

## Day - 1

- **Introduction to the Course**

- Introduction to the Course
- Our Community

- **Setting Up Labs**

- Introduction to Nginx
- Installation Methods for Nginx
- Our Lab Setup
- Document - MSSP
- Launching Infrastructure for Nginx
- Installing Nginx
- Document - Install Nginx
- Notes - Section 1

- **Setting Up Labs**

- Introduction to Protocols
- HTTP - GET
- HTTP - Partial GET
- HTTP - Conditional GET
- HTTP POST
- HTTP - Head
- HTTP Trace
- HTTP - OPTIONS Header
- HTTP Request Methods
- HTTP Response Status Code
- Notes - Domain 2

- **Getting started with NGINX**

- Understanding NGINX Architecture
- Important Note
- Configuration Contexts
- Understanding HTTP Contexts
- Nginx Command Line Options
- Include Directive
- Understanding Server Blocks / Virtual Hosts
- Configuring Multiple Websites on Nginx

- **Reverse Proxy**

- Overview of Reverse Proxy Setup
- Configuring NGINX as a Reverse Proxy
- Document - Reverse Proxy Setup
- X-Real-IP
- Document - X-Real-IP Configuration
- Proxy Host Header
- Document - Proxy Host Header Commands

## Day - 2

- **Load Balancers**

- Introduction to Load Balancers
- Implementing Nginx as Load Balancer
- Document - Load Balancing Configuration
- Understanding Health Checks
- Active vs Passive Health Checks
- Health Check Parameters
- Traffic Distribution Method - Server Weight
- Least Connect Method

- **The Caching Subsystem**

- Introduction to HTTP Caching (New)
- Understanding the HTTP Cache Control Headers (New)
- Cache Control Headers: no-store (New)
- Adding no-store response header in Nginx (New)
- If-Modified-Since Header (New)
- Introduction to Cache-Control Headers
- The Q Factor
- Cache Control: no-cache and must-re validate
- Cache Control Headers: max-age & s-max-age
- Cache Time & Browser Analysis
- Expires Header
- Understanding the Keep Alive connections
- Date & Expires Header

- **Load Balancers**

- Understanding Static Assets
- Configure Reverse Proxy with Static Assets

- **Access Control**

- White Listing
- Limit connection module
- Basic Authentication
- Basic Authentication Practical
- Understanding Hashing
- Understanding Digest Authentication
- Digest Authentication Practical
- GeoIP

- **Logging Subsystem**

- Access Logs
- Configuring Custom Access Logs
- Error Logs

## Day - 3

- **HTTP Compression**

- HTTP Compression
- Accept Content Encoding
- Getting started with Gzip for Nginx

- **Yet To Decide**

- HTTP Referrer
- Accept Language & Content Language

- **Modular Architecture of Nginx**

- Understanding the Modular NGINX Architecture
- Compiling Nginx from Source
- Document - Compilation of Nginx
- Building Dynamic Modules for Nginx
- Document - Dynamic Modules Compilation
- Building Static Modules for Nginx
- Document - Static Modules Compilation
- Web Application Firewall
- Installing & Configuring WAF on Nginx
- WAF - Custom Messages on Rule Matching Patterns

- **Cryptography Module**

- Our Community
- Understanding Asymmetric Key Encryption
- Plain Text vs Encrypted Text Protocols
- Understanding HTTPS Protocol
- Overview of NGINX Configuration for TLS
- Grading SSL/TLS Configuration
- Creating HTTPS website with Let's Encrypt
- CRL and OCSP
- Revocation of SSL/TLS Certificates
- SSL Termination