

VMware NSX Advanced Load Balancer: ICM plus Troubleshooting and Operations Fast Track

Code:	EDU-NSXABICMTFT
Length:	5 days
URL:	View Online

This five-day, fast-paced course provides comprehensive training on how to install, configure, and manage a VMware NSX® Advanced Load Balancer™ (Avi Networks) solution. This course covers key NSX Advanced Load Balancer (Avi Networks) features and functionality offered in the NSX Advanced Load Balancer 18.2 release. The features covered include the overall infrastructure, virtual services and application components, global server load balancing, various cloud connectors. Also covered are application troubleshooting and solution monitoring. You will be presented with various types of technical problems, which you will identify, analyze, and solve through a systematic process. Access to a software-defined data center environment is provided through hands-on labs to reinforce the skills and concepts presented in the course.

Skills Gained

By the end of the course, you should be able to meet the following objectives:

- Describe NSX Advanced Load Balancer architecture
- Describe the NSX Advanced Load Balancer components and main functions
- Explain the NSX Advanced Load Balancer key features and benefits
- Deploy and configure NSX Advanced Load Balancer infrastructure within Private or Public Clouds leveraging Write and No Access Cloud Connectors
- Explain, deploy, and configure Service Engines
- Explain and configure Local Load Balancing constructors such as Virtual Services, Pools, Health Monitors, and related components
- Understand and modify application behavior leveraging Profiles, Policies, and DataScripts
- Configure advanced services such as Global Server Load Balancing
- Describe and leverage NSX Advanced Load Balancer REST API interfaces and related automation capabilities
- Describe and configure NSX Advanced Load Balancer application and infrastructure monitoring
- Gather relevant information and perform basic troubleshooting of applications leveraging built-in NSX Advanced Load Balancer tooling
- Describe the NSX Advanced Load Balancer components and main functions

- Explain NSX Advanced Load Balancer key features and benefits
- Establish and apply a structured troubleshooting approach and methodology
- Identify, analyze, and troubleshoot problems related to the NSX Advanced Load Balancer infrastructure, to include control and data plane components
- Identify, analyze and troubleshoot problems related to application components such as Virtual Services, Pools and related components

Who Can Benefit

- Experienced system administrators or network administrators
- Network professionals who have experience working with VMware NSX Advanced Load Balancer and are responsible for troubleshooting and operating Application Delivery Controllers solutions

Course Details

Product Alignment

- NSX Advanced Load Balancer 18.2

Outline

Course Introduction

- Introductions and course logistics
- Course objectives

Introduction to NSX Advanced Load Balancer

- Introduce NSX Advanced Load Balancer
- Discuss NSX Advanced Load Balancer use cases and benefits
- Explain NSX Advanced Load Balancer architecture and components
- Explain the management, control, data, and consumption planes and their respective functions

Virtual Services Configuration Concepts

- Explain Virtual Service components
- Explain Virtual Service types
- Explain and configure basic Virtual Service components such as Application Profiles, Network Profiles, Pools, and Health Monitors

Profiles and Policies

- Explain and deep dive on Advanced Virtual Service creation
- Explain and deep dive on Application Profiles and Types such as L4, DNS, Syslog, and HTTP
- Explain and configure advanced application HTTP Profile options
- Deep dive on Network Profiles and Types

- Explain and configure SSL Profiles and Certificates
- Explain and Configure HTTP and DNS policies

Pools Configuration Concepts

- Explain and deep dive on Pools configuration options
- Describe available Load Balancing algorithms
- Explain multiple Health Monitor types
- Explain multiple Persistence Profiles
- Explain and configure Pool Groups

Modifying Application Behavior

- Design and apply application solutions leveraging application profiles
- Design and apply application solutions leveraging Network and HTTP Policies and DataScripts
- Explain DataScript fundamentals
- Explain and leverage NSX Advanced Load Balancer analytics to understand application behavior
- Describe and configure Client SSL Certificate Validation
- Describe and configure Virtual Service DDoS, Rate Limiting, and Throttling capabilities
- Modify Network Profiles properties such as TCP connection properties
- Design and apply application solutions leveraging Persistence Profiles

NSX Advanced Load Balancer Infrastructure Architecture

- Deep dive on the management, control, data, and consumption planes and functions
- Describe Control Plane Clustering and High Availability
- Describe Controller Process Sharding
- Describe Controller Sizing
- Describe Service Engine CPU and NIC Architecture
- Explain Tenants
- Deep dive and configure properties of Service Engine Groups
- Explain Service Engine Group High Availability Modes
- Describe and configure Active/Standby High Availability Mode
- Describe and configure Elastic HA High Availability Mode (Active/Active, N+M)
- Explain Service Engine Failure Detection and Self-Healing
- Describe Service Engine as a Router
- Deep dive on Virtual Service scale out options, such as Layer 2 (Native), Layer 3 (BGP), and DNS-based
- Explain Infrastructure Upgrade process

Introduction to Cloud Connectors

- Introduce Cloud Connectors
- Review Cloud Connector integration modes
- Introduce Cloud Connector types

Install, Configure, and Manage NSX ALB in No Access Clouds

- Explain No Access Cloud concepts
- Configure No Access Cloud integration
- Explain and Configure Linux Server Cloud
- Describe the Advanced Configuration options available in Bare-Metal (Linux Server Cloud)

Install, Configure, and Manage NSX ALB in VMware environments

- Introduce VMware integration options
- Explain and configure VMware No Access Cloud Connector
- Explain and configure VMware Write Access Cloud Connector
- Describe VMware Write with NSX-V Access Cloud Connector
- Describe VMware NSX-T integration

Install, Configure, and Manage NSX ALB in Public Clouds (AWS)

- Describe NSX Advanced Load Balancer Public Cloud integrations
- Explain and demonstrate AWS Public Cloud Integration
- Describe Azure Public Cloud Integration

DNS Foundations

- Review, discuss, and explain DNS fundamentals
- Describe NSX Advanced Load Balancer DNS and IPAM providers

Global Server Load Balancing

- Introduce Global Server Load Balancing Concepts and Benefits
- Explain and configure NSX Advanced Load Balancer infrastructure
- Explain and configure DNS Virtual Service components
- Explain and configure GSLB Service Engine Group
- Describe and configure GSLB Sites
- Explain and configure basic GSLB Services to include pools and health monitors
- Describe GSLB Service Load Balancing algorithms
- Explain and configure Data and Control Plane-based Health Monitors
- Describe GSLB Health Monitor Proxy

Troubleshooting

- Introduce Infrastructure and Application Troubleshooting Concepts
- Describe Control Plane and Data Plane-based Troubleshooting
- Explain Application Analytics and Logs
- Describe client logs analysis
- Explain Headers troubleshooting and Packet Capture mechanism
- Leverage CLI for detailed data plane troubleshooting

- Explain Service Engine Logs
- Explain Health Monitors troubleshooting
- Explain BGP session troubleshooting
- Describe Control Plane Troubleshooting, Clustering, and Cloud Connector issues

Monitoring NSX Advanced Load Balancer Solution

- Describe NSX Advanced Load Balancer Events
- Describe and configure NSX Advanced Load Balancer Alerts
- Describe NSX Advanced Load Balancer monitoring capabilities, leveraging SNMP, Syslog, and Email

Introduction to NSX ALB Programmability and Automation

- Introduce NSX Advanced Load Balancer REST API interface
- Describe REST API Object Schema
- Explain and interact with REST API interface, leveraging browser and command line utility
- Explain Swagger-based API documentation
- Review 3rd-party automation integrations

Events and Alerts

- Describe NSX Advanced Load Balancer Events
- Describe and configure NSX Advanced Load Balancer Alerts
- Describe NSX Advanced Load Balancer monitoring capabilities leveraging SNMP, Syslog and Email

Introduction to NSX Advanced Load Balancer Troubleshooting

- Explain NSX Advanced Load Balancer troubleshooting concepts
- Describe and leverage Application Logs
- Describe and leverage Application Analytics and Security Insights
- Understand and utilize Health Score concepts
- Explain and leverage metrics
- Explain and leverage packet capture and command line utilities
- Describe and leverage UI and CLI utilities to perform Control Plane troubleshooting

Cloud Connector Infrastructure Troubleshooting

- Describe and perform general Cloud Connector troubleshooting
- Describe and analyze VMware Cloud Connector state
- Leverage case studies to troubleshoot VMware Cloud Connector
- Describe and troubleshoot VMware NSX Cloud Connector integration
- Describe and troubleshoot Linux Server Cloud Connector integration
- Describe and troubleshoot Openstack Cloud Connector integration
- Leverage case studies to troubleshoot Openstack Cloud Connector
- Describe and troubleshoot AWS and Azure Cloud Connector integrations

Data Plane Infrastructure Troubleshooting

- Explain general Service Engine infrastructure
- Explain and leverage Analytics, Health Score and Metrics for Service Engine troubleshooting
- Explain and leverage Events and Alerts for Service Engine troubleshooting
- Leverage CLI for Service Engine troubleshooting
- Analyze Service Engine with Tech Support utility
- Leverage CLI for advanced Datapath analysis

Monitoring NSX Advanced Load Balancer

- Explain and configure SNMP-based monitoring
 - Explain and configure REST API-based monitoring
 - Describe and leverage 3rd-party REST API monitoring extensions (Grafana, Prometheus)
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