

Computer Hardware

1) Fundamental Of Computer

- Types Of Computer
- PC Components, Features, And System Design

2) Microprocessor

- Processor Specifications
- Cache Memory
- Processor Hierarchy
- Multitasking & Multiprocessing
- Processor Cooling
- Over Clocking
- Processor Troubleshooting Techniques

3) Memory

- Memory Basics
- Memory Standards
- Memory Types
- Memory Troubleshooting

4) Motherboard

- Motherboard Basics
- Types Of Motherboard
- Identification Of Motherboard Components
- Chipsets
- VRM Section
- Motherboard Troubleshooting Techniques

5) BIOS

- Bios Basics
- Upgrading Bios
- Bios Setup
- Bios Errors

6) Storage Devices

- Storage Device Basics
- Types Of Storage Devices
- Understand Working Of Storage Devices
- Storage Device Troubleshooting Techniques
- Data Recovery

7) Printer & Scanner

- Printer Basics
- Types Of Printer
- Understand Working Of Printer & Scanner
- Printer Troubleshooting Techniques
- Cartridge & Toner Refilling

8) SMPS

- SMPS Basics
- Identify SMPS Connectors
- Measure Voltage Of Each Wire
- SMPS Troubleshooting Techniques

9) I/O Devices

- I/O Devices Basics
- Types Of I/O Devices
- Functioning & Specification Of I/O Devices
- I/O Device Troubleshooting Techniques

10) Display Devices

- Display Devices Basics
- Types Of Display Devices
- Functioning & Specification Of display Devices
- Display Devices Troubleshooting Techniques

11) Identification, Installation & Troubleshooting Of Each Hardware Device

12) Laptop & Desktop Assembling

13) CCTV & Biometrics

AVASTS

Windows 7 MCP

This exam measures your ability to accomplish the technical tasks listed below. The percentages indicate the relative weight of each major topic area in the exam. The higher the percentage, the more questions you are likely to see on that content area in the exam.

1) Installing, upgrading and migrating to Windows 7

- Perform a clean installation
- Upgrade to Windows 7 from previous versions of Windows
- Migrate user profiles

2) Deploying Windows 7

- Capture a system image
- Prepare a system image for deployment
- Deploy a system image
- Configure a VHD

3) Configuring hardware and applications

- Configure devices
- Configure application compatibility
- Configure application restrictions
- Configure Internet Explorer

4) Configuring network connectivity

- Configure IPv4 network settings
- Configure IPv6 network settings
- Configure networking settings
- Configure Windows Firewall
- Configure remote management

5) Configuring access to resources

- Configure shared resources
- Configure file and folder access
- Configure user account control (UAC)
- Configure authentication and authorisation
- Configure BranchCache

6) Configuring mobile computing

- Configure BitLocker and BitLocker To Go
- Configure DirectAccess
- Configure mobility options
- Configure remote connections

7) Monitoring and maintaining systems that run Windows 7

- Configure updates to Windows 7
- Manage disks
- Monitor systems
- Configure performance settings

8) Configuring backup and recovery options

- Configure backup
- Configure system recovery options
- Configure file recovery options

Networking +

1) Introduction of Computer Network

- Networking Basics
- Types Of Network

2) OSI & TCP / IP Model

- Osi Model Basics
- Tcp / Ip Model Basics
- Brief Introduction Of Osi Layers
- Brief Introduction Of Tcp / Ip Layers

3) Networking Devices

- Networking Devices Basics
- Physical Layer Devices
- Data Link Layer Devices
- Network Layer Devices
- Transport Layer Devices

4) LAN Standards

- Ethernet / Fast Ethernet / Giga Ethernet
- Communications Mode
- Token-Ring
- Wireless Networks

5) IP Addressing

- Basics Of Ip Address
- Ip Address Space Mapping
- Ip Address Operations
- Troubleshooting Ip Address Issues

6) TCP/IP protocol suite

- Basics Of Tcp / Ip Protocols
- Standard Tcp/Ip Services
- Name Services

- Application Layer Protocols
- Transport Layer Protocols
- Network Layer Protocols
- Data Link Layer Protocols

7) Structured cabling

- Network Cable Basics
- Structured Cabling Equipments
- Installation Of I/O Box
- Installation Of Patch Panel

8) Working with email clients

- Ms-Outlook Basics
- Configure Email Account With Outlook
- Secure Email Account In Outlook
- Backup Methods Of Outlook

9) Modem configuration

- Modem Basics
- Internet Connection & Sharing
- Types Of Modem & Technical Specification
- Always On Connection Configuration
- Dial-Up Connection Configuration

10) Installing, configuring and troubleshooting wireless networks

- Wireless Network Basics
- Add-Hoc Configuration
- Infrastructure Mode Configuration
- Security Configuration
- Hotspot configuration

11) Troubleshooting network problem using hardware and software tools

12) N-Computing

- N-Computing Basics
- N-computing Device Configuration
- N-computing Software Configuration
- N-computing Troubleshooting

AVATS

MCSA: Windows Server 2012

The skills for your professional career

Prove your mastery of the primary set of Windows Server 2012 skills required to reduce IT costs and deliver more business value. Earning an MCSA: Windows Server 2012 certification qualifies you for a position as a network or computer systems administrator or as a computer network specialist, and it is the first step on your path to becoming a [Microsoft Certified Solutions Expert \(MCSE\)](#).

Step	Title	Required exam
1	Installing and Configuring Windows Server 2012	410
2	Administering Windows Server 2012	411
3	Configuring Advanced Windows Server 2012 Services	412

Exam 410

1) Install and configure servers

- Install servers
- Configure servers
- Configure local storage

2) Configure server roles and features

- Configure file and share access
- Configure print and document services
- Configure servers for remote management

3) Configure Hyper-V

- Create and configure virtual machine settings
- Create and configure virtual machine storage
- Create and configure virtual networks

4) Deploy and configure core network services

- Configure IPv4 and IPv6 addressing
- Deploy and configure Dynamic Host Configuration Protocol (DHCP) service

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- Deploy and configure DNS service

5) Install and administer Active Directory

- Install domain controllers
- Create and manage Active Directory users and computers
- Create and manage Active Directory groups and organisational units (OUs)

6) Create and manage Group Policy

- Create Group Policy objects (GPOs)
- Configure security policies
- Configure application restriction policies
- Configure Windows Firewall

Exam 411

1) Deploy, manage and maintain servers

- Deploy and manage server images
- Implement patch management
- Monitor servers

2) Configure File and Print Services

- Configure Distributed File System (DFS)
- Configure File Server Resource Manager (FSRM)
- Configure file and disk encryption
- Configure advanced audit policies

3) Configure network services and access

- Configure DNS zones
- Configure DNS records
- Configure virtual private networks (VPN) and routing
- Configure DirectAccess

4) Configure a Network Policy Server (NPS) infrastructure

- Configure Network Policy Server
- Configure NPS policies
- Configure Network Access Protection (NAP)

5) Configure and manage Active Directory

- Configure service authentication
- Configure domain controllers
- Maintain Active Directory
- Configure account policies

6) Configure and manage Group Policy

- Configure Group Policy processing
- Configure Group Policy settings
- Manage Group Policy objects (GPOs)
- Configure Group Policy preferences (GPP)

Exam 412

1) Configure and manage high availability

- Configure Network Load Balancing (NLB)
- Configure failover clustering
- Manage failover clustering roles
- Manage VM movement

2) Configure file and storage solutions

- Configure advanced file services
- Implement Dynamic Access Control (DAC)
- Configure and optimise storage

3) Implement business continuity and disaster recovery

- Configure and manage backups
- Recover servers
- Configure site-level fault tolerance

4) Configure Network Services

- Implement an advanced Dynamic Host Configuration Protocol (DHCP) solution
- Implement an advanced DNS solution
- Deploy and manage IP Address Management (IPAM)

5) Configure the Active Directory infrastructure

- Configure a forest or a domain
- Configure trusts
- Configure sites
- Manage Active Directory and SYSVOL replication

6) Configure Identity and Access Solutions

- Implement Active Directory Federation Services (AD FS)
- Install and configure Active Directory Certificate Services (AD CS)
- Manage certificates
- Install and configure Active Directory Rights Management Services (AD RMS)

CCNA

The 200-120 composite CCNA v2 exam is a 1.5 hour test with 50 – 60 questions.

The 200-120 CCNA exam is the composite exam associated with the [CCNA Routing and Switching certification](#).

This exam tests a candidate's knowledge and skills required to install, operate, and troubleshoot a small to medium-size enterprise branch network. The topics include all the areas covered under the 200-120 CCNA exam.

The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

1) Operation of IP Data Networks

- Recognize the purpose and functions of various network devices such as routers, switches, bridges and hubs
- Select the components required to meet a given network specification
- Identify common applications and their impact on the network
- Describe the purpose and basic operation of the protocols in the OSI and TCP/IP models
- Predict the data flow between two hosts across a network
- Identify the appropriate media, cables, ports, and connectors to connect Cisco network devices to other network devices and hosts in a LAN

2) LAN Switching Technologies

- Determine the technology and media access control method for Ethernet networks
- Identify basic switching concepts and the operation of Cisco switches
- Configure and verify initial switch configuration including remote access management
- Verify network status and switch operation using basic utilities such as
- Describe how VLANs create logically separate networks and the need for routing between them
- Configure and verify VLANs
- Configure and verify trunking on Cisco switches
- Identify enhanced switching technologies
- Configure and verify PVSTP operation

3) IP Addressing (IPv4/IPv6)

- Describe the operation and necessity of using private and public IP addresses for IPv4 addressing
- Identify the appropriate IPv6 addressing scheme to satisfy addressing requirements in a LAN/WAN environment
- Identify the appropriate IPv4 addressing scheme using VLSM and summarization to satisfy addressing requirements in a LAN/WAN environment.
- Describe the technological requirements for running IPv6 in conjunction with IPv4
- Describe IPv6 addresses

4) IP Routing Technologies

- Describe basic routing concepts
- Configure and verify utilizing the CLI to set basic Router configuration
- Configure and verify operation status of a device interface
- Verify router configuration and network connectivity using
- Configure and verify routing configuration for a static or default route given specific routing requirements
- Differentiate methods of routing and routing protocols
- Configure and verify OSPF
- Configure and verify interVLAN routing (Router on a stick)
- Configure SVI interfaces
- Manage Cisco IOS Files
- Configure and verify EIGRP (single AS)

5) IP Services

- Configure and verify DHCP (IOS Router)
- Describe the types, features, and applications of ACLs
- Configure and verify ACLs in a network environment
- Identify the basic operation of NAT
- Configure and verify NAT for given network requirements
- Configure and verify NTP as a client.
- Recognize High availability (FHRP)
- Configure and verify syslog
- Describe SNMP v2 and v3

6) Network Device Security

- Configure and verify network device security features
- Configure and verify Switch Port Security
- Configure and verify ACLs to filter network traffic
- Configure and verify ACLs to limit telnet and SSH access to the router

7) Troubleshooting

- Troubleshoot and correct common problems associated with IP addressing and host configurations
- Troubleshoot and resolve VLAN problems
- Troubleshoot and resolve trunking problems on Cisco switches
- Troubleshoot and resolve ACL issues
- Troubleshoot and resolve Layer 1 problems
- Identify and correct common network problems
- Troubleshoot and resolve spanning tree operation issues
- Troubleshoot and resolve routing issues
- Troubleshoot and resolve OSPF problems
- Troubleshoot and resolve EIGRP problems
- Troubleshoot and resolve interVLAN routing problems
- Troubleshoot and resolve WAN implementation issues
- Monitor NetFlow statistics
- TS EtherChannel problems

8) WAN Technologies

8.1 Identify different WAN technologies

- 8.1.a Metro ethernet
- 8.1.b VSAT
- 8.1.c Cellular 3g/4g
- 8.1.d MPLS
- 8.1.e T1/E1
- 8.1.f ISDN
- 8.1.g DSL
- 8.1.h Frame relay
- 8.1.i Cable
- 8.1.j VPN

8.2 Configure and verify a basic WAN serial connection

- Configure and verify a PPP connection between Cisco routers
- Configure and verify Frame Relay on Cisco routers
- Implement and troubleshoot PPPoE

AVASTS

The performance-based Red Hat Certified Engineer exam (EX300) tests to determine if your knowledge, skill, and ability meet those required of a senior system administrator responsible for [Red Hat Enterprise Linux](#) (RHEL) systems. [Red Hat Certified System Administrator \(RHCSA\)](#) certification is required to earn [RHCE certification](#).

An RHCE certification is earned by a Red Hat Certified System Administrator (RHCSA) who has demonstrated the knowledge, skill, and ability required of a senior system administrator responsible for Red Hat Enterprise Linux systems.

RHCSA

1) Understand and use essential tools

- Access a shell prompt and issue commands with correct syntax
- Use input-output redirection (>, >>, |, 2>, etc.)
- Use grep and regular expressions to analyze text
- Access remote systems using ssh
- Log in and switch users in multiuser targets
- Archive, compress, unpack, and uncompress files using tar, star, gzip, and bzip2
- Create and edit text files
- Create, delete, copy, and move files and directories
- Create hard and soft links
- List, set, and change standard ugo/rwx permissions
- Locate, read, and use system documentation including man, info, and files in /usr/share/doc

2) Operate running systems

- Boot, reboot, and shut down a system normally
- Boot systems into different targets manually
- Interrupt the boot process in order to gain access to a system
- Identify CPU/memory intensive processes, adjust process priority with renice, and kill processes
- Locate and interpret system log files and journals
- Access a virtual machine's console
- Start and stop virtual machines
- Start, stop, and check the status of network services
- Securely transfer files between systems

3) Configure local storage

- List, create, delete partitions on MBR and GPT disks
- Create and remove physical volumes, assign physical volumes to volume groups, and create and delete logical volumes
- Configure systems to mount file systems at boot by Universally Unique ID (UUID) or label
- Add new partitions and logical volumes, and swap to a system non-destructively

4) Create and configure file systems

- Create, mount, unmount, and use vfat, ext4, and xfs file systems
- Mount and unmount CIFS and NFS network file systems
- Extend existing logical volumes
- Create and configure set-GID directories for collaboration
- Create and manage Access Control Lists (ACLs)
- Diagnose and correct file permission problems

5) Deploy, configure, and maintain systems

- Configure networking and hostname resolution statically or dynamically
- Schedule tasks using at and cron
- Start and stop services and configure services to start automatically at boot
- Configure systems to boot into a specific target automatically
- Install Red Hat Enterprise Linux automatically using Kickstart
- Configure a physical machine to host virtual guests
- Install Red Hat Enterprise Linux systems as virtual guests
- Configure systems to launch virtual machines at boot
- Configure network services to start automatically at boot
- Configure a system to use time services
- Install and update software packages from Red Hat Network, a remote repository, or from the local file system
- Update the kernel package appropriately to ensure a bootable system
- Modify the system bootloader

6) Manage users and groups

- Create, delete, and modify local user accounts
- Change passwords and adjust password aging for local user accounts
- Create, delete, and modify local groups and group memberships
- Configure a system to use an existing authentication service for user and group information

7) Manage security

- Configure firewall settings using firewall-config, firewall-cmd, or iptables
- Configure key-based authentication for SSH
- Set enforcing and permissive modes for SELinux
- List and identify SELinux file and process context
- Restore default file contexts
- Use boolean settings to modify system SELinux settings
- Diagnose and address routine SELinux policy violations

RHCE

1) System configuration and management

- Use network teaming or bonding to configure aggregated network links between two Red Hat Enterprise Linux systems
- Configure IPv6 addresses and perform basic IPv6 troubleshooting
- Route IP traffic and create static routes
- Use firewalld and associated mechanisms such as rich rules, zones and custom rules, to implement packet filtering and configure network address translation (NAT)
- Use /proc/sys and sysctl to modify and set kernel runtime parameters
- Configure a system to authenticate using Kerberos
- Configure a system as either an iSCSI target or initiator that persistently mounts an iSCSI target
- Produce and deliver reports on system utilization (processor, memory, disk, and network)
- Use shell scripting to automate system maintenance tasks

2) Network services

- Install the packages needed to provide the service
- Configure SELinux to support the service
- Use SELinux port labeling to allow services to use non-standard ports
- Configure the service to start when the system is booted
- Configure the service for basic operation
- Configure host-based and user-based security for the service

HTTP/HTTPS

- Configure a virtual host
- Configure private directories
- Deploy a basic CGI application

- Configure group-managed content
- Configure TLS security

DNS

- Configure a caching-only name server
- Troubleshoot DNS client issues

NFS

- Provide network shares to specific clients
- Provide network shares suitable for group collaboration
- Use Kerberos to control access to NFS network shares

SMB

- Provide network shares to specific clients
- Provide network shares suitable for group collaboration

SMTP

- Configure a system to forward all email to a central mail server

SSH

- Configure key-based authentication
- Configure additional options described in documentation

NTP

- Synchronize time using other NTP peers

3) Database services

- Install and configure MariaDB
- Backup and restore a database
- Create a simple database schema
- Perform simple SQL queries against a database