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Administering Windows Server Hybrid Core Infrastructure

This course teaches IT Professionals how to manage core Windows Server workloads and services using on-premises, hybrid, and cloud technologies. The course teaches IT Professionals how to implement and manage on-premises and hybrid solutions such as identity, management, compute, networking, and storage in a Windows Server hybrid environment.

Détails

- Code : CWSH
- Durée : 4 jours (28 heures)

Public

- Administrateurs
- Administrateurs de bases de données
- Administrateurs de Cloud
- Consultants
- datacenter administrators

Pré-requis

- Experience with managing Windows Server operating system and Windows Server workloads in on-premises scenarios.

  Experience with common Windows Server management tools.

  Basic knowledge of core Microsoft compute, storage, networking, and virtualiz…

Objectifs

- Use administrative techniques and tools in Windows Server.
- Identify tools used to implement hybrid solutions, including Windows Admin Center and PowerShell.
- Implement identity services in Windows Server.
- Implement identity in hybrid scenarios, including Azure AD DS on Azure IaaS and managed AD DS.
- Integrate Azure AD DS with Azure AD.

Programme

Module 1: Identity services in Windows Server

- Description
  - This module introduces identity services and describes Active Directory Domain Services (AD DS) in a Windows Server environment
  - The module describes how to deploy domain controllers in AD DS, as well as Azure Active Directory (AD) and the benefits of integrating Azure AD with AD DS
  - The module also covers Group Policy basics and how to configure group policy objects (GPOs) in a domain environment
- Lessons
  - Introduction to AD DS
  - Manage AD DS domain controllers and FSMO roles
  - Implement Group Policy Objects
  - Manage advanced features of AD DS
- Labs
  - Implementing identity services and Group Policy
  - Deploying a new domain controller on Server Core
  - Configuring Group Policy
- After completing this module, students will be able to:
  - Describe AD DS in a Windows Server environment
  - Deploy domain controllers in AD DS
  - Describe Azure AD and benefits of integrating Azure AD with AD DS
  - Explain Group Policy basics and configure GPOs in a domain environment

Module 2: Implementing identity in hybrid scenarios

- Description
  - This module discusses how to configure an Azure environment so that Windows IaaS workloads requiring Active Directory are supported
  - The module also covers integration of on-premises Active Directory Domain Services (AD DS) environment into Azure
  - Finally, the module explains how to extend an existing Active Directory environment into Azure by placing IaaS VMs configured as domain controllers onto a specially configured Azure virtual network subnet
- Lessons
  - Implement hybrid identity with Windows Server
  - Deploy and manage Azure IaaS Active Directory domain controllers in Azure
- Labs
  - Implementing integration between AD DS and Azure AD
  - Preparing Azure AD for AD DS integration
  - Preparing on-premises AD DS for Azure AD integration

    - Downloading, installing, and configuring Azure AD Connect
    - Verifying integration between AD DS and Azure AD
    - Implementing Azure AD integration features in AD DS
- After completing this module, students will be able to:
    - Integrate on-premises Active Directory Domain Services (AD DS) environment into Azure
    - Install and configure directory synchronization using Azure AD Connect
    - Implement and configure Azure AD DS
    - Implement Seamless Single Sign-on (SSO)
    - Implement and configure Azure AD DS
    - Install a new AD DS forest on an Azure VNet

Module 3: Windows Server administration

- Description
    - This module describes how to implement the principle of least privilege through Privileged Access Workstation (PAW) and Just Enough Administration (JEA)
    - The module also highlights several common Windows Server administration tools, such as Windows Admin Center, Server Manager, and PowerShell
    - This module also describes the post-installation configuration process and tools available to use for this process, such as sconfig and Desired State Configuration (DSC)
- Lessons
    - Perform Windows Server secure administration
    - Describe Windows Server administration tools
    - Perform post-installation configuration of Windows Server
    - Just Enough Administration in Windows Server
- Labs
    - Managing Windows Server
    - Implementing and using remote server administration
- After completing this module, students will be able to:
    - Explain least privilege administrative models
    - Decide when to use privileged access workstations
    - Select the most appropriate Windows Server administration tool for a given situation
    - Apply different methods to perform post-installation configuration of Windows Server
    - Constrain privileged administrative operations by using Just Enough Administration (JEA)

Module 4: Facilitating hybrid management

- Description
    - This module covers tools that facilitate managing Windows IaaS VMs remotely
    - The module also covers how to use Azure Arc with on-premises server instances, how to deploy Azure policies with Azure Arc, and how to use role-based access control (RBAC) to restrict access to Log Analytics data
- Lessons
    - Administer and manage Windows Server IaaS virtual machines remotely
    - Manage hybrid workloads with Azure Arc
- Labs
    - Using Windows Admin Center in hybrid scenarios
    - Provisioning Azure VMs running Windows Server
    - Implementing hybrid connectivity by using the Azure Network Adapter
    - Deploying Windows Admin Center gateway in Azure
    - Verifying functionality of the Windows Admin Center gateway in Azure
- After completing this module, students will be able to:
    - Select appropriate tools and techniques to manage Windows IaaS VMs remotely
    - Explain how to onboard on-premises Windows Server instances in Azure Arc
    - Connect hybrid machines to Azure from the Azure portal
    - Use Azure Arc to manage devices
    - Restrict access using RBAC

Module 5: Hyper-V virtualization in Windows Server

- Description
    - This module describes how to implement and configure Hyper-V VMs and containers
    - The module covers key features of Hyper-V in Windows Server, describes VM settings, and how to configure VMs in Hyper-V
    - The module also covers security technologies used with virtualization, such as shielded VMs, Host Guardian Service, admin-trusted and TPM-trusted attestation, and Key Protection Service (KPS)
    - Finally, this module covers how to run containers and container workloads, and how to orchestrate container workloads on Windows Server using Kubernetes
- Lessons
    - Configure and manage Hyper-V
    - Configure and manage Hyper-V virtual machines
    - Secure Hyper-V workloads
    - Run containers on Windows Server
    - Orchestrate containers on Windows Server using Kubernetes
- Labs
    - Implementing and configuring virtualization in Windows Server
    - Creating and configuring VMs
    - Installing and configuring containers
- After completing this module, students will be able to:
    - Install and configure Hyper-V on Windows Server
    - Configure and manage Hyper-V virtual machines
    - Use Host Guardian Service to protect virtual machines
    - Create and deploy shielded virtual machines
    - Configure and manage container workloads
    - Orchestrate container workloads using a Kubernetes cluster

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Module 6: Deploying and configuring Azure VMs

- Description
  - This module describes Azure compute and storage in relation to Azure VMs, and how to deploy Azure VMs by using the Azure portal, Azure CLI, or templates
  - The module also explains how to create new VMs from generalized images and use Azure Image Builder templates to create and manage images in Azure
  - Finally, this module describes how to deploy Desired State Configuration (DSC) extensions, implement those extensions to remediate noncompliant servers, and use custom script extensions
- Lessons
  - Plan and deploy Windows Server IaaS virtual machines
  - Customize Windows Server IaaS virtual machine images
  - Automate the configuration of Windows Server IaaS virtual machines
- Labs
  - Deploying and configuring Windows Server on Azure VMs
  - Authoring Azure Resource Manager (ARM) templates for Azure VM deployment
  - Modifying ARM templates to include VM extension-based configuration
  - Deploying Azure VMs running Windows Server by using ARM templates
  - Configuring administrative access to Azure VMs running Windows Server
  - Configuring Windows Server security in Azure VMs
- After completing this module, students will be able to:
  - Create a VM from the Azure portal and from Azure Cloud Shell
  - Deploy Azure VMs by using templates
  - Automate the configuration of Windows Server IaaS VMs
  - Detect and remediate noncompliant servers
  - Create new VMs from generalized images
  - Use Azure Image Builder templates to create and manage images in Azure

Module 7: Network infrastructure services in Windows Server

- Description
  - This module describes how to implement core network infrastructure services in Windows Server, such as DHCP and DNS
  - This module also covers how to implement IP address management and how to use Remote Access Services
- Lessons
  - Deploy and manage DHCP
  - Implement Windows Server DNS
  - Implement IP address management
  - Implement remote access
- Labs
  - Implementing and configuring network infrastructure services in Windows Server
  - Deploying and configuring DHCP
  - Deploying and configuring DNS
- After completing this module, students will be able to:
  - Implement automatic IP configuration with DHCP in Windows Server
  - Deploy and configure name resolution with Windows Server DNS
  - Implement IPAM to manage an organization's DHCP and DNS servers, and IP address space
  - Select, use, and manage remote access components
  - Implement Web Application Proxy (WAP) as a reverse proxy for internal web applications

Module 8: Implementing hybrid networking infrastructure

- Description
  - This module describes how to connect an on-premises environment to Azure and how to configure DNS for Windows Server IaaS virtual machines
  - The module covers how to choose the appropriate DNS solution for your organization's need and run a DNS server in a Windows Server Azure IaaS VM
  - Finally, this module covers how to manage Microsoft Azure virtual networks and IP address configuration for Windows Server infrastructure as a service (IaaS) virtual machines
- Lessons
  - Implement hybrid network infrastructure
  - Implement DNS for Windows Server IaaS VMs
  - Implement Windows Server IaaS VM IP addressing and routing
- Labs
  - Implementing Windows Server IaaS VM networking
  - Implementing virtual network routing in Azure
  - Implementing DNS name resolution in Azure
- After completing this module, students will be able to:
  - Implement an Azure virtual private network (VPN)
  - Configure DNS for Windows Server IaaS VMs
  - Run a DNS server in a Windows Server Azure IaaS VM
  - Create a route-based VPN gateway using the Azure portal
  - Implement Azure ExpressRoute
  - Implement an Azure wide area network (WAN)
  - Manage Microsoft Azure virtual networks (VNets)
  - Manage IP address configuration for Windows Server IaaS virtual machines (VMs)

Module 9: File servers and storage management in Windows Server

- Description
  - This module covers the core functionality and use cases of file server and storage management

technologies in Windows Server
    - The module discusses how to configure and manage the Windows File Server role, and how to use Storage Spaces and Storage Spaces Direct
    - This module also covers replication of volumes between servers or clusters using Storage Replica
- Lessons
    - Manage Windows Server file servers
    - Implement Storage Spaces and Storage Spaces Direct
    - Implement Windows Server Data Deduplication
    - Implement Windows Server iSCSI
    - Implement Windows Server Storage Replica
- Labs
    - Implementing storage solutions in Windows Server>/li>
    - Implementing Data Deduplication
    - Configuring iSCSI storage
    - Configuring redundant Storage Spaces
    - Implementing Storage Spaces Direct
- After completing this module, students will be able to:
    - Configure and manage the Windows Server File Server role
    - Protect data from drive failures using Storage Spaces
    - Increase scalability and performance of storage management using Storage Spaces Direct
    - Optimize disk utilization using Data DeDuplication
    - Configure high availability for iSCSI
    - Enable replication of volumes between clusters using Storage Replica
    - Use Storage Replica to provide resiliency for data hosted on Windows Servers volumes

Module 10: Implementing a hybrid file server infrastructure

- Description
    - This module introduces Azure file services and how to configure connectivity to Azure Files
    - The module also covers how to deploy and implement Azure File Sync to cache Azure file shares on an on-premises Windows Server file server
    - This module also describes how to manage cloud tiering and how to migrate from DFSR to Azure File Sync

Lessons

- Overview of Azure file services
- Implementing Azure File Sync
- Labs
    - Implementing Azure File Sync
    - Implementing DFS Replication in your on-premises environment
    - Creating and configuring a sync group
    - Replacing DFS Replication with File Sync–based replication
    - Verifying replication and enabling cloud tiering
    - Troubleshooting replication issues
- After completing this module, students will be able to:
    - Configure Azure file services
    - Configure connectivity to Azure file services
    - Implement Azure File Sync
    - Deploy Azure File Sync
    - Manage cloud tiering
    - Migrate from DFSR to Azure File Sync

Modalités

- Type d'action :Acquisition des connaissances
- Moyens de la formation :Formation présentielle – 1 poste par stagiaire – 1 vidéo projecteur – Support de cours fourni à chaque stagiaire
- Modalités pédagogiques :Exposés – Cas pratiques – Synthèse
- Validation :Exercices de validation – Attestation de stages