

Refer to the exhibit. How does the router manage traffic to 192.168.12.16?

- It load-balances traffic between all three routes.
- It chooses the EIGRP route because it has the lowest administrative distance.
- It chooses the OSPF route because it has the longest prefix inclusive of the destination address.
- It selects the RIP route because it has the longest prefix inclusive of the destination address.

Which WAN topology provides a combination of simplicity, quality, and availability?

- point-to-point
- full mesh
- hub-and-spoke
- partial mesh

What is the function of a controller in controller-based networking?

- It is the card on a core router that maintains all routing decisions for a campus.
- It is a pair of core routers that maintain all routing decisions for a campus.
- It centralizes the data plane for the network.
- It serves as the centralized management point of an SDN architecture.

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A network engineer must create a diagram of a multivendor network. Which command must be configured on the Cisco devices so that the topology of the network is allowed to be mapped?

- Device(config)#**lldp run**
- Device(config)#**cdp run**
- Device(config-if)#**cdp enable**
- Device(config)#**flow-sampler-map topology**

How will Link Aggregation be implemented on a Cisco Wireless LAN Controller?

- One functional physical port is needed to pass client traffic.
- The EtherChannel must be configured in "mode active".
- To pass client traffic, two or more ports must be configured.
- When enabled, the WLC bandwidth drops to 500 Mbps.

Which action must be taken to assign a global unicast IPv6 address on an interface that is derived from the MAC address of that interface?

- configure a stateful DHCPv6 server on the network
- disable the EUI-64 bit process
- enable SLAAC on an interface
- explicitly assign a link-local address

A wireless administrator has configured a WLAN; however, the clients need access to a less congested 5-GHz network for their voice quality. Which action must be taken to meet the requirement?

- enable Band Select
- enable DTIM
- enable RX-SOP
- enable AAA override

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Which API is used in controller-based architectures to interact with edge devices?

- [x] southbound
- [ ] northbound
- [ ] underlay
- [ ] overlay

```
R1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
       U - per-user static route, o - ODR
Gateway of last resort is not set
C    1.0.0.0/8 is directly connected, Loopback0
     10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
O       10.0.1.3/32 [110/100] via 10.0.1.3, 00:39:08, Serial0
C       10.0.1.0/24 is directly connected, Serial0
O       10.0.1.5/32 [110/5] via 10.0.1.50, 00:39:08, Serial0
O       10.0.1.4/32 [110/10] via 10.0.1.4, 00:39:08, Serial0
```

Refer to the exhibit. What is the next hop address for traffic that is destined to host 10.0.1.5?

- [ ] 10.0.1.4
- [ ] Loopback 0
- [ ] 10.0.1.3
- [x] 10.0.1.50

Which IPv6 address block sends packets to a group address rather than a single address?

- [ ] 2000::/3
- [ ] FC00::/7
- [ ] FE80::/10
- [x] FF00::/8

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Which two values or settings must be entered when configuring a new WLAN in the Cisco Wireless LAN Controller GUI? (Choose two.)

- [x] SSID
- [x] profile name
- [ ] IP address of one or more access points
- [ ] management interface settings
- [ ] QoS settings

Which IPv6 address type provides communication between subnets and is unable to route on the Internet?

- ( ) link-local
- (•) unique local
- ( ) multicast
- ( ) global unicast

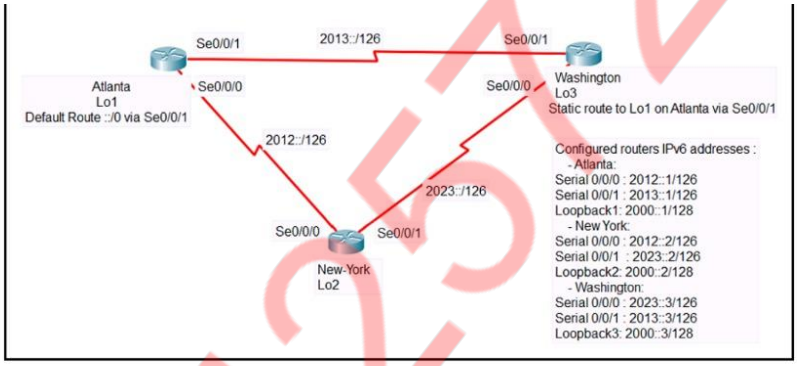
An engineer must configure interswitch VLAN communication between a Cisco switch and a third-party switch. Which action should be taken?

- ( ) configure DSCP
- (•) configure IEEE 802.1q
- ( ) configure ISL
- ( ) configure IEEE 802.1p

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What is a design element when deploying an 802.11b wireless infrastructure?

- configuring access points to provide clients with a maximum of 5 Mbps
- allocating nonoverlapping channels to access points that are in close physical proximity to one another
- disabling TPC so that access points negotiate signal levels with their attached wireless devices
- setting the maximum data rate to 54 Mbps on the Cisco Wireless LAN Controller



Refer to the exhibit. An engineer is configuring the New York router to reach the Lo1 interface of the Atlanta router using interface Se0/0/0 as the primary path. Which two commands must be configured on the New York router so that it reaches the Lo1 interface of the Atlanta router via Washington when the link between New York and Atlanta goes down? (Choose two.)

- [x] ipv6 route 2000::1/128 2012::1
- [ ] ipv6 route 2000::1/128 2012::1 5
- [ ] ipv6 route 2000::1/128 2012::2
- [ ] ipv6 route 2000::1/128 2023::2 5
- [x] ipv6 route 2000::1/128 2023::3 5

```
R1#show ip route
#output suppressed

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C       172.16.1.128/25 is directly connected, GigabitEthernet1/1/0
C       192.168.12.0/24 is directly connected, FastEthernet0/0
C       192.168.13.0/24 is directly connected, FastEthernet0/1
C       192.168.14.0/24 is directly connected, FastEthernet1/0
C       172.16.16.1 is directly connected, Loopback1
    192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
0       192.168.10.0.24 [110/2] via 192.168.14.4, 00:02:01, FastEthernet1/0
0       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:52, FastEthernet0/1
0       192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:01, FastEthernet1/1
D       192.168.10.1/32 [90/52778] via 192.168.12.2, 00:03:44, FastEthernet0/0
0*E2    0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

Refer to the exhibit. If R1 receives a packet destined to 172.16.1.1, to which IP address does it send the packet?

- 192.168.12.2
- 192.168.13.3
- 192.168.14.4
- 192.168.15.5

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A network administrator enabled port security on a switch interface connected to a printer. What is the next configuration action in order to allow the port to learn the MAC address of the printer and insert it into the table automatically?

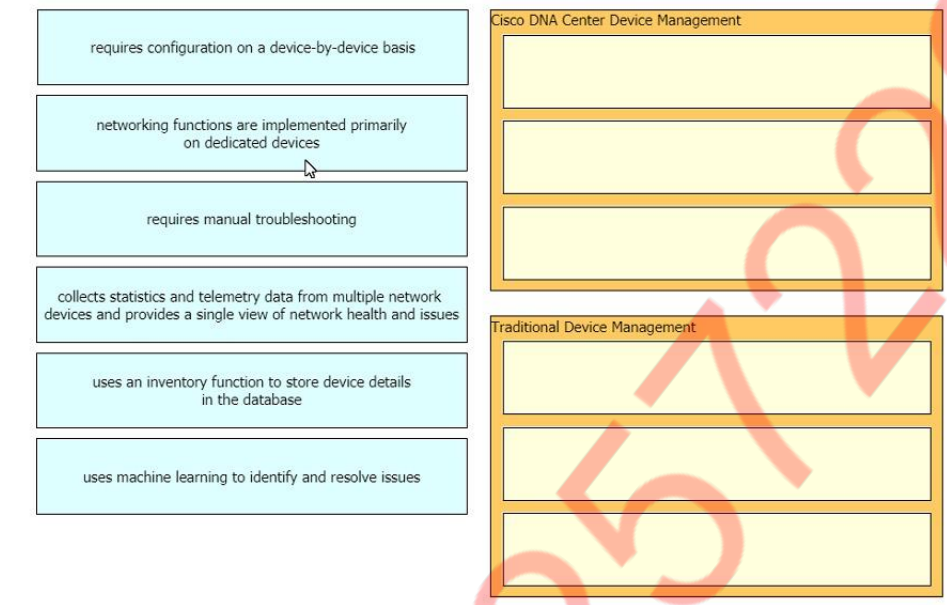
- enable dynamic MAC address learning
- implement static MAC addressing
- [x] enable sticky MAC addressing
- implement auto MAC address learning

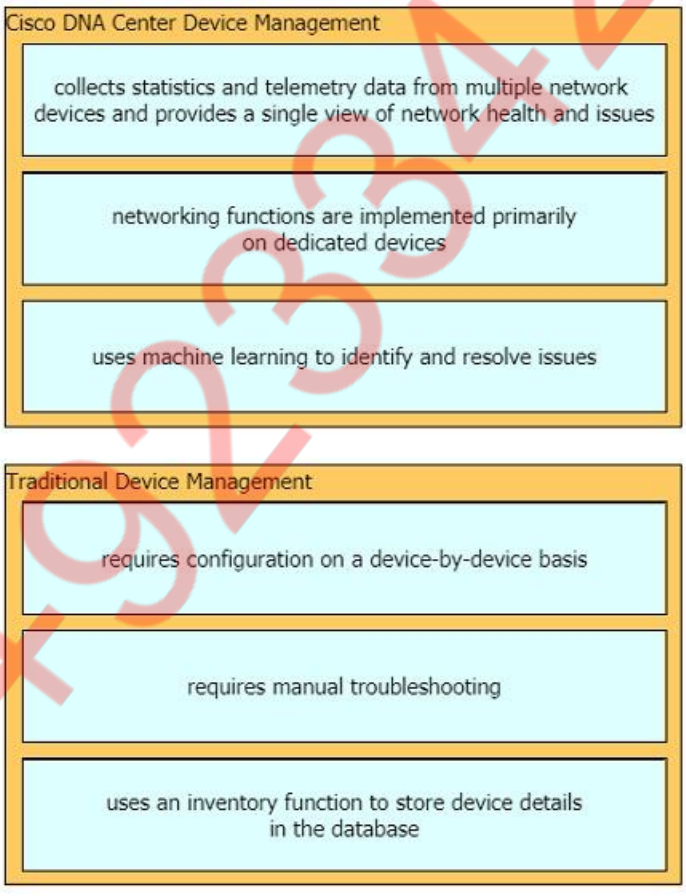
Drag and drop the TCP/IP protocols from the left onto their primary transmission protocols on the right.



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Drag and drop the descriptions of device management from the left onto the management types on the right.





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```
[root@HostTest ~]# ip route
default via 192.168.1.193 dev eth1  proto static
192.168.1.0/26 dev eth1  proto kernel  scope link  src 192.168.1.200  metric 1

[root@HostTest ~]# ip addr show eth1
eth1:  mtu 1500 qdisc pfifo_fast qlen 1000
   link/ether 00:0C:22:83:79:A3 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.200/26 brd 192.168.1.255 scope global eth1
   inet6 fe80::20c:29ff:fe89:79b3/64 scope link
   valid_lft forever preferred_lft forever
```

Refer to the exhibit. Drag and drop the networking parameters from the left onto the correct values on the right.

default gateway	00:0C:22
host IP address	00:0C:22:83:79:A3
NIC MAC address	192.168.1.193
NIC vendor OUI	192.168.1.200
subnet mask	255.255.255.192

NIC vendor OUI

NIC MAC address

default gateway

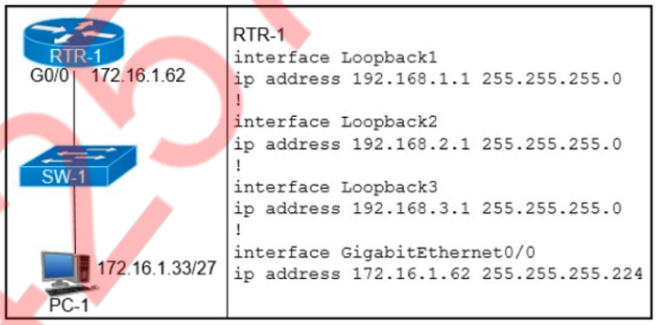
host IP address

subnet mask

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What is the same for both copper and fiber interfaces when using SFP modules?

- They offer reliable bandwidth up to 100 Mbps in half duplex mode.
- They accommodate single-mode and multi-mode in a single module.
- They support an inline optical attenuator to enhance signal strength.
- **They provide minimal interruption to services by being hot-swappable.**



Refer to the exhibit. Which configuration for RTR-1 denies SSH access from PC-1 to any RTR-1 interface and allows all other traffic?

- access-list 100 deny tcp host 172.16.1.33 any eq 22
  access-list 100 permit ip any any

  interface GigabitEthernet0/0
  ip access-group 100 in
- **access-list 100 deny tcp host 172.16.1.33 any eq 22**
  access-list 100 permit ip any any

  line vty 0 15
  access-class 100 in
- access-list 100 deny tcp host 172.16.1.33 any eq 23
  access-list 100 permit ip any any

  interface GigabitEthernet0/0
  ip access-group 100 in
- access-list 100 deny tcp host 172.16.1.33 any eq 23
  access-list 100 permit ip any any

  line vty 0 15
  access-class 100 in

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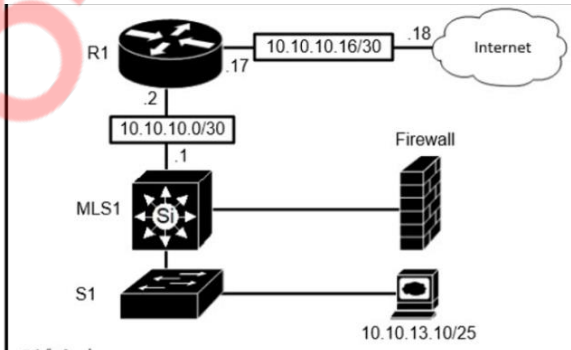
What are two characteristics of a controller-based network? (Choose two.)

- [x] It moves the control plane to a central point.
- [x] It uses northbound and southbound APIs to communicate between architectural layers.
- [ ] The administrator can make configuration updates from the CLI.
- [ ] It decentralizes the control plane, which allows each device to make its own forwarding decisions.
- [ ] It uses Telnet to report system issues.

```
R1#show ip interface brief
Interface                  IP-Address      OK? Method Status                Protocol
FastEthernet0/0            unassigned      YES NVRAM  administratively down down
GigabitEthernet1/0         192.168.0.1     YES NVRAM  up                    up
GigabitEthernet2/0         10.10.1.10      YES manual up                    up
GigabitEthernet3/0         10.10.10.20     YES manual up                    up
GigabitEthernet4/0         unassigned      YES NVRAM  administratively down down
Loopback0                  172.16.15.10    YES manual
```

Refer to the exhibit. What does router R1 use as its OSPF router-ID?

- 10.10.1.10
- 10.10.10.20
- [x] 172.16.15.10
- 192.168.0.1




```
R1#sh ip ro
Gateway of last resort is 10.10.10.18 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C       10.10.10.0/30 is directly connected, FastEthernet0/1
O       10.10.13.0/25 [110/6576] via 10.10.10.1, 06:58:21, FastEthernet0/1
C       10.10.10.16/30 is directly connected, FastEthernet0/24
O       10.10.13.144/28 [110/110] via 10.10.10.1, 06:58:21, FastEthernet0/1
B*   0.0.0.0/0 [20/0] via 10.10.10.18, 01:17:58
```

Refer to the exhibit. Which route type is configured to reach the Internet?

- host route
- network route
- default route
- floating static route

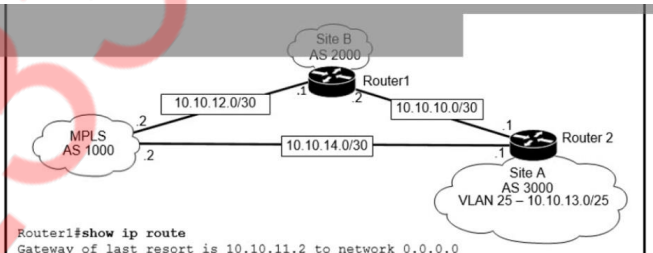
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Which function is performed by the collapsed core layer in a two-tier architecture?

- marking interesting traffic for data policies
- applying security policies
- attaching users to the edge of the network
- [x] enforcing routing policies

What is the difference between AAA authentication and authorization?

- Authentication controls the system processes a user accesses, and authorization logs the activities the user initiates.
- Authentication identifies a user who is attempting to access a system, and authorization validates the user's password.
- Authentication verifies a username and password, and authorization handles the communication between the authentication agent and the user database.
- [x] Authentication identifies and verifies a user who is attempting to access a system, and authorization controls the tasks the user performs.




```
Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0
     10.0.0.0/8 is variably subnetted, 8 subnets, 4 masks
C       10.10.10.0/28 is directly connected, GigabitEthernet0/0
C       10.10.11.0/30 is directly connected, FastEthernet2/0
O       10.10.13.0/25 [110/2] via 10.10.10.1, 00:00:17, GigabitEthernet0/0
O       10.10.13.128/28 [110/2] via 10.10.10.1, 00:33:38, GigabitEthernet0/0
O       10.10.13.144/28 [110/2] via 10.10.10.1, 00:33:38, GigabitEthernet0/0
O       10.10.13.160/29 [110/2] via 10.10.10.1, 00:33:38, GigabitEthernet0/0
O       10.10.13.208/29 [110/2] via 10.10.10.1, 00:33:39, GigabitEthernet0/0
O       10.10.13.252/30 [110/2] via 10.10.10.1, 00:33:39, GigabitEthernet0/0
S*   0.0.0.0/0 [1/0] via 10.10.11.2
```

Refer to the exhibit. An engineer is bringing up a new circuit to the MPLS provider on the Gi0/1 interface of Router1. The new circuit uses eBGP and learns the route to VLAN25 from the BGP path. What is the expected behavior for the traffic flow for route 10.10.13.0/25?

- [x] Route 10.10.13.0/25 learned via the Gi0/0 interface remains in the routing table.
- Route 10.10.13.0/25 is updated in the routing table as being learned from interface Gi0/1.
- Traffic to 10.10.13.0/25 is asymmetrical.
- Traffic to 10.10.13.0/25 is load balanced out of multiple interfaces.

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The **service password-encryption** command is entered on a router. What is the effect of this configuration?

- protects the VLAN database from unauthorized PC connections on the switch
- prevents network administrators from configuring clear-text passwords
- encrypts the password exchange when a VPN tunnel is established
- restricts unauthorized users from viewing clear-text passwords in the running configuration

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```
R1#config t
R1(config)# interface gi1/1
R1(config-if)# ip address 192.168.0.1 255.255.255.0

R1(config)# router bgp 65000
R1(config-router)# neighbor 192.168.0.2 remote-as 65001
R1(config-router)# network 10.1.1.0 mask 255.255.255.0

R1(config)# router ospf 1
R1(config)# router-id 1.1.1.1
R1(config)# network 192.168.0.1 0.0.0.0 area 0
R1(config)# network 10.1.1.0 0.0.0.255 area 0

R1(config)# router eigrp 1
R1(config)# eigrp router-id 1.1.1.1
R1(config)# network 10.1.1.0 0.0.0.255
R1(config)# network 192.168.0.1 0.0.0.0

R2#config t
R2(config)# interface gi1/1
R2(config-if)# ip address 192.168.0.2 255.255.255.0

R2#config t
R2(config)# router bgp 65001
R2(config-router)# neighbor 192.168.0.1 remote-as 65000

R2(config)# router ospf 1
R2(config)# router-id 2.2.2.2
R2(config)# network 192.168.1.2 0.0.0.0 area 0

R2(config)# router eigrp 1
R2(config)# eigrp router-id 1.1.1.1
R2(config)# network 192.168.0.1 0.0.0.0

R2(config)# ip route 10.1.1.0 255.255.255.0 192.168.0.1
```

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Refer to the exhibit. Router R2 is configured with multiple routes to reach network 10.1.1.0/24 from router R1. Which path is chosen by router R2 to reach the destination network 10.1.1.0/24?

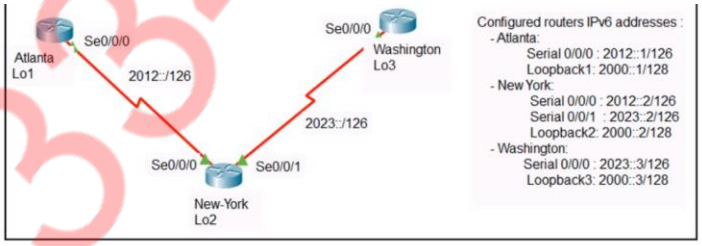
- EIGRP
- eBGP
- OSPF
- static

What is a difference between local AP mode and FlexConnect AP mode?

- Local AP mode causes the AP to behave as if it were an autonomous AP.
- Local AP mode creates two CAPWAP tunnels per AP to the WLC.
- FlexConnect AP mode bridges the traffic from the AP to the WLC when local switching is configured.
- FlexConnect AP mode fails to function if the AP loses connectivity with the WLC.

Which mechanism carries multicast traffic between remote sites and supports encryption?

- IPsec over ISATAP
- ISATAP
- GRE
- GRE over IPsec



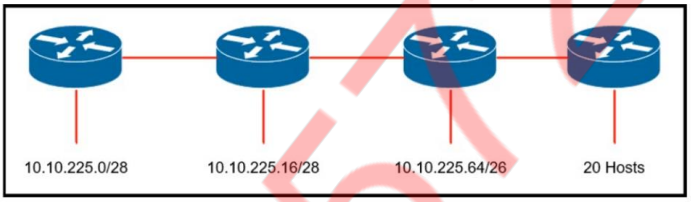
Refer to the exhibit. An engineer configured the New York router with static routes that point to the Atlanta and Washington sites. Which command must be configured on the Atlanta and Washington routers so that both sites are able to reach the loopback2 interface on the New York router?

- ipv6 route ::/0 2000::2
- ipv6 route ::/0 Serial 0/0/1
- ip route 0.0.0.0 0.0.0.0 Serial 0/0/0
- ipv6 route 0/0 Serial 0/0/0
- ipv6 route ::/0 Serial 0/0/0

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An engineer must configure a WLAN using the strongest encryption type for WPA2- PSK. Which cipher fulfills the configuration requirement?

- TKIP
- [x] AES
- RC4
- WEP



Refer to the exhibit. An engineer must add a subnet for a new office that will add 20 users to the network. Which IPv4 network and subnet mask combination does the engineer assign to minimize wasting addresses?

- 10.10.225.48 255.255.255.240
- 10.10.225.32 255.255.255.240
- 10.10.225.48 255.255.255.224
- [x] 10.10.225.32 255.255.255.224

A device detects two stations transmitting frames at the same time. This condition occurs after the first 64 bytes of the frame is received. Which interface counter increments?

- runt
- collision
- CRC
- [x] late collision

By default, how does EIGRP determine the metric of a route for the routing table?

- It uses a reference bandwidth and the actual bandwidth of the connected link to calculate the route metric.
- [x] It uses the bandwidth and delay values of the path to calculate the route metric.
- It uses a default metric of 10 for all routes that are learned by the router.
- It counts the number of hops between the receiving and destination routers and uses that value as the metric.

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An engineer is configuring NAT to translate the source subnet of 10.10.0.0/24 to any one of three addresses: 192.168.3.1, 192.168.3.2, or 192.168.3.3. Which configuration should be used?

- enable
  configure terminal
  ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
  access-list 1 permit 10.10.0.0 0.0.0.255
  ip nat outside destination list 1 pool mypool
  interface g1/1
  ip nat inside
  interface g1/2
  ip nat outside

- enable
  configure terminal
  ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
  route-map permit 10.10.0.0 255.255.255.0
  ip nat outside destination list 1 pool mypool
  interface g1/1
  ip nat inside
  interface g1/2
  ip nat outside

- enable
  configure terminal
  ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
  access-list 1 permit 10.10.0.0 0.0.0.254
  ip nat inside source list 1 pool mypool
  interface g1/1
  ip nat inside
  interface g1/2
  ip nat outside

- enable
  configure terminal
  ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
  access-list 1 permit 10.10.0.0 0.0.0.255
  ip nat inside source list 1 pool mypool
  interface g1/1
  ip nat inside
  interface g1/2
  ip nat outside

```
cisco_ospf_vrf {"R1 default":
   ensure => 'present',
   auto_cost => '100',
}
```

Refer to the exhibit. Which type of configuration is represented in the output?

- Ansible
- Puppet
- Chef
- JSON

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Why was the RFC 1918 address space defined?

- (●) conserve public IPv4 addressing
- ( ) reduce instances of overlapping IP addresses
- ( ) support the NAT protocol
- ( ) preserve public IPv6 address space

```
SW1#sh lacp neighbor
Flags:  S - Device is requesting Slow LACPDUs
        F - Device is requesting Fast LACPDUs
        A - Device is in Active mode       P - Device is in Passive mode

Channel group 35 neighbors

Partner's information:

                  LACP port                        Admin  Oper   Port    Port
Port      Flags   Priority  Dev ID          Age    key    Key    Number  State
Et1/0     SP      32768     aabb.cc80.7000   8s    0x0    0x23   0x101   0x3C
Et1/1     SP      32768     aabb.cc80.7000   8s    0x0    0x23   0x102   0x3C
```

Refer to the exhibit. Based on the LACP neighbor status, in which mode is the SW1 port channel configured?

- ( ) passive
- ( ) mode on
- (●) active
- ( ) auto

A user configured OSPF and advertised the Gigabit Ethernet interface in OSPF. By default, to which type of OSPF network does this interface belong?

- (●) point-to-point
- ( ) nonbroadcast
- ( ) point-to-multipoint
- ( ) broadcast

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Which two conditions must be met before SSH operates normally on a Cisco IOS switch? (Choose two.)

- [ ] Telnet must be disabled on the switch.
- [ ] A console password must be configured on the switch.
- [x] The switch must be running a k9 (crypto) IOS image.
- [ ] IP routing must be enabled on the switch.
- [x] The **ip domain-name** command must be configured on the switch.

How does HSRP provide first hop redundancy?

- (•) It uses a shared virtual MAC and a virtual IP address to a group of routers that serve as the default gateway for hosts on a LAN.
- ( ) It load-balances traffic by assigning the same metric value to more than one route to the same destination in the IP routing table.
- ( ) It load-balances Layer 2 traffic along the path by flooding traffic out all interfaces configured with the same VLAN.
- ( ) It forwards multiple packets to the same destination over different routed links in the data path.

Which benefit does controller-based networking provide versus traditional networking?

- ( ) provides an added layer of security to protect from DDoS attacks
- ( ) combines control and data plane functionality on a single device to minimize latency
- ( ) moves from a two-tier to a three-tier network architecture to provide maximum redundancy
- (•) allows configuration and monitoring of the network from one centralized point

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When a switch receives a frame for a known destination MAC address, how is the frame handled?

- flooded to all ports except the one from which it originated
- forwarded to the first available port
- broadcast to all ports
- [x] sent to the port identified for the known MAC address

What are two reasons for an engineer to configure a floating static route? (Choose two.)

- [ ] to support load balancing via static routing
- [ ] to control the return path of traffic that is sent from the router
- [x] to automatically route traffic on a secondary path when the primary path goes down
- [ ] to route traffic differently based on the source IP of the packet
- [x] to enable fallback static routing when the dynamic routing protocol fails

```
SiteA#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
  Hardware is BUILT-IN-EPA-8x10G, address is 780c.f02a.db91 (bia 780a.f02b.db91)
  Description: Connection to SiteB
  Internet address is 10.10.10.1/30
  MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
     reliability 166/255, txload 1/255, rxload 1/255
  Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
  5 minute input rate 264797000 bits/sec, 26672 packets/sec
  5 minute output rate 122464000 bits/sec, 15724 packets/sec

SiteB#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
  Hardware is BUILT-IN-EPA-8x10G, address is 780c.f02c.db26 (bia 780c.f02c.db26)
  Description: Connection to SiteA
  Internet address is 10.10.10.2/30
  MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
  5 minute input rate 122464000 bits/sec, 15724 packets/sec
  5 minute output rate 264797000 bits/sec, 26672 packets/sec
```

Refer to the exhibit. Shortly after SiteA was connected to SiteB over a new single-mode fiber path, users at SiteA report intermittent connectivity issues with applications hosted at SiteB. What is the cause of the intermittent connectivity issue?

- [x] High usage is causing high latency.
- Interface errors are incrementing.
- An incorrect SFP media type was used at SiteA.
- The sites were connected with the wrong cable type.

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Which event has occurred if a router sends a notice level message to a syslog server?

- A TCP connection has been torn down.
- An ICMP connection has been built.
- An interface line has changed status.
- A certificate has expired.

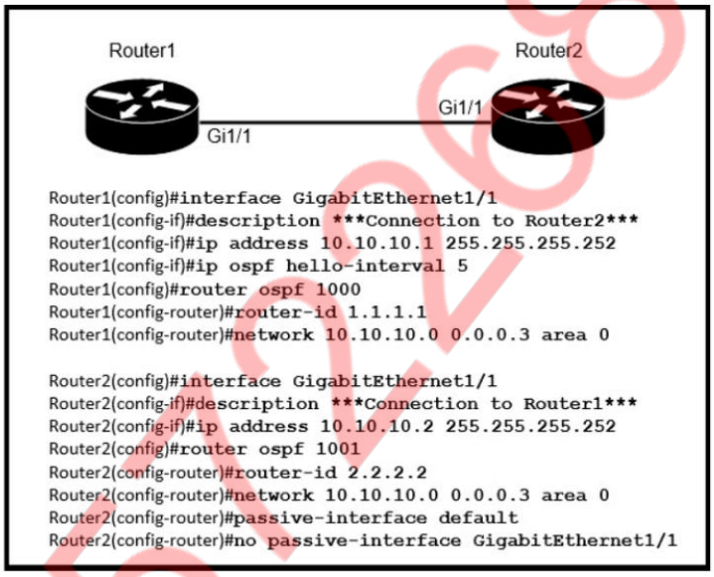
Which two primary drivers support the need for network automation? (Choose two.)

- [ ] eliminating training needs
- [x] providing a single entry point for resource provisioning
- [ ] reducing hardware footprint
- [x] policy-driven provisioning of resources
- [ ] increasing reliance on self-diagnostics and self-healing

How does CAPWAP communicate between an access point in local mode and a WLC?

- The access point must be connected to the same switch as the WLC.
- The access point must not be connected to the wired network, as it would create a loop.
- The access point has the ability to link to any switch in the network, assuming connectivity to the WLC.
- The access point must directly connect to the WLC using a copper cable.

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```
Router1(config)#interface GigabitEthernet1/1
Router1(config-if)#description ***Connection to Router2***
Router1(config-if)#ip address 10.10.10.1 255.255.255.252
Router1(config-if)#ip ospf hello-interval 5
Router1(config)#router ospf 1000
Router1(config-router)#router-id 1.1.1.1
Router1(config-router)#network 10.10.10.0 0.0.0.3 area 0

Router2(config)#interface GigabitEthernet1/1
Router2(config-if)#description ***Connection to Router1***
Router2(config-if)#ip address 10.10.10.2 255.255.255.252
Router2(config)#router ospf 1001
Router2(config-router)#router-id 2.2.2.2
Router2(config-router)#network 10.10.10.0 0.0.0.3 area 0
Router2(config-router)#passive-interface default
Router2(config-router)#no passive-interface GigabitEthernet1/1
```

Refer to the exhibit. After the configuration is applied, the two routers fail to establish an OSPF neighbor relationship. What is the reason for the problem?

- ○ The OSPF router IDs are mismatched.
- ○ The network statement on Router1 is misconfigured.
- ◉ Router2 is using the default hello timer.
- ○ The OSPF process IDs are mismatched.

What is a benefit of VRRP?

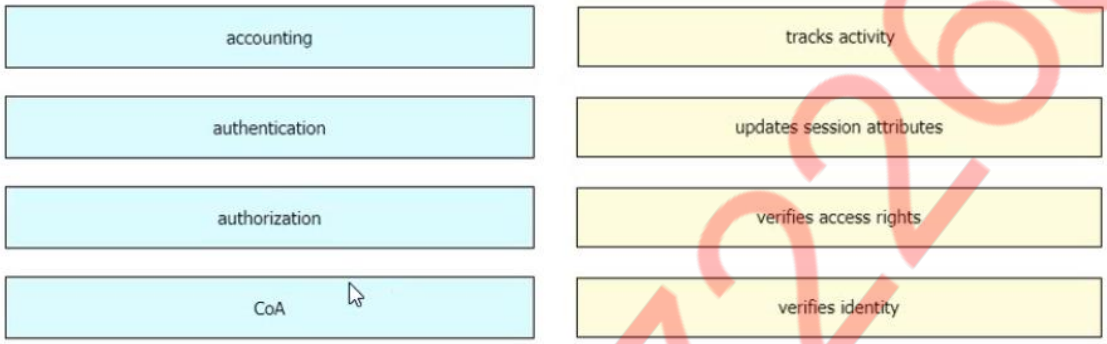
- ○ It allows neighbors to share routing table information between each other.
- ○ It prevents loops in a Layer 2 LAN by forwarding all traffic to a root bridge, which then makes the final forwarding decision.
- ◉ It provides the default gateway redundancy on a LAN using two or more routers.
- ○ It provides traffic load balancing to destinations that are more than two hops from the source.

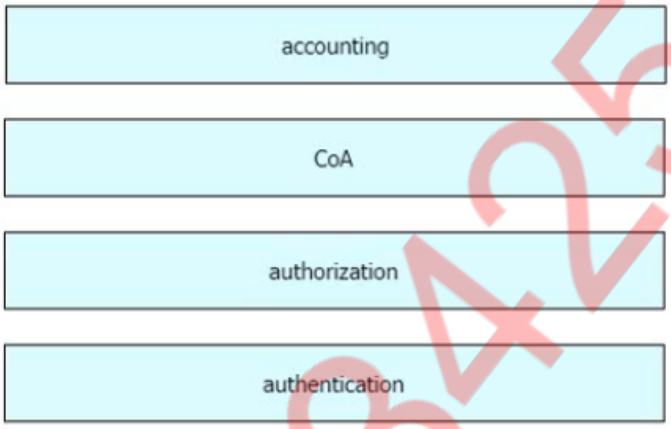
Which two capabilities of Cisco DNA Center make it more extensible as compared to traditional campus device management? (Choose two.)

- ☑ SDKs that support interaction with third-party network equipment
- ☐ modular design that is upgradable as needed
- ☐ customized versions for small, medium, and large enterprises
- ☐ adapters that support all families of Cisco IOS software
- ☑ REST APIs that allow for external applications to interact natively

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Drag and drop the AAA terms from the left onto the descriptions on the right.





Which command on a port enters the forwarding state immediately when a PC is connected to it?

- switch(config-if)#**spanning-tree portfast trunk**
- switch(config)#**spanning-tree portfast default**
- switch(config-if)#**no spanning-tree portfast**
- switch(config)#**spanning-tree portfast bpduguard default**

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Which protocol requires authentication to transfer a backup configuration file from a router to a remote server?

- TFTP
- DTP
- FTP
- SMTP

A network administrator must enable DHCP services between two sites. What must be configured for the router to pass DHCPDISCOVER messages on to the server?

- a DHCP Relay Agent
- DHCP Binding
- DHCP Snooping
- a DHCP Pool

A port security violation has occurred on a switch port due to the maximum MAC address count being exceeded. Which command must be configured to increment the security-violation count and forward an SNMP trap?

- switchport port-security violation access
- switchport port-security violation protect
- switchport port-security violation restrict
- switchport port-security violation shutdown

When a WLAN with WPA2 PSK is configured in the Wireless LAN Controller GUI, which format is supported?

- unicode
- base64
- ASCII
- decimal

An engineer configured an OSPF neighbor as a designated router. Which state verifies the designated router is in the proper mode?

- Init
- Exchange
- Full
- 2-way

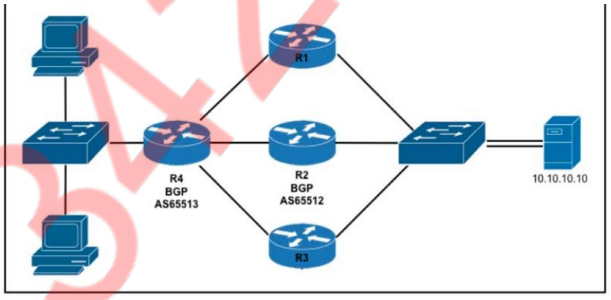
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A wireless administrator has configured a WLAN; however, the clients need access to a less congested 5-GHz network for their voice quality. Which action must be taken to meet the requirement?

- [x] enable Band Select
- [ ] enable DTIM
- [ ] enable RX-SOP
- [ ] enable AAA override

Which IPv6 address block sends packets to a group address rather than a single address?

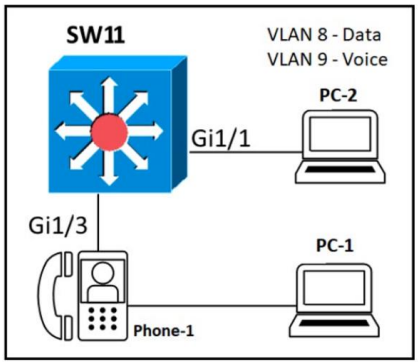
- [ ] 2000::/3
- [ ] FC00::/7
- [ ] FE80::/10
- [x] FF00::/8



Refer to the exhibit. Router R4 is dynamically learning the path to the server. If R4 is connected to R1 via OSPF Area 20, to R2 via BGP, and to R3 via EIGRP 777, which path is installed in the routing table of R4?

- [ ] the path through R1, because the OSPF administrative distance is 110
- [ ] the path through R3, because the EIGRP administrative distance is lower than OSPF and BGP
- [ ] the path through R2, because the IBGP administrative distance is 200
- [x] the path through R2, because the EBGP administrative distance is 20

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Refer to the exhibit. An administrator must configure interfaces Gi1/1 and Gi1/3 on switch SW11. PC-1 and PC-2 must be placed in the Data VLAN, and Phone-1 must be placed in the Voice VLAN. Which configuration meets these requirements?

```
interface gigabitethernet1/1
 switchport mode access
 switchport access vlan 8
 !
interface gigabitethernet1/3
 switchport mode access
 switchport voice vlan 8
 switchport access vlan 9
```

```
interface gigabitethernet1/1
 switchport mode access
 switchport access vlan 8
 !
interface gigabitethernet1/3
 switchport mode access
 switchport access vlan 8
 switchport voice vlan 9
```

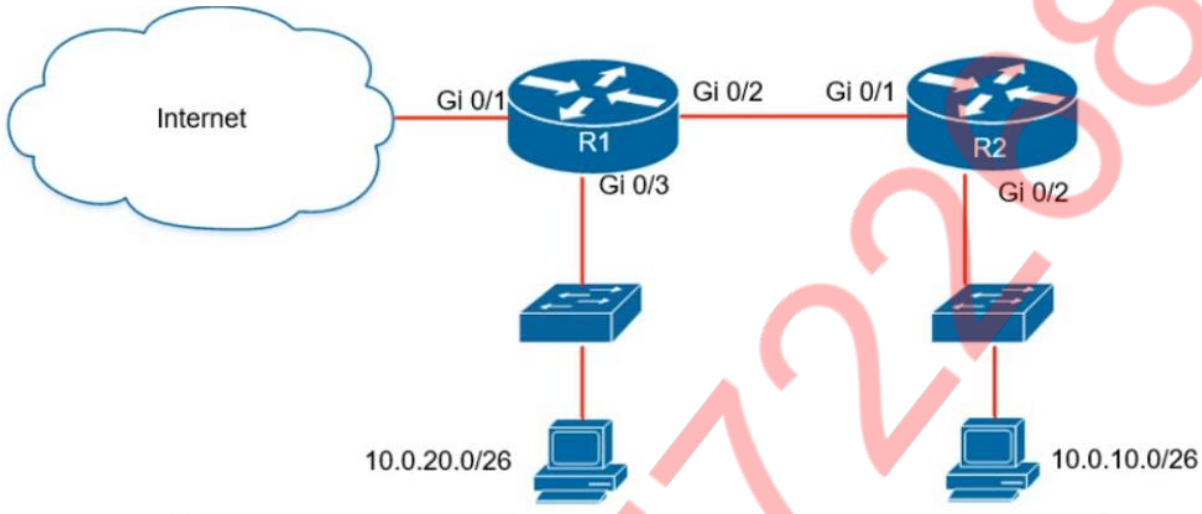
```
interface gigabitethernet1/1
 switchport mode access
 switchport access vlan 9
 !
interface gigabitethernet1/3
 switchport mode trunk
 switchport trunk vlan 8
 switchport trunk vlan 9
```

```
interface gigabitethernet1/1
 switchport mode access
 switchport access vlan 8
 !
interface gigabitethernet1/3
 switchport mode trunk
 switchport trunk vlan 8
 switchport voice vlan 9
```

In which two ways does a password manager reduce the chance of a hacker stealing a user's password? (Choose two.)

- [x] It protects against keystroke logging on a compromised device or web site.
- [ ] It automatically provides a second authentication factor that is unknown to the original user.
- [ ] It uses an internal firewall to protect the password repository from unauthorized access.
- [ ] It stores the password repository on the local workstation with built-in antivirus and anti-malware functionality.
- [x] It encourages users to create stronger passwords.

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```
R2#config t
R2(config)#access-list 101 deny tcp 10.0.20.0 0.0.0.63
10.0.10.0 0.0.0.63 eq smtp
R2(config)#access-list 101 deny tcp 10.0.20.0 0.0.0.63
10.0.10.0 0.0.0.63 eq www
R2(config)#int gi0/2
R2(config-if)# ip access-group 101 in
```

Refer to the exhibit. An extended ACL has been configured and applied to router R2. The configuration failed to work as intended. Which two changes stop outbound traffic on TCP ports 25 and 80 to 10.0.20.0/26 from the 10.0.10.0/26 subnet while still allowing all other traffic? (Choose two.)

- [ ] The ACL must be configured the Gi0/2 interface inbound on R1.
- [x] The source and destination IPs must be swapped in ACL 101.
- [ ] Add a "permit ip any any" statement to the beginning of ACL 101 for allowed traffic.
- [ ] The ACL must be moved to the Gi0/1 interface outbound on R2.
- [x] Add a "permit ip any any" statement at the end of ACL 101 for allowed traffic.

R1 has learned route 10.10.10.0/24 via numerous routing protocols. Which route is installed?

- (•) route with the lowest administrative distance
- ( ) route with the next hop that has the highest IP
- ( ) route with the shortest prefix length
- ( ) route with the lowest cost

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What is the effect when loopback interfaces and the configured router ID are absent during the OSPF Process configuration?

- The router ID 0.0.0.0 is selected and placed in the OSPF process.
- The lowest IP address is incremented by 1 and selected as the router ID.
- The highest up/up physical interface IP address is selected as the router ID.
- No router ID is set, and the OSPF protocol does not run.

What is the expected outcome when an EUI-64 address is generated?

- The seventh bit of the original MAC address of the interface is inverted.
- The characters FE80 are inserted at the beginning of the MAC address of the interface.
- The interface ID is configured as a random 64-bit value.
- The MAC address of the interface is used as the interface ID without modification.

Router R1 must send all traffic without a matching routing-table entry to 192.168.1.1. Which configuration accomplishes this task?

- R1#**config t**
  R1(config)#**ip routing**
  R1(config)#**ip default-gateway 192.168.1.1**
- R1#**config t**
  R1(config)#**ip routing**
  R1(config)#**ip route 0.0.0.0 0.0.0.0 192.168.1.1**
- R1#**config t**
  R1(config)#**ip routing**
  R1(config)#**ip route 192.168.1.1 0.0.0.0 0.0.0.0**
- R1#**config t**
  R1(config)#**ip routing**
  R1(config)#**ip route default-route 192.168.1.1**

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An engineer must configure traffic for a VLAN that is untagged by the switch as it crosses a trunk link. Which command should be used?

- switchport mode trunk
- switchport trunk allowed vlan 10
- switchport trunk native vlan 10
- switchport trunk encapsulation dot1q

Which HTTP status code is returned after a successful REST API request?

- 200
- 301
- 404
- 500

```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route

Gateway of last resort is 209.165.202.131 to network 0.0.0.0

S*    0.0.0.0/0 [1/0] via 209.165.202.131
      209.165.200.0/27 is subnetted, 1 subnets
S        209.165.200.224 [254/0] via 209.165.202.129
      209.165.201.0/27 is subnetted, 1 subnets
S        209.165.201.0 [1/0] via 209.165.202.130
```

Refer to the exhibit. Which command configures a floating static route to provide a backup to the primary link?

- ip route 209.165.200.224 255.255.255.224 209.165.202.129 254
- ip route 209.165.201.0 255.255.255.224 209.165.202.130
- ip route 0.0.0.0 0.0.0.0 209.165.200.224
- ip route 0.0.0.0 0.0.0.0 209.165.202.131

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A router running EIGRP has learned the same route from two different paths. Which parameter does the router use to select the best path?

- [x] metric
- [ ] administrative distance
- [ ] as-path
- [ ] cost

A corporate office uses four floors in a building.

- Floor 1 has 24 users.
- Floor 2 has 29 users.
- Floor 3 has 28 users.
- Floor 4 has 22 users.

Which subnet summarizes and gives the most efficient distribution of IP addresses for the router configuration?

- [ ] 192.168.0.0/26 as summary and 192.168.0.0/29 for each floor
- [x] 192.168.0.0/25 as summary and 192.168.0.0/27 for each floor
- [ ] 192.168.0.0/24 as summary and 192.168.0.0/28 for each floor
- [ ] 192.168.0.0/23 as summary and 192.168.0.0/25 for each floor

```
interface GigabitEthernet3/1/4
 switchport voice vlan 50
!
```

Refer to the exhibit. An administrator is tasked with configuring a voice VLAN. What is the expected outcome when a Cisco phone is connected to the GigabitEthernet3/1/4 port on a switch?

- [ ] The phone and a workstation that is connected to the phone do not have VLAN connectivity.
- [x] The phone sends and receives data in VLAN 50, but a workstation connected to the phone sends and receives data in VLAN 1.
- [ ] The phone sends and receives data in VLAN 50, but a workstation connected to the phone has no VLAN connectivity.
- [ ] The phone and a workstation that is connected to the phone send and receive data in VLAN 50.

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Which output displays a JSON data representation?

```
{
  "response": {
    "taskId": {};
    "url": "string"
  };
  "version": "string"
}
```

```
{
  "response": {
    "taskId": {},
    "url": "string"
  },
  "version": "string"
}
```

```
{
  "response"- {
    "taskId"- {},
    "url"- "string"
  },
  "version"- "string"
}
```

```
{
  "response", {
    "taskId", {};
    "url", "string"
  };
  "version", "string"
}
```

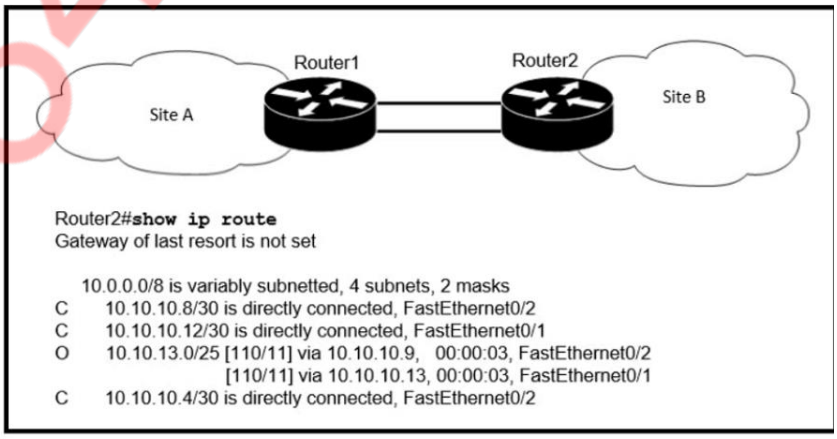
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What is the role of a firewall in an enterprise network?

- processes unauthorized packets and allows passage to less secure segments of the network
- explicitly denies all packets from entering an administrative domain
- [x] determines which packets are allowed to cross from unsecured to secured networks
- forwards packets based on stateless packet inspection

What are two recommendations for protecting network ports from being exploited when located in an office space outside of an IT closet? (Choose two.)

- [ ] configure ports to a fixed speed
- [x] shut down unused ports
- [x] implement port-based authentication
- [ ] enable the PortFast feature on ports
- [ ] configure static ARP entries



Refer to the exhibit. If OSPF is running on this network, how does Router2 handle traffic from Site B to 10.10.13.128/25 at Site A?

- It sends packets out of interface Fa0/2.
- It load-balances traffic out of Fa0/1 and Fa0/2.
- [x] It is unreachable and discards the traffic.
- It sends packets out of interface Fa0/1.

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How does QoS optimize voice traffic?

- by reducing packet loss
- by differentiating voice and video traffic
- by increasing jitter
- by reducing bandwidth usage

Which switch technology establishes a network connection immediately when it is plugged in?

- BPDU guard
- UplinkFast
- PortFast
- BackboneFast

What are two fundamentals of virtualization? (Choose two.)

- [ ] It requires that some servers, virtual machines, and network gear reside on the Internet.
- [ ] It allows a physical router to directly connect NICs from each virtual machine into the network.
- [x] It allows logical network devices to move traffic between virtual machines and the rest of the physical network.
- [x] It allows multiple operating systems and applications to run independently on one physical server.
- [ ] The environment must be configured with one hypervisor that serves solely as a network manager to monitor SNMP traffic.

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Which feature on the Cisco Wireless LAN Controller when enabled restricts management access from specific networks?

- RADIUS
- CPU ACL
- Flex ACL
- TACACS

```
SW2
vtp domain cisco
vtp mode transparent
vtp password ciscotest
interface fastethernet0/1
   description connection to sw1
   switchport mode trunk
   switchport trunk encapsulation dot1q
```

Refer to the exhibit. How does SW2 interact with other switches in this VTP domain?

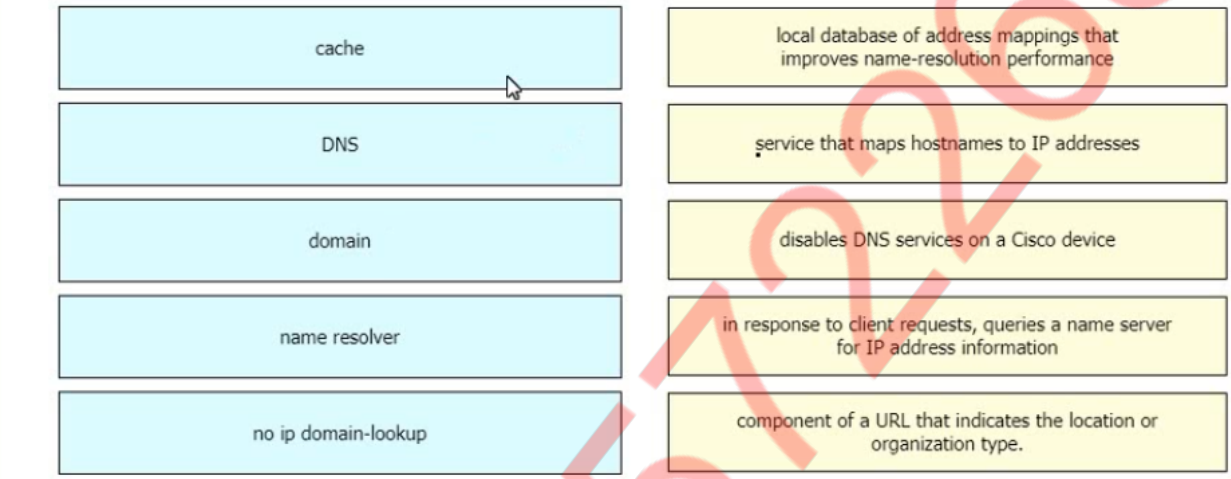
- It forwards only the VTP advertisements that it receives on its trunk ports.
- It transmits and processes VTP updates from any VTP clients on the network on its trunk ports.
- It processes VTP updates from any VTP clients on the network on its access ports.
- It receives updates from all VTP servers and forwards all locally configured VLANs out all trunk ports.

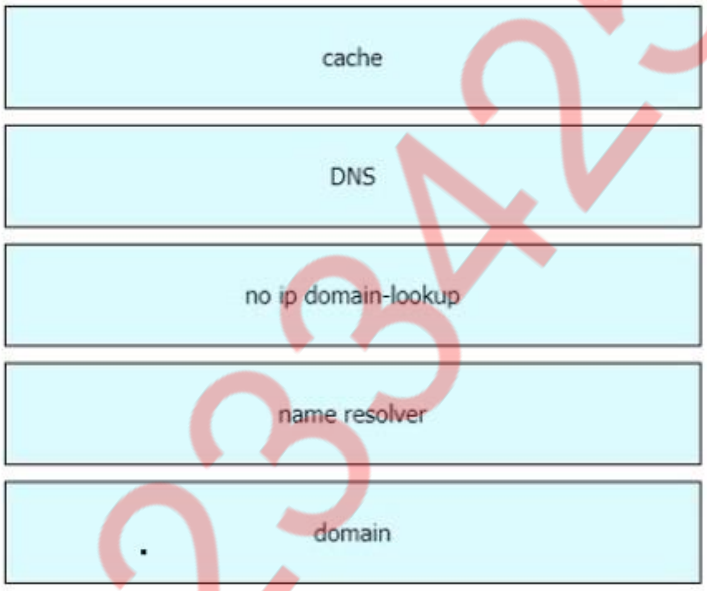
An engineer needs to configure LLDP to send the port description type length value (TLV). Which command sequence must be implemented?

- switch(config-line)#**lldp port-description**
- switch(config-if)#**lldp port-description**
- switch(config)#**lldp port-description**
- switch#**lldp port-description**

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Drag and drop the DNS lookup components from the left onto the functions on the right.





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A network administrator is asked to configure VLANS 2, 3, and 4 for a new implementation. Some ports must be assigned to the new VLANS with unused ports remaining. Which action should be taken for the unused ports?

- configure in a nondefault native VLAN
- configure ports in a black hole VLAN
- configure ports as access ports
- configure ports in the native VLAN

Which configuration is needed to generate an RSA key for SSH on a router?

- Create a user with a password.
- Configure VTY access.
- Assign a DNS domain name.
- Configure the version of SSH.

Drag and drop the Cisco Wireless LAN Controller security settings from the left onto the correct security mechanism categories on the right.



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Which 802.11 frame type is indicated by a probe response after a client sends a probe request?

- data
- action
- [x] management
- control

Which device permits or denies network traffic based on a set of rules?

- access point
- wireless controller
- [x] firewall
- switch

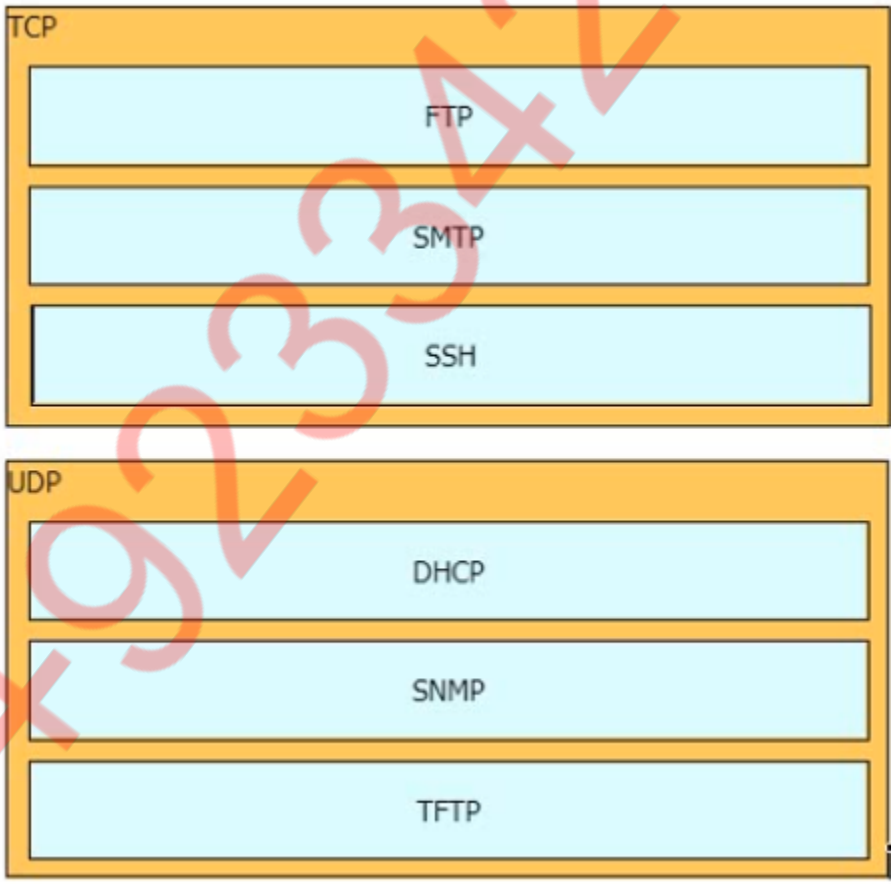
Which WPA3 enhancement protects against hackers viewing traffic on the Wi-Fi network?

- TKIP encryption
- scrambled encryption key
- AES encryption
- [x] SAE encryption

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Drag and drop the application protocols from the left onto the transport protocols that it uses on the right.





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How are VLAN hopping attacks mitigated?

- (•) manually implement trunk ports and disable DTP
- ( ) activate all ports and place in the default VLAN
- ( ) enable dynamic ARP inspection
- ( ) configure extended VLANs

Which mode must be used to configure EtherChannel between two switches without using a negotiation protocol?

- ( ) desirable
- (•) on
- ( ) auto
- ( ) active

```
SW1(config-line)#line vty 0 15
SW1(config-line)#no login local
SW1(config-line)#password cisco

SW2(config)#username admin1 password abcd1234
SW2(config)#username admin2 password abcd1234
SW2(config-line)#line vty 0 15
SW2(config-line)#login local

SW3(config)#username admin1 secret abcd1234
SW3(config)#username admin2 secret abcd1234
SW3(config-line)#line vty 0 15
SW3(config-line)#login local

SW4(config)#username admin1 secret abcd1234
SW4(config)#username admin2 secret abcd1234
SW4(config-line)#line console 0
SW4(config-line)#login local
```

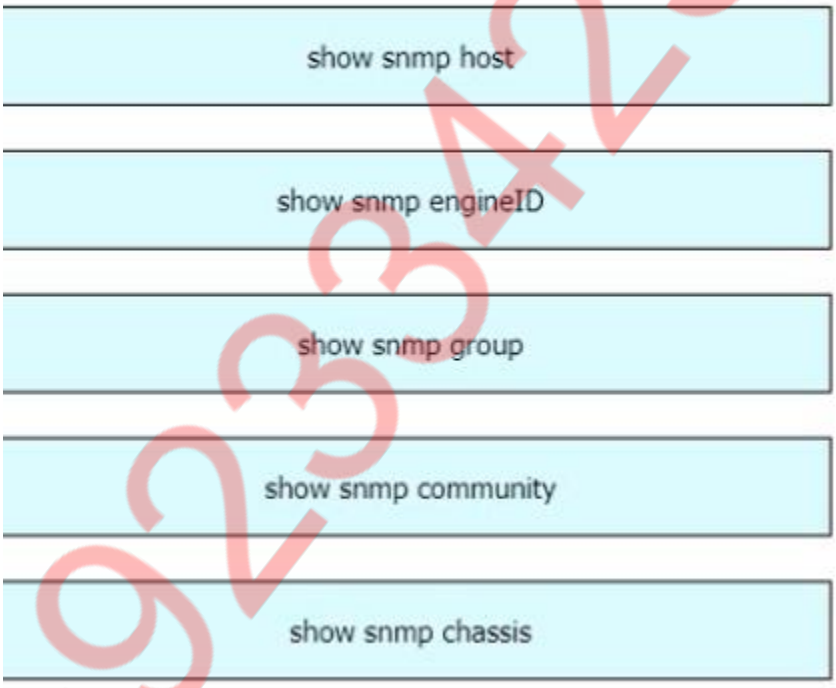
Refer to the exhibit. An administrator configures four switches for local authentication using passwords that are stored as a cryptographic hash. The four switches must also support SSH access for administrators to manage the network infrastructure. Which switch is configured correctly to meet these requirements?

- ( ) SW1
- ( ) SW2
- (•) SW3
- ( ) SW4

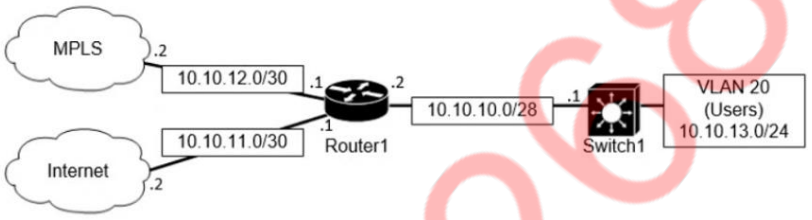
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Drag and drop the SNMP manager and agent identifier commands from the left onto the functions on the right.

show snmp chassis	displays information about the SNMP recipient
show snmp community	displays the IP address of the remote SNMP device
show snmp engineID	displays the SNMP security model in use
show snmp group	displays the SNMP access string
show snmp host	displays the SNMP server serial number



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```
Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0
     209.165.200.0/27 is subnetted, 1 subnets
B       209.165.200.224 [20/0] via 10.10.12.2, 00:09:57
     10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C       10.10.10.0/28 is directly connected, GigabitEthernet0/0
C       10.10.11.0/30 is directly connected, FastEthernet2/0
O       10.10.13.0/24 [110/2] via 10.10.10.1, 00:08:34, GigabitEthernet0/0
C       10.10.12.0/30 is directly connected, GigabitEthernet0/1
S*   0.0.0.0/0 [1/0] via 10.10.11.2

Switch1#show ip route
Gateway of last resort is not set
     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.10.10.0/28 is directly connected, FastEthernet0/1
C       10.10.13.0/24 is directly connected, VLAN20
```

Refer to the exhibit. Which path is used by the router for Internet traffic?

- 10.10.10.0/28
- 209.165.200.0/27
- 0.0.0.0/0
- 10.10.13.0/24

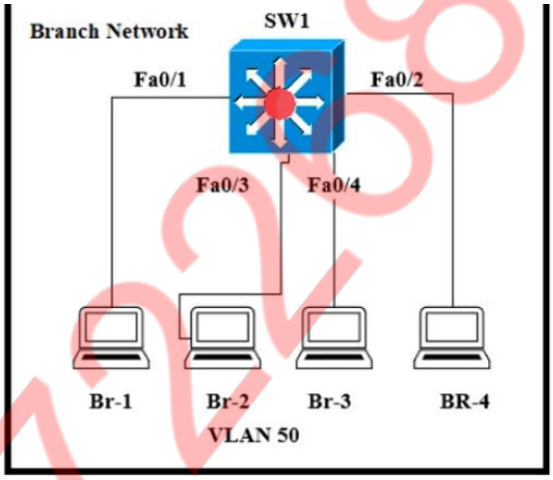
A network analyst is tasked with configuring the date and time on a router using EXEC mode. The date must be set to January 1, 2020 and the time must be set to 12:00 am. Which command should be used?

- **clock set**
- **clock summer-time recurring**
- **clock timezone**
- **clock summer-time date**

An engineer must configure interswitch VLAN communication between a Cisco switch and a third-party switch. Which action should be taken?

- configure DSCP
- configure IEEE 802.1q
- configure ISL
- configure IEEE 802.1p

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Refer to the exhibit. The entire MAC address table for SW1 is shown here:

```
SW1#show mac-address-table
Mac Address Table
-------------------------------------------------------------------------------
Vlan    Mac Address Type      Ports
50      000c.8590.bb7d DYNAMIC Fa0/1
50      010a.7a17.45bc DYNAMIC Fa0/3
50      7aa7.4062.0772 DYNAMIC Fa0/4
SW1#
```

What does SW1 do when Br-4 sends a frame to Br-2?

- It performs a lookup in the MAC address table for Br-4 and discards the frame due to a missing entry.
- It floods the frame out of all ports except on the port where Br-2 is connected.
- It maps the Layer 2 MAC address for Fa0/3 to the Layer 3 IP address and forwards the frame.
- [x] It inserts the source MAC address and port into the forwarding table and forwards the frame to Br-2.

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