



Susant K Rout's
Center of Excellence

Diploma in Enterprise System Engineer (DESE)

Module 1: Electronics

- . Analog Electronics
- . Digital Electronics
- . Microprocessor

Module 2: ComTIA A+ Essential

- . HARDWARE
- . Operating System
- . Troubleshooting

Module 3: Networking Concepts

Networking essentials

- ➔ What is networking and advantages?
- ➔ Types of networks, LAN & WAN
- ➔ Requirements for implementing LAN
- ➔ Network topology
- ➔ Network model
- ➔ Types of cables
- ➔ Crimping(straight and cross)
- ➔ Network adaptors / NIC cards
- ➔ Network devices (Hub, switches & router)

IP address

- Class A to Class B
- Private / public address
- Logical physical address

Network protocol

- (TCP / UDP, IPX/SPX, Net BEUI)

OSI reference model

Networking standard

Network technology

Remote connectivity

Managing windows security

User accounts administration

File system security

Printer shareing

Drive shareing , file shareing

Internet shareing

Voip

Mac address

Dhcp automatic ip configuration

Advance wan technology

Testing and troubleshooting networks

Module 4: Microsoft Certified IT Professional (MCITP)

All 5 papers covered

Introduction to Microsoft windows 2003 / 2008 families

- History of server O/S
- Features of windows server 2008
- Installation of windows server 2003 / 2008
- Upgrading existing win 2003 domain to window 2008 domain

Active directory- Domain services

- Features of active directory
- Installing and configuring ADDS
- Active directory and its components (Logical & physical components)
- Configuration ADC / CDC
- Uninstallation of ADSS

FSMO roles of AD-DS

- Roles of AD-DS
- Transferring of roles
- Seizing of roles

Trust relationship

- Introduction to trust relationship
- Functional levels
- Authentication protocols
- Configuring forest trust between 2008 forests

RODC

- Introduction & configuration of read-only domain control
- SITES and global catalogue
- Replication between the domain controller

Member server, clients, user configuration

- Adding of clients to domain
- Creating local & domain user
- Creating groups
- Password policies
- Account lockout policies
- User properties

Permission access control list

- File system
- Security and sharing permission to folders & files

- Difference between FAT & NTFS

User profiles

- Types of profiles (local, roaming & mandatory profiles)
- Types of profiles (Local, roaming & mandatory profiles)
- Home folder
- Disk quotas
- Applying & denying disk space to user

Group policy / system policies

- Organizational unit
- Delegation of control
- Configuration of group policy
- Applying group policies on OU's, domain & sites
- Group policy modeling
- Software deployment
- Script, folder redirection

Dynamic host configuration protocol (DHCP)

- Introduction & configuration of DHCP server
- Configuration or scope
- Reservations
- BOOTP server
- DHCP backup

Domain name system (DNS)

- What is DNS? DNS naming hierarchy
- Installing & configuring DNS
- Types of zones: primary, secondary, stub zone
- Lookup zones – forward & reverse lookup zones
- Resource records integration with Ads, SRV records
- Forwarders, dynamic updates

Internet information services

- Installing & configuration IIS
- Creating & hosting websites
- Virtual directory
- Backup and restoring sites
- FTP server configuration
- Uploading and downloading the contents through FTP

Disk management

- Basic & dynamic disk
- Types of volume
- Creating- simple, spanned, striped, mirroring & RAID5

Windows deployment services

- Introduction & configuration of WDS server
- Attended and unattended installation

Terminal services

- Terminal server configuration
- Terminal server licensing mode
- Remote desktop

Routing & remote access

- Remote access server configuration
- VPN, NAT, DHCP relay agent

Windows server core

- Installation of windows server core 2008
- Basic command of server core
- Installation, managing & uninstalling server core features and roles

Advanced topics

- Introduction to backup
- User data, system state backup & restoration
- Upgrading windows server 2003 to 2008
- Offline folder, VSS
- DNS backup & restore
- Extend partition using command prompt

Module 5 : Red Hat Certified Engineer (RHCE)

All 3 papers covered

. **Red Hat Linux Essentials (RH-033)**

. **Red Hat Linux System Administration (RH-133)**

. **Red Hat Networking & Security Administration (RH-253)**

Introduction to Unix & Linux

- History of Unix & Linux
- Basic Concepts of Operating Systems, Kernel, shell and file system structure
- Basic Concepts of Linux
- Basic Commands of Linux
- Advanced Linux Commands

Installation of Linux

- Interactive Installation
- Kickstart Installation
- Network based Installation

User and group administration

- Creating and deleting users from the system
- Modifying users profile
- Creating and deleting groups
- Important system files related to user administration

Advanced file permissions (ACL)

- Assigning advanced files permissions i.e. SUID, SGID and Sticky bit
- Creating, modifying and deleting ACL's

Disk Partitioning and Mounting File System

- Using fdisk, disk druid utilities for disk partitioning
- Using mkfs, dd commands to create file systems
- Mounting various file systems
- Auto mounting of file system
- Logical Volume Manager (LVM)

Quotas

- Enabling Quotas on partitions

- Creating Quotas for users
- Auditing quotas

Backup and recovery

- Introduction to various types of backup media
- Backup and restoring data using dump / restore commands
- Backup and restoring using tar and cpio commands
- Automation of Jobs

RAID (Redundant Array of Inexpensive Disks)

- Implementing RAID on Linux
- Pre installation / Post Installation
- RAID levels (0, 1, and 5) configuration using RAID tools

Troubleshooting your system

- Recovering the super user password
- Recovering the boot loader (GRUB)
- Troubleshooting Xserver problems
- Troubleshooting network related problems

Startup and Shutdown scripts

- Boot Sequence
- Kernel Initialization
- INIT Process

Dynamic Host Configuration Protocol (DHCP)

- Configuring Linux as DHCP server
- Configuring various clients for dhcp server (Windows & Linux)

DNS

- Basis of Internet
- Basic of DNS and BIND 9

- Configuring DNS primary server, and secondary servers
- Configuring DNS for multiple domains and sub domains
- Configuring various clients (Windows & Linux)

Web Server (Apache)

- Basics of web service
- Introduction to Apache
- Configuring Apache for main site
- Configuring Apache for multiple sites using IP-based, port-based and name-based virtual hosting

FTP server (vsftpd daemon)

- Basics of File Transfer protocol
- Configuring proftpd for anonymous ftp service

Samba service

- Basics of file sharing in Windows
- Configuring samba to act as member server for Windows Network
- Configuring samba service for file sharing with windows systems

Proxy Server (Squid)

- Basics of proxy services
- Configuring proxy services
- Creating ACL's for controlling access to internet

Module 6: Cisco Certified Network Associate (CCNA)

640-802 paper covered

Introduction to WAN

- Components of WAN
- Function of WAN components
- OSI layers
- Adjacent layer interaction
- Difference between OSI & TCP/IP model
- TCP/IP protocol suite

TCP/IP – Addressing & sub netting

- Class of IP address
- Types of address (unicast,, broadcast & multicast)
- Public & private addresses
- Variable length subnet masking (VLSM), CIDR
- Super netting

LAN segmentation

- Collision domain & broadcast domain
- Physical segmentation
- Network switching technology

Introduction to CISCO

- Cisco hierarchical model
- Interface & components

IOS

- Modes & basic commands
- Navigation commands
- TFTP – (IOS) and CDP

Routing concepts

- IP routing basics
- Static, default & dynamic routing
- Routed vs Routing protocols
- Interior routing protocol (RIP v1, v2, IGRP, OSPF, EIGRP)
- Introduction to exterior routing protocol(EGP, BGP)
- Distance – vector routing protocol (EIGRP)
- Comparing distance vector to link state routing
- Troubleshooting

Dynamic routing

- Distance vector routing protocol
- RIP & IGRP
- OSPF & EIGRP

IP Access list

- Standard access list
- Extended access list
- Named access list

Switching

- Switching methods
- Configuring switches using Browser , telnet, cci & menu
- Layers 2 switching
- Spanning tree protocol (STP)
- Configuring VLAN's VLAN trunking protocol
- Modes of VTP & VTP pruning

WAN protocol

- Leased line, circuit & packet switching, PPP & HDLC
- Authentication protocols PAP & CHAP

ISDN & Leased line

- Concepts of ISDN –BRI
- DDR – Configuration & leased line

Frame Relay

- Concepts of frame relay
- Password recovery

Troubleshooting and Multicom Routers

- Interface troubleshooting using debug commands
- WAN troubleshooting, intro channelized E1 lines, PRI lines

Total Duration : 1year

Course Fees-50.000