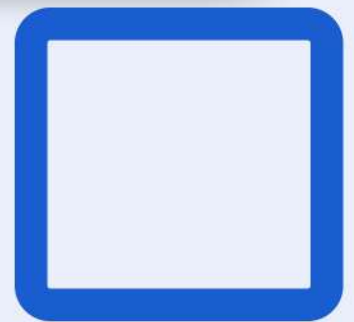# Nuage Networks Virtualized Cloud Services (VCS) – Advanced Topics

Online Course

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Course Modules

1. **VCS Overview**
   - Software-Defined Networking (SDN)
   - SDN in datacenters
   - Nuage Networks product portfolio
   - Review of overlay network concepts
   - Review of the Shared Infrastructure

2. **Datacenter Underlay Design**
   - Traditional data center networking
   - Leaf and spine design
   - External connectivity options
   - Routing protocol in the underlay
   - Redundancy

3. **BGP on L3-Domain VPorts**
   - Using BGP in a L3-domain to learn external routes
   - Configuration of BGP on a L3-domain virtual port
   - Verification of BGP on the VTEP
   o Lab – BGP on an overlay virtual port

Nuage Networks Virtualized Cloud Services (VCS) – Advanced Topics

4. Domain Linking in VCS

- Hub-and-spoke domain linking
- Domain linking with service chaining
- Security policies between linked domains
- PAT between overlays using floating IP addresses

o Lab – Domain Linking in VCS

5. Routing to the Underlay

- Access to external networks
- Centralized breakout
- Hub-and-spoke model
- Local breakout with and without NAT
- PAT to the underlay
- FIP to the underlay
- VRS and secondary network namespaces

o Lab – Routing to the Underlay on the VRS

6. Dual Uplinks on the VRS

- Usefulness of dual uplinks on the VRS
- Configuration of a VRS with dual uplink
- Usage of a VRS with dual uplink

o Lab – Dual Uplinks on the VRS

7. Datacenter Gateways

- Rationale behind the use of DC GWs
- Different models to extend L2 and L3-domains into the DC GW
- Auto discovery of the DC GW on the VSD
- 7750 DC GW provisioning methods (static, static + dynamic)
- Service chaining on the 7750 DC GW

o Lab – Datacenter Gateways

8. Policy Groups

- The concept of policy groups
- Usage restrictions on hardware-based VTEPs
- Policy group configuration
- Policy group expressions

o Lab – Policy Groups

9. Multicast in the Underlay

- The need for multicast in the underlay
- Enabling multicast in the underlay
- Carrying multicast traffic in the underlay

10. Quality of Service

- Quality of service capabilities in VCS
- Classification of packets on ingress
- Rate limiting of traffic on ingress
- Packet marking

o Lab – VCS Quality of Service

11. 7750 SR Netconf Integration

- Using Netconf to configure a 7750 Service Router frm the VSD
- Extend L2 and L3 domains to a 7750 SR usd as VXLAN Gateway
- L3 Domain Aggregation on a 7750 SR with Netconf

o Lab – Configure a 7750 SR with Netconf from the VSD

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For contact:+91 8680961847
+91 9600579474

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