



Training Course Outline:

Training Pack 1

Introduction

LAN Switching

- LAN Switching Concepts
- Virtual LANs & Trunking
- Spanning Tree Protocol
- Link Aggregation

IP Routing

- IP Routing Concepts
- IP Addressing
- Static Routing
- Dynamic Routing: OSPF/EIGRP

Wireless LAN

- WLAN Concepts
- WLAN Components
- WLAN Design
- WLAN Security

IPv6 Concepts

- IPv6 Addressing
- Static IPv6 Routing
- Dynamic IPv6 Routing
- Implementing DHCPv6

Quality Of Service (QoS)

- Classification & Marking
- Congestion Management
- Congestion Avoidance
- Traffic Policing & Shaping

Additional Technologies

- Access Lists
- NAT & PAT
- DHCP & HSRP & VRRP
- NTP & Syslog & SNMP

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Training Pack 1

Introduction

Installation and Upgrade

- Requirements
- Installation options
- Upgrading Windows versions
- Post-installation configuration

Active Directory

- Active Directory Domain Services
- Managing users, groups, and accounts
- Group Policy Management
- Active Directory Federation Services

Implementing Network Solutions

- IP addressing and routing
- DNS configuration and management
- DHCP setup and administration
- Virtual networking (Hyper-V)

Implementing Storage Solutions

- Disk and storage management
- Data deduplication
- Storage Spaces
- iSCSI and NFS configuration

Security and Access Control

- Windows Defender features
- User account Permissions
- BitLocker Drive Encryption
- Firewall and security policies

Backup and Recovery

- Windows Server Backup
- Volume Shadow Copy Service
- Data protection and recovery
- Azure Backup integration

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Training Course Outline:

Training Pack 1

Introduction

Installing Red Hat Enterprise Linux Server

- Installing Linux Virtual Machines
- Configuring Network and Time Services
- Registering and Updating the System
- Managing Repositories and Packages

Using Essential Tools

- Accessing the Command Line
- Working with Files and Directories
- Using Basic Text Editors
- Using Pipes, Redirection, and Regex

Managing Users and Groups

- Creating and Deleting User Accounts
- Modifying User Account Attributes
- Managing User Passwords and Aging
- Creating and Managing Groups

Managing File Systems and Permissions

- Creating and Mounting File Systems
- Managing File System Attributes
- Using Logical Volume Management
- File Permissions

Managing Processes and Services

- Viewing and Controlling Processes
- Scheduling Tasks with Cron and At
- Understanding and Managing Systemd
- Troubleshooting System Boot Issues

Managing Network Services and Security

- Configuring Network Interfaces and Routing
- Configuring SSH and SCP
- Configuring Apache Web Server
- Configuring Unbound DNS Server

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Training Course Outline:

Training Pack 1

Introduction

Python Basics

- Installing and Running Python
- Variables, Expressions, and Statements
- Functions and Modules
- Best Practices and Code Optimization

Object & Data Structure

- Python Data Types
- Lists, Tuples, and Dictionaries
- Sets, Booleans and Logical operations
- Advanced Data Structure Manipulation

Python Statements

- Conditional Statements
- Looping & Nested Statements
- Exception Handling
- File Handling & IO Operations

Web Development

- Concepts and Terminology
- HTML, CSS, and JavaScript
- Using Bootstrap and AJAX
- Front-End Frameworks

Web Application

- Forms and User Input Validation
- PHP and MySQL
- Relational & non-Relational Databases
- RESTful APIs & Integration

CMS & Wordpress

- Concepts and Terminology
- Installing & Configuring WordPress
- Customizing Themes & Plugins
- Performance Optimization

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Training Course Outline:

Training Pack 1

Introduction

Machine Learning

- Supervised & Unsupervised Learning
- Reinforcement Learning
- Data Preprocessing & Feature engineering
- Model Selection & Evaluation

Neural Networks & Deep Learning

- Deep Learning Architectures
- Convolutional Neural Networks (CNN)
- Recurrent Neural Networks (RNN)
- Training Deep Neural Networks

Natural Language Processing (NLP)

- Text Preprocessing
- Sentiment Analysis
- Named Entity Recognition
- Text Generation

Computer Vision

- Image Processing
- Image Classification
- Object Detection & Recognition
- Image Generation

AI Tools & Frameworks

- AI Algorithms & Libraries
- Data Manipulation & Model Building
- Troubleshooting & Debugging AI Models
- Developing Basic AI Applications

Future Trends in AI

- AI Ethics Evolution
- Generative AI Revolution
- AI-Powered Education
- AI in Cybersecurity

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Training Course Outline:

Training Pack 2

Introduction

- ✓ Network Security Terminology
- ✓ Security against System Vulnerabilities
- ✓ Security against Reconnaissance Attacks
- ✓ Security against Unauthorized Remote Access
- ✓ Security against SNMP Attacks
- ✓ Authentication, Authorization, Accounting
- ✓ Security against VLAN Attacks
- ✓ Security against VTP Bomb
- ✓ Security against VTP DoS
- ✓ Security against VLAN Hopping
- ✓ Security against STP Reconnaissance
- ✓ Security against Root Bridge Attack
- ✓ Security against BPDU Injection
- ✓ Security against BPDU Modification
- ✓ Security against TCN Flood
- ✓ Security against LAG Spoofing
- ✓ Security against LAG Starvation
- ✓ Security against LAG Security Bypass
- ✓ Security against MAC Flooding
- ✓ Security against MAC Spoofing
- ✓ Security against DHCP Starvation
- ✓ Security against DHCP Spoofing
- ✓ Security against ARP Poisoning
- ✓ Security against L2 & L3 MiTM
- ✓ Security against IP Spoofing
- ✓ Security against Isolation Bypass
- ✓ Security against Route Injection
- ✓ Security against Route Manipulation
- ✓ Security against Routing DoS
- ✓ Security against Routing Table Exhaustion
- ✓ Security against VLAN Isolation Bypass
- ✓ Security against ACL Bypass
- ✓ Security against Rogue Wireless Devices
- ✓ Security against Unauthorized Wireless Access
- ✓ Security against Wireless DoS Attacks
- ✓ Security against Flow Storms
- ✓ VPN and Network Security

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Training Course Outline:

Training Pack 2

Introduction

Authentication and Authorization

- User Authentication
- Multi-Factor Authentication (MFA)
- Role-Based Access Control (RBAC)
- Certificate-Based Authentication

Active Directory Security

- Securing AD Domain Services
- Group Policy Settings
- Securing AD Replication
- Hardening Active Directory

Group Policy Security

- Introduction to Group Policy
- Creating and Managing GPOs
- Group Policy Settings
- GPO Filtering Techniques

Securing Server Roles and Features

- Securing Web Server
- Securing File Server
- Securing Virtualization
- Securing Remote Access

Data Security

- Data at Rest Encryption
- Data in Transit Encryption
- Access Controls & Permissions
- Data Backup & Recovery

Security Compliance and Monitoring

- Windows Security Center
- Windows Security Assessments
- Security Compliance using SCM
- Audits & Compliance Reporting

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Training Course Outline:

Training Pack 2

Introduction

Linux Security Fundamentals

- File System and Permissions
- Access Control Lists
- Context-Based Permissions
- User Accounts & Privilege Escalation

Linux Security Tools and Techniques

- Firewall & SELinux
- Secure Remote Access
- Encrypt Files and Partitions
- Detecting and Removing Malware

Linux Network Security

- Log Management
- Traffic Monitoring
- Securing Apache Web Server
- Implementing VPNs

Linux System Security

- Tuning System Performance
- Scheduling Tasks with Cron and AT
- Using Systemd and Rescue Mode
- Analyzing Core Dumps and ABRT

Linux Server Security

- Installing and Configuring Linux Servers
- Managing Software Repositories and Packages
- Securing Services with Certificates and Keys
- Using Host Intrusion and Detection Systems

Linux Container Security

- Understanding Containers
- Running and Managing Containers
- Building and Pushing Container Images
- Container Security & Threat Protection

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Training Course Outline:

Training Pack 2

Introduction

Security Concepts

- HTTP/S Protocol Basics
- Encoding & Same Origin
- Cookies & Sessions
- Web Application Proxies

Information Gathering

- Web Server Fingerprinting
- Subdomains Enumeration
- Frameworks & Applications Fingerprinting
- Custom Applications Fingerprinting

Common Web Application Attacks

- Cross-Site Scripting (XSS)
- SQL Injection
- Authentication Bypass
- Insecure Direct Object References (IDOR)

Advanced Web Application Attacks

- Cross-Site Request Forgery (CSRF)
- Unrestricted File Upload & Web Shells
- Local & Remote File Inclusion (LFI/RFI)
- MFA Bypass

Content Management Systems Assessment

- CMS Assessment
- CMS Information Gathering
- Exploiting CMS Vulnerabilities
- Extracting Sensitive Data from CMS Databases

Introduction to Web Application Penetration Testing

- Overview and Importance
- Legal and Ethical Considerations
- Preparing for Testing
- Reporting and Documentation

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Training Course Outline:

Training Pack 2

Introduction

Introduction to Generative AI

- Fundamentals of Generative AI
- Types of Generative Models
- Applications and Use Cases
- Ethical and Societal Implications

Large Language Models (LLMs)

- Transformer-Based Models
- Instruction Fine-tuning
- Language Model Compression & Efficiency
- Fairness and Ethical Bias Mitigation

Managing and Deploying AI Models

- Model Development Lifecycle
- Versioning & Experiment Tracking
- Deployment Strategies & Infrastructure
- Model Monitoring & Maintenance

Langchain: Making LLM powered Apps

- Understanding LangChain
- Core Components and Concepts
- Retrieval-Augmented Generation (RAG)
- Building Agents with LangChain

Adversarial Attacks and Defenses in AI Systems

- Understanding Adversarial Attacks
- Types and Methods of Adversarial Attacks
- Impact on AI Systems and Security
- Defending Against Adversarial Attacks

Future Perspectives and Emerging Trends

- Advancements in Generative AI
- Interdisciplinary Applications
- Ethical and Responsible AI
- Research Frontiers and Open Challenges

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Training Course Outline:

Training Pack 3

Introduction

Cybersecurity Nowadays

- PPT Framework
- Proactive & Reactive Security
- Red, Blue and Purple Teams
- Cyber Defence Capabilities
- Cyber Resiliency

Cybersecurity Operations

- Risk Management
- Threat Management
- Vulnerability Management
- Cyber Compliance
- Security Hardening
- Secure Code Review
- Configuration Review
- Penetration Testing
- Security Monitoring
- Digital Forensics
- Incident Response
- Threat Hunting
- Threat Intelligence
- Awareness Training

Cybersecurity Solutions

- Endpoint Protection
- Next Generation Firewalls
- Next Generation IPS
- Advanced Malware Protection
- Web Application Firewalls
- Anti-DDoS Solutions
- Identity Access Management
- Privileged Access Management
- Data Loss & Leak Prevention
- Next Generation SIEM

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Training Course Outline:

Training Pack 3

Introduction

File Operations & Data Handling

- Reading & Writing Files with Python
- Handling Different Data Formats (CSV, JSON)
- Parsing & Extracting Information from Files

Web Application Security

- Introduction to Web Scraping
- Extracting Information from Websites
- Python for Identifying Web Vulnerabilities
- Python for Web Application Security Testing

Reconnaissance & Enumeration

- Python for Subdomain Enumeration
- Python for Directory Enumeration
- Python for Reconnaissance

Network Scanning & Enumeration

- Python for Network & Port Scanning
- Python for Identifying Vulnerabilities
- Scapy for Packet Manipulation

Data Collection & Manipulation

- Python for File Downloading
- Python for File Uploading
- Python for Hash Cracking
- Keyloggers with Python

Brute Force Testing

- Python for SSH Brute Forcing
- Python for WebApp Brute Forcing
- Python for FTP Brute Forcing
- Python for RDP Brute Forcing

Threading for Security and Performance

- Introduction to Threading
- Parallel Execution for Improved Performance
- Python's Threading Module

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Training Course Outline:

Training Pack 3

Introduction

Security Monitoring

- SIEM Components & Deployment
- Log Management & Analytics
- Security Configuration Assessment
- File Integrity Monitoring
- Command Audit & VirusTotal Integration

Incident Response

- Endpoint Log Analysis
- Incident Categorization
- Incident Handling Workflow
- Manual Incident Response
- Active Incident Response
- SOAR Overview

Digital Forensic

- Investigation Process
- Data Acquisition and Triage
- Windows Live Artifact Collection
- Memory Investigation
- Disk Investigation
- Network Investigation

Threat Hunting

- Types of Threat Hunting
- OSINT for Threat Hunting
- Network Threat Hunting
- Endpoint Threat Hunting
- MITRE based Threat Hunting

Cyber Threat Intelligence

- Threat Intelligence Frameworks
- Threat Intelligence Platforms
- Threat Intelligence Sources
- Threat Intelligence Data Collection
- Sharing Threat Intelligence

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Training Course Outline:

Training Pack 3

Introduction

Reconnaissance

- Passive Vs. Active Reconnaissance
- OSINT Gathering & Foot-Printing
- Human Reconnaissance
- Verification & Vitality

Scanning & Enumeration

- Scan for Alive Hosts
- Scan for Open Ports
- Service Version & OS Detection (OSD)
- Firewall Detection & Evasion

Vulnerability Analysis

- Navigating CVEs and CVSS
- Vulnerability Types
- Vulnerability Scanning Tools
- Perform a Vulnerability Scan

Exploitation

- Metasploit Framework (MSF)
- Network & System Exploitation
- Privilege Escalation & Persistence
- Pivoting & Lateral Movement

Web Application Pentesting

- Enumerating webapps
- SQL injection
- Cross-Site Scripting
- Web Brute Forcing

Reporting

- Report Structure
- Executive Summary
- Detailed Findings
- Recommendations
- Proofs of Concept

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Training Course Outline:

Training Pack 3

Introduction

Role of AI in Cybersecurity

- AI in Threat Detection
- AI in Incident Response
- AI in Vulnerability Assessment
- Anomaly Detection using AI
- AI-driven Threat Intelligence
- AI-powered Threat Hunting
- Human-AI Collaboration

AI in Endpoint & Network Security:

- Network Traffic Analysis using AI
- IDS/IPS Powered by AI
- AI in User and Entity Behavior Analytics (UEBA)
- Secure Authentication using AI
- Adaptive and Self-learning Defense

Security Operations Automation:

- Streamline Security Operations
- Reduce False Positives
- Incident Response Automation with AI
- AI in Defending Networks

Application of AI in Malware:

- Using AI for Malware Analysis
- Using AI for Malware Detection
- Using AI for Malware Classification
- AI-driven Malware Detection Systems

AI in Offensive Security

- Next-Gen Penetration Testing
- AI-Driven Reconnaissance
- AI-Enhanced Network Scanning
- AI for Deeper Vulnerability Discovery
- AI-Driven Exploitation
- AI-Powered Red Teaming
- ML for Advanced Threat Simulation

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