

MCSE

Exam 70-410 Installing and Configuring Windows Server 2012

Install and configure servers (15–20%)

- Install servers
Plan for a server installation; plan for server roles; plan for a server upgrade; install Server Core; optimize resource utilization by using Features on Demand; migrate roles from previous versions of Windows Server
- Configure servers
Configure Server Core; delegate administration; add and remove features in offline images; deploy roles on remote servers; convert Server Core to/from full GUI; configure services; configure NIC teaming
- Configure local storage
Design storage spaces; configure basic and dynamic disks; configure MBR and GPT disks; manage volumes; create and mount virtual hard disks (VHDs); configure storage pools and disk pools

Configure server roles and features (15–20%)

- Configure file and share access
- Create and configure shares; configure share permissions; configure offline files; configure NTFS permissions; configure access-based enumeration (ABE); configure Volume Shadow Copy Service (VSS); configure NTFS quotas
- Configure print and document services
- Configure the Easy Print print driver; configure Enterprise Print Management; configure drivers; configure printer pooling; configure print priorities; configure printer permissions
- Configure servers for remote management
- Configure WinRM; configure down-level server management; configure servers for day-to-day management tasks; configure multi-server management; configure Server Core; configure Windows Firewall

Configure Hyper-V (15–20%)

- Create and configure virtual machine settings
Configure dynamic memory; configure smart paging; configure Resource Metering; configure guest integration services
- Create and configure virtual machine storage

Create VHDs and VHDX; configure differencing drives; modify VHDs; configure pass-through disks; manage snapshots; implement a virtual Fibre Channel adapter

- Create and configure virtual networks

Implement Hyper-V Network Virtualization; configure Hyper-V virtual switches; optimize network performance; configure MAC addresses; configure network isolation; configure synthetic and legacy virtual network adapters

Deploy and configure core network services (15–20%)

- Configure IPv4 and IPv6 addressing

Configure IP address options; configure subnetting; configure supernetting; configure interoperability between IPv4 and IPv6; configure ISATAP; configure Teredo

- Deploy and configure Dynamic Host Configuration Protocol (DHCP) service

Create and configure scopes; configure a DHCP reservation; configure DHCP options; configure client and server for PXE boot; configure DHCP relay agent; authorize DHCP server

- Deploy and configure DNS service

Configure Active Directory integration of primary zones; configure forwarders; configure Root Hints; manage DNS cache; create A and PTR resource records

Install and administer Active Directory (15–20%)

- Install domain controllers

Add or remove a domain controller from a domain; upgrade a domain controller; install Active Directory Domain Services (AD DS) on a Server Core installation; install a domain controller from Install from Media (IFM); resolve DNS SRV record registration issues; configure a global catalog server

- Create and manage Active Directory users and computers

Automate the creation of Active Directory accounts; create, copy, configure, and delete users and computers; configure templates; perform bulk Active Directory operations; configure user rights; offline domain join; manage inactive and disabled accounts

- Create and manage Active Directory groups and organizational units (OUs)

Configure group nesting; convert groups including security, distribution, universal, domain local, and domain global; manage group membership using Group Policy; enumerate group membership; delegate the creation and management of Active Directory objects; manage default Active Directory containers; create, copy, configure, and delete groups and OUs

Create and manage Group Policy (15–20%)

- Create Group Policy objects (GPOs)

Configure a Central Store; manage starter GPOs; configure GPO links; configure multiple local group policies; configure security filtering

- Configure security policies

Configure User Rights Assignment; configure Security Options settings; configure Security templates; configure Audit Policy; configure Local Users and Groups; configure User Account Control (UAC)

- Configure application restriction policies

Configure rule enforcement; configure Applocker rules; configure Software Restriction Policies

□ Configure Windows Firewall

Configure rules for multiple profiles using Group Policy; configure connection security rules; configure Windows Firewall to allow or deny applications, scopes, ports, and users; configure authenticated firewall exceptions; import and export settings

Exam 70-411 Administering Windows Server 2012

Deploy, manage, and maintain servers (15–20%)

□ Deploy and manage server images

Install the Windows Deployment Services (WDS) role; configure and manage boot, install, and discover images; update images with patches, hotfixes, and drivers; install features for offline images

□ Implement patch management

Install and configure the Windows Server Update Services (WSUS) role; configure group policies for updates; configure client-side targeting; configure WSUS synchronization; configure WSUS groups

□ Monitor servers

Configure Data Collector Sets (DCS); configure alerts; monitor real-time performance; monitor virtual machines (VMs); monitor events; configure event subscriptions; configure network monitoring

Configure file and print services (15–20%)

□ Configure Distributed File System (DFS)

Install and configure DFS namespaces; configure DFS Replication Targets; configure Replication Scheduling; configure Remote Differential Compression settings; configure staging; configure fault tolerance

□ Configure File Server Resource Manager (FSRM)

Install the FSRM role; configure quotas; configure file screens; configure reports

□ Configure file and disk encryption

Configure Bitlocker encryption; configure the Network Unlock feature; configure Bitlocker policies; configure the EFS recovery agent; manage EFS and Bitlocker certificates including backup and restore

□ Configure advanced audit policies

Implement auditing using Group Policy and AuditPol.exe; create expression-based audit policies; create removable device audit policies

Configure network services and access (15–20%)

□ Configure DNS zones

Configure primary and secondary zones; configure stub zones; configure conditional forwards; configure zone and conditional forward storage in Active Directory; configure zone delegation; configure zone transfer settings; configure notify settings

□ Configure DNS records

Create and configure DNS Resource Records (RR) including A, AAAA, PTR, SOA, NS, SRV, CNAME, and MX records; configure zone scavenging; configure record options

including Time To Live (TTL) and weight; configure round robin; configure secure dynamic updates

- Configure VPN and routing

Install and configure the Remote Access role; implement Network Address Translation (NAT); configure VPN settings; configure remote dial-in settings for users; configure routing

- Configure Direct Access

Implement server requirements; implement client configuration; configure DNS for Direct Access; configure certificates for Direct Access

Configure a Network Policy Server infrastructure (10–15%)

- Configure Network Policy Server (NPS)

Configure multiple RADIUS server infrastructures; configure RADIUS clients; manage RADIUS templates; configure RADIUS accounting; configure certificates

- Configure NPS policies

Configure connection request policies; configure network policies for VPN clients (multilink and bandwidth allocation, IP filters, encryption, IP addressing); manage NPS templates; import and export NPS policies

- Configure Network Access Protection (NAP)

Configure System Health Validators (SHVs); configure health policies; configure NAP enforcement using DHCP and VPN; configure isolation and remediation of non-compliant computers using DHCP and VPN; configure NAP client settings

Configure and manage Active Directory (15–20%)

- Configure service authentication

Create and configure Service Accounts; create and configure Group Managed Service Accounts; create and configure Managed Service Accounts; configure Kerberos delegation; manage Service Principal Names (SPNs)

- Configure Domain Controllers

Configure Universal Group Membership Caching (UGMC); transfer and seize operations masters; install and configure a read-only domain controller (RODC); configure Domain Controller cloning

- Maintain Active Directory

Back up Active Directory and SYSVOL; manage Active Directory offline; optimize an Active Directory database; clean up metadata; configure Active Directory snapshots; perform object- and container-level recovery; perform Active Directory restore

- Configure account policies

Configure domain user password policy; configure and apply Password Settings Objects (PSOs); delegate password settings management; configure local user password policy; configure account lockout settings

Configure and manage Group Policy (15–20%)

- Configure Group Policy processing

Configure processing order and precedence; configure blocking of inheritance; configure enforced policies; configure security filtering and WMI filtering; configure loopback processing; configure and manage slow-link processing; configure client-side extension (CSE) behavior

- Configure Group Policy settings
Configure settings including software installation, folder redirection, scripts, and administrative template settings; import security templates; import custom administrative template file; convert administrative templates using ADMX Migrator; configure property filters for administrative templates
- Manage Group Policy objects (GPOs)
Back up, import, copy, and restore GPOs; create and configure Migration Table; reset default GPOs; delegate Group Policy management
- Configure Group Policy preferences
Configure Group Policy Preferences (GPP) settings including printers, network drive mappings, power options, custom registry settings, Control Panel settings, Internet Explorer settings, file and folder deployment, and shortcut deployment; configure item-level targeting

Exam 70-412 Configuring Advanced Windows Server 2012 Services

Configure and manage high availability (15–20%)

- Configure Network Load Balancing (NLB)
Install NLB nodes; configure NLB prerequisites; configure affinity; configure port rules; configure cluster operation mode; upgrade an NLB cluster
- Configure failover clustering
Configure Quorum; configure cluster networking; restore single node or cluster configuration; configure cluster storage; implement Cluster Aware Updating; upgrade a cluster
- Manage failover clustering roles
Configure role-specific settings including continuously available shares; configure VM monitoring; configure failover and preference settings
- Manage Virtual Machine (VM) movement
- Perform Live Migration; perform quick migration; perform storage migration; import, export, and copy VMs; migrate from other platforms (P2V and V2V)

Configure file and storage solutions (15–20%)

- Configure advanced file services
Configure NFS data store; configure BranchCache; configure File Classification Infrastructure (FCI) using File Server Resource Manager (FSRM); configure file access auditing
- Implement Dynamic Access Control (DAC)
Configure user and device claim types; implement policy changes and staging; perform access-denied remediation; configure file classification
- Configure and optimize storage
Configure iSCSI Target and Initiator; configure Internet Storage Name server (iSNS); implement thin provisioning and trim; manage server free space using Features on Demand

Implement business continuity and disaster recovery (15–20%)

- Configure and manage backups

Configure Windows Server backups; configure Windows Online backups; configure role-specific backups; manage VSS settings using VSSAdmin; create System Restore snapshots

- Recover servers

Restore from backups; perform a Bare Metal Restore (BMR); recover servers using Windows Recovery Environment (Win RE) and safe mode; apply System Restore snapshots; configure the Boot Configuration Data (BCD) store

- Configure site-level fault tolerance

Configure Hyper-V Replica including Hyper-V Replica Broker and VMs; configure multi-site clustering including network settings, Quorum, and failover settings

Exam 70-413 Designing and Implementing a Server Infrastructure

Plan and deploy a server infrastructure (20–25%)

- Design an automated server installation strategy
- Design considerations including images and bare metal/virtual deployment; design a server implementation using Windows Assessment and Deployment Kit (ADK); design a virtual server deployment
- Plan and implement a server deployment infrastructure
- Configure multicast deployment; configure multi-site topology and distribution points; configure a multi-server topology; configure autonomous and replica Windows Deployment Services (WDS) servers
- Plan and implement server upgrade and migration
- Plan for role migration; migrate server roles; migrate servers across domains and forests; design a server consolidation strategy; plan for capacity and resource optimization
- Plan and deploy Virtual Machine Manager services
- Design Virtual Machine Manager service templates; define operating system profiles; configure hardware and capability profiles; manage services; configure image and template libraries; manage logical networks
- Plan and implement file and storage services
- Planning considerations include iSCSI SANs, Fibre Channel SANs, Virtual Fibre Channel, storage spaces, storage pools, and data de-duplication; configure the iSCSI Target server; configure the Internet Storage Name server (iSNS); configure Network File System (NFS); install Device Specific Modules (DSMs)

Design and implement network infrastructure services (20–25%)

- Design and maintain a Dynamic Host Configuration Protocol (DHCP) solution
- Design considerations including a highly available DHCP solution including split scope, DHCP failover, and DHCP failover clustering, DHCP interoperability, and DHCPv6;

implement DHCP filtering; implement and configure a DHCP management pack; maintain a DHCP database

- Design a name resolution solution strategy
- Design considerations including secure name resolution, DNSSEC, DNS Socket Pool, cache locking, disjoint namespaces, DNS interoperability, migration to application partitions, IPv6, Single-Label DNS Name Resolution, zone hierarchy, and zone delegation
- Design and manage an IP address management solution
- Design considerations including IP address management technologies including IPAM, Group Policy based, manual provisioning, and distributed vs. centralized placement; configure role-based access control; configure IPAM auditing; migrate IPs; manage and monitor multiple DHCP and DNS servers; configure data collection for IPAM

Design and implement network access services (15–20%)

- Design a VPN solution
- Design considerations including certificate deployment, firewall configuration, client/site to site, bandwidth, protocol implications, and VPN deployment configurations using Connection Manager Administration Kit (CMAK)
- Design a DirectAccess solution
- Design considerations including topology, migration from Forefront UAG, DirectAccess deployment, and enterprise certificates
- Implement a scalable remote access solution
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- Configure site-to-site VPN; configure packet filters; implement packet tracing; implement multi-site Remote Access; configure Remote Access clustered with Network Load Balancing (NLB); configure DirectAccess
- Design a network protection solution
- Design considerations including Network Access Protection (NAP) enforcement methods for DHCP, IPSec, VPN, and 802.1x, capacity, placement of servers, firewall, Network Policy Server (NPS), and remediation network
- Implement a network protection solution
- Implement multi-RADIUS deployment; configure NAP enforcement for IPSec and 802.1x; deploy and configure the Endpoint Protection client; create anti-malware and firewall policies; monitor for compliance
- Design and implement an Active Directory infrastructure (logical) (20–25%)
- Design a forest and domain infrastructure
- Design considerations including multi-forest architecture, trusts, functional levels, domain upgrade, domain migration, forest restructure, and hybrid cloud services

- Implement a forest and domain infrastructure
- Configure domain rename; configure Kerberos realm trusts; implement a domain upgrade; implement a domain migration; implement a forest restructure; deploy and manage a test forest including synchronization with production forests
- Design a Group Policy strategy
- Design considerations including inheritance blocking, enforced policies, loopback processing, security, and WMI filtering, site-linked Group Policy Objects (GPOs), slow-link processing, group strategies, organizational unit (OU) hierarchy, and Advanced Group Policy Management (AGPM)
- Design an Active Directory permission model
- Design considerations including Active Directory object security and Active Directory quotas; customize tasks to delegate in Delegate of Control Wizard; deploy administrative tools on the client computer; delegate permissions on administrative users (AdminSDHolder); configure Kerberos delegation

Design and implement an Active Directory infrastructure (physical) (20–25%)

- Design an Active Directory sites topology
- Design considerations including proximity of domain controllers, replication optimization, and site link; monitor and resolve Active Directory replication conflicts
- Design a domain controller strategy
- Design considerations including global catalog, operations master roles, Read-Only Domain Controllers (RODCs), partial attribute set, and domain controller cloning
- Design and implement a branch office infrastructure
- Design considerations including RODC, Universal Group Membership Caching (UGMC), global catalog, DNS, DHCP, and BranchCache; implement confidential attributes; delegate administration; modify filtered attributes set; configure password replication policy; configure hash publication

Exam 70-414 Implementing an Advanced Server Infrastructure(MCSE SYLLABUS NEW 2013)

- **Manage and maintain a server infrastructure (25–30%)**

Design an administrative model

Design considerations including user rights, built-in groups, and end-user self-service portal; design a delegation of administration structure for Microsoft System Center 2012

Design a monitoring strategy

Design considerations including monitoring servers using Audit Collection Services (ACS), performance monitoring, centralized monitoring, and centralized reporting; implement and optimize System Center 2012 – Operations Manager management packs; plan for monitoring Active Directory

Implement automated remediation

Create an Update Baseline in Virtual Machine Manager; implement a Desired Configuration Management (DCM) Baseline; implement

Virtual Machine Manager Integration with Operations Manager; configure Virtual Machine Manager to move a VM dynamically based on policy; integrate System Center 2012 for automatic remediation into your existing enterprise infrastructure

▣ **Plan and implement a highly available enterprise infrastructure (25–30%)**

Plan and implement failover clustering

Plan for multi-node and multi-site clustering; design considerations including redundant networks, network priority settings, resource failover and failback, heartbeat and DNS settings, Quorum configuration, and storage placement and replication

Plan and implement highly available network services

Plan for and configure Network Load Balancing (NLB); design considerations including fault-tolerant networking, multicast vs. unicast configuration, state management, and automated deployment of NLB using Virtual Machine Manager service templates

Plan and implement highly available storage solutions

Plan for and configure storage spaces and storage pools; design highly available, multi-replica DFS namespaces; plan for and configure multi-path I/O, including Server Core; configure highly available iSCSI Target and iSNS Server

Plan and implement highly available server roles

Plan for a highly available Dynamic Host Configuration Protocol (DHCP) Server, Hyper-V clustering, Continuously Available File Shares, and a DFS Namespace Server; plan for and implement highly available applications, services, and scripts using Generic Application,

Generic Script, and Generic Service clustering roles

Plan and implement a business continuity and disaster recovery solution

Plan a backup and recovery strategy; planning considerations including Active Directory domain and forest recovery, Hyper-V replica, domain controller restore and cloning, and Active Directory object and container restore using authoritative restore and Recycle Bin

□ **Plan and implement a server virtualization infrastructure (25–30%)**

Plan and implement virtualization hosts

Plan for and implement delegation of virtualization environment (hosts, services, and VMs), including self-service capabilities; plan and implement multi-host libraries including equivalent objects; plan for and implement host resource optimization; integrate third-party virtualization platforms

Plan and implement virtualization guests

Plan for and implement highly available VMs; plan for and implement guest resource optimization including smart page file,

dynamic memory, and RemoteFX; configure placement rules; create Virtual Machine Manager templates

Plan and implement virtualization networking

Plan for and configure Virtual Machine Manager logical networks; plan for and configure IP address and MAC address settings across multiple Hyper-V hosts including IP virtualization; plan for and configure virtual network optimization

Plan and implement virtualization storage

Plan for and configure Hyper-V host storage including stand-alone and clustered setup using SMB 2.2 and CSV; plan for and

configure Hyper-V guest storage including virtual Fibre Channel, iSCSI, and pass-through disks; plan for storage optimization

Plan and implement virtual guest movement

Plan for and configure live, SAN, and network migration between Hyper-V hosts; plan for and manage P2V and V2V

Manage and maintain a server virtualization infrastructure

Manage dynamic optimization and resource optimization; manage Operations Manager integration using PRO Tips; automate VM software and configuration updates using service templates; maintain library updates

□ **Design and implement identity and access solutions (20–25%)**

Design a Certificate Services infrastructure

Design a multi-tier Certificate Authority (CA) hierarchy with offline root CA; plan for multi-forest CA deployment; plan for

Certificate Enrollment Web Services; plan for network device enrollment; plan for certificate validation and revocation; plan for disaster recovery; plan for trust between organizations

Implement and manage a Certificate Services infrastructure

Configure and manage offline root CA; configure and manage Certificate Enrollment Web Services; configure and manage Network

Device Enrollment Services; configure Online Certificates Status Protocol responders; migrate CA; implement administrator role separation;

implement and manage trust between organizations; monitor CA health

Implement and manage certificates

Manage certificate templates; implement and manage deployment, validation, and revocation; manage certificate renewal including

Internet-based clients; manage certificate deployment and renewal to network devices; configure and manage key archival and recovery

Design and implement a federated identity solution

Plan for and implement claims-based authentication including planning and implementing Relying Party Trusts; plan for and

configure Claims Provider Trust rules; plan for and configure attribute stores including Active Directory Lightweight Directory Services

(AD LDS); plan for and manage Active Directory Federation Services (AD FS) certificates; plan for Identity Integration with cloud services

Design and implement Active Directory Rights Management Services (AD RMS)

Plan for highly available AD RMS deployment; manage AD RMS Service Connection Point; plan for and manage AD RMS client deployment; manage Trusted User Domains; manage Trusted Publishing Domains; manage Federated Identity support; manage Distributed and Archived Rights Policy templates; configure Exclusion Policies; decommission AD RMS