CNS-205-1 Citrix NetScaler 11 Essentials and Networking

The objective of the Citrix NetScaler 11 Essentials and Networking course is to provide the foundational concepts and advanced skills necessary to implement, configure, secure, monitor, optimize, and troubleshoot a Citrix NetScaler system from within a networking framework. This course is designed specifically for learners who have limited or no previous NetScaler experience. In order to successfully complete this course, learners will have access to hands-on exercises within a virtual lab environment.

This course is based on the Citrix NetScaler 11.0 product, but the skills and fundamental concepts learned are common to earlier product versions.

Who should enroll in this course? This course is recommended for learners* who are new to the NetScaler platform or are currently networking professionals.

**For administrators interested in integrating NetScaler as an access gateway, please refer CAG-200 Implementing Citrix Access Gateway 9.0 Enterprise Edition.*

Skills and Key Topics

Upon successful completion of this course, learners are able to:

- Identify the capabilities and functionality of the NetScaler
- Explain basic NetScaler network architecture
- Obtain, install, and manage NetScaler licenses
- Explain how SSL is used to secure the NetScaler
- Implement NetScaler TriScale Technology, including Clustering
- Configure advanced load balancing and GSLB on the NetScaler system
- Optimize the NetScaler system for traffic handling and management.
- Customize the NetScaler system for traffic flow and content-specific requirements
- Demonstrate monitoring and reporting through native NetScaler logging tools
- Employ recommended tools and techniques to troubleshoot common NetScaler network and connectivity issues

Instructional Method

Onsite at IntraSystems Training Facility or Self-paced online course, Instructor-led

Course Length

30 hours or 5 days (estimated time needed to complete this course)

Certification Preparation

The CNS-205-1 course prepares learners for the A28 Citrix NetScaler 11 Essentials and Networking exam, a requirement for the NetScaler 11 Citrix Certified Administrator (CCA) certification.

TOPIC OUTLINE

Provided is the topic outline for CNS-205-1:

Getting Started

- NetScaler Overview
- Introduction to the NetScaler System
- NetScaler Functionality
- NetScaler Operating System Overview
- Hardware Platforms
- Hardware Components
- Planning a NetScaler Deployment
- Deployment Scenarios
- TriScale
- NetScaler Configuration
- Logging in to the NetScaler System
- NetScaler Licenses

Basic Networking

- OSI Networking Model
- NetScaler Architecture Overview
- Packet Forwarding
- NetScaler-Owned IP Addresses
- NetScaler IP Address
- Sending a Client IP Address to Servers
- Virtual Local Area Networks
- Network Address Translation

Basic Load Balancing

- Load Balancing Basics
- Configure Basic Load Balancing
- Services Configuration Overview
- Virtual Servers Creation
- Services Bound to a Virtual Server
- Configuration Verification
- Load-Balancing Methods
- Service Weights
- Session Persistence Methods
- Service Level Monitors

High Availability

- High Availability Functionality
- High Availability Node Configuration
- Propagation and Synchronization
- High Availability Management
- Policies and Expressions
- Policies Overview
- Policy Basics
- Basic Policy Components
- About Policy Bindings
- Policy Priorities
- Hypertext Transfer Protocol
- Expression Structures
- Wildcards
- Context-Sensitive Fields
- Simple Expressions
- Compound Expressions
- Advanced Policy Conversion

Content Switching

- Introduction to Content Switching
- Understanding Content Switching
- Configure a Load-Balancing Setup for Content Switching
- Content-Switching Policies
- Content-Switching Rule Precedence Without Priority Specified
- Content-Switching Rule Precedence With Priority Specified

Connection Tuning

- IPv6
- DNS and the NetScaler
- IP Routing
- Link Load Balancing
- SIP Load Balancing
- Custom Load
- Persistence and Persistence Connections
- Load-Balancing Configuration Protection
- Load-Balancing Setup Management
- Traffic Management

Global Server Load Balancing

- GSLB Deployment Methods
- GSLB Concepts
- GSLB DNS Methods
- Implementing Static GSLB
- Metric Exchange Protocol
- Configuring Site-to-Site Communication
- Customizing the GSLB Configuration
- GSLB Persistence
- Monitoring GSLB Services
- Protecting the GSLB Setup Against Failure
- Implementing GSLB Failover for Disaster Recovery

Clustering

- Features supported by Clustering
- How Clustering Works
- Cluster Synchronization
- Cluster Connections
- Cluster Communication Interfaces
- Striped and Spotted IP Addresses
- Traffic Distribution
- Cluster and Node States
- NetScaler Cluster Set up
- NetScaler Cluster Traffic Distribution Mechanisms
- NetScaler Cluster Management
- NetScaler Cluster Troubleshooting

Security and Authentication

- SSL
- SSL Administration
- SSL Keys
- Digital Certificates
- Certificate Signing Request
- SSL Certificates
- Certificate Generation
- Certificate Key Pairs
- NetScaler System Communication
- Front-end SSL
- Front-end SSL_TCP
- Securing Traffic
- SSL_Bride
- SSL Termination Points
- SSL Offload
- Configuring SSL Offload
- Advanced SSL Settings
- Hardware Compliance
- Authentication Setup
- AAA for Traffic Management
- SAML 2.0 Consumer Support
- Enhanced NTLMv2 Support
- Authentication Policy Creation
- Single Sign-on Setup
- LDAP Authentication
- Detailed Access Control Lists Configuration
- Extended Access Control Lists
- Creation and Removal of Access Control Lists
- SYN, SSL Renegotiation, TLS Man-in-the-Middle, and DoS Protection
- Client Traffic Management Based on Traffic Rate

Rewrite, Responder, and URL Transformation

- Understanding Packet Processing Flow
- Understanding Policies
- Policy Process Evaluation Flow
- Identifying Advanced Policy Expressions
- Actions
- Understanding Bind Points
- Understanding Policy Labels
- Pattern Sets
- Typecasting
- Rewrite, Responder, and URL Transform
- Configuring Rewrite Policies and Actions
- Configuring Responder Policies and Actions
- Configuring URL Transformation Policies and Actions

Optimizing Traffic

- Introduction to Compression
- Integrated Caching
- Reverse-Proxy-Cache Configuration
- Content Groups
- Cache Selectors and Policies
- Caching Static and Dynamic Content
- Request and Response Process Flow
- Cache Policies and Cache Expressions
- Action Analytics
- Evaluation Order
- Built-In Policies
- Graceful Cache Configuration Changes
- Cache Content Groups
- FlashCache
- Caching Management
- AppExpert Templates
- Terminology
- Methodology

Advanced Monitoring

- Monitoring Needs
- Simple Network Management Protocol
- Dashboard
- Citrix Command Center
- Reporting Tools
- NetScaler Log Management
- Audit Logging
- Configuring NetScaler for Audit Logging
- Configuring an Audit Logging Server
- Global Auditing Parameters
- Configuring Auditing Policies
- Monitoring Methods
- Reporting Tools
- Monitoring Needs
- Simple Network Management Protocol
- To Configure SMNPv1 and SMNPv2
- AppFlow on the NetScaler
- AppFlow Collectors and EdgeSight Monitoring
- AppFlow Actions and EdgeSight Monitoring
- Third-Party Collectors

Troubleshooting

- Troubleshooting Methodology
- Troubleshooting Resources
- Troubleshooting Tools
- Troubleshooting Network Issues
- Troubleshooting Hardware Issues
- Load Balancing Issues
- Authentication, Authorization, and Access (AAA) Issues
- SSL Troubleshooting
- SSL Offload Troubleshooting
- Policy Troubleshooting
- High Availability Troubleshooting