

# CNS-320-1I: Citrix NetScaler Security, Management and Optimization



## Overview

This course is designed for students with previous experience NetScaler experience, and best suited for individuals who will be deploying and/or managing Citrix NetScaler Application Firewall (AppFirewall) to secure application access in a Citrix NetScaler environment, as well as NetScaler Management and Analytics System (MAS) to administer a Citrix NetScaler environment or optimize NetScaler-managed application delivery traffic.

Students will learn the skills required to deploy and manage AppFirewall including types of web attacks, protections and signatures, the adaptive learning engine, AppFirewall policies and profiles, troubleshooting, and additional pertinent NetScaler security features.

Students will learn the skills required for deploying and utilizing the NetScaler Management and Analytics System including the ability to manage multiple NetScaler platforms centrally, orchestrate configuration changes, report on transactions passing through the NetScaler environment, visualize infrastructure, and plan expansions. Students will also learn how to implement features including Caching, Frontend Optimization, NetScaler Web logging, and TCP/HTTP optimization to optimize traffic managed by a NetScaler environment.

At the end of the course, students will be able to configure NetScaler environments to address application services security requirements with AppFirewall, as well as automate and manage network services for scale-out application architectures with Citrix NetScaler Management and Analytics System and optimize NetScaler managed application delivery traffic.

Recommended pre-requisite courses:

- [CNS-102 NetScaler Overview](#)
- AND
- [CNS-220 Citrix NetScaler Essentials and Traffic Management](#)
- OR
- [CNS-222 Citrix NetScaler Essentials and Unified Gateway](#)

## Key Skills

Upon successful completion of this course, students will be able to:

- Identify common web attacks and vulnerabilities
- Write PERL compatible regular expressions
- Understand how to utilize the adaptive learning engine
- Configure AppFirewall to protect web applications
- Utilize NetScaler Secure Insight to Monitor, Manage and report on Application Services security
- Troubleshoot AppFirewall

- Manage multiple NetScaler platforms centrally
- Orchestrate configuration changes
- Report on transactions passing through the NetScaler environment
- Visualize infrastructure and plan expansion

### **Audience**

Students interested in learning the skills required to deploy and manage AppFirewall to secure application access in their Citrix NetScaler environment, as well as NetScaler MAS to administer a Citrix NetScaler environment, or optimize NetScaler-managed application delivery traffic. Specifically:

- Administrators
- Implementers / Engineers
- Architects

### **Instructional Method**

This course is offered in instructor-led training (ILT)/virtual instructor-led training (vILT) formats with application of concepts through hands-on exercises in a live lab environment.

### **Course Length**

5 days

### **Course Materials**

As part of this course, students will receive the following materials:

- Access to a lab environment for the duration of the course
- Lab exercise guide
- Access to final course deliverables once the course is available in general availability including copies of all official materials presented by the instructor with additional notes and references as well as videos with experts throughout Citrix around course topics and lab exercises.

### **Preparatory Recommendations**

Citrix recommends students prepare for this course by taking the following courses:

- [CNS-102 NetScaler Overview](#)
- AND
- [CNS-220 Citrix NetScaler Essentials and Traffic Management](#)
- OR
- [CNS-222 Citrix NetScaler Essentials and Unified Gateway](#)

Citrix also recommends an understanding of the following concepts and technologies:

- Functionalities and capabilities of Citrix NetScaler
- Basic NetScaler network architecture
- Obtaining, installing, and managing NetScaler licenses

- Use of NetScaler traffic management features
- Basic Networking
- Windows and Linux Server administration
- Web Services
- SSL encryption and certificates
- Common web services attacks
- 3<sup>rd</sup> party Network Management tools

## **Certification Preparation**

There are no associated exams/certifications currently available. Click [here](#) to learn more about Citrix Certifications.

## **Topic Outline**

### Days 1-3

#### Application Firewall Overview

- AppFirewall solution Security Model (include signature)
- Overview of types of attacks
- PCIDSS
- Adaptive Learning Engine
- Packet Processing and Inspection
- Log Files – view violations

#### Policies and Profiles

- Profiles
- Policies
- Engine Settings

#### Regular Expressions

- Forms of Regular Expressions
- Using Regular Expressions
- Metacharacters and Literal Characters
- Escapes
- Quantifiers
- Back Referencing
- Lookaheads
- Regular Expression Scope

#### Attacks and Protections

- Data Flow with AppFirewall
- Security Checks

- AppFirewall Actions
- Adaptive Learning
- Signatures
- Code Quality (HTML Comment Striping)
- Buffer Overflow
- SQL injection
- Cross-Site Scripting
- Cookie Tampering
- Cookie Protection
- Parameter Tampering
- Server Misconfiguration
- Form Protections
- Identity Theft - CC – Safe Object
- URL Protections – Start URL and Deny URL
- CSRF

#### Application Firewall Troubleshooting and Monitoring

- Security Insight
- HTTP Callout
- Rate-Limit
- AppQOE
- IP Reputation

#### Days 4-5

##### Introduction

- NetScaler MAS Introduction and Configuration
- Using NetScaler MAS to Manage and Monitor NetScalers
- Using NetScaler MAS to Manage NetScaler configurations

##### MAS analytics

##### Optimization

- Caching
- Frontend Optimization
- TCP/HTTP optimization

##### NetScaler Web Logging