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T.120

ITU standard that describes data conferencing. H.323 provides for the capability to establish T.120 data sessions inside an existing H.323 session.

T.30

Describes the overall procedure for establishing and managing communication between two fax machines.

T.38

Defines procedures for real-time Group 3 facsimile communication over IP networks.

T1

Digital WAN carrier facility. T1 transmits DS-1–formatted data at 1.544 Mbps through the telephone-switching network, using AMI or B8ZS coding. Compare with *E1*. See also *AMI*, *B8ZS*, and *DS-1*.

T3

Digital WAN carrier facility. T3 transmits DS-3–formatted data at 44.736 Mbps through the telephone switching network. Compare with *E3*. See also *DS-3*.

TABS

Telemetry Asynchronous Block Serial. AT&T polled point-to-point or multipoint communication protocol that supports moderate data transfer rates over intra-office wire pairs.

TAC

1. Terminal Access Controller. Internet host that accepts terminal connections from dial-up lines.

2. Cisco Technical Assistance Center. See *TAC* and *TACACS+* in the “Cisco Systems Terms and Acronyms” section.

TACACS

Terminal Access Controller Access Control System. Authentication protocol, developed by the DDN community, that provides remote access authentication and related services, such as event logging. User passwords are administered in a central database rather than in individual routers, providing an easily scalable network security solution. See also *TACACS+* in the “Cisco Systems Terms and Acronyms” section.

TACACS+

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

tag

Identification information, including a number plus other information.

tag switching

High-performance, packet-forwarding technology that integrates network layer (Layer 3) routing and data link layer (Layer 2) switching and provides scalable, high-speed switching in the network core. Tag switching is based on the concept of label swapping, in which packets or cells are assigned short, fixed-length labels that tell switching nodes how data should be forwarded.

tagged traffic

ATM cells that have their CLP bit set to 1. If the network is congested, tagged traffic can be dropped to ensure the delivery of higher-priority traffic. Sometimes called DE traffic. See also *CLP*.

tail-end

The downstream, receive end of a tunnel.

Tandem switching

Dynamic switching of voice calls between VoFR, VoATM, or VoHDL PVCs and subchannels; also called tandeming. Tandem switching often is encountered in multi-hop VoFR call connection paths.

TAPI

Telephony Application Programming Interface. A call control model developed by Microsoft and Intel.

TARP

TID Address Resolution Protocol. In OSS, a protocol that resolves a TL-1 TID to a CLNP address (NSAP).

TAXI 4B/5B

Transparent Asynchronous Transmitter/Receiver Interface 4-byte/5-byte. Encoding scheme used for FDDI LANs as well as for ATM. Supports speeds of up to 100 Mbps over multimode fiber. TAXI is the chipset that generates 4B/5B encoding on multimode fiber. See also *4B/5B local fiber*.

TB

transparent bridging. This feature supports connectivity for multiple VLANs bridged between Dot1q interfaces and other interface encapsulations or other types of interface media.

TBOS protocol

Telemetry Byte Oriented Serial protocol. Protocol that transmits alarm, status, and control points between NE and OSS. TBOS defines one physical interface for direct connection between the telemetry equipment and the monitored equipment.

TC

1. Telephony Controller. A new generic term for the Signaling Controller (SC) and the Virtual Switch Controller (VSC).

2. transmission convergence. Sublayer of the ATM physical layer that transforms the flow of cells into a steady flow of bits for transmission over the physical medium. When transmitting, the TC sublayer maps the cells into the frame format, generates the HEC, and sends idle cells when there is nothing to send. When receiving, the TC sublayer delineates individual cells in the received bit stream and uses HEC to detect and correct errors. See also *HEC* and *PHY*.

TCA

telecommunications access method.

TCAP

transaction capabilities applications part. SS7 protocol layer that helps exchange noncircuit-related data between applications.

T-carrier

TDM transmission method usually referring to a line or a cable carrying a DS-1 signal.

TCC

terminating call control.

T-CCS

Transparent Common Channel Signaling. Feature that allows the connection of two PBXs with digital interfaces that use a proprietary or unsupported CCS protocol without the need for interpretation of CCS signalling for call processing. T1/E1 traffic is transported transparently through the data network and the feature preserves proprietary signalling. From the PBX standpoint, this is accomplished through a point-to-point connection. Calls from the PBXs are not routed, but follow a preconfigured route to the destination.

TCL

Toolkit Command Language. A scripting language used for gateway products both internally and externally to Cisco IOS software code.

TCL Interface

tool command line interface.

Tcl/Tk

Toolkit Command Language windowing toolkit. A combination of a scripting language (Tcl) with a windowing toolkit (Tk). Used for rapid prototyping and application development.

TCP

Transmission Control Protocol. Connection-oriented transport layer protocol that provides reliable full-duplex data transmission. TCP is part of the TCP/IP protocol stack. See also *TCP/IP*.

TCP/IP

Transmission Control Protocol/Internet Protocol. Common name for the suite of protocols developed by the U.S. DoD in the 1970s to support the construction of worldwide internetworks. TCP and IP are the two best-known protocols in the suite. See also *IP* and *TCAP*.

TCU

trunk coupling unit. In Token Ring networks, a physical device that enables a station to connect to the trunk cable.

TDM

time-division multiplexing. Technique in which information from multiple channels can be allocated bandwidth on a single wire based on preassigned time slots. Bandwidth is allocated to each channel regardless of whether the station has data to transmit. Compare with *ATDM*, *FDM*, and *statistical multiplexing*.

TDM Cross-Connect

Allows DS0 channels from one T1 or E1 facility to be cross-connected digitally to DS0 channels on another T1 or E1. By using this method, channel traffic is sent between a PBX and CO PSTN switch or other telephony device, so that some PBX channels are directed for long-distance service through the PSTN while the router compresses others for interoffice VoIP calls. In addition, Drop and Insert can cross-connect a telephony switch (from the CO or PSTN) to a channel bank for external analog connectivity. Also called *drop and insert*.

TDMA

time division multiplex access. Type of multiplexing where two or more channels of information are transmitted over the same link by allocating a different time interval (“slot” or “slice”) for the transmission of each channel, that is, the channels take turns to use the link. Some kind of periodic synchronizing signal or distinguishing identifier usually is required so that the receiver can tell which channel is which. See also *TDM*.

TDR

time domain reflectometer. Device capable of sending signals through a network medium to check cable continuity and other attributes. TDRs are used to find physical layer network problems.

TE

terminal equipment. Any ISDN-compatible device that can be attached to the network, such as a telephone, a fax, or a computer.

Technical Assistance Center

See *TAC*.

Technical Office Protocol

See *TOP*.

Technology prefix

Discriminators used to distinguish between gateways having specific capabilities within a given zone. In the exchange between the gateway and the gatekeeper, the technology prefix is used to select a gateway after the zone has been selected. Technology prefixes can be used to tell the gatekeeper that a certain technology is associated with a particular call (for example, 15# could mean a fax transmission), or it can be used like an area code for more generic routing. No standard defines what the numbers in a technology prefix mean; by convention, technology prefixes are designated by a pound (#) symbol as the last character.

TEI

terminal endpoint identifier. Field in the LAPD address that identifies a device on an ISDN interface. See also *TE*.

telco

Abbreviation for telephone company.

Telco-Return CM

A cable modem that uses the cable plant only for subscriber downstream traffic, and uses the PSTN for subscriber upstream traffic (which is necessary in older cable plants); DOCSIS has issued specifications for telco-return CMs that include dialup with PPP/PCP and RADIUS, as well as booting with DHCP, Time, and TFTP service.

Telecommunication Management Network

See *TMN*.

telecommunications

Term referring to communications (usually involving computer systems) over the telephone network.

Telecommunications Industry Association

See *TIA*.

telemetry

Capability of transmitting or retrieving data over long distance communication links, such as satellite or telephone.

Telemetry Asynchronous Block Serial

See *TABS*.

telephony

Science of converting sound to electrical signals and transmitting it between widely removed points.

TeleRouter

An optional software overlay product for the Cisco VCO/4K switch. TeleRouter uses its own database to parse dialed digit strings from inbound calls and routes calls based on this information.

telex

Teletypewriter service allowing subscribers to send messages over the PSTN.

Telnet

Standard terminal emulation protocol in the TCP/IP protocol stack. Telnet is used for remote terminal connection, enabling users to log in to remote systems and use resources as if they were connected to a local system. Telnet is defined in RFC 854.

Tempest

U.S. military standard. Electronic products adhering to the Tempest specification are designed to withstand EMP. See also *EMP*.

TERENA

Trans-European Research and Education Networking Association. Organization that promotes information and telecommunications technologies development in Europe. Formed by the merger of EARN and RARE. See also *EARN* and *RARE*.

termid

SNA cluster controller identification for switched lines only. Also called *Xid*.

terminal

Simple device at which data can be entered or retrieved from a network. Generally, terminals have a monitor and a keyboard, but no processor or local disk drive.

Terminal Access Controller

See *TAC*.

Terminal Access Controller Access System

See *TACACS*.

terminal adapter

Device used to connect ISDN BRI connections to existing interfaces, such as EIA/TIA-232. Essentially, an ISDN modem.

terminal emulation

Network application in which a computer runs software that makes it appear to a remote host as a directly attached terminal.

terminal endpoint identifier

See *TEI*.

terminal equipment

See *TE*.

terminal server

Communications processor that connects asynchronous devices, such as terminals, printers, hosts, and modems, to any LAN or WAN that uses TCP/IP, X.25, or LAT protocols. Terminal servers provide the internetwork intelligence that is not available in the connected devices.

termination point

See *TP*.

terminator

Device that provides electrical resistance at the end of a transmission line to absorb signals on the line, thereby keeping them from bouncing back and being received again by network stations.

TESS

The Exponential Encryption System. A system of separate but cooperating cryptographic mechanisms and functions for the secure authenticated exchange of cryptographic keys, the generation of digital signatures, and the distribution of public keys. TESS employs asymmetric cryptography, based on discrete exponentiation, and a structure of self-certified public keys.

TEST

test.

Texas Higher Education Network

See *THEnet*.

TFN

Tribe Flood Network. A common type of denial-of-service (DoS) attack that can take advantage of forged or rapidly changing source IP addresses to allow attackers to thwart efforts to locate or filter the attacks.

TFTP

Trivial File Transfer Protocol. Simplified version of FTP that allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password).

TGT

Ticket granting ticket. A credential that the key distribution center (KDC) issues to authenticated users.

TGW

Trunking Gateway. A gateway that supports only bearer traffic (no signaling traffic). For example, a gateway that terminates T1s (or greater) with no signaling control is a trunking gateway.

TH

transmission header. SNA header that is appended to the SNA basic information unit (BIU). The TH uses one of a number of available SNA header formats. See also *FID0*, *FID1*, *FID2*, *FID3*, and *FID4*.

THC over X.25

See *THC over X.25* in the “Cisco Systems Terms and Acronyms” section.

The Exponential Encryption System

See *TESS*.

THEnet

Texas Higher Education Network. Regional network comprising over 60 academic and research institutions in the Texas (United States) area.

Thinnet

Term used to define a thinner, less expensive version of the cable specified in the IEEE 802.3 10Base2 standard. Compare with *Cheapernet*. See also *10Base2*, *EtherChannel*, and *IEEE 802.3*.

three-way handshake

Process whereby two protocol entities synchronize during connection establishment.

threshold

Each PM parameter has a provisionable threshold that defines the autonomous message trigger point. Thresholds usually are defined in terms of either a specific BER value or a specific number of events counted during a set time period.

throughput

Rate of information arriving at, and possibly passing through, a particular point in a network system.

TIA

Telecommunications Industry Alliance. Organization that develops standards relating to telecommunications technologies. Together, the TIA and the EIA have formalized standards, such as EIA/TIA-232, for the electrical characteristics of data transmission. See also *EIA*.

TIC

Token Ring interface coupler. Controller through which an FEP connects to a Token Ring.

TID

1. tunnel identifier. Used to identify a GTP tunnel between two GSNs in a GPRS network. Contains an MM Context ID and an NSAPI. A tunnel is created whenever an SGSN sends a Create PDP Context Request in a GPRS network. See also *GTP tunnel*.

A two-octet value that denotes a tunnel between an L2TP access concentrator (LAC) and an L2TP Network Server (LNS). An L2TP device that the client directly connects to and whereby PPP frames are tunneled to the L2TP network server (LNS). The LAC need only implement the media over which L2TP is to operate to pass traffic to one or more LNSs. It may tunnel any protocol carried within PPP. The LAC initiates incoming calls and receives outgoing calls. Analogous to the Layer 2 Forwarding (L2F) network access server (NAS).

2. Terminal Identifier.

tie-line

Specifies a connection that emulates a temporary tie-line trunk to a private branch exchange (PBX). A tie-line connection is set up automatically for each call and is torn down when the call ends.

tie-line trunk

PBX trunk that is *tied* to a line, which leads to a remote PBX; typically used for private telephone networks, although the tie-line connection often is carried on telco-provided lines.

Tier 1 Authentication

Call authentication using DNIS and CLID.

Tier 2 Authentication

User authentication using User ID and Password.

Time

Time Protocol (RFC 868). Time clients obtain the current time-of-day within one-second resolution from Time servers.

time domain reflectometer

See *TDM Cross-Connect*.

time-division multiplexing

See *TDM*.

timeout

Event that occurs when one network device expects to hear from another network device within a specified period of time, but does not. The resulting timeout usually results in a retransmission of information or the dissolving of the session between the two devices.

TINA-C

Telecommunications Information Networking Architecture. Services applications built in C and corresponding to TINA guidelines.

TIOS

Transpath Input Output Subsystem.

tip and ring

Pair of wires that provide the electrical connection between a telephone set and the local CO. The more electrically positive side of a POTS (Plain Old Telephone Service) telephone line (0 V) is the tip. It is designated internationally as black, but in the U.S. it often is designated green. It's counterpart is the ring (the more negative side, 52 v), which is designated red internationally and in the U.S. When tip and ring are terminated on a connecting block, tip usually goes on top (left) and ring usually goes on the bottom (right).

TIRKS

Trunk Information Record Keeping System. Bellcore OSS that provides record keeping for interoffice trunk facilities. See also *OSS*.

TL-1

Transaction Language One. Bellcore term for intelligent network elements.

TLAP

TokenTalk Link Access Protocol. Link-access protocol used in a TokenTalk network. TLAP is built on top of the standard Token Ring data-link layer.

TLS

Transport Layer Security. A future IETF protocol to replace SSL.

TM

traffic management.

TMN

Telecommunication Management Network. ITU-T generic model for transporting and processing OAM&P information for a telecommunications network. See also *OAM&P*.

TMSI

Wireless—temporary mobile subscriber identity. A temporary code used to identify an MS, which is assigned using encryption after the MS is identified to the HLR.

TN3270

Terminal emulation software that allows a terminal to appear to an IBM host as a 3278 Model 2 terminal.

TNotify

Time Notify. Specifies how often SMT initiates neighbor notification broadcasts. See also *SMT*.

token

Frame that contains control information. Possession of the token allows a network device to transmit data onto the network. See also *token passing*.

token bucket

A formal definition of a rate of transfer. A token bucket has three components: a burst size, a mean rate, and a time interval (Tc). A token bucket is used to manage a device that regulates the of a flow.

token bus

LAN architecture using token passing access over a bus topology. This LAN architecture is the basis for the IEEE 802.4 LAN specification. See also *IEEE 802.4*.

token passing

Access method by which network devices access the physical medium in an orderly fashion based on possession of a small frame called a token. Contrast with *circuit switching* and *contention*. See also *token*.

Token Ring

Token-passing LAN developed and supported by IBM. Token Ring runs at 4 or 16 Mbps over a ring topology. Similar to IEEE 802.5. See also *IEEE 802.5*, *ring topology*, and *token passing*.

token storage key

Cryptography key used to protect data that is stored on a security token.

TokenTalk

Apple Computer's data-link product that allows an AppleTalk network to be connected by Token Ring cables.

TOP

Technical Office Protocol. OSI-based architecture developed for office communications.

top CA

The highest-level CA (that is, the most trusted CA) in a certification hierarchy.

topology

Physical arrangement of network nodes and media within an enterprise networking structure.

ToS

type of service. See *CoS*.

TP

termination point. A termination point is a transmission line or path that terminates or originates on an NE, such as the Line Card unit on the Cisco ONS 15900.

TP0

Transport Protocol Class 0. OSI connectionless transport protocol for use over reliable subnetworks. Defined by ISO 8073.

TP4

Transport Protocol Class 4. OSI connection-based transport protocol. Defined by ISO 8073.

TPD

Mechanism used by some ATM switches that allows the remaining cells supporting an AAL5 frame to be discarded when one or more cells of that AAL5 frame are dropped. This avoids sending partial AAL5 frames through the ATM network when they have to be retransmitted by the sender. Compare with *EPD*.

TPPMD

twisted-pair physical medium dependent.

TR VLAN

Token Ring virtual LAN.

traceroute

Program available on many systems that traces the path a packet takes to a destination. It is used mostly to debug routing problems between hosts. A traceroute protocol is also defined in RFC 1393.

traffic analysis

Inference of information from observable characteristics of data flow(s), even when the data is encrypted or otherwise not directly available. Such characteristics include the identities and locations of the source(s) and destination(s), and the presence, amount, frequency, and duration of occurrence.

traffic engineering

Techniques and processes that cause routed traffic to travel through the network on a path other than the one that would have been chosen if standard routing methods were used.

traffic engineering tunnel

A label-switched tunnel that is used for traffic engineering. Such a tunnel is set up through means other than normal Layer 3 routing; it is used to direct traffic over a path different from the one that Layer 3 routing could cause the tunnel to take.

traffic flow confidentiality

Data confidentiality service to protect against traffic analysis.

traffic management

Techniques for avoiding congestion and shaping and policing traffic. Allows links to operate at high levels of utilization by scaling back lower-priority, delay-tolerant traffic at the edge of the network when congestion begins to occur.

Traffic path

Route of a bearer channel that carries voice traffic.

traffic policing

Process used to measure the actual traffic flow across a given connection and compare it to the total admissible traffic flow for that connection. Traffic outside of the agreed upon flow can be tagged (where the CLP bit is set to 1) and can be discarded en route if congestion develops. Traffic policing is used in ATM, Frame Relay, and other types of networks. Also known as admission control, permit processing, rate enforcement, and UPC. See also *tagged traffic*.

traffic profile

Set of CoS attribute values assigned to a given port on an ATM switch. The profile affects numerous parameters for data transmitted from the port, including rate, cell drop eligibility, transmit priority, and inactivity timer. See also *CoS*.

traffic shaping

Use of queues to limit surges that can congest a network. Data is buffered and then sent into the network in regulated amounts to ensure that the traffic fits within the promised traffic envelope for the particular connection. Traffic shaping is used in ATM, Frame Relay, and other types of networks. Also known as metering, shaping, and smoothing.

trail

In the context of wavelength routing, a trail is the physical connection of two network ports. A single trail is equal to either an OC-48 or OC-192 wavelength between two Cisco ONS 15900s.

trailer

Control information appended to data when encapsulating the data for network transmission. Compare with *header*.

transaction

Result-oriented unit of communication processing.

transaction services layer

Layer 7 in the SNA architectural model. Represents user application functions, such as spreadsheets, word-processing, or e-mail, by which users interact with the network. Corresponds roughly with the *application layer* of the OSI reference model. See also *data flow control layer*, *data link control layer*, *path control layer*, *physical control layer*, *presentation services layer*, and *transaction services layer*.

transceiver

See *MAU*.

transceiver cable

See *AUI*.

transfer syntax

Description on an instance of a data type that is expressed as a string of bits.

transform

The list of operations done on a dataflow to provide data authentication, data confidentiality, and data compression. For example, one transform is the ESP protocol with the HMAC-MD5 authentication algorithm; another transform is the AH protocol with the 56-bit DES encryption algorithm and the ESP protocol with the HMAC-SHA authentication algorithm.

transit bridging

Bridging that uses encapsulation to send a frame between two similar networks over a dissimilar network.

transit node

A transit node interfaces with other nodes and transfers packet data.

translational bridging

Bridging between networks with dissimilar MAC sublayer protocols. MAC information is translated into the format of the destination network at the bridge. Contrast with *encapsulation bridging*.

transmission control layer

Layer 4 in the SNA architectural model. This layer is responsible for establishing, maintaining, and terminating SNA sessions, sequencing data messages, and controlling session level flow. Corresponds to the *transport layer* of the OSI model. See also *data flow control layer*, *data-link control layer*, *path control layer*, *physical control layer*, *presentation services layer*, and *transaction services layer*.

Transmission Control Protocol

See *TCAP*.

transmission group

In SNA routing, one or more parallel communications links treated as one communications facility.

transmission link

See *link*.

TRANSPAC

Major packet data network run by France Telecom.

transparent bridging

Bridging scheme often used in Ethernet and IEEE 802.3 networks in which bridges pass frames along one hop at a time based on tables associating end nodes with bridge ports. Transparent bridging is so named because the presence of bridges is transparent to network end nodes. Contrast with *SRB*.

TransPath component

The part of your signaling controller system where signals are identified, converted, and routed.

transport layer

Layer 4 of the OSI reference model. This layer is responsible for reliable network communication between end nodes. The transport layer provides mechanisms for the establishment, maintenance, and termination of virtual circuits, transport fault detection and recovery, and information flow control. Corresponds to the *transmission control layer* of the SNA model. See also *application layer*, *data link layer*, *network layer*, *physical layer*, *PQ*, and *session layer*.

trap

Message sent by an SNMP agent to an NMS, a console, or a terminal to indicate the occurrence of a significant event, such as a specifically defined condition or a threshold that was reached. See also *alarm* and *event*.

trap door

Hidden computer flaw known to an intruder, or a hidden computer mechanism (usually software) installed by an intruder, who can activate the trap door to gain access to the computer without being blocked by security services or mechanisms.

TRBRF

Token Ring Bridge Relay Function. Internal multiport bridge function used to interconnect rings to form a domain.

TRCRF

Token Ring Concentrator Relay Function. A logical ring domain formed by defining groups of ports that have the same ring number.

tree topology

LAN topology similar to a bus topology, except that tree networks can contain branches with multiple nodes. Transmissions from a station propagate the length of the medium and are received by all other stations. Compare with *bus topology*, *ring topology*, and *star topology*.

TRIP

See *TRIP* (Token Ring Interface Processor) in the “Cisco Systems Terms and Acronyms” section.

triple-wrapped

In S/MIME, data that has been signed with a digital signature, and then encrypted, and then signed again. [RFC 2634]

TRISL

Token Ring Inter-Switch Link.

Trojan horse

Computer program that appears to have a useful function but also has a hidden and potentially malicious function that evades security mechanisms, sometimes by exploiting legitimate authorizations of a system entity that invokes the program.

trunk

1. Physical and logical connection between two switches across which network traffic travels. A backbone is composed of a number of trunks.
2. In telephony, a phone line between two COs or between a CO and a PBX.

trust level

Characterization of a standard of security protection to be met by a computer system.

trusted certificate

Certificate upon which a certificate user relies as being valid without the need for validation testing; especially a public-key certificate that is used to provide the first public key in a certification path.

trusted key

Public key upon which a user relies; especially a public key that can be used as the first public key in a certification path.

trusted process

System process that has privileges that enable it to affect the state of system security and that can, therefore, through incorrect or malicious execution, violate the system’s security policy.

trusted subnetwork

Subnetwork containing hosts and routers that trust each other not to engage in active or passive attacks. (There also is an assumption that the underlying communication channels—for example, telephone lines or a LAN—are protected from attack by some means.)

trust-file PKI

Non-hierarchical PKI in which each certificate user has a local file (which is used by application software) of public-key certificates that the user trusts as starting points (that is, roots) for certification paths.

TSAPI

Telephony Services Application Programming Interface. A call control model developed by Lucent and Novell.

TSI

1. transport session identifier. Unique identifier used by both the PGM Host and PGM Router Assist features to identify each individual session.

2. transmitting subscriber information. Frame that can be sent by the caller with the caller's telephone number that can be used to screen calls.

TUD

trunk up-down. Protocol used in ATM networks that monitors trunks and detects when one goes down or comes up. ATM switches send regular test messages from each trunk port to test trunk line quality. If a trunk misses a given number of these messages, TUD declares the trunk down. When a trunk comes back up, TUD recognizes that the trunk is up, declares the trunk up, and returns it to service. See also *trunk*.

TULIP

TCP and UDP over Lightweight IP. Proposed protocol for running TCP and UDP applications over ATM.

TUNIP

TCP and UDP over Nonexistent IP. Proposed protocol for running TCP and UDP applications over ATM.

tunnel

Secure communication path between two peers, such as two routers.

tunneling

Architecture that is designed to provide the services necessary to implement any standard point-to-point encapsulation scheme. See also *encapsulation*.

TUV

German test agency that certifies products to European safety standards.

twisted pair

Relatively low-speed transmission medium consisting of two insulated wires arranged in a regular spiral pattern. The wires can be shielded or unshielded. Twisted pair is common in telephony applications and is increasingly common in data networks. See also *STP* and *UTP*.

two-way simultaneous

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

TYMNET

See *XStream*.

Type 1 operation

IEEE 802.2 (LLC) connectionless operation.

Type 2 operation

IEEE 802.2 (LLC) connection-oriented operation.

Type A traffic

Transactional traffic. Typically, this is conversational traffic exchanged between a host and its ASCUs for terminal queries and responses for another form of Type A traffic is called host-to-host traffic.

Type B traffic

Messaging traffic. Typically, this is e-mail application traffic in IATA-compliant format.

type of service

See *ToS*.

