

# Load Balance Technologies

## Course 1766 – 24 Hours

### Overview

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The objective of the 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 Load Balancer experience. In order to successfully complete this course, learners will have access to hands-on exercises within a virtual lab environment.

### On Completion, Delegates will be able to

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- Configure Netscaler technologies and understand Load Balancing consideration

### Who Should Attend

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- Currently networking professionals

### Prerequisites

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- CCNA certification or familiarity with internetworking technologies and the ability to perform basic configuration of Cisco routers, including practical experience installing, operating, and maintaining Cisco routers and switches in an enterprise environment
- Knowledge of IP, including the ability to perform IP subnetting on non-octal boundaries, configure IP standard and extended access lists, operate and configure distance vector routing protocol, configure serial interface, and interpret a Cisco routing table

### Course Contents

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#### 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 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\_Bridge
- 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

### **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