Exam Report: 12.3.5 Practice Questions

Date: 4/28/2020 10:55:10 am
Time Spent: 4:33

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Overall Performance

Your Score: 29%

Passing Score: 80%

View results by: Objective Analysis Individual Responses

Individual Responses

Question 1: Correct

Which of the following describes an IPv6 address? (Select TWO).

- [ ] Four decimal octets
- [ ] 32-bit address
- [x] Eight hexadecimal quartets
- [ ] 64-bit address
- [x] 128-bit address

Explanation

IP version 6 addresses are 128-bit addresses. They are commonly written using 32 hexadecimal numbers organized into eight quartets. Each quartet is represented as a hexadecimal number between 0 and FFFF. The quartets are separated by colons.

IP version 4 addresses are 32-bit addresses. They have four octets. Each octet is an eight-digit binary number. Each octet has a decimal value between 0 and 255.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_LP5_01]

Question 2: Incorrect

Which of the following correctly describe the most common format for expressing IPv6 addresses? (Select TWO).

- [ ] 32 numbers grouped using colons
- [x] Hexadecimal numbers
- [x] ~~128 numbers grouped using colons~~
- [ ] Decimal numbers
- [ ] Binary numbers

Explanation

IP version 6 addresses are made up of 32 hexadecimal numbers organized into eight quartets. The quartets are separated by colons. An IPv6 address is made of 128 binary digits.

IP version 4 addresses use decimal numbers organized into four octets and separated by periods.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_LP5_02]

Question 3: Incorrect

Which of the following are valid IPv6 addresses? Select all that apply.

- [ ] A82:5B67:7700:AH0A:446A:779F:FFE3:0091
- [ ] 165.15.78.53.100.1
- [x] 141:0:0:0:15:0:0:1
- [ ] 6384:1319:7700:7631:446A:5511:8940:2552
- [x] ~~343F:1EEE:ACDD:2034:1FF3:5012~~

Explanation

An IPv6 IP address is a 128-bit address listed as eight 16-bit hexadecimal sections. Leading zeros can be omitted in each section. Therefore, 6384:1319:7700:7631:446A:5511:8940:2552 and 141:0:0:0:15:0:0:1 are both valid IPv6 IP addresses. A single set of all-zero sections can be abbreviated with two colons (::). Therefore, 141::15:0:0:1 is a valid way of writing that address.

Digits in a hexadecimal system range from 0-9 and A-F. H is not a valid hexadecimal number. 343F:1EEE:ACDD:2034:1FF3:5012 is too short, having only six sections instead of eight. 165.15.78.53.100.1 is too short, and the sections are separated by periods instead of colons.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_LP5_03]

Question 4: Incorrect

Which of the following is a valid IPv6 address?

- ( ) FEC0:AB04:899A
- ( ) FEC0::AB:9007
- (•) ~~FEC0:AB98::A7::9845:4567~~
- ( ) 199.12.254.11
- ( ) FEC0:9087:AB04:9900:7GA2:7788:CEDF:349A

Explanation

FEC0::AB:9007 is a valid IPv6 address. :: in the address replaces blocks of consecutive 0s. The longer form of this address is FEC0:0000:0000:0000:0000:0000:00AB:9007. Leading 0s within a quartet can also be omitted.

You can only omit one block of 0s using the double colon. Each number in the IPv6 address must be between 0-9 or A-F; G is not a valid number for the IPv6 address. An address without double colons should have a total of 32 hexadecimal numbers in eight blocks.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_LP5_04]

Question 5: Incorrect

IPv6 uses 128-bit addresses. The address contains two 64-bit components.

What is the first 64-bit component called?

The prefix

What is the last 64-bit component called?

The interface ID

Explanation

The first 64-bit part of an IPv6 address is called the prefix, or network portion, of the address. The last 64-bit portion is called the interface ID, or host portion, of the address. The host portion of the address assigned to an interface must be unique.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_LP5_05]

Question 6: Incorrect

Which of the following describes link-local IPv6 addresses? (Select THREE).

- [ ] Link-local IPv6 addresses begin with FE8, FE9, FEA, or FEB.
- [ ] Link-local IPv6 addresses are not routable.
- [ ] Link-local IPv6 addresses must be assigned to any network interface on a Linux system.
- [ ] Link-local IPv6 addresses cannot be used on subnets that have no routers.
- [ ] Link-local IPv6 addresses are only needed on interfaces connected to small networks.
- [x] ~~Link-local IPv6 addresses are routable.~~

Explanation

Link-local addresses (also known as local link addresses) are addresses that are valid on only the current subnet.

- Link-local addresses have a FE80::/10 prefix. This includes any address beginning with FE8, FE9, FEA, or FEB.
- All nodes must have at least one link-local address, although each interface can have multiple addresses.
- Routers never forward packets destined for link-local addresses to other subnets.
- Link-local addresses are used for automatic address configuration, neighbor discovery, or subnets that have no routers.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_CONF_LP5_01]

Question 7: Correct

IPv6 is configured using several methods. In which method do clients use Neighbor Discovery Protocol to send router solicitation and router advertisement messagesto learn the subnet prefix and default gateway as part of an automatic interface ID generation process?

- ( ) Static full assignment
- ( ) Static partial assignment
- (•) Stateless autoconfiguration
- ( ) DHCPv6

Explanation

Stateless autoconfiguration is the configuration in which clients automatically generate the interface ID and learn the subnet prefix and default gateway through the *Neighbor Discovery Protocol* (NDP). NDP

uses the following messages for autoconfiguration:

- *Router solicitation* (RS) is a message sent by the client to request that routers respond.
- *Router advertisement* (RA) is a message sent by the router periodically and in response to RS messages to inform clients of the IPv6 subnet prefix and the default gateway address.

NDP is also used by hosts to discover the address of other interfaces on the network, replacing the need for the Address Resolution Protocol(ARP).

Static full assignment is the configuration in which the entire 128-bit IPv6 address and all other configuration information is statically assigned to the host.

Static partial assignment is the configuration in which the prefix is statically assigned and the interface ID uses the modified EUI-64 format derived from the MAC address.

DHCPv6 is the confugraiton in which IPvG uses an updated version of DHCP (called DHCPv6) that operates in stateful or stateless mode.

Stateful DHCPv6 is used when the DHCP server provides each client with the IP address, default gateway, and other IP configuration information (such as the DNS server IP address). The DHCP server tracks the status (or state) of the client.>

Stateless DHCPv6 does not provide the client an IP address and does not track the status of each client, but is used to supply the client with the DNS server IP address. Stateless DHCPv6 is most useful when used in conjunction with stateless autoconfiguration.

References

Linux Pro - 12.3 IPv6 Overview
[e_ipv6_lp5.exam.xml Q_IPV6_CONF_LP5_02]