Quizlet

CPE 348 Midterm 2

Terms in this set (48)

BGP is used to find a reachable path to an AS (Autonomous system)	What is the goal that the border gateway protocol (BGP) promises to achieve?
Different autonomous systems may have different cost metrics. Hard to find any type of universal cost method. Basically just not possible.	Why can BGP not promise to find an optimal path from one AS to another?

Very good for streaming services and online gaming that do not require high reliability.	In which application do you prefer UDP to TCP?
TCP is good for reliable transmission that has error control and remains reliable throughout the entire transmission of data	In which application do you prefer TCP to UDP?
edge router puts an additional header and enables an IP tunnel to transmit packet to the destination edge router.	Briefly explain how a VPN works
1. distance is long 2. too many intermediate devices (router switches) 3. congestion happens anywhere that causes packets to drop	What makes the correct estimation of RTT in TCP difficult or even impossible
it will give the cost/distance information to its neighbors	For the Distance Vector Routing Protocol, what information does a node exchange and which nodes receive this information?

2500 meters	What is the maximum length of an Ethernet connection
Bridge	What is a node between two Ethernet connections
Extended LAN	A collection of LANs connected by one or more bridges is usually said to form an
If multiple nodes transmit over the same nodes or bridges, a loop can form. A sent frame would then loop through it forever	What is one of the potential problems of an Extended LAN network?
The bridges are always prepared to reconfigure themselves into a new spanning tree if some bridges fail	Why is the Spanning Tree Algorithm dynamic?

Each bridge selects the ports over which they will forward the frames	What is the main idea of the Spanning Tree Algorithm?
Internetwork	An arbitrary collection of networks interconnected to provide host-host packet delivery service
Subnet masks	define variable partition of host part of class A and B addresses
Class A (255.0.0.0) Class B (255.255.0.0) Class C (255.255.255.0)	3 primary classes for ip addresses
Allows for smaller number of hosts to be handled more efficiently	Why is Subnetting used?

Forwarding	one device sending a datagram to the next one in the path to the destination
Switching	moving a datagram from one interface to another within a device
Routing	a specific process in a layer-3 device to decide what to do with a layer-3 packer
Bellman-Ford algorithm	What is the vector routing algorithm based off of
Count-to-infinity Problem (When a node is disconnected, not all the other nodes will be notified immediately. Some nodes will be told by others that they can still reach the disconnected node and continually attempt to reach it.)	What is one of the of the problems that could arise in a Distance Vector routing algorithm?

Guarantee message delivery deliver in correct order support large message allow flow control, congestion control and QoS provisioning	A transport protocol promises to
prevents senders from overruning the capacity of the receivers	flow control
prevent too much data from being injected into the network, thereby causing switches or links to become overloaded	Congestion control

First Send: SYN (x) Second send: SYN(Y) + ACK(x+1) Third send: ACK (y+1)	What makes up the TCP connection establishment 3-way handshake (know how to draw)
Fin(X) ->\ ACK (X+1) <- FIN(y) <- ACK (y+1) ->	What makes up the TCP connection termination 4-way handshake (know how to draw)
EstimatedRTT = alpha x Previous EstimatedRTT + (1 - alpha) x SampleRTT	Original EstimatedRTT Formula
Timeout = 2 x EstimatedRTT	Original Timeout Formula
(recognized root, distance from root, sender node). Receiver picks root first by distance, then by ID if distances tie.	Spanning Tree messages
To have one and only one path from each node to another, in order to eliminate redundant connections and prevent loops	What is the goal of using the Spanning Tree Algorithm?
Connectionless	What is the packet delivery model of IP?

Unreliable service - packets are lost, packets are delivered out of order, duplicate copies of packets, long packet delays	What does best-effort delivery provide?

A: 1-126 B: 128 - 191 C: 192 - 223 D: 224 - 239 E: 240 - 254	What are the IP ranges of each class?
127.0.0.0 - 127.255.255.255 (127.0.0.1 is localhost)	IP range reserved for loopback and diagnostics
The dot notation or sequence of bits at the beginning of the address. Also the amount of bits dedicated to network vs host information. (A has more for host while C has more for network)	The difference between class addresses
IP address AND subnet mask	How to find the subnetted address
1. growth of backbone routing table 2. potential exhaustion of 32-bit address space (uses aggregate routes)	Which two concerns of the internet does CIDR address?
To map IP addresses into MAC addresses (Address Translation Protocol).	What is the purpose of ARP?
A DHCP server	When a new device wants to connect to a network, how does it obtain an IP address?
A routing table is on layer 3, uses IP addresses and knows the path to the final destination. A forwarding table is on layer 2, uses interfaces and MAC addresses, and is peer-to-peer only	What are the main differences between a routing table and a forwarding table?

A sender may be sending packets from several processes at once. (Multiplexing adds headers to identify which process a packet is from, Demultiplexing is when the server uses these headers to classify packets)	Why is multiplexing necessary?

DNS = 53 (UDP) FTP = 21 HTTP = 80 SMTP = 25 SSH = 22	What were the well-known port numbers presented in class?
1500 bytes	Maximum Transmission Unit (MTU) of Ethernet
1. Place an upper bound on cost 2. Split horizon	Possible solutions to the count-to-infinity problem
SeqNum >= 2*AW (sequenceNum size should be at least twice as large)	How do you determine the SequenceNum size based on the AdvertisedWindow size?
(Num. Bytes the SequenceNum can represent)/(network speed in bps)	How do you determine the wraparound time based on SequenceNum?
The AW should fill up the pipe. Reminder: delay x bandwidth = pipe capacity	How do you determine how many bits to use in the advertised window?