

Citrix NetScaler Essentials and Traffic Management (CNS-220)

COURSE OVERVIEW:

In this course, you will learn the skills that are required for implementing NetScaler components including secure load balancing, high availability, and NetScaler management. You will learn how to configure your NetScaler environments to address traffic delivery and management requirements including load balancing, availability, and NetScaler operation management.

You will also learn how to configure and manage NetScaler Traffic Management features, including content switching, traffic optimization, and global server load balancing. At the end of the course, you will be able to configure your NetScaler environments to address efficient traffic switching and resilience requirements including content switching, traffic optimization, and disaster recovery.

This course is based on the Citrix NetScaler 11 product, but the skills and fundamental concepts are common to earlier product versions. A voucher for the Citrix Certified Professional – Networking (CCP-N) exam will be issued in this course.

WHO WILL BENEFIT FROM THIS COURSE?

Individuals with little or no previous NetScaler experience who will be deploying or managing NetScaler environments.

PREREQUISITES:

- Basic networking experience
- Experience using TCP/IP, HTTP protocols, and the OSI model
- Knowledge of server load balancing and content switching concepts
- Familiarity with Web server software
- Familiarity with DNS, SSL, and compression concepts
- Knowledge of network security threats and site protection concepts

Note: Citrix recommends that you take the following follow free course prior to attending this class:

- CNS-102 NetScaler Overview
- Citrix NetScaler Essentials and Unified Gateway (CNS-222)

COURSE OBJECTIVES:

- Functionality and capabilities of the NetScaler
- Basic NetScaler network architecture
- Obtain, install, and manage NetScaler licenses
- How SSL is used to secure the NetScaler
- Optimize the NetScaler system for traffic handling and management
- Customize the NetScaler system for traffic flow and content-specific requirements
- Tools and techniques for troubleshooting common NetScaler network and connectivity issues
- Implement NetScaler TriScale technology, including clustering
- Configure advanced load balancing and GSLB on the NetScaler system
- Functionality and characteristics of the NetScaler SDX platform

COURSE OUTLINE:

1. Getting Started

- Introduction to the NetScaler System
- TriScale
- NetScaler Use Cases NetScaler Functionality NetScaler Overview
- Product Features
- NetScaler Operating System Overview
- nCore Configuration Architecture
- NetScaler File System
- Deployment Scenarios
- Logging in to the NetScaler System
- NetScaler Licenses

2. Basic Networking

- OSI Networking Model
- NetScaler Architecture Overview NetScaler-Owned IP Addresses Network Topology
- NetScaler Network Interfaces
- Virtual Local Area Networks (VLANs)
- IP Routing
- Determining the Source IP Address
- Packet Forwarding
- Use Source IP Mode
- Client-IP HTTP Header Insertion
- Path MTU Discovery
- Link Aggregation
- Access Control Lists
- Network Address Translation (NAT)

3. NetScaler Platforms

- Architecture and General Concepts
- Hardware Platforms
- Hardware Components
- Overview of MPX, VPX, CPX, and SDX
- Unique capabilities and functionality of the NetScaler SDX platform
- Networking characteristics of the NetScaler SDX platform
- Process of provisioning and administration of NetScaler VPX instances on a NetScaler SDX appliance

4. High Availability

- High Availability Functionality
- High Availability Node Configuration
- Propagation and Synchronization
- Failover, Route Monitors, and Fail Safe
- Propagation and Synchronization
- High Availability Management
- Performing an Upgrade
- Troubleshooting
- Upgrading High Availability Pair

5. Load Balancing

- Local Load Balancing Concepts
- Naming Conventions
- Persistence
- Service Types
- LB Methods
- Disabling Entities
- Diagnostics/Troubleshooting
- L4 vs. L7 for TCP Services
- UDP Ping vs. L7
- Monitor Attributes
- Built in L7 Monitors
- Monitors from Scripts
- EAV Monitors
- ECV Monitors
- DataStream

6. SSL Offload

- SSL and TLS
- SSL Session Process
- SSL Administration
- SSL Offload Overview
- SSL Attacks Overview
- SSL Troubleshooting
- Cipher Suites
- Certificate Management
- Feature and Benefits
- Offload Performance
- Deployment Scenarios
- Citrix Recommendations for SSL

7. Securing the NetScaler

- NetScaler Communication Ports
- Overview of AAA
- Authentication on the NetScaler
- NetScaler Users
- Command Policies
- Admin Partitions

8. Monitoring and Troubleshooting

- Monitoring Needs
- NetScaler Log Management
- Simple Network Management Protocol
- AppFlow on the NetScaler System
- NetScaler Insight Overview
- NetScaler Command Center Overview
- Network Traffic Capture using NSTRACE
- Decoding SSL Traffic with Wireshark
- Display NetScaler System Information
- NetScaler Command Line Tools

9. AppExpert Classic Policy Engine

- Policies Overview
- Expression Structures
- Content Filtering
- Content Filtering Actions
- Content Filtering Rules

10. AppExpert Default Policy Engine

- Understanding Packet-Processing Flow
- Understanding Policies
- Policy Process Evaluation Flow
- Identifying Default Policy Expressions
- Actions
- Understanding Bind Points
- Understanding Policy Labels
- Pattern Sets
- Typecasting

11. Rewrite, Responder, and URL Transform

- Configuring Rewrite Policies and Actions
- Responder Actions
- Responder Action for Timeouts
- Responder Policies
- Responder HTML Page Imports
- Binding Policies
- URL Transformation
- URL Transformation Actions
- Binding of URL Transformations

12. Content Switching

- Introduction to Content Switching
- Content Switching Based on Network Characteristics
- Content Switching, Virtual Servers, and Load-Balancing Virtual Servers
- Configuring Content-Switching Virtual Servers
- Configure a Load-Balancing Setup for Content Switching
- Content-Switching Policies
- Content-Switching Rule Precedence With Priority Specified

13. Optimization

- Introduction to Caching
- Compression
- Frontend Optimization

14. Global Server Load Balancing

- DNS Overview and Records
- GSLB Deployment Methods
- GSLB Concepts
- GSLB Entities
- GSLB DNS Methods
- Metric Exchange Protocol
- Viewing and Configuring GSLB with the Visualizer
- GSLB Persistence

15. Clustering (Optional)

- How Clustering Works
- Cluster Synchronization
- Cluster Communication Interfaces
- Striped and Spotted IP Addresses
- Traffic Distribution
- Cluster and Node States
- NetScaler Cluster Set up
- Dynamic Configuration for a Cluster Link Aggregation Group
- NetScaler Cluster Management
- NetScaler Cluster Troubleshooting

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