

IN723 Advanced Networking

Final Theory Exam Preparation

Basics / Revision

What are the 3 layers in a hierarchical network design?

Describe the main purpose/s of each of the 3 layers.

What locally significant value is used to define a routing protocol's believability?

STP

Why is spanning tree needed?

How is the root switch elected?

How does PVST differ from STP?

Describe 2 ways in which rapid-pvst differs from pvst?

Etherchannel

If both ends of an etherchannel are set to auto will a port channel be successfully negotiated? Why or why not?

What is an etherchannel?

What are the 2 protocols that a CISCO device can use to form an etherchannel? Which one is CISCO proprietary?

What benefit does etherchannel provide in relation to spanning tree?

When might you change the load balancing algorithm for a port channel?

FHRP

Describe the purpose of a FHRP?

How does GLBP differ from HSRP?

What does the preempt command do?

Describe how interface tracking can be used with HSRP?

What does Gratuitous ARP do?

OSPF

Explain how OSPF determines its router ID?

Where & why is a DR & BDR elected?

What is the admin distance for OSPF?

What 2 things does the network command do?

What does the passive interface command do?

Name 3 settings that must match before 2 routers can form an OSPF adjacency

What is the purpose of a stub network?

Where is a type 7 LSA used? Why is it used?

Redistribution

Describe a method of preventing route feedback when performing mutual redistribution.

How could OSPF be modified so that an OSPF external route was preferred over an internal EIGRP route?

Name 2 ways of filtering routes?

Explain why route filtering is problematic with OSPF?

2 consecutive match statements in a route-map is a logical AND or OR?

How does a route-map employ an implicit deny all/any?

BGP

How does the next-hop attribute differ for iBGP & eBGP?

What does an AS represent?

What is a transit AS?

How does eBGP prevent loops?

How does iBGP prevent loops?

Put the following path selection steps in order = Weight, Local Pref, Med, Origin

Describe two situations when it is best to use BGP

Describe two situations when it is best not to use BGP

What does the BGP network command do?

What are the three Well Known mandatory attributes

How is local-preference used to modify path selection / preference? And in which direction it it applied? Which direction does it affect?

How is AS-path prepending used to modify path selection / preference? And in which direction it it applied? Which direction does it affect?

How is MED used to modify path selection / preference? And in which direction it it applied? Which direction does it affect?

What can be used to prevent the need for an iBGP full mesh?

What does ORF do?

What does this do? `ip as-path access-list 1 deny _200_`

What does the BGP predefined community "no-export" do?

Describe an issue that could arise as a result of aggregation?

What does the Trigger do in RTBH filtering?

When are BGP extended communities required?

VRF Lite

What is a VRF? What does it allow you to do?

What is a route distinguisher? Why is it needed?

Describe a benefit of VRF-lite?

MPLS

What type of VPN is an MPLS-VPN?

In an MPLS-VPN network, on which devices are the VRFs configured?

What is a benefit of MPLS?

When supporting MPLS-VPNs, is the transport label (aka IGP label) the top label or bottom label?

Is label advertisement upstream or downstream?

Are MPLS packets sent upstream or downstream?

Describe the function of the control plane

What is the role of a P router

Which version of BGP is required to support MPLS-VPNs?

What are route-targets used for?

What is a route distinguisher used for?

Why is BGP required to be configured for extended community support in an MPLS-VPN network?

Can a route belong to more than 1 VPN?

Describe a central services VPN?

What is the difference between the VPN label & the route-target?