VMware Certified Professional (VCP-DCV)

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Online Course

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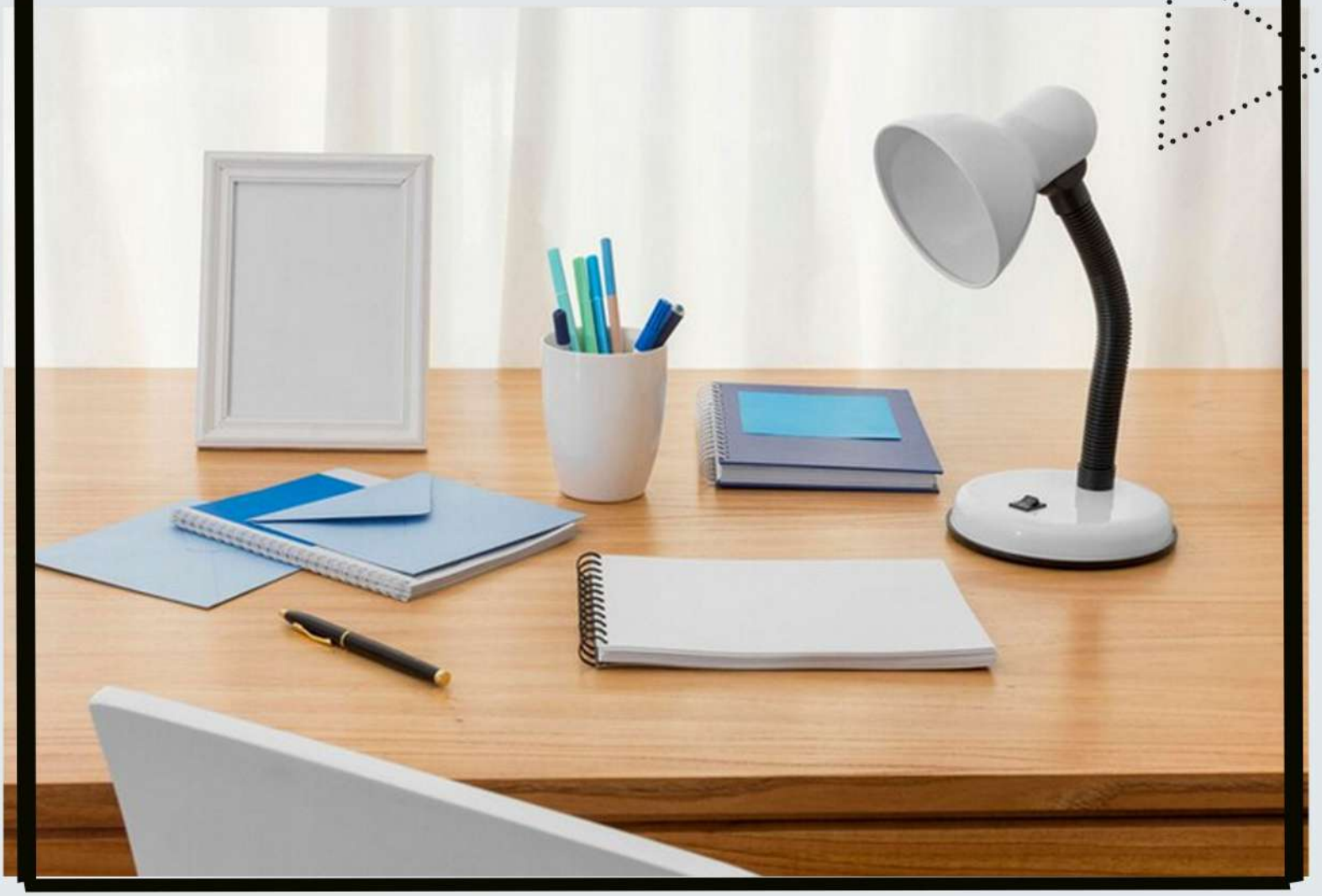

Course Modules

1. VMware Solution

- Demonstrate knowledge of VMware Virtual Cloud Network & NSX
  - Describe the purpose of VMware Virtual Cloud Network
  - Identify the benefits and recognize the use cases for NSX
  - Describe how NSX fits into the NSX product portfolio
  - Recognize features & the main elements in the NSX architecture
  - Describe NSX policy and centralized policy management
  - Describe the NSX management cluster & the management plane
  - Identify the functions of control plane components, data plane
- Demonstrate knowledge of NSX Management Cluster
  - Explain the deployment workflows for the NSX infrastructure
- Demonstrate knowledge of the NSX UI
  - Distinguish between the Policy and the Manager UI
- Demonstrate knowledge of the data plane
  - Describe the functions of transport zones, transport nodes
  - Explan the relationships among transport nodes, transport zones
  - Describe NSX VDS
  - Describe uplink profiles

VCP-NV - Network Virtualization

- Demonstrate knowledge of logical switching
  - Describe the functions of NSX segments
  - Recognize different types of segments
  - Explain tunneling and the Geneve encapsulation protocol
  - Describe the interaction betwn components in logical switching
  - The function of kernel modules and NSX agents installed on ESXi
  - The function of the management plane in logical switching
  - Describe the function of the control plane in logical switching
- Demonstrate knowledge of logical switching packet forwarding
  - Describe the functions of each table used in packet forwarding
  - Describe how BUM traffic is managed in switching
  - Explain how ARP suppression is achieved
- Demonstrate knowledge of segments and segment profiles
  - Define what a segment is
  - Describe the purpose of segment profiles
  - Identify the functions of the segment profiles in NSX
- Demonstrate knowledge of logical routing
  - Explain the function and features of logical routing
  - Describe the architecture of NSX two-tier routing
  - Differentiate between north-south and east-west routing
  - Describe the gateway components
  - Recognize the various types of gateway interfaces

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- Demonstrate knowledge of NSX Edge and Edge Clusters
  - Explain the main functions and features of the NSX Edge node
  - Describe the functions of the NSX Edge cluster
  - Identify the NSX Edge node form factors and sizing options
  - Describe the different NSX Edge node deployment methods
- Demonstrate knowledge of Tier-0 and Tier-1 Gateways
  - Explain how to configure a Tier-0 gateway and Tier-1 gateway
  - Explain Active/Active Tier-0 and Tier-1 configurations
  - Explain Active standby Tier-0 and Tier-1 configurations
  - Explain Stateful Active/Active Tier-0 and Tier-1 configurations
  - Explain multi-tenancy use in a Tier-0 gateway
- Distinguish between static and dynamic routing lain OSPF and BGP
  - Demonstrate knowledge of ECMP and high availability
  - Explain the purpose of ECMP routing
  - Identify the active-active and active-standby modes
  - Recognize failure conditions and explain the failover process
- Demonstrate knowledge of logical routing packet walk
  - Describe the datapath of single-tier routing
  - Explain the datapath of multitier routing
- Demonstrate knowledge of VRF Lite
  - Describe VRF Lite
  - Explain the benefits of VRF Lite

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- Demonstrate knowledge of bridging
  - Describe the purpose and function of bridging
  - Distinguish between routing and bridging
- Demonstrate knowledge of NAT and how it is used with NSX
  - Explain the role of network address translation (NAT)
  - Distinguish between source and destination NAT
  - Describe how reflexive NAT works
  - Explain how NAT64 facilitates communication betwn IPv6 & IPv4
  - Describe stateful active-active NAT operation
- Demonstrate knowledge of DHCP and DNS
  - How DHCP and DHCP Relay are used for IP address allocation
  - Configure DHCP services in NSX
  - Describe how to use a DNS forwarder service
- Demonstrate knowledge of IPSec VPN
  - Explain how IPSec-based technologies are used to establish VPNs
  - Compare policy-based and route-based IPSec VPN
  - Describe IPSec VPN requirements in NSX
- Demonstrate knowledge of L2 VPN
  - Describe L2 VPN technologies in an NSX
  - Identify various supported L2 VPN endpoints
- Demonstrate knowledge of integrating NSX with VMware Identity
  - Describe the purpose of VMware Identity Manager
  - The benefits of integrating NSX with VMware Identity Manager

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- Knowledge of integrating NSX with VMware Identity Manager
  - Describe the purpose of VMware Identity Manager
  - The benefits of integrating NSX with VMware Identity Manager
- Demonstrate knowledge of integrating NSX with LDAP
  - Identify the benefits of integrating NSX with LDAP
  - Describe the LDAP authentication architecture
- Demonstrate knowledge of managing users and configuring RBAC
  - Identify the different types of users in NSX
  - Recognize permissions and roles available in NSX
  - Understand the use of orgs and projects in multi-tenancy
- Demonstrate knowledge of Federation Architecture
  - Describe Federation and its use cases
  - Describe the requirements and limitations of Federation
  - Describe the Federation configuration workflow
  - Describe the prerequisites for Federation
  - Describe the onboardg of Local Manager configs and workloads
  - Describe the stretched networking concepts in Federation
  - Explain the supported Tier-0 and Tier-1 stretched topologies
  - Explain Layer 2 concepts related to NSX Federation
  - Explain the Federation security use cases
  - Describe the Federation security components
  - Explain the security configuration workflows
- Demonstrate knowledge of DPU-based acceleration for NSX

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Plan and design the VMware Solution

2. Install, Configure, Administrate the VMware Solution

- Prepare an NSX infrastructure for deployment
  - Create Transport Zones
  - Create IP Pools
  - Prepare ESXi Hosts
- Configure segments
  - Create segments
  - Attach VMs to segments
  - Use network topology to validate the logical switching config
- Deploy and configure NSX Edge Nodes
  - Deploy NSX Edge Nodes
  - Configure an Edge Cluster
- Configure the Tier-1 gateway
  - Create a Tier-1 gateway
  - Connect segments to the Tier-1 gateway
  - Use network topology to validate the Tier-1 gateway config
- Create and configure a Tier-0 gateway with OSPF
  - Create uplink segments
  - Create a Tier-0 gateway
  - Connect the Tier-0 and Tier-1 gateways
  - Use network topology to validate the Tier-0 gateway config

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- Configure the Tier-0 gateway with BGP
  - Create uplink segments
  - Create a Tier-0 gateway
  - Connect the Tier-0 and Tier-1 gateways
  - Use network topology to validate the Tier-0 gateway config
- Configure VRF Lite
  - Create the uplink trunk segment
  - Deploy and configure the VRF gateways
  - Deploy and connect the Tier-1 gateways to the VRF gateways
  - Create and connect segments to the Tier-1 gateways
  - Attach VMs to segments on each VRF
  - Review the routing tables in each VRF
- Configure Network Address Translation (NAT)
  - Create a Tier-1 gateway for Network Address Translation
  - Create a segment
  - Attach a VM to NAT segment
  - Configure NAT
  - Configure NAT route redistribution
- Deploy Virtual Private Networks
  - Deploy a new NSX Edge Node to support a VPN deployment
  - Configure a new Edge Cluster
  - Deploy and configure a new Tier-0 gateway and segments
  - Create an IPSec VPN service
  - Create an L2 VPN server and session

- Manage users and roles
  - Add an Active Directory Domain as an identity source
  - Assign NSX roles to domain users and validate permissions
  - Modify an existing role and validate the role permissions
- Perform operations tasks in a VMware NSX environment
- Monitor a VMware NSX implementation
- Use NSX Intelligence
  - Generate network flows and visualize traffic
  - Use recommendations to create security policies
  - Enable detection of suspicious traffic

3. Troubleshoot and Optimize the VMware Solution

- Use log files to troubleshoot issues
  - Identify the default log file locations of NSX components
  - Generate Log Bundles
  - Use log files to help identify NSX issues
- Identify Tools Available for Troubleshooting Issues
  - Use traceflow, traffic analysis, dashboard for troubleshooting
- Troubleshoot Common NSX Issues
  - Troubleshoot Common NSX Installation/Configuration Issues
  - Troubleshoot Common NSX Component Issues
  - Troubleshoot Common Connectivity Issues
  - Troubleshoot Common logical infrastructure Issues
  - Troubleshoot Common physical infrastructure Issues

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