IGP - Things to Remember

1. Routing occurs by finding the longest match in the routing table and by recursing to the outgoing interface. 2. We can debug the transiting traffic by enabling the process switching. But we don't need to turn on process switching for the router's locally originated traffic or for the traffic destined for the router. 3. "*ip default-gateway*" command only works when IP routing is off. 4. In classless routing, when a default route exists, and no specific match is made when comparing the destination of the packet and the routing table, the default route is used. 5. In classful routing, when a default route exists, and the class A, B, or C network for the destination IP address does not exist at all in the routing table, the default route is used. If any part of that classful network exists in the routing table, but the packet does not match any of the existing subnets of that classful network, the router does not use the default route and thus discards the packet. 6. A proxy-arp enabled router replies to an ARP request with its own MAC address, only if (1) the destination network or subnet is in the router's routing table, and (2) the routing table indicates that the destination is reachable via a different router interface than the one on which the ARP request was received. 7. A redirect is an IP router function. If a device has sent a packet to the router and if the router must forward the packet to a next-hop router on the same data link, the router will send a redirect to the originating device informing that it can reach the next-hop router directly. 8. When a static route is configured to reference a next-hop address, the destination address will be entered into the routing table pointing to the specified next-hop address with an AD of 1. Again, when a static route is configured to reference an exit interface instead of a next-hop address, the destination address will be entered into the routing table as directly connected but also with an AD of 1. Lots of books and documentations mentioned static route pointing to an interface has an AD of 0 which is completely wrong. 9. When routing to a next-hop address the router performs layer 2 to layer 3 resolution on the next-hop address. When routing to an interface the router performs layer 2 to layer 3 resolution on the final destination. 10. A static route that point to an interface is considered in the routing table to be connected. So if it is included in the ?*network ?*' command under RIP or EIGRP, it will be advertised regardless of the ?*redistribute static*' command. With OSPF, static routes that point to an interface are not advertised unless a ?*redistribute static*' command is specified. 11. A distance vector router sends its entire route table, but it only sends the table to directly connected neighbors. A link state router sends only information about its directly connected links, but it floods the information throughout the networking area. 12. Simple split horizon does not send route information back to the source of the route information. Split horizon with poisoned reverse sends the information back to the source but sets the metric to unreachable. 13. An implicit deny exists at the end of every route map. Routes that pass through a redistribution route map without a match are not redistributed, and packets that pass through a policy route map without a match are sent to the normal routing process. 14. In PBR, the ?*set ip next-hop*? command verifies the existence of the next hop specified in the routing table, and (1) if exists, the packet is policy routed to the next hop, (2) if does not exist, the normal routing table is used to forward the packet. 15. In PBR, the ?*set ip default next-hop*? command verifies the existence of the destination IP address in the routing table, and (1) if exists, the packet is not policy routed, instead the packet is forwarded based on the routing table, (2) if does not exist, the command policy routes the packet by sending it to the specified next hop. 16. In PBR, the ?*set ip next-hop verify-availability*? command can be used in the following two ways by (1) verifying next hop reachability using Cisco Discovery Protocol (CDP) or (2) with object tracking using Internet Control Message Protocol (ICMP) ping. 17. Extended ACLs when called as distribute-list in IGP have a different meaning than in redistribution or as in BGP. In BGP and redistribution the ?source? field in the ACL represents the network address, and the ?destination? represents the subnet mask. In IGP distribute-list the ?source? field in the ACL matches the update source of the route, and the ?destination? field represents the network address; e.g. ?*access-list 100 deny ip host 155.1.0.3 host 155.1.7.0*?. 18. In tunnel interfaces, recursive routing error occurs when the tunnel destination is learned by the tunnel itself. 19. To make ODR to work, CDP must be enabled on the interfaces. For ODR, the administrative distance is 160; the metric of the routes is 1. Because ODR routes are always from a hub router to a stub router, the metric (hop count) will never be more than 1. 20. The line protocol status of frame-relay physical interface doesn't depend on the PVC status. So if the ?*backup interface*? command is configured on a frame-relay physical interface, the change of PVC status will not trigger the backup interface to come up. A GRE tunnel (with keepalive) can be used to solve this issue. 21. An outbound access-list will not affect a packet sourced by the router itself. 22. With RIP, ?*distribute-list ?*? command filters incoming/outgoing routing updates. With EIGRP, ?*distribute-list ?*? command filters routing updates to/from the EIGRP topology table. With OSPF, the ?*distribute-list ?*? command filters routes (not LSAs) from entering into local RIB from OSPF database; so it can be used only for inbound filtering, because filtering any outbound OSPF information would mean filtering LSAs, not routes. 23. ?*passive-interface ?*? command only disables sending of routing updates. The passive interface will still be advertised by other non-passive interfaces. 24. The IP Event Dampening feature will function on a subinterface but cannot be configured on only the subinterface. Only the primary interface can be configured with this feature. Primary interface configuration

is applied to all subinterfaces by default. By Zakir A. Khan * IGP - Things to Remember . Pdf | Download