

CCNA Quick Notes ? TCP/IP

1. What are the four layers of the TCP/IP layer model? The four layers of the TCP/IP layer model are: Application (process) Host-to-host (transport) Internet Network Access (physical and data link)

2. What two protocols function at the transport (host-to-host) layer of the TCP/IP model? The two protocols that function at the host-to-host layer of the TCP/IP model are TCP and UDP. (TCP is a connection-oriented, reliable protocol. UDP is a connectionless and unacknowledged protocol.)

3. What are the protocol numbers for TCP and UDP? The protocol number for TCP is 6. The protocol number for UDP is 17.

4. How many bytes are in the header for TCP and UDP packets? A TCP header contains 20 bytes, and a UDP header contains 8 bytes.

5. What are TCP and UDP port numbers? To pass information (such as e-mail) to upper layers, TCP and UDP use port numbers. These port numbers are used to keep track of different conversations among different hosts at the same time. Originating source port numbers are dynamically assigned by the source host, which is a number greater than 1023.

6. What is the number range for "well-known" port numbers? Defined in RFC 1700, the well-known port numbers are 1 to 1023.

7. What are the steps for the TCP three-way handshake? The steps for the TCP three-way handshake are as follows: Step 1. The source host sends a SYN to the destination host. Step 2. The destination host replies with a SYN/ACK to the source host. Step 3. The source host replies with an ACK.

8. What are some protocols that operate at the TCP/IP Internet layer? Some protocols that operate at the TCP/IP Internet layer are IP ICMP ARP RARP

9. What is the Internet Protocol (IP)? IP is a connectionless protocol that provides best-effort delivery routing of datagrams.

10. What is the Internet Control Message Protocol (ICMP)? ICMP is a management protocol for IP. ICMP messages are carried in IP datagrams and are used to send error and control messages. An example of a utility that uses ICMP is ping.

11. What is the Address Resolution Protocol (ARP)? ARP is used to resolve a known IP address to a MAC address. In order for a host to communicate with another host, it must know the MAC address of the destination host (if they are on the same network) or next hop router. This is the reason for ARP.

12. What is the Reverse Address Resolution Protocol (RARP)? RARP is a protocol used to find the IP address of a station that knows its MAC address. It is mainly used for diskless workstations that boot up and need an IP address. An RARP request is a broadcast packet.

13. What are the IP address ranges for Class A, Class B, and Class C addresses? The address ranges are as follows: Class A 1.0.0.0 to 126.0.0.0 Class B 128.0.0.0 to 191.255.0.0 Class C 192.0.0.0 to 223.255.255.0

14. What does RFC 1918 define? RFC 1918 defines reserved (private) networks and addresses that are not routed on the Internet. These addresses are 10.0.0.0 to 10.255.255.255, 172.16.0.0 to 172.31.255.255, and 192.168.0.0 to 192.168.255.255. They are used as internal private addresses. Private addresses are widely used today, along with proxy servers and Network Address Translation to assist with "stretching" the current IP address space.

15. Cisco IOS software supports what three kinds of broadcasts? The three kinds of broadcasts that Cisco IOS software supports are: Flooding Directed broadcast All-subnet broadcast Flooded broadcasts are local broadcasts that have an address of 255.255.255.255. They are not propagated by a router. Direct broadcasts are directed to a specific network. They contain all 1s in the host portion of the address. Routers forward these broadcasts. An example is 192.168.0.255/24. All-subnet broadcast are broadcast messages to all hosts within a subnet and to all subnets within a network. An example is 192.168.255.255/24. With Cisco IOS release 12.0, a router does not forward all subnet broadcasts. You can use the ip directed-broadcast command to enable all subnet broadcasts.

16. How do you assign an IP address to a Cisco router? To assign an IP address to a router, use the ip address address subnet-mask interface configuration command. Here's an example: RouterB(config)#inter e0 RouterB(config-if)#ip address 172.16.0.1 255.255.0.0 RouterB(config-if)#no shut Note: By default all interfaces on a Cisco router are administratively disabled. To enable them you must use the "no shut" interface command.

How do you manually assign IP addresses to host names in a Cisco router? The ip host name [tcp-port-number] address [address] global configuration command lets you assign IP addresses to host names in a Cisco router. [tcp-port-number] is an optional parameter; the default value is Telnet. Here's an example: RouterB(config)#ip host cisco 172.16.0.1

17. What Cisco IOS command can you use to program the router to use a DNS server to resolve host names? The ip name-server server-address [[server-address2]...[server-address6]] command lets you program the Cisco router to resolve host names with a DNS server. Here's an example: RouterB(config)#ip name-server 172.16.0.250

18. If you enter a command that a Cisco router does not recognize, the router tries to resolve the command you just entered with a DNS server. How do you turn off this DNS domain lookup? To turn off DNS domain lookup, use the no ip domain-lookup global command. Here's an example: RouterB#enb Translating "enb"...domain server (255.255.255.255)% Unknown command or computer name, or unable to find computer address RouterB#config t Enter configuration commands, one per line. End with CNTL/Z. RouterB(config)#no ip domain-lookup

19. For different VLANs to communicate with each other, they need to be routed (a router!). To perform inter-VLAN routing, what two things must occur? To perform inter-VLAN routing, the following must occur: The router must know how to reach all VLANs being interconnected. The router must have a separate physical connection on the router for each

VLAN, or trunking must be enabled on a single physical connection. 20.How do you enable ISL trunking on a Cisco router? To enable ISL trunking on a Cisco router, you must do the following: Step 1 Configure subinterfaces on the router's physical Fast Ethernet or Gigabit interface. (ISL trunking works only on Fast Ethernet or Gigabit interfaces.) Step 2 Assign an IP address to the subinterface. Step 3 Enable ISL encapsulation for the particular VLAN with the encapsulate isl vlan# subinterface command. Here's an example: RouterB(config)#int f0/0 RouterB(config-subif)#ip address 172.16.0.1 255.255.0.0 RouterB(config-subif)#encapsulation isl 1 PDF Version | Download