GLOSSARY

A

alert — A syslog or SNMP message notifying an operator or administrator of a problem.

API — Application programming interface. Specification of function-call conventions that defines an interface to a service.

audit log — A log file containing a summary of major changes in the RDU database. This includes changes to system defaults, technology defaults, DHCP criteria, and Class of Service.

B

BAC — An integrated solution for data-over-cable service providers to configure and manage broadband modems, and enable and administer subscriber self-registration and activation. BAC is a scalable product capable of supporting millions of devices.

bandwidth — The difference between the highest and lowest frequencies available for network signals. The term is also used to describe the rated throughput capacity of a given network medium or protocol.

broadband — Transmission system that multiplexes multiple independent signals onto one cable. In Telecommunications terminology, any channel having a bandwidth greater than a voice-grade channel (4 kHz). In LAN terminology, a coaxial cable on which analog signaling is used.

Broadband Access Center — *See* BAC.

Broadband Access Center for Cable — *See* BAC.

C

cable modem termination system — *See* CMTS.

CableHome — A CableLabs initiative to develop a standardized infrastructure to let cable operators extend high-quality, value-added services to the home local area network.

caching — A form of replication in which information learned during a previous transaction is used to process later transactions.

chaddr — DHCP client hardware (MAC) address. Sent in an RFC 2131 packet between the client and server.

client class A Network Registrar feature that provides differentiated services to users that are connected to a common network. The client class is used in the BAC DHCP criteria to provide differentiated DHCP services to devices.

CMTS Cable modem termination system. A CMTS is a component that exchanges digital signals with cable modems on a cable network. Either a router or bridge, typically at the cable headend. Usually located in the cable provider's local office.

CMTS shared secret *See* shared secret.

configuration file A file containing configuration parameters for the device to be provisioned.

configuration generation The process of generating configurations at the RDU for devices and distributing them to the DPE. The configuration instructions are cached by the DPE and informed about action needed to be performed on the CPE.

CPE Customer premises equipment. Terminating equipment, such as telephones, computers, and modems, supplied and installed at a customer location.

D

Data Over Cable Service Interface Specification *See* DOCSIS.

DHCP Dynamic Host Configuration Protocol. Designed by the Internet Engineering Task Force (IETF) to reduce the amount of configuration that is required when using TCP/IP. DHCP allocates IP addresses to hosts. It also provides all the parameters that hosts require to operate and exchange information on the Internet network to which they are attached.

DNS Domain Name System. Handles the growing number of Internet users. DNS translates names, such as www.cisco.com, into Internet Protocol (IP) addresses, such as 192.168.40.0, so that computers can communicate with each other.

DOCSIS Data over cable service interface specification. DOCSIS defines functionality in cable modems involved in high-speed data distribution over cable television system networks.

DOCSIS Shared Secret Shared secret for communication between DOCSIS devices in a BAC deployment.

domain Portion of the DNS naming hierarchy tree that refers to general groupings of networks based on organization type or geography. The hierarchy is root, top- or first-level, and second-level domain.

DPE Device provisioning engine. The DPE caches device information. These distributed servers automatically synchronize with the RDU to obtain the latest configurations and provide BAC scalability.

DSTB Digital set-top box. A device that enables a television to become a user interface to the Internet and to receive and decode digital television signals.

dual stack A mode of DOCSIS cable modem operation in which the modem is manageable simultaneously via both IPv4 and IPv6 addresses.

DUID DHCP Unique Identifier. The primary device identifier in DHCPv6.

dynamic configuration file A dynamically created configuration file that uses template files to provide greater flexibility and security in the provisioning process.

E

eMTA Embedded MTA. A single node that contains both an MTA and a cable modem.

eSAFE embedded Service Application Functional Entity. A mixed-IP mode device that consists of an IPv6 embedded cable modem and an IPv4 eMTA.

F

FQDN Fully qualified domain name. FQDN is the full name of a system, rather than just its hostname. For example, cisco is a hostname and www.cisco.com is an FQDN.

G

giaddr DHCP gateway (relay agent) IP address. Sent in an RFC 2131 packet between the client and server.

I

Internet Protocol (IP, IPv4) Network layer for the TCP/IP protocol suite. Internet Protocol (version 4) is a connectionless, best-effort packet switching protocol. Defined in RFC 791.

IP address An IP address is a 32-bit number that identifies each sender or receiver of information that is sent in packets across the Internet.

IPv6 IP version 6. Replacement for the current version of IP (version 4). IPv6 includes support for flow ID in the packet header, which can be used to identify flows. Formerly called IPng (next generation).

K

KDC A key distribution center that implements limited Kerberos functionality. Used in the provisioning of PacketCable MTAs.

Kerberos A secret-key network authentication protocol that uses a choice of cryptographic algorithms for encryption and a centralized key database for authentication.

L

lease query Process by which a relay agent can request lease (and reservation) data directly from a DHCP server in addition to gleaning it from client/server transactions.

M

MAC address Standardized data link layer address that is required for every port or device that connects to a LAN. Other devices in the network use these addresses to locate specific ports in the network and to create and update routing tables and data structures. MAC addresses are 6 bytes long and are controlled by IEEE, Also known as hardware address, MAC-layer address, or physical address. Compare with *network address*.

MSO Multiple system operator. A company that operates more than one cable TV or broadband system.

MTA Multimedia Terminal Adapter. Equipment at the customer end of a broadband (PacketCable) network.

multiple service operator *See* MSO.

N

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 routeable address space. This is also known as Network Address Translation.

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

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

Network Time Protocol *See* NTP.

NR Cisco Network Registrar. A software product that provides IP addresses, configuration parameters, and DNS names to DOCSIS cable modems and PCs, based on network and service policies.

NTP Network Time Protocol. NTP is a protocol designed to synchronize server clocks over a network.

O

option, DHCP DHCP configuration parameter and other control information stored in the options field of a DHCP message. DHCP clients determine what options get requested and sent in a DHCP packet. Network Registrar allows for creating option definitions as well as the option sets to which they belong.

Organizationally Unique Identifier (OUI) Assigned by the IEEE to identify the owner or ISP of a VPN.

P

PacketCable A CableLabs initiative for interoperable interface specifications to deliver advanced, real-time multimedia services over a two-way cable network. Built on top of cable modem infrastructure to enable a wide range of multimedia services, such as IP telephony, multimedia conferencing, interactive gaming, and general multimedia applications.

provisioning API A series of BAC functions that programs can use to make the operating system perform various functions.

provisioning groups Groupings of devices with a defined set of associated DPE and DHCP servers, based on either network topology or geography.

publishing The process of publishing provisioning information to an external datastore in real time. Publishing plug-ins must be developed to write data to a datastore.

R

RDU Regional distribution unit. The primary server in the BAC provisioning system, it manages generation of device configurations, processes all API requests, and manages the BAC system.

realm The logical network served by a single Kerberos database and a set of Key Distribution Centers.

realm names By convention, realm names are generally all uppercase letters, to differentiate the realm from the Internet domain. *See* realm.

redundancy In internetworking, the duplication of devices, services, or connections so that, in the event of a failure, the redundant devices, services, or connections can perform the work of those that failed.

relay agent Device that connects two or more networks or network systems. In DHCP, a router on a virtual private network that is the IP helper for the DHCP server.

S

selection tags Selection tags associated with Network Registrar scopes. These tags define the clients and client classes associated with a scope.

shared secret A character string used to provide secure communication between two servers or devices.

single stack A mode of DOCSIS cable modem operation in which the modem operates with only one IP address type (v4 or v6) at any given time.

static configuration files These files are used as a configuration file for a device. For example, a static configuration file called *gold.cm* would identify the gold DOCSIS class of service. BAC treats this file type like any other binary file.

T

template files Text files that contain DOCSIS or PacketCable MTA options and values that, when used in conjunction with a DOCSIS or PacketCable MTA Class of Service, provide dynamic file generation.

TFTP Trivial File Transfer Protocol. Simplified version of File Transfer Protocol (FTP) that allows files to be transferred from one computer to another over a network.

TLV Type-Length-Value. A tuple within a DOCSIS or PacketCable configuration file.

tuple In programming languages, a tuple is an ordered set of values. Common uses for the tuple as a data type are: for passing a string of parameters from one program to another, or to represent a set of value attributes in a relational database.

Type Length Value *See* TLV.

U

uBr Universal Broadband Router (such as the Cisco 7246 or 7223), which is the Cisco router implementation of a DOCSIS CMTS.

V

VoIP VoIP is the ability to make telephone calls and send faxes over IP-based data networks with a suitable quality of service (QoS) and superior cost/benefit.

W

watchdog A watchdog is a daemon process that is used to monitor, stop, start, and restart BAC component processes such as the RDU, Tomcat, and the SNMP agent.

X

XGCP A Gateway Control Protocol used to pass data between networks. This includes M (for Media) GCP and S (Simple) GCP.