

# ENCORE (350-401) Video Training Series

## with Kevin Wallace and Charles Judd

### 0.0.0 Course Introduction

#### 0.1.0 Performing Lab Exercises with VIRL

#### 1.0.0 Enterprise Architecture

##### 1.1.0 Lesson 1: Enterprise Network Design Considerations

- 1.1.1 Tier 2 vs. Tier 3 Designs
- 1.1.2 On-Premise vs. Cloud Designs
- 1.1.3 Fabric Capacity Planning
- 1.1.4 Redundant Design
- 1.1.5 First Hop Redundancy Protocols (FHRPs)
- 1.1.6 Stateful Switchover (SSO)
- 1.1.7 Lesson 1 Quiz

##### 1.2.0 Lesson 2: Wireless LAN (WLAN) Design Considerations

- 1.2.1 WLAN Deployment Options
- 1.2.2 Location Services
- 1.2.3 Lesson 2 Quiz

##### 1.3.0 Lesson 3: Software-Defined WAN (SD-WAN)

- 1.3.1 Overview of SD-WAN Technology
- 1.3.2 SD-WAN Implementation
- 1.3.3 Lesson 3 Quiz

##### 1.4.0 Lesson 4: Software-Defined Access (SD-Access)

- 1.4.1 Overview of SD-Access Technology
- 1.4.2 SD-Access Implementation
- 1.4.3 Lesson 4 Quiz

##### 1.5.0 Lesson 5: Quality of Service (QoS)

- 1.5.1 Review of QoS Mechanisms
- 1.5.2 Applying QoS Policies
- 1.5.3 Wireless QoS
- 1.5.4 Lesson 5 Quiz

##### 1.6.0 Lesson 6: Switching Mechanisms

- 1.6.1 Process Switching
- 1.6.2 Cisco Express Forwarding (CEF)
- 1.6.3 The CAM vs. the TCAM
- 1.6.4 The FIB vs. the RIB
- 1.6.5 Lesson 6 Quiz

##### 1.7.0 Module 1 Summary

#### 2.0.0 Virtualization Technologies

##### 2.1.0 Lesson 1: Device Virtualization

- 2.1.1 Hypervisor Types 1 and 2
- 2.1.2 Virtual Machines
- 2.1.3 Virtual Switches
- 2.1.4 Lesson 1 Quiz

##### 2.2.0 Lesson 2: Data Path Virtualization

- 2.2.1 Virtual Routing and Forwarding (VRF)
- 2.2.2 VIRL LAB: VRF
- 2.2.3 The Need to Combine GRE and IPsec Tunneling
- 2.2.4 Configuring GRE over IPsec Tunnels
- 2.2.5 Lesson 2 Quiz

##### 2.3.0 Lesson 3: Network Virtualization

- 2.3.1 Location ID Separation Protocol (LISP)
- 2.3.2 Virtual Extensible LAN (VXLAN)
- 2.3.3 Lesson 3 Quiz

##### 2.4.0 Module 2 Summary

#### 3.0.0 Infrastructure Technologies

##### 3.1.0 Lesson 1: Layer 2 Infrastructure Technologies

- 3.1.1 Review of IEEE 802.1Q Trunking
- 3.1.2 Troubleshooting 802.1Q Trunks
- 3.1.3 VLAN Trunking Protocol (VTP) Theory
- 3.1.4 VTP Configuration
- 3.1.5 Review of EtherChannel Operation
- 3.1.6 Troubleshooting EtherChannels
- 3.1.7 Multiple Spanning Tree (MST) Theory
- 3.1.8 MST Configuration
- 3.1.9 VIRT LAB - MSTP
- 3.1.10 Review of Rapid Spanning Tree Protocol (RSTP)
- 3.1.11 RSTP Configuration
- 3.1.12 VIRT LAB - Rapid PVST+
- 3.1.13 Lesson 1 Quiz
- 3.2.0 Lesson 2: OSPF
  - 3.2.1 OSPF Compared to EIGRP
  - 3.2.2 Review of OSPF Neighbor Formation
  - 3.2.3 Review of OSPF Network Types
  - 3.2.4 Multi-Area OSPFv2 Configuration
  - 3.2.5 VIRT LAB: OSPFv2 Configuration
  - 3.2.6 OSPF Route Filtering
  - 3.2.7 VIRT LAB: OSPF Route Filtering
  - 3.2.8 OSPF Route Summarization
  - 3.2.9 OSPFv3 Traditional Configuration
  - 3.2.10 VIRT LAB: OSPFv3 Traditional Configuration
  - 3.2.11 OSPFv3 Address Families Configuration
  - 3.2.12 VIRT LAB: OSPFv3 Address Families Configuration
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- 3.3.0 Lesson 3: BGP
  - 3.3.1 Fundamental BGP Concepts
  - 3.3.2 BGP Path Selection Criteria
  - 3.3.3 Routing IPv4 with BGP - Part 1
  - 3.3.4 Routing IPv4 with BGP - Part 2
  - 3.3.5 VIRT LAB: BGP for IPv4
  - 3.3.6 Routing IPv6 with BGP Over an IPv4 Session Configuration
  - 3.3.7 Routing IPv6 with BGP Over an IPv6 Session Configuration
  - 3.3.8 VIRT LAB: BGP for IPv6
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- 3.4.0 Lesson 4: Wireless Technologies
  - 3.4.1 Wireless Communication Theory
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  - 3.4.3 Antenna Types
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- 3.5.0 Lesson 5: Network Services
  - 3.5.1 Review of Network Address Translation (NAT)
  - 3.5.2 Static NAT Configuration
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  - 3.5.4 Port Address Translation (PAT) Configuration
  - 3.5.5 Review of Network Time Protocol (NTP)
  - 3.5.6 NTP Security
  - 3.5.7 HSRP Configuration
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### 4.1.0 Lesson 1: Command Line Management Utilities

- 4.1.1 The "debug" Command
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### 4.2.0 Lesson 2: SNMP

- 4.2.1 SNMP Theory
- 4.2.2 SNMPv2 Configuration
- 4.2.3 SNMPv3 Configuration
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### 4.3.0 Lesson 3: Syslog

- 4.3.1 Syslog Theory
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### 4.4.0 Lesson 4: NetFlow

- 4.4.1 NetFlow Theory
- 4.4.2 NetFlow Configuration
- 4.4.3 VIRT Lab: NetFlow
- 4.4.4 Flexible NetFlow Configuration
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### 4.5.0 Lesson 5: SPAN

- 4.5.1 SPAN Theory
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- 4.5.4 VIRT LAB: RSPAN
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- 4.6.1 IP SLA Theory
- 4.6.2 Basic IP SLA Configuration
- 4.6.3 Advanced IP SLA Configuration
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- 4.7.1 EEM Theory
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- 5.1.2 Line Passwords
- 5.1.3 AAA with a Local Database
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- 5.2.1 Standard Access Control List (ACL) Configuration
- 5.2.2 Extended Numbered ACL Configuration
- 5.2.3 Extended Named ACL Configuration
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- 5.2.5 Control Plane Policing (CoPP) Theory
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- 5.3.1 Overview of Extensible Authentication Protocols (EAPs)
- 5.3.2 EAP Configuration
- 5.3.3 Overview of WebAuth
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- 5.3.5 Pre-Shared Key (PSK) Theory

- 5.3.6 PSK Configuration
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  - 5.4.2 Endpoint Hardening
  - 5.4.3 Next Generation Firewall (NGFW)
  - 5.4.4 Cisco TrustSec
  - 5.4.5 Media Access Control Security (MACsec)
  - 5.4.6 Network Access Control (NAC) with 802.1X
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    - 6.1.2 JSON Formatting
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    - 6.5.2 Cisco DNA Center Workflows
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    - 6.5.4 Cisco DNA Center and vManage APIs
    - 6.5.5 REST API Response Codes
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