of the mask are valid addresses on the subnet.
Subnet Mask	See address mask.
SVC	See Switched Virtual Connection.
Switch	Equipment used to connect and distribute communications between a trunk line or backbone and individual nodes.
Switched Virtual Connection (SVC)	A temporary virtual circuit between two users.
Synchronous Connection	During synchronous communications, data is not sent in individual bytes, but as frames of large data blocks.
SYSLOG	SYSLOG allows you to log significant system information to a remote server.

T

TCP
Transmission Control Protocol. The major transport protocol in the Internet suite of protocols providing reliable, connection-oriented full-duplex streams.

TFTP
Trivial File Transfer Protocol. A simple file transfer protocol (a simplified version of FTP) that is often used to boot diskless workstations and other network devices such as routers over a network (typically a LAN). Has no password security.

Telnet
The virtual terminal protocol in the Internet suite of protocols. Allows users of one host to log into a remote host and act as normal terminal users of that host.

Transparent Bridging
So named because the intelligence necessary to make relaying decisions exists in the bridge itself and is thus transparent to the communicating workstations. It involves frame forwarding, learning workstation addresses and ensuring no topology loops exist (in conjunction with the Spanning-Tree algorithm).

Trivial File Transfer Protocol (TFTP)
See TFTP.

Twisted Pair
Two insulated copper wires twisted together with the twists or lays varied in length to reduce potential signal interference between the pairs.

Tx
Transmitter.

U

UAC
Universal Access Concentrator. The Cisco 6400 UAC hardware acts as a central point of control for Layer 2 and Layer 3 services.

UDP
User Datagram Protocol. A connectionless transport protocol that runs on top of TCP/IP's IP. UDP, like TCP, uses IP for delivery; however, unlike TCP, UDP provides for exchange of datagrams without acknowledgments or guaranteed delivery. Best suited for small, independent requests, such as requesting a MIB value from an SNMP agent, in which first setting up a connection would take more time than sending the data.

UNI Signaling
User Network Interface signaling for ATM communications.

Upstream Rate
The line rate for message or data transfer from the source machine to a destination machine on the network. Also see downstream rate.

V

VC
See Virtual Connection.

VCI
See Virtual Channel Identifier.

VCL
Virtual Channel Link

VPI
See Virtual Path Identifier.

Virtual Channel Identifier (VCI)	16-bit field in the header of an ATM cell. The VCI, together with the VPI, is used to identify the next destination of a cell as it passes through a series of ATM switches.
Virtual Connection (VC)	A link that seems and behaves like a dedicated point to point line or a system that delivers packets in sequence, as happens on an actual point to point network. In reality, the data is delivered across a network via the most appropriate route. The sending and receiving devices do not have to be aware of the options and the route is chosen only when a message is sent. There is no pre-arrangement, so each virtual connection exists only for the duration of that one transmission.
Virtual Path Identifier (VPI)	An 8-bit field in the header of an ATM cell. The VPI, together with the VCI, is used to identify the next destination of a cell as it passes through a series of ATM switches.

W

WAN	Wide Area Network. A data communications network that spans any distance and is usually provided by a public carrier (such as a telephone company or service provider).