ROOMAN TECHNOLOGIES

ROOMAN
INNOVATE | INTEGRATE | EMPOWER
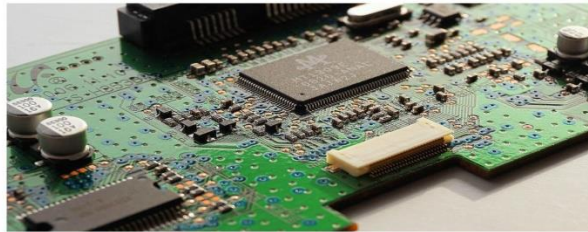
HARDWARE

Assembling & Installation
- PC parts and Add on card identification
- Assembling a computer
- Partition a HHD and Format the same
- Installation of Desktop OS (DOS, Windows Vista/ Windows 7)
- Installation of Application (MS-Office, Acrobat Reader, Winzip)

Processor
- Popular CPU chips
- Processor Components Voltage, Speed
- Internal and External Cache Memory

RAM Types
- Types of Memory (ROM, RAM)
- RAM Types (EDO, DRAM, SRAM, VRAM, SDRAM, DDR RAM)
- SIMM, DIMM, SODIMM, MicroDIMM, RIMM
- Memory Chips and Form Factors

Motherboards
- Introduction | AT Motherboard | ATX Motherboard
- Ports and Memory Slots on Motherboard
- Processor Sockets and Chipset
- Bus Architecture
- Compatibility Guidelines

BIOS
- Understanding BIOS, CMOS, and Firmware.
- Configuring the System BIOS.
- Power-On Self-Test and Error Reporting.
- Plug and Play BIOS
- Power Management
- Disabling on-board Devices

Installing IDE and SCSI Devices
- IDE Interfaces, EIDE, ATA/ATAPI, Serial ATA (SATA)

Configuring IDE devices, Master/Slave/Cable Select
- SCSI Interface, SCSI ID, Jumper Block/DIP
- Switch setting

Storage Devices
- Floppy and Hard Disk Drives.
- CD and DVD Optical Devices.
- USB and Flash Memory Drives

I/O Interfaces
- Serial Port, Parallel Port, USB Port, IEEE 1394, IR Port
- Serial, Parallel, USB Cable and Connector
- Configuring Internal Devices-Multimedia, Modem, IR Device
- Configuring External Devices-Bluetooth Device, Digital Gadgets

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Printers

- Print Technologies Solid Ink, Dot Matrix, Ink
- Dispersion, Laser
- Printer Interfaces – Serial, Parallel , USB, Network
- Printer Installation, Driver, Printer Settings
- Installing Cartridge, Toner
- Printer Problems Troubleshooting

Anti-Virus Management

- Installation of renowned Anti-Virus in Server
- Client Mode
- Client Package creation and Remote Installation
- Downloading the update on server and distribution to clients

Laptops and Portable Devices

- Fundamentals Features of Laptops and Portable Devices
- Configuring Power Management
- Application for Portable and Laptop Hardware
- Application for Portable and Laptop Hardware
- Safe Removal of Laptop-Specific Hardware
- Introduction to blackberry and handheld devices

Data Recovery

- Tools to recover the lost Data
- Recover emails deleted in Outlook
- Image Creation and Data Synchronization

Application Support

- Windows7 Built-in applications
- Internet Explorer and Outlook Express
- Remote Assistance

PC Diagnostics and Maintenance

- The Power-ON Self Test and Boot
- Peripheral and Operating System Diagnostics
- Third Party Diagnostic and Performance
- Optimization
- Software PC Maintenance Tools

Internet and Email

- Basics of Computer Networks
- Basics of Internet Architecture
- Services on Internet-Email, Search Engine, Online
- Booking Chat, Messaging and Conference sites
- Internet Access Techniques – Broadband, Dialup, Data Card

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NETWORKING
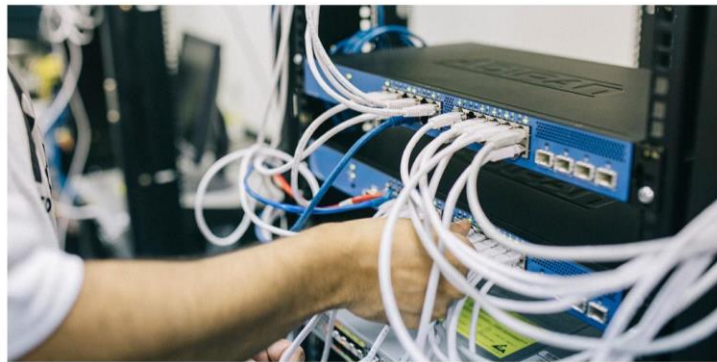
Basic Network Theory

Network Definitions
Network Models
Connectivity
Network Addressing
Signaling Concepts

Network Connectivity

The Data Package
Establishing a Connection
Reliable Delivery
Network Connectivity
Noise Control
Building Codes
Connection Devices

Advanced Network Theory

The OSI Model
Ethernet
Network Resources

Token Ring/IEEE 802.5
FDDI
Wireless Networking

Common Network Protocols

Families of Protocols
NetBEUI
Bridges and Switcher
The TCP/IP Protocol
Building a TCP/IP Network
The TCP/IP Suite

TCP/IP Services

Dynamic Host Configuration
DNS Name Resolution
NetBIOS Support
SNMP
TCP/IP Utilities
Upper Layer Services: FTP , HTTP, SMTP, POP3

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Network WAN Infrastructure

The WAN Environment
WAN Transmission Technologies
WAN Connectivity Devices
Voice Over Data Services

Remote Networking

Remote Networking
Remote Access Protocols
VPN Technologies

Advanced Data Storage Techniques

Enterprise Data Storage
Clustering
Network Attached Storage
Storage Area Networks

Foundation of Security

Essential Terminology
Firewall, IDS ,IPS, VPN
Virus, Trojan, Phishing
Malware, Spyware, Adware
Defining Security
Need for security
Cyber crime

Desktop Security

Hardening of Operating System
Updating the system and configuring the updates
Deployment of OS Firewall
Configuring Firewall Exceptions
Internet Explorer Setting

Administering Windows Security

Commonly used services and Ports
How to find services and ports they listen on ?
Kill Suspected Process and close ports?
Overview of the windows registry?
Tools for PC- Tuning and Optimization

Wireless Basics

Introduction to Wireless Network
Types of 802.11 Network
Ad-Hoc and Infrastructure Network

Configuring WLAN and Security

Setting up a Wireless Network
Bridging the Wireless Network with Wired

Network

Roaming within a WLAN
Configuring WLAN Security

Broadband Setting and Configuration

Features of various Broadband Routers
Setting configured by renowned ISP
Configuring NAT and Security
Access your PC using Virtual Server and Dynamic DNS

Network Troubleshooting

Using a Systematic Approach to Troubleshooting
Network Support Tools: Utilities
The Network Baseline

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Windows 7/8/10. Configuring

- Installing, upgrading, and Migrating to Windows 7/8/10
- Capture a system image & Prepare for deployment
- Configuring Hardware And Application
- Configure IPv4 & IPv6 network Setting
- Configure Windows Firewall and Remote Management
- Configure User account Control (UAC)
- Configure Shared Resources , file and folder access
- Configure authentication and authorization
- Configure BitLocker, Direct Access and Remote connections
- Monitor System, Manage Disks
- Configure backup and system recovery option
- Configure updates to windows

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CISCO ™

CCNA (200-301)

1.0 Network Fundamentals

1.1 Explain the role and function of network components
- Routers
- L2 and L3 switches
- Next-generation firewalls and IPS
- Access points
- Controllers (Cisco DNA Center and WLC)
- Endpoints
- Servers

1.2 Describe characteristics of network topology architectures
- 2 tier
- 3 tier
- Spine-leaf
- WAN
- Small office/home office (SOHO)
- On-premises and cloud

1.3 Compare physical interface and cabling types
- Single-mode fiber, multimode fiber, copper
- Connections (Ethernet shared media and point-to-point)
- Concepts of PoE

1.4 Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)
1.5 Compare TCP to UDP

1.6 Configure and verify IPv4 addressing and subnetting

1.7 Describe the need for private IPv4 addressing
1.8 Configure and verify IPv6 addressing and prefix

1.9 Compare IPv6 address types
- Global unicast
- Unique local
- Link local
- Anycast
- Multicast

- Modified EUI 64

1.10   Verify IP parameters for Client OS (Windows, Mac OS, Linux)

1.11   Describe wireless principles
- Nonoverlapping Wi-Fi channels
- SSID
- RF
- Encryption

1.12   Explain virtualization fundamentals (virtual machines)

1.13   Describe switching concepts
- MAC learning and aging
- Frame switching
- Frame flooding
- MAC address table

2.0   Network Access
2.1   Configure and verify VLANs (normal range) spanning multiple switches
- Access ports (data and voice)
- Default VLAN
- Connectivity

2.2   Configure and verify interswitch connectivity
- Trunk ports
- 802.1Q
- Native VLAN

2.3   Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)

2.4   Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)

2.5   Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
- Root port, root bridge (primary/secondary), and other port names
- Port states (forwarding/blocking)
- PortFast benefits

2.6   Compare Cisco Wireless Architectures and AP modes

2.7   Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, and LAG)

2.8   Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS,

console, and TACACS+/RADIUS)

2.9   Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings

3.0   IP Connectivity

3.1   Interpret the components of routing table
- Routing protocol code
- Prefix
- Network mask
- Next hop
- Administrative distance
- Metric
- Gateway of last resort

3.2   Determine how a router makes a forwarding decision by default
- Longest match
- Administrative distance
- Routing protocol metric

3.3   Configure and verify IPv4 and IPv6 static routing
- Default route
- Network route
- Host route
- Floating static

3.4   Configure and verify single area OSPFv2
- Neighbor adjacencies
- Point-to-point
- Broadcast (DR/BDR selection)
- Router ID

3.5   Describe the purpose of first hop redundancy protocol

4.0   IP Services

4.1   Configure and verify inside source NAT using static and pools
4.2   Configure and verify NTP operating in a client and server mode
4.3   Explain the role of DHCP and DNS within the network
4.4   Explain the function of SNMP in network operations
4.5   Describe the use of syslog features including facilities and levels
4.6   Configure and verify DHCP client and relay
4.7   Explain the forwarding per-hop behavior (PHB) for QoS such as classification, marking, queuing, congestion, policing, shaping
4.8   Configure network devices for remote access using SSH

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4.9   Describe the capabilities and function of TFTP/FTP in the network

5.0   Security Fundamentals

5.1   Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)

5.2   Describe security program elements (user awareness, training, and physical access control)

5.3   Configure device access control using local passwords

5.4   Describe security password policies elements, such as management, complexity, and password alternatives (multifactor authentication, certificates, and biometrics)

5.5   Describe remote access and site-to-site VPNs

5.6   Configure and verify access control lists

5.7   Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)

5.8   Differentiate authentication, authorization, and accounting concepts

5.9   Describe wireless security protocols (WPA, WPA2, and WPA3)

5.10   Configure WLAN using WPA2 PSK using the GUI

6.0   Automation and Programmability

6.1   Explain how automation impacts network management

6.2   Compare traditional networks with controller-based networking

6.3   Describe controller-based and software defined architectures (overlay, underlay, and fabric)

- Separation of control plane and data plane
- North-bound and south-bound APIs

6.4   Compare traditional campus device management with Cisco DNA Center enabled device management

6.5   Describe characteristics of REST-based APIs (CRUD, HTTP verbs, and data encoding)

6.6   Recognize the capabilities of configuration management mechanisms Puppet, Chef, and Ansible

6.7   Interpret JSON encoded data

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Red Hat Enterprise Linux

Red Hat System Administration I

Accessing the Command Line
Managing Files From the Command Line
Getting Help in Red Hat Enterprise Linux
Creating, Viewing, and Editing Text Files
Managing Local Linux Users and Groups
Controlling Access to Files with Linux File System Permissions
Monitoring and Managing Linux Process
Controlling Services and Daemons
Configuring and Security openSSH Service
Analyzing and storing Logs
Managing red Hat Enterprise Linux Networking
Archiving and Copying Files Between Systems
Installing and Updating Software Packages
Accessing Linux File System
Analyzing servers and getting support
Comprehensive review

Red Hat System Administration II

Automating Installation with Kickstart
Using Regular Expressions with grep
Creating and Editing Text Fileswith Vim
Scheduling Future Linux Tasks
Managing Priority of Linux Process
Controlling Access to files with Acess Control Lists (ACLs)
Managing Selinux Security
Connecting to network-defined User and Groups
Adding Disks, Partitions and File systems to a Linux System
Managing Logical Volume management (LVM) Storage
Acessing Network Storage with Network File System (NFS)
Acessing Network Storage with SMB
Controlling and Troubleshooting the Red Hat Enterprise Linux Boot Process
Limiting Network Cication with Firewalid
Comprehensive Review of System Administration II

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Curriculum AWS Practitioner & Associate Combo

Introduction of Network
- Introduction of network
- type of network
- TCP/IP Model
- IP Address(type version and class)
- windows and Linux Physical servers setup

Introduction to Cloud Computing
- Introduction to Cloud Computing
- Why Cloud Computing?
- Benefits of Cloud Computing
- Public Cloud, Private Cloud, Hybrid Cloud
- Service Models (IAAS, PAAS, SAAS)
- Software as a Service,
- Platform as a Service,
- Infrastructure as a Service,
- VIRTUALIZATION
- What is virtualization?,
- Virtualization and Cloud Computing,
- Types of virtualization,
- Virtualization terminologies,
- Hypervisor,

Introduction to AWS
- Elastic computing
- Introduction to the AWS products
- Regions and Availability Zones
- Signing up for AWS.
- AWS Free usage tier
- Introduction AWS management console

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Identity access management (IAM)
- Introduction of IAM Service
- Creating Users and Groups
- Grant Least Privilege
- Configuring a Strong Password Policy for your Users
- Enabling MFA for Privileged Users
- Granting permissions using IAM Policies
- Creating Custom Policies and Associating to Users and Groups
- Understanding Roles

EC2 Compute Service
- EC2 Introduction
- Public and Private IPs
- Spinning Windows/Linux servers in EC2
- Key Pairs,
- Elastic IPs
- Connecting to Instances using RDP, MobaXTerm, Putty
- Security Group Basics and Implementing Security for Real-Time Environments.
- Backups for Instances using Snapshots

S3 (Simple Storage Service)
- Introduction to AWS Object Storage
- Creating S3 Buckets and Uploading Data into them
- S3 durability and redundancy
- Various S3 Storage Types (Standard, Infrequent, One Zone)
- Configuring S3 Versioning, Logging, Encryption
- Hosting a Static Website on S3
- Implementing Lifecycle and cross region replication for S3 Buckets
- Understanding S3 Analytics, Metrics and Inventory

EBS (Elastic Block Storage)
- Understanding Block Level Storage using EBS
- Configuring SSD/HDD/Magnetic Storage for Windows and Linux Servers
- Attach and detach EBS volumes,
- Mounting and un-mounting EBS volume,
- Creating and deleting snapshots,
- Creating volumes from snapshots
- Configuring VOLUME-SNAPSHOT-VOLUME Process
- Understanding AMI and its Features
- Creating AMI for Windows/Linux Servers
- Server migration in same region and cross region

Amazon Virtual Private Cloud (VPC)
- Introduction to VPC
- IPv4 Addressing Scheme
- Public and Private IP's
- Understanding Subnetting
- Elastic IP's
- Basic VPC configuration

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- Implementing Private/Public subnets in VPC
- VPC security
- Deep Dive in to VPC core concepts (Route Tables, Subnets, Internet Gateway)
- Building Custom VPC Network Topology for Real Time Environments

ELB (Elastic Load Balancer)
- Introduction to ELB
- Implementing HA using Load Balancer for Websites
- Understanding ELB Load Distribution using Round Robin Algorithm
- Understanding Health Checks
- Configuring Advanced VPC and Cross-Zone Load Balancing
- Adding and removing instances on ELB

CloudWatch
- Introduction of AWS Monitoring
- Understanding Virtualization
- Making a Status Check Failed Incident manually
- CloudWatch Basic and Detailed Monitoring and Its Features
- Cloudwatch dashboard
- Implementing Real-Time monitoring by Integrating with SNS.
- Understanding CloudWatch Logs and Metrics
- Creating Alarms and its Actions
- Configuring Dashboards for Organization Architectures

Simple Notification Service (SNS)
- Introduction to SNS.
- Creating topics and Evaluating ARNs.
- Subscribing using Various Protocols.
- Publishing Notifications using SNS.
- Integrating SNS Topics with CloudWatch and Autoscaling Services.

Route53
- Introduction of the Domain-Name System
- Buying Domain names at Domain Registrars
- Creating Zones on Route53
- Creating Route53 Records (Address, CNAME, Alias)
- Creating Health Checks in Route53
- Understanding routing policies provided by AWS
- Routing Policy and its Implementation

Auto scaling
- Understanding Horizontal vs Vertical scaling
- Understanding Auto Scaling
- Create a launch configuration
- Create an Auto Scaling group
- Understanding Various Scaling Types (Dynamic, Scheduled, Step, Target Tracking Scaling Policies)
- Setting up an auto-scaled, load-balanced Application using Autoscaling

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Microsoft Azure Fundamentals & Administrator (Combo)

Manage Azure identities and governance

- Create users and groups
- Create administrative units
- Manage user and group properties
- Manage guest accounts
- Configure self-service password reset

Manage access control

- Create custom role-based access control (RBAC) and Azure AD roles
- Provide access to Azure resources by assigning roles at different scopes

Manage Azure subscriptions and governance

- Configure and manage Azure policy
- Apply and manage tags on resources
- Manage resource groups
- Manage subscriptions
- Manage costs by using alerts, budgets, and recommendations
- Configure management groups

Implement and manage storage

- Configure network access to storage accounts
- Create and configure storage accounts
- Configure stored access policies
- Manage access keys
- Configure storage encryption

Manage data in Azure storage accounts

- Manage data by using Azure Storage Explorer and AzCopy

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- Implement Azure Storage redundancy
- Configure object replication
- Configure Azure Blob Storage
- Configure storage tiers
- Configure blob lifecycle management

Deploy and manage Azure compute resources

- Create a VM
- Manage images by using the Azure Compute Gallery
- Configure Azure Disk Encryption
- Manage VM sizes
- Add data disks
- Configure VM availability options
- Deploy and configure VM scale sets
- Configure sizing and scaling for Azure Instances
- Configure storage for Azure Kubernetes Service (AKS)
-Create and configure an Azure App Service
- Create an App Service plan
- Configure scaling settings in an App Service plan
- Create an App Service
- Configure custom domain names

Configure and manage virtual networking

- Create and configure virtual networks and subnets
- Create and configure virtual network peering
- Configure private and public IP addresses
-Vnet peering
-Manage gateway
- Configure Azure DNS
- Create and configure network security groups (NSGs)
- Evaluate effective security rules
- Implement Azure Bastion
- Configure service endpoints on subnets
-Configure load balancing
- Configure an internal or public load balancer

Monitor and maintain Azure resources

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Monitor resources by using Azure Monitor
- Configure Azure Monitor Logs
- Query and analyze logs
- Set up alerts and actions
- Configure monitoring of VMs, storage accounts, and networks by using VM insights

Implement backup and recovery

- Create an Azure Recovery Services vault
- Create an Azure Backup vault
- Perform backup and restore operations by using Azure Backup
- Configure Azure Site Recovery for Azure resources
- Perform failover to a secondary region by using Azure Site Recovery
- Configure and review backup reports