

## **5-Day Basic to Intermediate Level Proxy Administration Training**

### **Day 1: Introduction to Proxy Servers and Basic Configuration**

#### **Module 1: Understanding Proxy Servers**

- What is a proxy server and its role in network communication?
- Types of proxy servers: Forward, Reverse, Transparent, etc.
- Advantages and use cases of proxy servers in an organization.

#### **Module 2: Installing and Configuring a Basic Proxy Server**

- Choosing the right proxy server software (e.g., Squid, Nginx)
- Installing and setting up the proxy server on different platforms
- Basic configuration and testing of the proxy server
- Implementing access control policies for basic security

#### **Module 3: Logging and Monitoring Proxy Server Activity**

- Enabling and configuring logging on the proxy server
- Understanding access logs, error logs, and other log types
- Analyzing proxy server logs for troubleshooting and security insights
- Overview of monitoring tools for proxy server performance

### **Day 2: Advanced Proxy Configuration and Security**

#### **Module 4: Advanced Proxy Server Configuration**

- Implementing caching to improve performance and reduce bandwidth usage
- Configuring SSL interception for HTTPS traffic inspection
- Understanding proxy server chaining and cascading for load balancing
- Enabling transparent proxy mode for seamless user experience

#### **Module 5: Proxy Authentication and User Management**

- Setting up user authentication for controlled access
- Different authentication methods: Basic, Digest, NTLM, LDAP, etc.
- Managing user accounts and permissions
- Integrating with external authentication systems (e.g., Active Directory)

#### **Module 6: Proxy Server Security Best Practices**

- Securing the proxy server against common attacks (e.g., DDoS, SQL injection)
- Harden the server by disabling unnecessary services and implementing firewall rules
- Regularly updating and patching the proxy server software

- Designing a comprehensive security policy for the proxy environment

## **Day 3: Proxy Server Performance and Optimization**

### **Module 7: Performance Tuning and Optimization**

- Analyzing performance bottlenecks and areas of improvement
- Optimizing cache settings for better utilization of resources
- Adjusting connection and timeout settings for optimal performance
- Load balancing and failover configurations for high availability

### **Module 8: Content Filtering and URL Blacklisting**

- Implementing content filtering policies to restrict access to specific content categories
- Creating custom URL blacklists and whitelists
- Using third-party databases for enhanced content filtering
- Monitoring and reporting on content filtering effectiveness

### **Module 9: Transparent Proxy Implementation**

- Understanding the concepts of transparent proxying
- Configuring transparent proxy on different platforms (e.g., iptables, pf)
- Benefits and challenges of transparent proxy deployment
- Combining transparent proxy with other security solutions (e.g., IDS/IPS)

## **Day 4: Proxy Protocols and Load Balancing**

### **Module 10: Proxy Protocols and SOCKS Proxy**

- Overview of SOCKS protocol and its use cases
- Setting up a SOCKS proxy server for specific applications
- Pros and cons of using SOCKS proxy over HTTP/HTTPS proxies
- Implementing secure SOCKS proxy configurations

### **Module 11: Load Balancing with Proxy Servers**

- Understanding load balancing and its importance in proxy environments
- Load balancing methods: Round-robin, Least Connections, IP Hash, etc.
- Configuring load balancing for improved performance and redundancy
- Troubleshooting load balancing issues and optimizing configurations

### **Module 12: Proxy High Availability and Failover**

- Redundancy and failover options for proxy servers
- Implementing high availability using load balancers and clustering
- Monitoring and managing proxy server clusters

- Best practices for disaster recovery and business continuity

## **Day 5: Proxy Server Troubleshooting and Best Practices**

### **Module 13: Proxy Server Troubleshooting**

- Common proxy server issues and their root causes
- Analyzing log files for troubleshooting purposes
- Using diagnostic tools and commands to identify problems
- A step-by-step approach to resolving proxy server issues

### **Module 14: Proxy Server Best Practices and Case Studies**

- Recap of essential best practices for proxy administration
- Real-world case studies of successful proxy server implementations
- Q&A session and discussion on specific challenges faced by attendees
- Graduation and awarding of completion certificates