EVN

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or www.cisco.com/go/evn to find the above link.

Easy Virtual Networks

Exam topic 300-301

1.0 Network Principles
10%
Show Details
2.0 Layer 2 Technologies
10%
Show Details
3.0 Layer 3 Technologies
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Show Details
4.0 VPN Technologies
10%
Hide Details
4.1 Configure and verify GRE
4.2 Describe DMVPN (single hub)
4.3 Describe Easy Virtual Networking (EVN)
5.0 Infrastructure Security
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Show Details
6.0 Infrastructure Services
20%
Show Details

Background on segregation – for compliance, security, mergers. – virtual network on single physical infrastructure

Existing technologies

Vlans but l2 and want end to end. But maybe to router on a stick review for sub interfaces

Mpls – but complex for enterprises and usually relies on bgp. So we are talking here more about enterprise network virtualization.

Vrf-lite (but lots sub interfaces)

Background to vrf-lite

Cust1------R1-----R2-----Cust1

The link between R1 and R2 is .1q

Cust 2 also with separate interface (I presume could be a sub interface but examples seem to use physical)

The goal – cust1 cant ping (or anything else) cust2. Could achieve with acls – complex and error prone. Could use mpls/bgp/bgp attributes like route targets and route distinguishers.

Define the vrfs (draw 2 boxes for the vrfs on each router)

Ip vrf BLUE [examples often use colours]

Ip vrf RED

Int g1/1 (the customer1 interface)

Ip vrf forwarding red

Ip address…

Sh ip route vrf RED to see the connected interface. Wont be in the main rt

Int gi1/2.10 (the trunk)

      Encap dot1q 10

      Ip vrf forwarding BLUE

Etc for red

Then router ospf 1 vrf BLUE

Network statement

Router ospf 2 vrf RED (different ospf processes)

Etc

But vrf lots sub interfaces. image in the core say 4 neighbors and 4 customers that's 16 sub ints on the router.

Shared services – complex route export/import via bgp – in the video that bit still part of the vrf lite discussion.

EVN

Vrf definition blue

Vnet tag 1001

Repeat for red

Int 1/1 (physical int to customer)

Vrf forwarding red

Int ½ (the trunk)

Vnet trunk [that's the simplification. No need to create sub if. It does but they are hidden. Cant see with show run, a separate command),

Ip address… (and 1 ip which is put on all sub ints . each evn has a unique vrf so can have overlapping ips.). But that's also in the youtube video for the traditional vrf-lite config.

Can also have shared services – using something called route replication – allows access from cust to main rt I think. Todo that bit

Likely exam qs

Uses vrf-lite tech

Simplify l3 net virt

Improve shared services support – route replication easier than mpls/bgp/rt/rd. accomplished by the igp. Something like this

```
vrf definition VRF-X
  address-family ipv4|ipv6
```

```
route-replicate from vrf VRF-Y unicast|multicast
  [route-origin] [route-map [name]]
```

Enhance management troubleshooting usability)can switch contexts and then ping, trace, show ip route)

Supported on any if that supports .1q

.1q repurposed to carry a vnet tag

Supports ipv4 not 6, static, ospfv2, eigrp, cef. So not rip, isis. But I don't trust this maybe its old.

Unqiue tag for each vn gives isolation

Compatibe with vrf lite – in fact it is vrf lite but using command macros for less config errors. Only dealing with a physical int on each trunk

Can see the sub int with show derived-config

Could configure eg netflow on the main and its inherited by the vrf subints

The future- or maybe now – evn over wan using gre tunnels. Tunnel int gets the vnet trunk command. Video was 2012.