GLOSSARY

A | B | C | D | E | F | G | H | I | K | L | M | N | O | P | R | S | U | V

A

ABR See area border router.

ACE access control entry.

ACL access control list.

address family A specific type of network addressing supported by a routing protocol. Examples include IPv4 unicast and IPv4 multicast.

adjacency Two OSPF routers that have compatible configurations and have synchronized their link-state databases.

administrative distance A rating of the trustworthiness of a routing information source. In general, the higher the value, the lower the trust rating.

area A logical division of routers and links within an OSPF domain that creates separate subdomains. LSA flooding is contained within an area.

area border router A router that connects one OSPF area to another OSPF area.

ARP Address resolution protocol. ARP discovers the MAC address for a known IPv4 address.

AS See autonomous system.

ASBR See autonomous system border router.

ASM Any Source Multicast. ASM is a PIM tree building mode.

attributes Properties of a route that are sent in BGP UPDATE messages. These attributes include the path to the advertised destination as well as configurable options that modify the best path selection process.

autonomous system A network controlled by a single technical administration entity.

autonomous system border router A router that connect a an OSPF autonomous system to an external autonomous system.

B

backup designated router See BDR.

bandwidth The available traffic capacity of a link.

BDR Backup designated router. An elected router in a multi-access OSPF network that acts as the backup if the designated router fails. All neighbors form adjacencies with the backup designated router (BDR) as well as the designated router.

BFD Bidirectional Forwarding Detection. BFD is a detection protocol that is designed to provide fast forwarding path failure detection times.

BGP Border Gateway Protocol. BGP is an interdomain or exterior gateway protocol.

BGP peer A remote BGP speaker that is an established neighbor of the local BGP speaker.

BGP speaker BGP-enabled router.

Bidir-PIM Bidirectional Protocol Independent Multicast. Bidir-PIM is a variant of the PIM suite of routing protocols for IP multicast and is an extension of the existing PIM sparse mode (PIM-SM) feature.

C

CE customer edge.

communication cost Measure of the operating cost to route over a link.

converged The point at which all routers in a network have identical routing information.

convergence See converged.

CoPP Control Plane Policing.

D

dead interval The time within which an OSPF router must receive a Hello packet from an OSPF neighbor. The dead interval is usually a multiple of the hello interval. If no Hello packet is received, the neighbor adjacency is removed.

default gateway A router to which all unroutable packets are sent. Also called the router of last resort.

delay The length of time required to move a packet from the source to the destination through the internetwork.

designated router See DR.

DHCP Dynamic Host Control Protocol.

distance vector Defines routes by distance (for example, the number of hops to the destination) and direction (for example, the next-hop router) and then broadcasts to the directly connected neighbor routers.

DNS client Domain Name System client. Communicates with DNS server to translate a hostname to an IP address.

DR Designated router. An elected router in a multi-access OSPF network that sends LSAs on behalf of all its adjacent neighbors. All neighbors establish adjacency with only the designated router and the backup designated router.

E

eBGP External Border Gateway Protocol (BGP). Operates between external systems.

EIGRP Enhanced Interior Gateway Protocol. A Cisco routing protocol that uses the Diffusing Update Algorithm to provide fast convergence and minimized bandwidth usage.

F

feasible distance The lowest calculated distance to a network destination in EIGRP. The feasibility distance is the sum of the advertised distance from a neighbor plus the cost of the link to that neighbor.

feasible successor Neighbors in EIGRP that advertise a shorter distance to the destination than the current feasibility distance.

FHRP First Hop Redundancy Protocol.

FIB Fowarding Information Base. The forwarding table on each module that is used to make the Layer 3 forwarding decisions per packet.

FNF Flexible NetFlow.

G

gateway A switch or router that forwards Layer 3 traffic from a LAN to the rest of the network.

GLBP Gateway Load Balancing Protocol. A Cisco proprietary protocol that provides high availability features to end hosts.

graceful restart A feature that allows a router to remain in the data forwarding path while a routing protocol reboots.

GRE Generic Routing Encapsulation. A tunneling protocol that can encapsulate a wide variety of protocol packet types inside IP tunnels.

H

hello interval The configurable time between each Hello packet sent by an OSPF or EIGRP router.

hello packet A special message used by OSPF or IS-IS to discover neighbors. Also acts as a keepalive messages between established neighbors.

high availability The ability of a system or component to limit or avoid network disruption when a component fails.

hold time In BGP, the maximum time limit allowed in BGP between update or keepalive messages. If this time is exceeded, the TCP connection between the BGP peers is closed.

In EIGRP, the maximum time allowed between EIGRP Hello messages. If this time is exceeded, the neighbor is declared unreachable.

hop count The number of routers that can be traversed in a route. Used by RIP.

HSRP Hot Standby Router Protocol.

I

iBGP Internal Border Gateway Protocol (BGP). Operates within an autonomous system.

ICMP Internet Control Message Protocol.

IETF RFCs Internet Engineering Task Force Request for Comments.

IGMP Internet Group Management Protocol

IGP Interior Gateway Protocol. Used between routers within the same autonomous system.

instance An independent, configurable entity, typically a protocol.

IP tunnels A method of encapsulating packets within various Internet Protocols (IP) to interconnect communications between different networks.

IPv4 Internet Protocol version 4.

IPv6 Internet Protocol version 6.

IS-IS Intermediate System to Intermediate System. An ISO interior gateway protocol.

ISSU In-Service Software Upgrade.

K

keepalive A special message sent between routing peers to verify and maintain communications between the pair.

L

LACP Link Aggregation Control Protocol.

LDP MPLS Label Distribution Protocol.

link cost An arbitrary number configured on an OSPF interface which is in shortest path first calculations.

link-state Shares information about a link and link cost to neighboring routers.

link-state advertisement See LSA.

LSA Link-state advertisement. An OSPF message to share information on the operational state of a link, link cost, and other OSPF neighbor information.

link-state database OSPF database of all LSAs received. OSPF uses this database to calculate the best path to each destination in the network.

link-state refresh The time that OSPF floods the network with LSAs to ensure all OSPF routers have the same information.

load The degree to which a network resource, such as a router, is busy.

load balancing The distribution of network traffic across multiple paths to a given destination.

M

MD5 authentication digest A cryptographic construction that is calculated based on an authentication key and the original message and sent along with the message to the destination. Allows the destination to determine the authenticity of the sender and guarantees that the message has not been tampered with during transmission.

MEC multichassis EtherChannel.

message digest A one-way hash applied to a message using a shared password and appended to the message to authenticate the message and ensure the message has not been altered in transit.

metric A standard of measurement, such as the path bandwidth, that is used by routing algorithms to determine the optimal path to a destination.

MPLS Multi-Protocol Label Switching. MPLS is a packet-forwarding technology that uses labels to make data forwarding decisions.

MSDP Multicast Source Discovery Protocol

MTU Maximum transmission unit. The largest packet size that a network link transmits without fragmentation.

N

NDP Neighbor Discovery Protocol. The protocol used by IPv6 to find the MAC address associated with an IPv6 address.

NetFlow NetFlow is an embedded instrumentation within Cisco IOS software to characterize network operation.

network layer reachability information BGP network layer reachability information (NRLI). Contains the a list of network IP addresses and network masks for networks that are reachable from the advertising BGP peer.

next hop The next router that a packet is sent to on its way to the destination address.

NVT Nexus Validation Test.

O

OIR Online Insertion and Removal.

OSPF Open Shortest Path First. An IETF link-state protocol. OSPFv2 supports IPv4 and OSPFv3 supports IPv6.

P

path length Sum of all link costs or the hop count that a packet experiences when routed from the source to the destination.

PAgP Port Aggregation Protocol.

PIM Protocol Independent Multicast.

PIN Places in the Network. The Cisco PIN architecture addresses the differing requirements for systems design and deployment in the three principal network areas: the campus, the data center, Internet edge, and the Branch-WAN.

policy-based routing The method of using route maps to alter the route selected for a packet.

R

redistribution One routing protocol accepts route information from another routing protocol and advertises it in the local autonomous system.

Reliable Transport Protocol Responsible for guaranteed, ordered delivery of EIGRP packets to all neighbors.

reliability The dependability (usually described in terms of the bit-error rate) of each network link.

rendezvous point See RP.

RIB Routing Information Base. Maintains the routing table with directly connected routes, static routes, and routes learned from dynamic unicast routing protocols.

Route Policy Manager The process that controls route maps and policy-based routing.

Routing Information Base See RIB.

route map A construct used to map a route or packet based on match criteria and optionally alter the route or packet based on set criteria. Used in route redistribution and policy-based routing.

RP rendezvous point. An RP is a router in a multicast network domain that acts as a shared root for a multicast shared tree.

route summarization A process that replaces a series of related, specific routes in a route table with a more generic route.

router ID A unique identifier used by routing protocols. If not manually configured, the routing protocol selects the highest IP address configured on the system.

S

SPF algorithm Shortest Path First algorithm. Dijkstra's algorithm used by OSPF to determine the shortest route through a network to a particular destination.

split horizon Routes learned from an interface are not advertised back along the interface they were learned on, preventing the router from seeing its own route updates.

split horizon with poison reverse Routes learned from an interface are set as unreachable and advertised back along the interface they were learned on, preventing the router from seeing its own route updates.

SSM Source Specific Multicast. SSM is an extension of IP multicast where datagram traffic is forwarded to receivers from only those multicast sources to which the receivers have explicitly joined.

SSO/NSF Stateful Switchover with Nonstop Forwarding.

static route A manually configured route.

STP Spanning Tree Protocol.

stub area An OSPF area that does not allow AS External (type 5) LSAs.

stub router A router that has no direct connection to the main network and which routes to that network using a known remote router.

SVI switched virtual interface.

U

U6FIB Unicast IPv6 Forwarding Information Base.

UDLD Unidirectional Link Detection.

UFIB Unicast Forwarding Information Base for IPv4.

U6RIB Unicast IPv6 Routing Information Base. The unicast routing table that gathers information from all routing protocols and updates the forwarding information base for each module.

URIB Unicast Routing Information Base for IPv4. The unicast routing table that gathers information from all routing protocols and updates the forwarding information base for each module.

V

VDC virtual device context. Used to split a physical system into secure, independent, logical systems.

virtualization A method of making a physical entity act as multiple, independent logical entities.

vPC virtual PortChannel. A vPC allows links that are physically connected to two different devices to appear as a single PortChannel to a third device.

VRF virtual routing and forwarding. A method used to create separate, independent Layer 3 entities within a system, or an instance of that method.

VRF-lite VRF-lite (MPLS Multi-VRF) provides the ability to configure and maintain more than one instance of a routing and forwarding table within the same customer edge (CE) router.

VRRP Virtual Router Redundancy Protocol.

VSS virtual switching system. A VSS is network system virtualization technology that pools multiples witches into one virtual switch.