



GLOSSARY

A

ABR	See area border router .
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 .
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.

C

- 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](#).

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**F****G**

- gateway** A switch or router that forwards Layer 3 traffic from a LAN to the rest of the network.
- graceful restart** A feature that allows a router to remain in the data forwarding path while a routing protocol reboots.

H

- hello packet** A special message used by OSPF to discover neighbors. Also acts as a keep alive messages between established neighbors.
- high availability** The ability of a system or component to limit or avoid network disruption when a component fails.

I

- ICMP** Internet Control Message Protocol (ICMP)
- IETF RFCs** Internet Engineering Task Force Request for Comments.
- 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.

K

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

L

- 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

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.
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.
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.
next hop	The next router that a packet is sent to on its way to the destination address.
NSSA	Not-So-Stubby-Area. Limits AS external LSAs in an OSPF area.

O

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

path length	Sum of all link costs or the hop count that a packet experiences when routed from the source to the destination.
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.
reliability	The dependability (usually described in terms of the bit-error rate) of each network link.

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