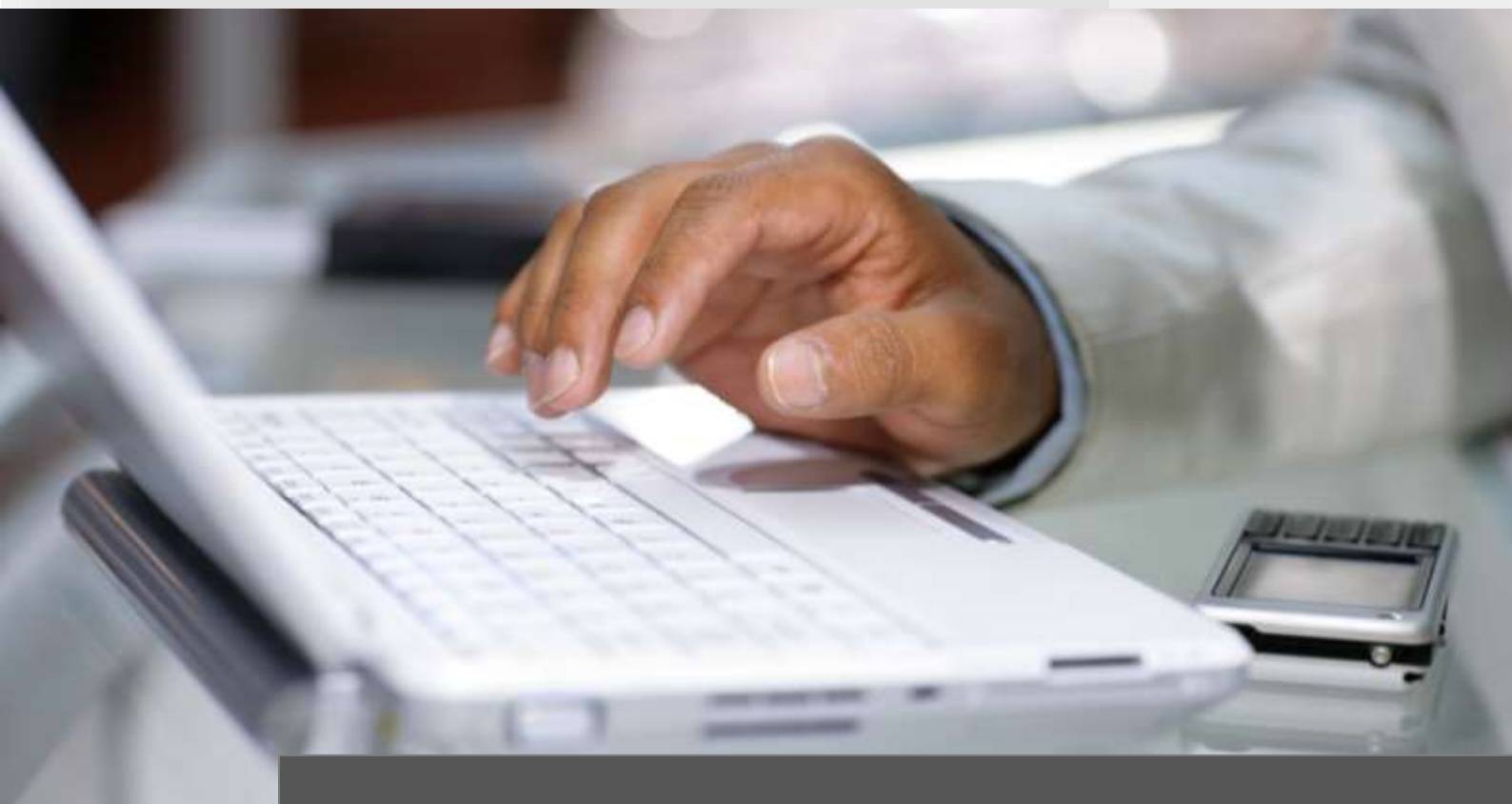


# Installation, Storage and Compute with Windows Server 2016

Online-Training | Examen 740



Ausbildungsinhalte

# Technische Trainings | Microsoft

## Installation, Storage and Compute with Windows Server 2016

Mit der Vorbereitung auf das Examen 740 werden Sie auf das erste von drei Examen vorbereitet, mit deren Bestehen Sie den Titel *Microsoft Certified Solutions Associate (MCSA) für Windows Server 2016* erlangen.

### Ausbildungspfad | Microsoft Certified Solutions Associate (MCSA) für Windows Server 2016



Mit der Zertifizierung zum *Microsoft Certified Solutions Associate (MCSA) für Windows Server 2016* demonstrieren Sie Ihre Kenntnisse über Installation, Administration und Support von Windows Server 2016

Online-Training	Dauer	Examen
Installation, Storage and Compute with Windows Server 2016	19 UE	740

Die Schwerpunkte dieses Examens liegen in der grundlegenden Implementierung und Konfiguration von Active Directory, Networking und Hyper-V.

Unterrichtseinheit	UE 01	740
Introducing Windows Server 2016 <ul style="list-style-type: none"> <li>✓ Selecting a suitable Windows Server 2016 edition</li> <li>✓ Hardware requirements</li> <li>✓ Overview of installation options</li> <li>✓ Managing servers remotely</li> <li>✓ Using Windows PowerShell 5.0 to manage servers</li> <li>✓ What's new since Windows Server 2008 was released?</li> </ul>	Preparing and installing Nano Server and Server Core <ul style="list-style-type: none"> <li>What is Nano Server?</li> <li>✓ Overview of installing Nano Server</li> </ul>	

Unterrichtseinheit	UE 02	740
Preparing and installing Nano Server and Server Core <ul style="list-style-type: none"> <li>✓ Managing and configuring Nano Server</li> <li>✓ Planning for Server Core</li> <li>✓ Comparing Server Core with Nano Server and a full installation</li> <li>✓ Installing Server Core and Server with Desktop Experience</li> <li>✓ Post-installation configuration settings</li> </ul> Preparing for upgrades and migrations <ul style="list-style-type: none"> <li>✓ In-place upgrades vs. server migration</li> <li>✓ In-place upgrade scenarios</li> <li>✓ Benefits of migrating to Windows Server 2016</li> <li>✓ Using solution accelerators</li> <li>✓ Recommendations for server consolidation</li> </ul>	Migrating server roles and workloads <ul style="list-style-type: none"> <li>Windows Server activation models                             <ul style="list-style-type: none"> <li>✓ Migrating server roles within a domain</li> <li>✓ Migrating server roles across domains or forests</li> </ul> </li> <li>Managing disks in Windows Server                             <ul style="list-style-type: none"> <li>✓ Selecting a partition table format</li> <li>✓ Selecting a disk type</li> <li>✓ Selecting a file system</li> <li>✓ Implementing ReFS</li> <li>✓ Using .vhd and .vhdx file types</li> <li>✓ Selecting a disk type</li> </ul> </li> </ul>	

Unterrichtseinheit	UE 03	740
I Module 2: Configuring local storage <ul style="list-style-type: none"> <li>✓ Managing volumes in Windows Server</li> <li>✓ What are disk volumes?</li> <li>✓ Options for managing volumes</li> <li>✓ Extending and shrinking a volume</li> <li>✓ What is RAID?</li> <li>✓ RAID levels</li> </ul> Lab Module 1: Installing, upgrading, and migrating servers and workloads	Module 3: Implementing enterprise storage solutions <ul style="list-style-type: none"> <li>✓ Overview of DAS, NAS and SANs</li> <li>✓ What is DAS?</li> <li>✓ What is NAS?</li> <li>✓ What is a SAN?</li> <li>✓ Comparison and scenarios for usage</li> <li>✓ Block-level storage vs. file-level storage</li> </ul>	

Unterrichtseinheit	UE 04	740
<p>Module 3: Implementing enterprise storage solutions</p> <p>Comparing Fibre Channel, iSCSI, and Fibre Channel over Ethernet</p> <ul style="list-style-type: none"> <li>✓ What is Fibre Channel?</li> <li>✓ Considerations for implementing Fibre Channel</li> <li>✓ What is iSCSI?</li> <li>✓ iSCSI components</li> <li>✓ Considerations for implementing iSCSI</li> <li>✓ Core storage components</li> <li>✓ Configuring an iSCSI target</li> </ul> <p>Understanding iSNS, DCB, and MPIO</p> <ul style="list-style-type: none"> <li>✓ What is iSNS?</li> <li>✓ What is DCB?</li> <li>✓ What is MPIO?</li> <li>✓ Configuring MPIO</li> </ul>	<p>Configuring sharing in Windows Server 2016</p> <ul style="list-style-type: none"> <li>✓ What is SMB?</li> <li>✓ Configuring SMB shares</li> <li>✓ Configuring SMB shares by using Server Manager and Windows PowerShell</li> <li>✓ What is NFS?</li> <li>✓ Configuring NFS shares</li> <li>✓ Configuring an NFS share by using Server Manager</li> </ul> <p>Lab Module 3: Implementing enterprise storage solutions</p>	

Unterrichtseinheit	UE 05	740
<p>Module 04: Implementing Storage Spaces and Data Reduplication</p> <p>Implementing Storage Spaces</p> <ul style="list-style-type: none"> <li>✓ Enterprise storage needs</li> <li>✓ What are Storage Spaces?</li> <li>✓ Components and features of Storage Spaces</li> <li>✓ Configuring Storage Spaces</li> <li>✓ Changes to file and storage services in Windows Server 2016</li> <li>✓ Storage Spaces usage scenarios</li> <li>✓ Comparing Storage Spaces to other storage solutions</li> </ul>	<p>Managing Storage Spaces</p> <ul style="list-style-type: none"> <li>✓ Managing Storage Spaces</li> <li>✓ Managing disk failure with Storage Spaces</li> <li>✓ Storage pool expansion</li> <li>✓ Managing Storage Spaces by using Windows PowerShell</li> <li>✓ Event logs and performance counters</li> </ul> <p>Lab A Module 04: Implementing Storage Spaces</p>	

Unterrichtseinheit	UE 06	740
<p>Lab A Module 04: Implementing Storage Spaces</p> <p>Module 04: Implementing Storage Spaces and Data Reduplication</p> <p>Implementing Data Reduplication</p> <ul style="list-style-type: none"> <li>✓ What is Data Reduplication?</li> <li>✓ Data Deduplication components</li> <li>✓ Deploying Data Reduplication</li> <li>✓ Implementing Data Reduplication</li> <li>✓ Usage scenarios for Data Reduplication</li> <li>✓ Monitoring and maintaining Data Reduplication</li> <li>✓ Backup and restore considerations with Data Deduplication</li> </ul> <p>Lab B Module 04: Implementing Data Reduplication</p>		

Unterrichtseinheit	UE 07	740
<p>Module 5: Installing and configuring Hyper-V and virtual machines Overview of Hyper-V</p> <ul style="list-style-type: none"> <li>✓ Installing Hyper-V</li> <li>✓ What is Hyper-V?</li> <li>✓ New Hyper-V host features in Windows Server 2016</li> <li>✓ New Hyper-V virtual machine features in Windows Server 2016</li> <li>✓ Windows Server Containers and Docker in Hyper-V</li> </ul> <p>Configuring storage on Hyper-V host servers</p> <ul style="list-style-type: none"> <li>✓ Prerequisites and requirements for installing Hyper-V</li> <li>✓ Installing the Hyper-V role</li> </ul> <p>Nested virtualization</p>	<p>Configuring networking on Hyper-V host servers</p> <ul style="list-style-type: none"> <li>✓ Storage options in Hyper-V</li> <li>✓ Considerations for virtual hard disk formats and types</li> <li>✓ Fibre Channel support in Hyper-V</li> <li>✓ Where to store VHDS?</li> <li>✓ Storing virtual machines on SMB 3.0 shares</li> <li>✓ Managing storage in Hyper-V</li> </ul>	

Unterrichtseinheit		UE 08	740
<p>Module 5: Installing and configuring Hyper-V and virtual machines</p> <p>Configuring Hyper-V virtual machines</p> <ul style="list-style-type: none"> <li>✓ Types of Hyper-V networks</li> <li>✓ Configuring Hyper-V networks</li> <li>✓ Best Practices for configuring Hyper-V virtual networks</li> <li>✓ New Hyper-V networking features in Windows Server 2016</li> </ul> <p>Managing virtual machines</p> <ul style="list-style-type: none"> <li>✓ What are virtual machine configuration versions?</li> <li>✓ Virtual machine generation versions</li> <li>✓ Creating a virtual machineThe Hot Adding feature in Hyper-V</li> <li>✓ Shielded virtual machines</li> <li>✓ Virtual machine settings</li> <li>✓ Best practices for configuring virtual machines</li> </ul>	<p>Module 6: Deploying and managing Windows and Hyper-V containers</p> <p>Overview of containers in Windows Server 2016</p> <ul style="list-style-type: none"> <li>✓ Overview of Windows Server containers</li> <li>✓ Overview of Hyper-V containers</li> <li>✓ Usage scenarios</li> <li>✓ Installation requirements</li> </ul>		

Unterrichtseinheit		UE 09	740
<p>Module 6: Deploying and managing Windows and Hyper-V containers</p> <p>Overview of containers in Windows Server 2016</p> <ul style="list-style-type: none"> <li>✓ Overview of Windows Server containers</li> <li>✓ Overview of Hyper-V containers</li> <li>✓ Usage scenariosInstallation requirements</li> </ul> <p>Deploying Windows Server and Hyper-V containers</p> <ul style="list-style-type: none"> <li>✓ Deploying Windows Server containers</li> <li>✓ Deploying Hyper-V containers</li> <li>✓ Managing Windows Server and Hyper-V containers by using Windows PowerShell</li> <li>✓ Installing the containers feature and preparing for Docker</li> </ul>	<p>Installing, configuring, and managing containers by using Docker</p> <ul style="list-style-type: none"> <li>✓ What is Docker?</li> <li>✓ Docker support on Windows Server 2016</li> <li>✓ Docker componentsUsage scenarios</li> <li>✓ Installing and configuring Docker</li> <li>✓ Overview of management with Docker</li> <li>✓ Overview of Docker Hub</li> <li>✓ Docker with Azure</li> <li>✓ Deploying Hyper-V containers by using Docker</li> </ul>		

Unterrichtseinheit		UE 10	740
<p>Module 7: Overview of high availability and disaster recovery</p> <p>Defining levels of availability</p> <ul style="list-style-type: none"> <li>✓ What is high availability?</li> <li>✓ What is continuous availability?</li> <li>✓ What is business continuity?</li> <li>✓ Creating a disaster recovery planHighly available networking</li> <li>✓ Highly available storage</li> <li>✓ Highly available compute or hardware functions</li> </ul>	<p>Planning high availability and disaster recovery solutions with Hyper-V virtual machines</p> <ul style="list-style-type: none"> <li>✓ High availability considerations with Hyper-V virtual machines</li> <li>✓ Overview of Live Migration</li> <li>✓ Live migration requirements</li> <li>✓ Configuring live migration</li> <li>✓ Providing high availability with storage migration</li> <li>✓ Configuring storage migration</li> </ul>		

Unterrichtseinheit		UE 11	740
<p>Module 7: Overview of high availability and disaster recovery</p> <p>Planning high availability and disaster recovery solutions with Hyper-V virtual machines</p> <ul style="list-style-type: none"> <li>✓ Overview of Hyper-V Replica</li> <li>✓ Planning for Hyper-V Replica</li> <li>✓ Implementing Hyper-V Replica</li> </ul> <p>Backing up and restoring by using Windows Server Backup</p> <ul style="list-style-type: none"> <li>✓ Overview of Windows Server Backup</li> <li>✓ Implementing backup and restore</li> </ul>	<p>High Availability with failover clustering in Windows Server 2016</p> <ul style="list-style-type: none"> <li>✓ What is failover clustering?</li> <li>✓ High availability with failover clustering</li> <li>✓ Clustering terminology</li> <li>✓ Clustering categories and typesFailover clustering components</li> <li>✓ Technology redundancy comparison</li> </ul>		

Unterrichtseinheit		UE 12	740
Module 8: Implementing failover clustering Planning a failover cluster <ul style="list-style-type: none"> <li>✓ Preparing to implement failover clustering</li> <li>✓ Failover-cluster storage</li> <li>✓ Hardware requirements for a failover-cluster implementation</li> <li>✓ Network requirements for a failover-cluster implementation</li> <li>✓ Verify a network adapter's RSS and RDMA compatibility on an SMB Server</li> <li>✓ Infrastructure and software requirements for a failover cluster</li> <li>✓ Security considerations</li> <li>✓ Quorum in Windows Server 2016</li> <li>✓ Planning for migrating and upgrading failover clusters</li> </ul>	Creating and configuring a new failover cluster <ul style="list-style-type: none"> <li>✓ The Validation Wizard and the cluster support-policy requirements</li> <li>✓ The process for creating a failover cluster</li> <li>✓ Creating a failover cluster</li> </ul> Reviewing the Validation Wizard		

Unterrichtseinheit		UE 13	740
Module 8: Implementing failover clustering Creating and configuring a new failover cluster <ul style="list-style-type: none"> <li>✓ Configuring roles</li> <li>✓ Creating a general file-server failover cluster</li> <li>✓ Managing failover clusters</li> <li>✓ Configuring cluster properties</li> <li>✓ Configuring failover and tailback</li> <li>✓ Configuring storage</li> <li>✓ Configuring networking</li> <li>✓ Configuring quorum options</li> <li>✓ Configuring the quorum</li> </ul> Maintaining a failover cluster <ul style="list-style-type: none"> <li>✓ Monitoring failover clusters</li> <li>✓ Backing up and restoring failover-cluster configuration</li> <li>✓ Maintaining failover clusters</li> <li>✓ Managing cluster-network heartbeat traffic</li> <li>✓ What is cluster-aware updating?</li> <li>✓ Configuring CAU</li> </ul>	Troubleshooting a failover cluster <ul style="list-style-type: none"> <li>✓ Communication issues</li> <li>✓ Repairing the cluster name object in AD DS</li> <li>✓ Starting a cluster with no quorum</li> <li>✓ Reviewing the Cluster.Log file</li> <li>✓ Monitoring performance with failover clustering</li> <li>✓ Using Event Viewer with failover clustering</li> <li>✓ Windows PowerShell troubleshooting cmdlets</li> </ul>		

Unterrichtseinheit		UE 14	740
Module 8: Implementing failover clustering Implementing site high availability with stretch clustering <ul style="list-style-type: none"> <li>✓ What is a stretch cluster?</li> <li>✓ Prerequisites for implementing a stretch cluster</li> <li>✓ Synchronous and asynchronous replication</li> <li>✓ Overview of the Storage Replica feature</li> <li>✓ Implementing server-to-server storage replica</li> <li>✓ Selecting a quorum mode for a stretch cluster</li> <li>✓ Configuring a stretch cluster</li> <li>✓ Challenges for deploying a stretch cluster</li> <li>✓ Multisite failover and failback considerations</li> </ul>	Module 9: Implementing failover clustering with Windows Server 2016 Hyper-V Overview of the integration of Hyper-V Server 2016 with failover clustering <ul style="list-style-type: none"> <li>✓ Options for making application and services highly available</li> <li>✓ How does a failover cluster work with Hyper-V nodes?</li> <li>✓ Failover clustering with Windows Server 2016 Hyper-V features</li> <li>✓ Best practices for implementing high availability in a virtual environment</li> </ul>		

Unterrichtseinheit	UE 15	740
Module 9: Implementing failover clustering with Windows Server 2016 Hyper-V <ul style="list-style-type: none"> <li>✓ Implementing Hyper-V VMs on failover clusters</li> <li>✓ Components of Hyper-V clusters</li> <li>✓ Prerequisites for implementing Hyper-V failover clusters</li> <li>✓ Implementing Hyper-V VMs on a failover cluster</li> <li>✓ Configuring CSVs</li> <li>✓ Configuring a shared virtual hard disk</li> <li>✓ Implementing Scale-Out File Servers for VMs</li> <li>✓ Considerations for implementing Hyper-V clusters</li> <li>✓ Maintaining and monitoring VMs in clusters</li> <li>✓ Implementing failover clustering with Hyper-V</li> </ul>	Key features for VMs in a clustered environment <ul style="list-style-type: none"> <li>✓ Overview of Network Health Protection</li> <li>✓ Overview of actions taken on VMs when a host shuts down</li> <li>✓ Overview of drain on shutdown</li> <li>✓ Configure drain on shutdown</li> </ul>	

Unterrichtseinheit	UE 16	740
Module 10: Implementing Network Load Balancing Overview of NLB <ul style="list-style-type: none"> <li>✓ What is NLB?</li> <li>✓ How NLB works</li> <li>✓ How NLB works with server failures and recovery</li> <li>✓ NLB features in Windows Server 2016</li> </ul> Configuring an NLB cluster <ul style="list-style-type: none"> <li>✓ Deployment requirements for NLB</li> <li>✓ Deploying NLB</li> <li>✓ Configuration options for NLB</li> <li>✓ Configuring NLB affinity and port rules</li> <li>✓ Network considerations for NLB</li> </ul>	Planning an NLB implementation <ul style="list-style-type: none"> <li>✓ Designing applications and storage support for NLB</li> <li>✓ Considerations for deploying an NLB cluster on virtual machines</li> <li>✓ Considerations for securing NLB</li> <li>✓ Considerations for scaling NLB</li> <li>✓ Considerations for upgrading NLB clusters</li> </ul>	

Unterrichtseinheit	UE 17	740
Modul 11: Creating and managing deployment images Introduction to deployment images <ul style="list-style-type: none"> <li>✓ Overview of images</li> <li>✓ Overview of image-based installation tools</li> <li>✓ Creating, updating, and maintaining images</li> <li>✓ Windows ADK for Windows 10</li> <li>✓ Windows Deployment Services</li> <li>✓ Microsoft Deployment Toolkit 2013 (Update 2)</li> <li>✓ Preparing a Windows Server 2016 Image in MDT</li> </ul>	Creating and managing deployment images by using MDT <ul style="list-style-type: none"> <li>✓ Creating images in MDT</li> <li>✓ Deploying images in MDT</li> </ul>	

Unterrichtseinheit	UE 18	740
Module 11: Creating and managing deployment images Virtual machine environments for different workloads <ul style="list-style-type: none"> <li>✓ Evaluation factors</li> <li>✓ Overview of virtualization solution accelerators</li> <li>✓ Assessment features of the MAP toolkit</li> <li>✓ Assessing the computing environment by using the MAP toolkit</li> <li>✓ Designing a solution for server virtualization</li> </ul> Lab Module 11: Creating and managing deployment images Module 12: Managing, monitoring, and maintaining virtual machine installations WSUS overview and deployment options <ul style="list-style-type: none"> <li>✓ What is WSUS?</li> <li>✓ WSUS server deployment options</li> <li>✓ The WSUS update management process</li> <li>✓ Server requirements for WSUS</li> <li>✓ Configuring clients to use WSUS</li> </ul>	Update management process with WSUS <ul style="list-style-type: none"> <li>✓ WSUS administration</li> <li>✓ What are computer groups?</li> <li>✓ Approving updates</li> <li>✓ Configuring automatic updates</li> <li>✓ Deploying updates by using WSUS</li> <li>✓ WSUS reporting</li> <li>✓ WSUS troubleshooting</li> </ul>	

Unterrichtseinheit	UE 19	740
<p>Module 12: Managing, monitoring, and maintaining virtual machine installations</p> <p>Overview of Windows PowerShell DSC</p> <ul style="list-style-type: none"> <li>✓ Benefits of Windows PowerShell DSC</li> <li>✓ Requirements for Windows PowerShell DSC</li> <li>✓ Implementing Windows PowerShell DSC</li> <li>✓ Troubleshooting Windows PowerShell DSC</li> </ul> <p>Overview of Windows Server 2016 monitoring tools</p> <ul style="list-style-type: none"> <li>✓ Overview of Task Manager</li> <li>✓ Overview of Performance Monitor</li> <li>✓ Overview of Resource Monitor</li> <li>✓ Overview of Reliability Monitor</li> <li>✓ Overview of Event Viewer</li> <li>✓ Monitoring a server with Server Manager</li> </ul>	<p>Using Performance Monitor</p> <ul style="list-style-type: none"> <li>✓ Overview of baseline, trends, and capacity planning</li> <li>✓ What are data collector sets?</li> <li>✓ Capturing counter data with a data collector set</li> <li>✓ Configuring an alert</li> <li>✓ Viewing reports in Performance Monitor</li> <li>✓ Monitoring network infrastructure services</li> <li>✓ Considerations for monitoring virtual machines</li> </ul> <p>Monitoring event logs</p> <ul style="list-style-type: none"> <li>✓ Using Server Manager to view event logs</li> <li>✓ What is a custom view?</li> <li>✓ Creating a custom view</li> <li>✓ What are event log subscriptions?</li> <li>✓ Configuring an event subscription</li> </ul>	



## Weitere wichtige Informationen

### Optimale Prüfungsvorbereitung

Für die optimale Vorbereitung auf das Microsoft-Examen, empfehlen wir die IT-Prüfungsvorbereitungs-Plattform CertBase, die Sie unter [www.CertBase.de](http://www.CertBase.de) aufrufen können. In diesem Portal werden Fragen bereitgestellt, die den Original Microsoft Prüfungen gleichen und mit deren Hilfe Sie Ihre Chancen auf ein erfolgreiches Bestehen der gewünschten Prüfung deutlich steigern.



### Microsoft Test- und Demoumgebungen

Unter der Adresse [www.mycontoso.de](http://www.mycontoso.de) finden Sie eine Auswahl an Werkzeugen zur Demonstration aktueller Microsoft-Produkte und Services. Diese vorkonfigurierten Demoumgebungen aus der Microsoft Demonstration Plattform eignen sich auch sehr gut für administrative Übungszwecke.

### Sie haben Fragen oder Anregungen?

Falls Sie Fragen, Wünsche oder Anregungen zu dieser oder zu anderen Ausbildungen haben, stehen wir Ihnen montags bis donnerstags in der Zeit von 08:00 – 17:00 Uhr und freitags von 08:00 – 15:00 Uhr sehr gerne zur Verfügung.

Sie erreichen uns unter:

Telefon: 09526 95 000 60  
E-Mail: [info@ITKservice.NET](mailto:info@ITKservice.NET)

Ihre Ansprechpartner für das ITKwebcollege.ADMIN

Christoph Holzheid  
Anne Hirschlein  
Thomas Wölfel



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