Windows Server 2008: Enterprise Administrator

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Prerequisites: Students should have knowledge of network systems and Microsoft server operating systems.

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Course description: When building a Windows Server 2008 Enterprise network there are many other aspects that need to be considered above building a single network. The Enterprise network may span several floors, buildings and miles. This course will show planning the DNS and IP addressing. From there the course will cover Designing Active Directory Domain Services and its physical requirements. The course will then cover Windows Server 2008 installation, upgrading, migration and administration. Next the course moves to the deployment to branch offices, setting up systems, security, client and remote access. Virtualization of servers is covered next and how that can create efficiencies with hardware. Then the course moves into data availability planning covering sharing, security, backups and restores. The last section covers designing software update infrastructure and managing compliance.

Course outline:

Planning Name Resolution
- Introduction
- FQDN Names Resolved Using DNS
- Root Level and Top Level
- Registered Names
- FQDN Names again
- DNS Name Resolution Methods
- Example of Name Resolution
- Stub Zones
- Options Include
- Forwarding
- Example of Forwarding
- Zone Transfer
- Secondary Zone Options
- Administration Tools
- DNS Features
- Summary

Configuring DNS and WINS
- Introduction
- WINS is Legacy
- Deploy WINS
- Where to Put WINS
- Internal and External Name
- Use Internet Domain Name
- Zone Planning
- Zones Data and Replication
- Where to Put The DNS Server
- Zone Transfer Considerations
- Root Hints
- DNS Caching
- Demo: Configure IPv6
- Summary

Planning IP Addressing
- Introduction
- IPv4 addresses
- IPv6 address
- IPv6 Prefix
- Unicast Addresses
- Global Addresses
- Link Local Address
- Site Local or Unique Local
- Special Addresses
- Multicast Addresses
- Anycast Addresses
- Address State
- Next Generation TCP/IP
- Teredo
- Teredo Addressing
- Teredo NAT Example
- ISATAP
- 6 to 4
- Configuration
- Choices for Transition
- Demo: Setup IPv6
- Summary

Active Directory Domain
- Introduction
- AD DS Overview
- Schema and Domain
- Tree and Forest
- Domain Controller
- Gather Requirements
- Other Requirements-control
- Decide Forest Structure
- Data and Service
- Domain Structure Design
- Summary

ADD Continued
- Introduction
- Upgrade DCs or New Hardware
- Forest Root Considerations
- Domain Considerations
- Functional Levels
- Domain Functional Levels
- Forest Functional Level
- Schema Management
- Upgrading DC or Domain
- AD DS Trusts Planning
- Summary

Domain Services: Physical
- Introduction
- Gathering infromation
- Physical Models-Single Site
- Physical Models-Multiple Site
- Replication Planning
- Things to Consider
- Hub and Spoke
- Full Mesh
- Hybrid
- Summary

Domain Services: Links
- Introduction
- Designing Replication Links
- SMTP
- Site Links
- Schedule
- Site Link Bridging
- Planning Placement of DCs
- Regional Domain Controllers
- RODC
- Global Catalog Servers
- Forest Role and Domain Role
- Schem, RID, Domain Naming
- Planning Location Attribute
- Site Replication Topology
- Summary

Planning Migration or Upgrade
- Introduction
- The Big Question
- Hardware Requirements
- Ways to Migrate/Upgrade
- Upgrade Existing Structure
- Restructure Current Structure
- Upgrade then Restructure
- Performing an Upgrade

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- In Place Upgrade of DC
- Trust Relatrionships
- Types of Trust Relationships
- Accessing Reosources
- Authentication Across Domains
- Scenario
- Summary

Planning Federation Services
- Introduction
- AD Federation Services
- When to Use AD FS
- Federation Trust
- What to Need
- AD FS Claims
- AD FS Claims Mapping
- Securing
- AD FS Processes
- Requirements for AD FS
- Summary

Identity Management: Unix
- Introduction
- Interoperating with UNIX
- Password Synchronization
- UNIX Based Subsystem
- Services Network File System
- Service for NIS
- Install NIS
- Summary

Delegating Administration
- Introduction
- Gathering Infromation
- Compare Tasks with People
- What to Delegate
- How Will Admin be Perfromed
- Groups
- Local Groups
- Domain Local Groups
- Global Groups
- Universal Groups
- Groups can be converted
- Why Use Groups
- Solution
- Delegating tasks with Groups
- Consider Role Based Management
- Groups with Trust Relationships
- Shortcut Trust Relationships
- Assign a Manager to Groups
- Planning for auditing of AD DS
- Events Appear in Security Log
- OU Structure Planning
- Problem and Solution
- Delegate administration of OU
- Demo:Delegating Administration
- Large Company
- Summary

Enterprise Group Policy
- Introduction
- Policy for Multiple Domains
- Plan GPO Hierarchy
- Planning for Device Control
- GPO settings Device Control
- Authentication - Authorization
- Password Authentication
- Fine Grained Password Policies
- PSO Precedence Rules
- msDS-ResultantPSO
- Smart Card Authentication
- Demo: Fine Grained Policy
- Summary

Branch Office Deployments
- Introduction
- Remote Location Administration
- Branch Administration
- Branch Office Components
- Deploying OS at Branch Office
- Hands on vs. Automated
- Automated Deployment
- Servers in the Branch Office
- Windows Server Core
- What Makes a Site a Site
- Domain Controller at a Branch
- What Type Domain Controller
- RODC Features
- Summary

Office Deployments Continued
- Introduction
- Global Catalog
- Universal Group Caching
- Catalog in the Branch Office
- Master of Operations
- Relative ID Master
- Operations Masters
- DNS in the Branch Office
- DFS in Branch Offices
- RRAS in Branch Offices
- Hyper-V in Branch Offices
- Branch to Main Communication
- Securing Traffic
- Caching Data at Branch Office
- Summary

Branch Office Security
- Introduction
- Server Security
- Hardening Servers
- Branch Office Servers
- RODC Install Process
- Install RODC
- RODC Authentication
- Replication Policy Component
- Securing Branch Office Data
- Demo: Read only DNC
- Summary

Designing Network Access
- Introduction
- Perimeter Network Design
- Network with 3 leg Firewall
- Network with Two Firewalls
- Which Design to Use
- Perimeter Network Security
- Network Address Translation
- Stateful Packet Inspection
- Proxy Server
- Application Layer Firewalls
- Forefront TMG
- Forefront TMG 3 leg Firewall
- Forefront TMG in back to back
- Forefront TMG Features
- Deploying Services
- Deploying Web Services
- Summary

Designing Remote Access
- Introduction
- Remote Access
- PPT Protocol
- VPN Access
- PPTP
- L2TP
- SSTP
- IPSec Tunnel Mode
- DirectAccess
- DirectAccess Configuration
- DirectAccess Works
- VPN Authentication
- Which to Use
- Securing VPN Server Deployment
- Using RADIUS for Remote Access
- Network Policy Server
- Locating RADIUS Services
- Multiple Domain Authentication
- Medium Size Company Example
- Considerations
- Summary

Designing Network Access
- Introduction
- Network Access Protection
- Example of Network Access
- Scenarios
- NAP Enforcement Types
- What NAP does and does NOT
- IPSec Enforcement
- IPSec Security Zones
- Small Environment IPSec
- Large Environment IPSec
- PKI infrastructure for IPSec
- Deploying Third Party NAP
- NAP VPN Enforcement
- After PPP Authentication
- VPN Authentication Protocols
- Certificate Hierarchy
- VPN Enforcement Consideration
- NAP 802.1x Enforcement
- 802.1x Considerations
- ACL or VLAN
- Authentication Consideration
- NAP DHCP Enforcement
- Domain vs. Server Isolation
- Comparison with IPSec
- Migration Considerations
- Which NAP Method
- Summary

Remote Desktop Services
- Introduction
- Terminal Server
- Components of Remote Services
- Deploying License Servers
- Terminal Licensing Concerns
- Per Device CAL
- License Server Maintenance
- Deployment Considerations
- Remote Desktop Web Access
- Web Access - Server 2008 R2
- Using Remote Apps
- New Features for Server 08 R2
- Connection Broker Service
- Migrating to Connection Broker
- Managing Session Host Farms
- Remote Desktop Gateway
- Authorization Policies
- Configuring Secure Gateway
- Ports needed by RD Gateway
- Virtualization Host Servers
- RemoteFX
- Remote Desktop Scenario
- Summary

Application Deployment
- Introduction
- Deploying Software or Apps
- Group Policy Software Install

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- Which method to use?
- Deployment using Group Policy
- Application Maintenance
- Considerations
- System Center Essentials 2010
- SCCM 2007
- Software deployment with SCCM
- Scenarios
- Summary

Virtualization Planning
- Introduction
- Why use Virtualization
- Multiple hosted OS
- Hyper-V
- Installation requirements
- Hyper-V Installation
- Guest Operating Systems
- When to use Hyper-V
- Deploying Guest OS
- Planning Storage Requirements
- Planning Memory Requirements
- Processor Requirements
- Network Requirements
- Drive Considerations
- Summary

Deploying Virtualization
- Introduction
- Installing the guest OS
- Hyper-V Manager
- Snapshots
- When to use Hyper-V
- Server Consolidation
- Virtual Machine Manager
- Application Virtualization
- When to deploy App-V
- App-V Deployment
- Questions
- Summary

Planning Data Sharing DFS
- Introduction
- Data Sharing with DFS
- New for Server 2008 R2
- Namespace Type
- Folder Targets
- DFS Replication
- DFS Configuration
- Failover and Failback
- Setting Target Priority
- DFS Replication
- Requirements for DFS-R
- Replication Process
- Designing DFS
- Summary

Data Sharing SharePoint
- Introduction
- What is SharePoint
- SharePoint Considerations
- SharePoint Services 3.0
- SharePoint Configuration
- SharePoint Server 2007
- When would you use SP
- Summary

Planning Data Security
- Introduction
- BitLocker Drive Encryption
- Encrypted File System - EFS
- EFS Best Practices
- Rights Management Services
- What is needed to deploy RMS
- Server 2008 Security Features
- ACL Document Example
- Certificates and Licenses
- Deployment Considerations
- Apps that use AD RMS now
- Summary

Data Security Backups
- Introduction
- System State Backup
- Domain Controller Recovery
- When to Backup
- Where to Backup
- Restore Options
- Non-Authoritative Restore
- Authoritative Restore
- Domain Services Maintenance
- What if an OM DC fails
- Infrastruture Master
- PDC Emulator
- Now the Reality
- Summary

Data Security Availability
- Introduction
- Network Load Balancing (NLB)
- Clustering Servers
- Cluster Server Components
- Cluster Server Hardware
- iSCSI
- Network Infrastructure
- Cluster Server Uses
- Summary

Public Key Infrastructure
- Introduction
- What is it
- Certificate Services
- Applications of PKI
- Who Needs Certificates
- CA Hierarchy Installation
- Business needs assessment
- Active Directory Requirements
- Certificate Templates
- Infrastructure Planning
- Types of CA
- How Many Certificate Servers
- Summary

Enrolling for Certificates
- Introduction
- Enrolling for Certificates
- To use Web enrollment
- Manual Certificate Enrollment
- Renewing a Certificate
- Manual or Automatic Approvals
- Renewal Considerations
- CA Certificate Renewal
- Certificate is no longer valid
- Certificate Revocation List
- Publishing the CRL
- CRL Issues
- CRL vs. Online Responder
- CRL published to LDAP issues
- Summary

Designing Software Updates
- Introduction
- Keeping Systems up to Date
- WSUS
- WSUS installs as a Role
- Test Updates
- Managing Computers
- Update Installation Policy
- Summary

Designing Compliance
- Introduction
- System Center Essentials 2010
- System Center Configuartion
- SCCM Deployment
- Software deployment with SCCM
- Reporting with SCCM
- Compliance
- Server Update Reporting
- Security Baselines
- Role based Security Policies
- Summary