



Glossary

active RP—The RP that controls the system, runs the routing protocols, and presents the system management interface.

APS—Automatic Protection Switching. SONET switching mechanism that routes traffic from working lines to protect them in case of a line card failure or fiber cut.

ARP—Address Resolution Protocol. Internet protocol used to map an IP address to a MAC address.

ARPANET—Advanced Research Projects Agency Network. In 1969, the United States Department of Defense commissioned ARPANET to research networking, and the Internet revolution was born. The evolution of ARPANET into the Internet required new technologies and techniques, such as TCP/IP, Domain Name System (DNS), IP routing protocols, and the World Wide Web. The delivery of these new technologies and services allowed the ARPANET to grow into the Internet we know today as a vital part of the global economy.

ATM—Asynchronous Transfer Mode

BGP—Border Gateway Protocol. An interdomain routing protocol designed for the global Internet. Exterior border gateway protocols (EBGPs) communicate among different autonomous systems. Interior border gateway protocols (IBGPs) communicate among routers within a single autonomous system.

Cisco Express Forwarding (CEF)—An advanced Layer 3 switching technology for IP. CEF optimizes network performance and scalability for networks with large and dynamic traffic patterns, such as those associated with the Internet, Web-based applications, and interactive sessions.

CGM—Cisco GSR Manager. An element management system for managing Cisco 12000 Series Internet Routers.

CLI—command-line interface

CSC/SFC—Clock Scheduler Card and Switch Fabric Card

Cutover—See switchover.

dCEF—Distributed CEF

DLCI—Data Link Connection Identifier. Value that specifies a PVC or SVC in a Frame Relay network.

DPT—Dynamic Packet Transfer. A resilient packet ring technology designed to deliver scalable Internet service, reliable IP-aware optical transport, and simplified network operations. Principally for metropolitan area applications, DPT-based solutions allow service providers to cost-effectively scale and distribute their Internet and IP services across a reliable optical packet ring infrastructure. DPT is based on Spatial Reuse Protocol (SRP), a Cisco-developed MAC-layer protocol for ring-based packet internetworking.

DRAM—Dynamic Random-Access Memory

EBGP—Exterior Border Gateway Protocol. EBGPs communicate among different network domains.

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EHSA—Enhanced High System Availability. Redundancy method wherein the standby RP suspends its initialization midway through the startup process. See also RPR.

FIB—Forwarding Information Base. The FIB is conceptually similar to a routing table or information base. It maintains a mirror image of the forwarding information contained in the IP routing table. When routing or topology changes occur in the network, the IP routing table is updated and those changes are reflected in the FIB. The FIB maintains next-hop address information based on the information in the IP routing table and is maintained by the router.

FRU—Field Replaceable Unit

FSU—Fast Software Upgrade. A mechanism to upgrade the Cisco IOS software images on the RPs and line cards without reinitializing the entire system.

Gigabit Route Processor (GRP)—Serves as the console for the Cisco 12000 Series Internet Router, handles environmental monitoring for the entire system, and provides the line cards with routing table updates.

GRP—Gigabit Route Processor

GSR—Gigabit Switch Router. Also known as Cisco 12000 Series Internet Router.

HA—High Availability

HDLC—High-Level Data Link Control

Hot swap—The feature formerly known as OIR.

HSU—Hitless Software Upgrade. Provides continued service for planned upgrade situations.

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.

LANE—LAN Emulation

LC—Line card

LCP—Link Control Protocol. PPP provides LCP to establish, configure, and test the data link connection. This makes PPP more versatile, allowing it to be portable to a wide variety of environments. PPP uses LCP to automatically agree upon encapsulation format options, handle varying limits on packet size, detect a looped-back link or other common misconfiguration errors, and terminate the link. Other optional facilities provided authenticate the identity of the peer on the link, and determine when a link is functioning properly and when it is failing.

Line cards—Provide connection between the router and the network and are available in a variety of network media types (based on your order). Line cards communicate with each other and with the GRP through the switch fabric.

Mbus—Maintenance Bus

MIB—Management Information Base. Database of network management information that is used and maintained by a network management protocol such as SNMP. The value of a MIB object can be changed or retrieved using SNMP commands, usually through a network management system (NMS). MIB objects are organized in a tree structure that includes public (standard) and private (proprietary) branches.

NetFlow—NetFlow technology efficiently provides the metering base for a key set of applications including network traffic accounting, usage-based network billing, network planning, network monitoring, outbound marketing, and data mining capabilities for both service provider and enterprise customers. Cisco provides a set of NetFlow applications to collect NetFlow export data, perform data volume reduction and post-processing, and provide end-user applications with easy access to NetFlow data. Cisco is currently working with a number of partners to provide customers with comprehensive

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solutions for NetFlow-based billing, planning, and monitoring. NetFlow also provides the measurement base for Cisco's Internet Quality of Service (QoS) initiatives. NetFlow captures the traffic classification or precedence associated with each flow, enabling differentiated charging based on Quality of Service.

NSF—Non-Stop Forwarding. The ability of a router to continue to forward traffic toward a router that may be recovering from a transient failure. Also, the ability of a router recovering from a transient failure in the control plane to continue correctly forwarding traffic sent to it by a peer.

NVRAM—Non-volatile RAM

OIR—Online Insertion and Removal. Feature that permits the addition, replacement, or removal of cards without interrupting the system power, entering console commands, or causing other software or interfaces to shut down. Also called "hot swapping" or "power-on servicing".

OSPF—Open Shortest Path First. Link-state, hierarchical IGP routing algorithm proposed as a successor to RIP in the Internet community. OSPF features include least-cost routing, multipath routing, and load balancing.

PCMCIA—Personal Computer Memory Card International Association. PCMCIA is an organization that developed a standard for small, credit card-sized devices, some of which are used as Flash memory disks in Cisco routers.

PIM—Protocol Independent Multicast

POS—Packet-over-SONET interface. Enables core routers to send native IP packets directly over SONET/SDH frames.

Primary RP—Term previously used for active RP.

PRP—Performance Route Processor

PSAR—Packet Segmentation and Reassembly

PVC—Permanent Virtual Circuit

RAM—Random-Access Memory

RIP—Routing Internet Protocol. IGP supplied with UNIX BSD systems. The most common IGP in the Internet. RIP uses hop count as a routing metric.

ROM—Read-Only Memory

RP—Route Processor

RPF—Return Path Forwarding

RPR—Resilient Packet Ring. See DPT.

RPR—Route Processor Redundancy. In RPR, line cards are reset on switchover and line card software is reloaded.

RPR+—Route Processor Redundancy Plus. An enhancement to RPR/EHSA in which the standby RP is fully initialized. An RPR+ switchover does not involve line card reset or line card software reload.

RSVP—Resource Reservation Protocol. RSVP is a network-control protocol that enables Internet applications to obtain special qualities of service (QoS) for their data flows.

Secondary RP—Term previously used for standby RP

SIMM—Single Inline Memory Module

SNMP—Simple Network Management Protocol. Network management protocol used almost exclusively in TCP/IP networks. SNMP provides a means to monitor and control network devices, and to manage configurations, statistics collection, performance, and security.

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SSO—Stateful switchover. SSO provides protection for network edge devices with redundant processors (RPs) that represent a single point of failure in the network design, and where an outage might result in loss of service for customers.

standby RP—The RP that waits in case the active or primary RP fails.

SVC—Switched Virtual Circuit

Switch fabric—The circuitry that carries the user traffic between line cards or between the GRP and a line card.

Switchover—An event in which system control and routing protocol execution is transferred from a failed processor to a standby RP.

VC—Virtual Circuit. Logical circuit created to ensure reliable communication between two network devices. A virtual circuit is defined by a VPI/VCI pair, and can be either permanent (PVC) or switched (SVC).

VCI—Virtual Circuit Identifier.

VLAN— Virtual LAN. Group of devices on one or more LANs that are configured (using management software) so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, they are extremely flexible.

VOFR—Voice over Frame Relay. Voice over Frame Relay enables a router to carry voice traffic (for example, telephone calls and faxes) over a Frame Relay network. When sending voice traffic over Frame Relay, the voice traffic is segmented and encapsulated for transit across the Frame Relay network using FRF.12 encapsulation.

VPI—Virtual Path Identifier.

VPN—Virtual Private Network. VPNs are networks deployed on a public network infrastructure that employ the same security, management, and quality of service policies applied in a private network. Benefits of using VPNs include cost savings and extending connectivity to telecommuters, mobile users, and remote offices, as well as to new constituencies, such as customers, suppliers, and partners.

VRF—Virtual Route Forwarding

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