مقدّمة عن دورة أنظمة الخوادم والبنية التحتية – من موقع نتوركات

في مجال **أنظمة الخوادم والبنية التحتية**، صُمّمت خصيصًا لتأهيل (Live) يُقدّم لكم موقع **نتوركات** دورة تدريبية احترافية ومباشرة المتدرب لاكتساب المهارات العملية المطلوبة في سوق العمل، دون الاعتماد على مواد مسجّلة، بل من خلال تفاعل حي ومباشر مع .المدرب

هذه الدورة تغطّي مجموعة متكاملة من الكورسات الأساسية والمتقدمة التي يحتاجها كل من يسعى للعمل في مجال تكنولوجيا .المعلومات، وخاصةً في تخصصات البنية التحتية وأنظمة التشغيل

محتوى الدورة

Servers Systems

MCSA

Linux I, II VMware vSphere VCA, VCP

Proxmox VE Veeam Backup and Replication

Storage Systems SAN SwitchES

Monitoring and Reporting Course

مميزات الدورة:

- محاضرات مباشرة (Live)
- دعم فني وتقني متواصل
- تواصل مستمر مع المحاضرين
- إرسال جميع الملفات والأدوات المشروحة
- محتوى عملي مخصص لسوق العمل
- شهادة IISS – البوابة الشاملة لاحتراف إدارة السيرفرات والداتا سنتر

شهادة IISS – البوابة الشاملة لاحتراف إدارة السيرفرات والداتا سنتر

تُعد شهادة **IISS** واحدة من الشهادات العملية المتكاملة التي تؤهلك للتعامل مع **الخوادم (Servers)** و**مراكز البيانات (Data Centers)** بمستوى احترافي، بدءًا من الأساسيات وحتى المفاهيم المتقدمة التي يحتاجها أي متخصص في مجال البنية التحتية لتكنولوجيا المعلومات.

تهدف هذه الشهادة إلى تزويد المتدرب بمنهج شامل يغطي أهم أدوات وتقنيات العمل على الخوادم، أنظمة التشغيل، النسخ الاحتياطي، المراقبة، والتخزين، باستخدام أحدث الحلول التقنية في السوق.

محتوى الشهادة:

- **أنواع الخوادم (Servers)**

نبدأ بالتعرّف على الخوادم وأنواعها المختلفة من أهم ثلاث شركات في المجال:
DELL – HP – IBM، مع شرح الفروقات بين كل نوع، ومتى نستخدم كل منها.

- **أنظمة التشغيل (Operating Systems)**
نتعلم كيفية التعامل الكامل مع أنظمة التشغيل الخاصة بالسيرفرات:
Windows Server و**Linux**، من التثبيت حتى الإعداد والإدارة.

- **الافتراضية (Virtualization)**
نقوم بدراسة تقنية **الافتراضية** من خلال برنامج **VMware**، بالإضافة إلى البديل المجاني **Proxmox**، لفهم كيفية تشغيل وإدارة أكثر من نظام على خادم واحد.

- **النسخ الاحتياطي (Backup)**
نتعلم كيفية حماية بيانات الشبكة من الفقد المفاجئ عبر إعداد نظام نسخ احتياطي فعال باستخدام أداة **Veeam Backup and Replication**.

- **مراقبة الشبكة (Monitoring)**
ندرس كيفية مراقبة أداء الشبكة واكتشاف الأعطال من خلال أداة **Zabbix**، مما يساعدنا في تتبع المشكلات وحلها قبل أن تتسبب في توقف الخدمة.

- **التخزين (Storage Systems)**
نتعلم كيفية إنشاء وإدارة نظام تخزين احترافي، مع التعرف على أساسيات **Storage Systems** وأنواعها ودورها في مراكز البيانات.

بنهاية هذه الشهادة، ستكون مؤهلًا للعمل في وظائف مثل:

- مهندس نظم (System Engineer)
- مهندس بنية تحتية (Infrastructure Engineer)
- مسؤول مركز بيانات (Data Center Administrator)
- ادارى نظم
- مسؤول مراقبة الشبكات

لماذا تختار كورس IISS مع نتوركات؟

- 📌 **تدريب عملي مباشر (Live)** – بدون مواد مسجلة، تفاعل حي مع المدربين.
- 📌 **محتوى متكامل لسوق العمل** – يشمل: Veeam، Proxmox، VMware، Linux، Windows Server، أنظمة التخزين، المراقبة.
- 📌 **تأهيل شامل** – يغطي كل ما تحتاجه لإدارة السيرفرات والداتا سنتر من الأساسيات حتى التقنيات المتقدمة.
- 📌 **مدرّبون بخبرة عملية** – مع دعم فني وتقني مستمر طوال فترة التدريب.
- 📌 **ملفات وأدوات عملية** – يتم توفير جميع الموارد اللازمة للتطبيق الفعلي.
- 📌 **فرص وظيفية قوية** – بنهاية الكورس تكون جاهز للعمل كـ:
  - System Engineer
  - Infrastructure Engineer
  - Data Center Administrator
  - مسؤول نظم أو مراقبة شبكات
- 📌 **شهادة IISS معتمدة** – تُعد بوابة احترافية لدخول عالم الـ IT Infrastructure.

محتوى الدورة

Servers Systems

1. Introduction to Servers:

• Definition and Purpose of Servers

• Types of Servers (File Servers, Web Servers, Database Servers, Application Servers, etc.)

• Importance of Servers in IT Infrastructure

2. Server Networking:

• TCP/IP Fundamentals

• Configuring Network Interfaces

• DNS (Domain Name System)

• DHCP (Dynamic Host Configuration Protocol)

• Network File Sharing (SMB, NFS)

3. Server Hardware:

• Components of a Server (CPU, RAM, Storage, Network Interface Cards, etc.)

• Server Form Factors (Tower, Rack-mount, Blade)

• Redundancy and High Availability Concepts

4. Hardware and Firmware for Major Vendors (Dell, HP, IBM):

• Overview of Dell Server Hardware and Firmware

- 1. PowerEdge Series
- 2. iDRAC and Lifecycle Controller

• Overview of HP Server Hardware and Firmware

- 1. ProLiant Series
- 2. Integrated Lights-Out (iLO)

• Overview of IBM Server Hardware and Firmware

- 1. IBM Power Systems
- 2. Hardware Management Console (HMC)

Dell Technologies:

1. PowerEdge Servers

2. Dell EMC Storage Solutions

3. Integrated Dell Remote Access Controller (iDRAC)

4. Dell EMC OpenManage

Hewlett-Packard (HP) Enterprise:

1. HP ProLiant Servers

2. HP BladeSystem

3. HP Integrated Lights-Out (iLO)

4. HP OneView

IBM Technologies:

1. IBM Power Systems

2. IBM Z Systems

3. Hardware Management Console (HMC)

4. IBM Systems Director

5. Server Administration:

• Installation and Configuration of Server Operating Systems

• User and Group Management

• File System Management

• Disk Management and RAID Configuration

6. Cloud Servers:

• Introduction to Cloud Computing

• Infrastructure as a Service (IaaS)

• Deploym

7. Server Maintenance and Troubleshooting:

• Regular Maintenance Tasks (Software Updates, Patch Management)

• Common Server Issues and Solutions

• Troubleshooting Methodologies

8. Server Best Practices and Industry Trends:

• Best Practices for Server Management and Security

• Emerging Technologies and Trends in Server Management (Containers, Serverless Computing, Edge Computing)

Microsoft Certified Solutions Associate “MCSA”

1. Introduction to Windows Server:

• Overview of Windows Server Editions

• Installation Options and Requirements

• Server Management Tools (Server Manager, PowerShell)

2. Active Directory Domain Services (AD DS):

• Introduction to AD DS

• Installation and Configuration of Domain Controllers

• User and Group Management

• Group Policy Objects (GPOs)

3. Networking with Windows Server:

• TCP/IP Fundamentals

• DHCP (Dynamic Host Configuration Protocol)

• DNS (Domain Name System)

• Remote Access (VPN, DirectAccess)

4. Storage Solutions with Windows Server:

• Storage Spaces and Storage Spaces Direct

• Data Deduplication

• iSCSI and Fibre Channel Storage

• SMB File Shares

5. Identity and Access Management:

• Active Directory Certificate Services (AD CS)

• Active Directory Federation Services (AD FS)

• Active Directory Rights Management Services (AD RMS)

6. Virtualization with Hyper-V:

• Introduction to Hyper-V

• Hyper-V Installation and Configuration

• Virtual Machine Management

• High Availability and Failover Clustering

7. Server Administration:

• Server Deployment Options

• Server Core and Minimal Server Interface

• Server Backup and Recovery

• Monitoring and Performance Tuning

8. Web Services with Internet Information Services (IIS):

• Introduction to IIS

• Website Configuration and Management

• SSL Certificate Management

• Application Pools and Web Farming

9. Remote Desktop Services (RDS):

• Overview of RDS

• Remote Desktop Session Host (RDSH)

• Remote Desktop Virtualization Host (RDVH)

• Remote Desktop Gateway (RD Gateway)

10. Security and Compliance:

• Windows Server Security Features

• Windows Firewall with Advanced Security

• Network Access Protection (NAP)

• Security Compliance Manager

11. Advanced Networking:

• Network Load Balancing (NLB)

• Software Defined Networking (SDN) Basics

• VPN Reconnect

• Quality of Service (QoS)

12. Final Review:

• Review of Key Concepts

• Practice Exams

Linux Administration I

Course Topics:

1. Introduction to Linux:

• History and Evolution of Linux

• Linux Distributions

• Linux Philosophy and Open Source Concepts

2. Linux Installation and Basic Usage:

• Installation Methods (GUI, Command Line)

• Basic Command Line Usage

• File System Hierarchy

• Managing Files and Directories

3. User and Group Management:

• User Accounts and Groups

• Adding, Modifying, and Deleting Users

• User and Group Permissions

4. File System Administration:

• File System Types (ext4, XFS, Btrfs)

• Mounting and Unmounting File Systems

• Disk Management and Partitioning

• File System Maintenance and Troubleshooting

5. Process Management:

• Understanding Processes

• Process Lifecycle

• Process Monitoring and Management

• Process Prioritization and Scheduling

6. System Initialization:

• Boot Process Overview

• GRUB (Grand Unified Boot Loader)

• Systemd and SysVinit

• Managing Services and Daemons

7. Package Management:

• Introduction to Package Management Systems (RPM, DPKG)

• Package Installation, Removal, and Upgrading

• Dependency Management

• Package Verification and Querying

8. System Administration Tasks:

• System Backup and Recovery

• System Logging and Log Management

• Task Automation with Cron

• System Updates and Patch Management

9. Networking and Security:

• Network Configuration and Troubleshooting

• Firewall Configuration (iptables, firewalld)

• Secure Shell (SSH) Configuration

• Basic Security Practices and Hardening Techniques

10. Shell Scripting Basics:

• Introduction to Shell Scripting

• Shell Script Syntax

• Variables, Control Structures, and Functions

• Writing and Executing Shell Scripts

11. Basic System Monitoring and Performance Tuning:

• Monitoring System Resources (CPU, Memory, Disk, Network)

• Performance Tuning Techniques

• Resource Utilization Analysis

• Troubleshooting Performance Issues

12. Introduction to Virtualization:

• Virtualization Concepts

• Introduction to Hypervisors (KVM, VirtualBox)

• Creating and Managing Virtual Machines

• Virtualization Use Cases and Benefits

13. Final Review and Exam Preparation:

• Review of Key Concepts

• Practice Exercises and Labs

• Exam Preparation Tips

Linux Administration II

Course Topics:

1. Advanced System Administration Tasks:

• Advanced User and Group Management

• User and Group Permissions (ACLs)

• User and Group Quotas

• Configuring sudo Access

2. File System Management:

• File System Encryption (LUKS)

• Advanced Disk Partitioning and LVM (Logical Volume Manager)

• File System Monitoring and Maintenance

• File System Backup and Recovery Strategies

3. Networking Services:

• Domain Name System (DNS) Configuration

• DHCP (Dynamic Host Configuration Protocol) Server Configuration

• Network File System (NFS) Configuration

• Samba Configuration for Windows File Sharing

4. Web Services:

• Apache HTTP Server Configuration

• Nginx Web Server Configuration

• SSL/TLS Certificate Configuration

• Virtual Hosts and Name-based Hosting

5. Database Services:

• MySQL/MariaDB Installation and Configuration

• Database Creation and Management

• User and Privilege Management

• Database Backup and Recovery

6. Email Services:

• Postfix Mail Server Configuration

• Dovecot IMAP and POP3 Server Configuration

• Email Client Configuration

• Spam Filtering and Anti-Virus Integration

7. Security Enhancements:

• Linux Firewall Configuration (iptables, firewalld)

• Intrusion Detection Systems (IDS) and Intrusion Prevention Systems (IPS)

• Security-Enhanced Linux (SELinux) Basics

• File Integrity Checking with Tripwire or AIDE

8. Advanced Shell Scripting:

• Advanced Shell Scripting Techniques

• Script Debugging and Error Handling

• Scripting for Automation and System Management

• Introduction to AWK and Sed for Text Processing

9. Advanced System Monitoring and Performance Tuning:

• Performance Monitoring Tools (sar, vmstat, iostat)

• Tuning Kernel Parameters

• Advanced Network Configuration and Tuning

• Troubleshooting System Performance Issues

10. Containerization with Docker:

• Introduction to Containerization

• Docker Installation and Configuration

• Managing Docker Containers and Images

• Docker Networking and Storage

11. Virtualization with KVM:

• Introduction to KVM (Kernel-based Virtual Machine)

• KVM Installation and Configuration

• Managing KVM Virtual Machines

• Migration and High Availability with KVM

12. Final Review and Exam Preparation:

• Review of Key Concepts

• Practice Exercises and Labs

• Exam Preparation Tips

VMware vSphere VCA and VCP

Course Topics:

1. Introduction to Virtualization and VMware vSphere:

• Virtualization Concepts and Benefits

• Overview of VMware vSphere Suite

• Introduction to ESXi Hypervisor

• Licensing and Editions of VMware vSphere

2. Installation and Configuration of ESXi:

• Hardware Requirements and Compatibility

• ESXi Installation Methods (Interactive, Scripted, Auto Deploy)

• ESXi Configuration (Networking, Storage, Security)

3. Virtual Machine Creation and Management:

• Virtual Machine Hardware Configuration

• VM Creation Methods (vSphere Web Client, PowerCLI)

• VM Templates and Cloning

• Resource Allocation (CPU, Memory, Storage, Network)

4. vSphere Networking:

• Understanding vSphere Networking Concepts

• vSphere Standard Switch (vSS) Configuration

• vSphere Distributed Switch (vDS) Configuration

• VLANs and Network Traffic Shaping

5. vSphere Storage:

• Storage Concepts in vSphere

• Datastore Types (VMFS, NFS, vSAN)

• Storage Provisioning and Management

• Storage vMotion and Storage DRS

6. High Availability and Fault Tolerance:

• Understanding High Availability (HA)

• Configuring and Managing HA Cluster

• Introduction to Fault Tolerance (FT)

• Configuring and Managing Fault Tolerance

7. vSphere Resource Management:

• Introduction to vSphere Resource Management

• Resource Pools and Resource Allocation

• Distributed Resource Scheduler (DRS)

• Storage and Network I/O Control

8. vCenter Server:

• Introduction to vCenter Server

• vCenter Server Deployment Options (Appliance, Windows)

• vCenter Server Architecture

• Managing vCenter Server Inventory

9. vSphere Security:

• Understanding vSphere Security Concepts

• Role-Based Access Control (RBAC)

• Securing ESXi Hosts

• Virtual Machine Security Best Practices

10. Monitoring and Troubleshooting:

• vSphere Monitoring Tools (vSphere Client, vCenter Server, vRealize Operations)

• Performance Monitoring and Optimization

• vSphere Alarms and Event Management

• Troubleshooting Common Issues

11. Backup and Disaster Recovery:

• Backup Solutions for vSphere (vSphere Data Protection, Third-Party Solutions)

• Introduction to Site Recovery Manager (SRM)

• Disaster Recovery Planning and Testing

12. Advanced Topics:

• vSphere Update Manager (VUM) for Patching and Upgrades

• Introduction to vSphere PowerCLI for Automation

• Advanced Networking and Storage Features (NSX, vSAN)

13. Final Review and Exam Preparation:

• Review of Key Concepts

• Practice Exercises and Labs

• Exam Preparation Tips

Proxmox Virtual Environment

Course Topics

1. Introduction to Proxmox Virtual Environment:

• Overview of Virtualization Concepts

• Introduction to Proxmox VE

• Features and Benefits of Proxmox VE

• Licensing and Editions of Proxmox VE

2. Installation and Configuration:

• Hardware Requirements and Compatibility

• Proxmox VE Installation Methods (ISO, USB, Network)

• Network Configuration (Ethernet Bonding, VLANs)

• Initial Setup and Configuration

3. Virtualization with KVM:

• Understanding KVM Virtualization

• Creating and Managing Virtual Machines (VMs)

• Virtual Machine Hardware Configuration

• Importing and Exporting VMs

4. Container-based Virtualization with LXC:

• Introduction to Linux Containers (LXC)

• Creating and Managing LXC Containers

• Container Networking and Storage

• Using Templates for LXC Container Deployment

5. Storage Configuration:

• Storage Concepts in Proxmox VE

• Configuring Local and Remote Storage (NFS, iSCSI, Ceph)

• Storage Pool Management

• Storage Migration and Backup

6. Networking:

• Network Configuration in Proxmox VE

• Managing Virtual Networks (Bridges, VLANs)

• Firewall Configuration (iptables, nftables)

• Traffic Monitoring and Management

7. High Availability and Clustering:

• Introduction to High Availability (HA)

• Configuring High Availability in Proxmox VE

• Proxmox Cluster Configuration

• Cluster Management and Maintenance

8. Backup and Disaster Recovery:

• Backup Solutions for Proxmox VE (Proxmox Backup Server, Third-Party Solutions)

• Disaster Recovery Planning and Testing

• Snapshot Management

• Backup and Restore Procedures

9. Resource Management:

• CPU, Memory, and Storage Allocation

• QoS (Quality of Service) Configuration

• Dynamic Resource Management

• Monitoring Resource Usage

10. Security:

• Security Best Practices in Proxmox VE

• Role-Based Access Control (RBAC)

• SSL Certificate Management

• Hardening Proxmox VE Hosts and VMs

11. Integration with Other Tools and Services:

• Integrating Proxmox VE with Monitoring Tools (Prometheus, Grafana)

• Automation with Ansible

• Using Proxmox VE with Cloud Services (OpenStack, AWS, Azure)

12. Advanced Topics:

• GPU Passthrough

• Software-defined Networking (SDN)

• Docker Integration

• Kubernetes Integration with Proxmox VE

13. Final Review and Troubleshooting:

• Review of Key Concepts

• Troubleshooting Common Issues

• Best Practices for Performance Optimization

Veeam Backup and Replication

Course Topics:

1. Introduction to Veeam Backup and Replication:

• Overview of Veeam Backup and Replication

• Features and Benefits

• Licensing and Editions

2. Installation and Configuration:

• System Requirements

• Installation Methods (Standalone, Distributed)

• Configuration Wizard

• Integration with Virtualization Platforms (VMware vSphere, Microsoft Hyper-V)

3. Backup Jobs:

• Creating Backup Jobs

• Full, Incremental, and Differential Backups

• Backup Schedules and Retention Policies

• Backup Copy Jobs

4. Restore Operations:

• File-Level Restore

• Full VM Restore

• Instant VM Recovery

• Guest OS File Indexing

5. Replication:

• Configuring Replication Jobs

• Failover and Failback Procedures

• Replication Scheduling

• WAN Acceleration for Replication

6. Backup Storage and Repositories:

• Types of Backup Repositories (Local, Shared, Deduplicated)

• Capacity Tier and Archive Tier

• Backup Repository Configuration

• Scale-Out Backup Repository

7. Data Protection and Recovery:

• SureBackup Verification

• SureReplica Testing

• Virtual Lab Configuration

• Application-Aware Image Processing

8. Monitoring and Reporting:

• Monitoring Backup and Replication Jobs

• Performance Metrics and Alerts

• Reporting Options

• Veeam ONE Integration

9. Advanced Features:

• Backup from Storage Snapshots

• Backup to Tape

• Backup and Restore of Microsoft Office 365

• Integration with Cloud Storage Providers (AWS, Azure, etc.)

10. Security and Compliance:

• Data Encryption

• Role-Based Access Control (RBAC)

• Compliance Reporting

• Data Loss Prevention (DLP)

11. Integration with Other Tools and Services:

• Automation and Orchestration with Veeam PowerShell

• Integration with VMware vCloud Director

• API Integration for Customization

12. Best Practices and Optimization:

• Best Practices for Backup and Replication

• Performance Optimization Techniques

• Disaster Recovery Planning

13. Troubleshooting and Support:

• Troubleshooting Common Issues

• Working with Veeam Support

• Knowledge Base Resources

Storage Systems

Course Topics:

1. Introduction to Storage Systems:

• Overview of Storage Technologies

• Importance of Storage in IT Infrastructure

• Types of Storage Systems (Direct-Attached Storage, Network-Attached Storage, Storage Area Network)

2. Storage Fundamentals:

• Storage Hierarchies (Primary, Secondary, Tertiary Storage)

• Block, File, and Object Storage

• RAID (Redundant Array of Independent Disks) Levels

• Storage Protocols (iSCSI, Fibre Channel, NFS, SMB)

3. Storage Architecture:

• Storage Components (Controllers, Disk Arrays, Disk Enclosures)

• Storage Connectivity (Host Bus Adapters, Fibre Channel Switches)

• Storage Virtualizatio**n**

4. Direct-Attached Storage (DAS):

• Overview of DAS

• DAS Components and Configuration

• Advantages and Disadvantages of DAS

• Use Cases for DAS

5. Network-Attached Storage (NAS):

• Overview of NAS

• NAS Protocols (NFS, SMB)

• NAS Components and Configuration

• Advantages and Disadvantages of NAS

6. Introduction to TrueNAS:

• Overview of TrueNAS

• Features and Benefits

• Licensing and Editions

7. Storage Fundamentals:

• Introduction to Storage Concepts

• Understanding NAS (Network-Attached Storage)

• Understanding SAN (Storage Area Network)

• Differences between NAS and SAN

8. TrueNAS Architecture:

• Hardware Requirements

• TrueNAS Storage Architecture

• ZFS (Zettabyte File System) Overview

• Introduction to TrueNAS Enterprise Features (Replication, Snapshots, Encryption)

9. Installation and Initial Configuration:

• System Requirements

• Installation Methods (USB, ISO)

• Initial Setup and Configuration Wizard

• Network Configuration

10. Storage Configuration:

• Creating Storage Pools

• Configuring RAID (ZFS RAID-Z)

• Creating ZFS Datasets and Volumes

• Managing Storage Quotas and Permissions

11. Sharing Services:

• Configuring SMB/CIFS Shares

• Configuring NFS Shares

• AFP (Apple Filing Protocol) Configuration

• FTP (File Transfer Protocol) Configuration

12. Data Protection and Recovery:

• Snapshot Configuration and Management

• Replication Setup and Configuration

• Backing up Data to External Devices

• Disaster Recovery Planning

13. User and Group Management:

• Creating and Managing User Accounts

• Configuring Group Permissions

• LDAP and Active Directory Integration

• Access Control Lists (ACLs)

14. Monitoring and Reporting:

• Monitoring System Health and Performance

• Event Logging and Alerts

• Resource Usage Reports

• Email Notifications Setup

15. Networking and Security:

• Configuring Network Interfaces

• VLAN Configuration

• Firewall Configuration

• SSL Certificate Management

16. Storage Area Network (SAN):

• Overview of SAN

• SAN Components (Host Bus Adapters, Storage Arrays, Fibre Channel Switches)

• SAN Fabric Topologies (Point-to-Point, Fabric, Loop)

• SAN Protocols (Fibre Channel, iSCSI)

17. SAN Storage Arrays:

• Introduction to SAN Storage Arrays

• Storage Array Architecture

• Storage Array Features (Thin Provisioning, Deduplication, Compression)

• Storage Array Management

18. Introduction to Dell EMC Unity:

• Overview of Dell EMC Unity

• Features and Benefits

• Hardware and Software Components

19. Storage Fundamentals:

• Introduction to Storage Concepts

• Understanding SAN (Storage Area Network)

• Understanding NAS (Network-Attached Storage)

• Differences between SAN and NAS

20. Dell EMC Unity Architecture:

• Hardware Overview (Storage Processors, Disk Enclosures, Drives)

• Software Architecture (Operating Environment, Management Interfaces)

• Unity Models and Configurations

21. Installation and Initial Configuration:

• Pre-installation Planning

• Hardware Setup and Cabling

• Initial Setup and Configuration Wizard

• Network Configuration

22. Storage Configuration:

• Creating Storage Pools

• RAID Configuration (RAID Groups)

• Creating Storage Resources (LUNs, File Systems)

• Thin Provisioning and Deduplication

23. Data Protection and Replication:

• Snapshots Configuration and Management

• Remote Replication Setup (Replication Types, Replication Topologies)

• Disaster Recovery Planning

• Data Mobility (LUN Migration, File System Migration)

24. Storage Networking:

• Fibre Channel SAN Configuration

• iSCSI SAN Configuration

• NFS and SMB Configuration

• Storage Networking Best Practices

25. Storage Management:

• Unity Management Interface (Unisphere)

• CLI (Command Line Interface) Management

• REST API Integration

• Role-Based Access Control (RBAC)

26. Monitoring and Reporting:

• Monitoring System Health and Performance

• Event Logging and Alerts

• Performance Analysis Tools

• Generating Reports

27. Cloud Storage:

• Introduction to Cloud Storage

• Cloud Storage Models (Public, Private, Hybrid)

• Cloud Storage Services (Amazon S3, Azure Blob Storage)

• Cloud Storage Integration with On-Premises Systems

28. Storage Virtualization:

• Introduction to Storage Virtualization

• Benefits of Storage Virtualization

• Storage Virtualization Technologies (Software-Based, Appliance-Based, Array-Based)

• Implementing Storage Virtualization Solutions

29. Emerging Trends and Technologies:

• Software-Defined Storage (SDS)

• Hyper-Converged Infrastructure (HCI)

• Persistent Storage for Containers

• Edge Storage Solutions

SAN Switch

Course Topics:

1. SAN Switch Fundamentals:

• Understanding SAN Fabric and its Components

• Introduction to SAN Switches

• Importance of SAN Switches in Storage Networks

2. SAN Switch Architecture:

• Overview of SAN Switch Architecture

• Fabric Operating System (FOS) or Switch Operating System (SW-OS)

• Port Types (E, F, FL, G, TE)

• Switch Modes (Fabric, Access Gateway, NPV, NPIV)

3. SAN Switch Configuration:

• Initial Setup and Configuration

• Zoning Concepts and Configuration

• Port Configuration (Speed, Duplex, Trunking)

• Fabric Services (Name Server, Time Server, Management Server)

4. SAN Switch Management:

• Management Interfaces (CLI, Web-Based GUI)

• User Authentication and Role-Based Access Control (RBAC)

• Monitoring Performance and Health Status

• Firmware Upgrades and Patch Management

5. SAN Switch Troubleshooting:

• Troubleshooting Methodologies

• Diagnosing Fabric Connectivity Issues

• Analyzing Log Files and Error Messages

• Resolving Zoning and Configuration Problems

6. SAN Switch Best Practices:

• Best Practices for Deployment and Configuration

• Performance Optimization Techniques

• Security Best Practices (Zoning, Authentication, Auditing)

• Disaster Recovery Planning for SAN Switches

Monitoring and Reporting Course

You Will learn How to Setup and Configuring Monitoring Solutions and Reporting Mails and Daily Tasks you will face.

Netsupport Topics:

1. Introduction to NetSupport Manager:

• Overview of NetSupport Manager

• Features and Benefits

• Licensing and Editions

2. Installation and Configuration:

• System Requirements

• Installation Methods (Standalone, Managed)

• Configuration Wizard

• Deployment Options (Manual, Automated)

3. Remote Control:

• Remote Desktop Control

• File Transfer

• Chat and Messaging

• Audio and Video Streaming

4. Desktop Management:

• Hardware and Software Inventory

• Application Deployment and Updates

• System Configuration Management

• Software License Compliance

5. Security and Authentication:

• Secure Remote Access

• User Authentication and Permissions

• Encryption and Data Security

• Audit Trails and Logging

6. Monitoring and Reporting:

• Real-Time Monitoring of Systems and Users

• Performance Metrics and Alerts

• Activity Logging and Reporting

• Compliance Reporting

Zabbix Topics:

1. Introduction to Zabbix:

• Overview of Zabbix Monitoring Solution

• Features and Benefits

• Licensing and Editions

2. Zabbix Architecture:

• Zabbix Server Components

• Zabbix Proxy

• Zabbix Agents

• Zabbix Database (MySQL, PostgreSQL)

3. Installation and Configuration:

• System Requirements

• Installation Methods (Source, Packages)

• Configuration Wizard

• Initial Setup and Configuration

4. Monitoring Concepts:

• Monitoring Targets (Hosts, Devices, Applications)

• Item Types (Simple, Calculated, Dependent)

• Triggers and Thresholds

• Data Collection Methods (Agents, SNMP, JMX)

5. Zabbix Templates:

• Introduction to Templates

• Template Creation and Management

• Importing and Exporting Templates

• Template Linking and Inheritance

6. Alerting and Notifications:

• Trigger Actions and Notifications

• Configuring Media Types (Email, SMS, Slack, etc.)

• User Permissions and Roles

• Escalation Chains

7. Visualization and Reporting:

• Zabbix Screens

• Dashboards and Widgets

• Custom Graphs and Maps

• Report Generation and Export

8. Discovery and Auto-Registration:

• Discovery Rules

• Auto-Registration

• Dynamic Host Groups

• Network Discovery

9. Zabbix Agent:

• Installing and Configuring Zabbix Agent

• Passive and Active Agent Modes

• Agent Items and Parameters

• Agent Performance Tuning

10. Zabbix Proxy:

• Introduction to Zabbix Proxy

• Proxy Installation and Configuration

• Proxy Monitoring and Performance Optimization

• Proxy Deployment Best Practices

11. High Availability and Scaling:

• Zabbix Server High Availability Setup

• Database High Availability Setup

• Load Balancing Zabbix Components

• Horizontal and Vertical Scaling

12. Integration with Other Systems:

• Integration with External Systems (LDAP, Active Directory)

• Integration with Ticketing Systems (JIRA, ServiceNow)

• API Integration for Automation

• Webhooks Integration

13. Security Best Practices:

• Securing Zabbix Server and Agents

• Authentication Methods (LDAP, SAML)

• Encryption and Data Protection

• Role-Based Access Control (RBAC)

14. Troubleshooting and Maintenance:

• Troubleshooting Common Issues

• Performance Monitoring and Optimization

• Database Maintenance

• Log Analysis and Debugging

Software and Operating Systems

• iLO Simulator

• Windows Server 2022

• RedHat 8

• vSphere 8

• vCenter 8

• Proxmox VE v7.2

• Veeam B&R v12

• TrueNAS 12

• Dell EMC Unity Demo Lab

• SAN Switch Demo Lab

• NetSupport Manager

• Zabbix Monitoring System

At the End this program by Engineer Amr Amin and you will learn and be able to be the Best and Great Engineer if u did it by right way.