

TestOut[®]

TestOut Server Pro 2016: Install and Storage English 4.0.x

Objective Mappings:

TestOut Server Pro 2016: Install and Storage
MS 70-740

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Objective Mapping: LabSim Section to TestOut Server Pro 2016: Install and Storage Objective

Section	Title	Objectives for Server Pro v4
1.0	Introduction	
1.1	Windows as a Server	
1.2	Windows Server 2012 Interface Overview	
1.3	Windows Server 2016 Interface Overview	
2.0	Server Installation	
2.1	Server 2012 Installation	
2.2	Server 2016 Installation	
2.3	Server Upgrade and Migration	
3.0	Server Configuration and Management	
3.1	PowerShell	3.0 Server Management Configure servers. <ul style="list-style-type: none"> ○ Install server roles. ○ Service Windows images. Deploy and manage servers.
3.2	Server Roles	3.0 Server Management Configure servers. <ul style="list-style-type: none"> ○ Install server roles. ○ Service Windows images.

		Deploy and manage servers.
3.3	Server Core Deployment	3.0 Server Management Configure servers. <ul style="list-style-type: none"> ○ Install server roles. ○ Service Windows images. Deploy and manage servers.
3.4	Remote Server Management	3.0 Server Management Configure servers. <ul style="list-style-type: none"> ○ Install server roles. ○ Service Windows images. Deploy and manage servers.
3.5	Image Servicing	3.0 Server Management Configure servers. <ul style="list-style-type: none"> ○ Install server roles. ○ Service Windows images. Deploy and manage servers.
3.6	Nano Server Deployment	3.0 Server Management Configure servers. <ul style="list-style-type: none"> ○ Install server roles. ○ Service Windows images. Deploy and manage servers.
4.0	Networking	

4.1	IPv4 Addressing	2.0 Network Services Manage networking. <ul style="list-style-type: none"> ○ Configure basic TCP/IP settings.
4.2	IPv6 Addressing	2.0 Network Services Manage networking. <ul style="list-style-type: none"> ○ Configure basic TCP/IP settings.
4.3	Windows Firewall	
4.4	Advanced Networking	2.0 Network Services Manage networking. <ul style="list-style-type: none"> ○ Configure Windows firewall. ○ Configure NIC teaming.
5.0	Server Storage	
5.1	Traditional Storage	1.0 Storage Services Manage disks and volumes. <ul style="list-style-type: none"> ○ Create and manage volumes. ○ Initialize and partition disks. ○ Configure fault tolerance. ○ Create mount points.
5.2	VHD Storage	1.0 Storage Services Manage iSCSI. <ul style="list-style-type: none"> ○ Create iSCSI virtual disks.

5.3	Storage Pools	1.0 Storage Services Manage storage pools. Configure Server Storage. <ul style="list-style-type: none"> ○ Create and Mount Virtual Hard Disks (VHDs). ○ Create a Storage Pool.
5.4	iSCSI Storage	1.0 Storage Services Manage iSCSI. <ul style="list-style-type: none"> ○ Connect to iSCSI targets. ○ Create iSCSI volumes. ○ Create iSCSI virtual disks.
5.5	Data Deduplication	1.0 Storage Services Manage disks and volumes. <ul style="list-style-type: none"> ○ Create and manage volumes.
6.0	Hyper-V	
6.1	Virtualization Deployment	4.0 Virtualization Manage virtualization with Hyper-V. <ul style="list-style-type: none"> ○ Create virtual hard disks and volumes. ○ Create and configure virtual machines. ○ Create virtual switches.
6.2	Virtual Machines	4.0 Virtualization Manage virtualization with Hyper-V. <ul style="list-style-type: none"> ○ Create and configure virtual machines.

6.3	Virtual Machine Storage	4.0 Virtualization Manage virtualization with Hyper-V. <ul style="list-style-type: none"> ○ Create virtual hard disks and volumes. ○ Create and configure virtual machines. Manage virtual hard disk files with Disk Management.
6.4	Virtual Networks	4.0 Virtualization Manage virtualization with Hyper-V. <ul style="list-style-type: none"> ○ Create virtual switches. ○ Move virtual machines and virtual machine storage.
6.5	Virtual Network Optimization	
6.6	Virtual Machine Movement	4.0 Virtualization Manage virtualization with Hyper-V. <ul style="list-style-type: none"> ○ Move virtual machines and virtual machine storage.
7.0	Active Directory	
7.1	Active Directory	6.0 Active Directory Manage Active Directory. <ul style="list-style-type: none"> ○ Install and manage domain controllers
7.2	Domain Controllers	6.0 Active Directory Manage Active Directory. <ul style="list-style-type: none"> ○ Install and manage domain controllers. Manage accounts in Active Directory.

		<ul style="list-style-type: none"> ○ Configure and manage computer accounts.
7.3	Sites	6.0 Active Directory Manage Active Directory. <ul style="list-style-type: none"> ○ Configure sites.
7.4	Organizational Units	6.0 Active Directory Manage accounts in Active Directory. <ul style="list-style-type: none"> ○ Configure and manage organizational units.
7.5	Users Accounts	6.0 Active Directory Manage accounts in Active Directory. <ul style="list-style-type: none"> ○ Configure and manage users.
7.6	Bulk User Operations	6.0 Active Directory Manage accounts in Active Directory. <ul style="list-style-type: none"> ○ Configure and manage users.
7.7	Computer Accounts	6.0 Active Directory Manage accounts in Active Directory. <ul style="list-style-type: none"> ○ Configure and manage computer accounts.
7.8	Groups	6.0 Active Directory Manage groups in Active Directory. <ul style="list-style-type: none"> ○ Configure and manage groups. ○ Configure group scopes and types.
7.9	Rights Delegation	6.0 Active Directory

		<p>Manage groups in Active Directory.</p> <ul style="list-style-type: none"> ○ Configure and manage groups. ○ Configure group scopes and types.
7.10	Azure AD	
8.0	Group Policy	
8.1	Group Policy Foundation	<p>7.0 Group Policy</p> <p>Manage Group Policy objects (GPOs).</p> <ul style="list-style-type: none"> ○ Configure the default domain policy. ○ Create starter GPOs. ○ Configure user rights. <p>Manage group policies.</p> <ul style="list-style-type: none"> ○ Configure password policies. ○ Configure audit policies. <p>Manage security policies.</p> <ul style="list-style-type: none"> ○ Delegate permissions. ○ Configure UAC settings. ○ Configure restricted group policies.
8.2	Group Policy Management	<p>7.0 Group Policy</p> <p>Manage Group Policy objects (GPOs).</p> <ul style="list-style-type: none"> ○ Configure user rights. <p>Manage security policies.</p> <ul style="list-style-type: none"> ○ Delegate permissions.
8.3	Password Policies	<p>7.0 Group Policy</p> <p>Manage group policies.</p> <ul style="list-style-type: none"> ○ Configure password policies. <p>Manage security policies.</p> <ul style="list-style-type: none"> ○ Delegate permissions.

8.4	Audit Policies	7.0 Group Policy Manage group policies. <ul style="list-style-type: none"> ○ Configure audit policies.
8.5	User Rights Assignment	7.0 Group Policy Manage Group Policy objects (GPOs). <ul style="list-style-type: none"> ○ Configure user rights.
8.6	Security Options	7.0 Group Policy Manage security policies. <ul style="list-style-type: none"> ○ Configure UAC settings.
8.7	Restricted Groups	7.0 Group Policy Manage security policies. <ul style="list-style-type: none"> ○ Configure restricted group policies.
8.8	Application Restriction Policies	7.0 Group Policy Manage application restrictions. <ul style="list-style-type: none"> ○ Configure executable application rules.
8.9	Group Policy Preferences	
9.0	DNS	
9.1	DNS Overview	2.0 Network Services Manage DNS servers. <ul style="list-style-type: none"> ○ Configure DNS zones. ○ Configure DNS records.

9.2	Name Resolution	2.0 Network Services Manage DNS servers. <ul style="list-style-type: none"> ○ Configure DNS zones. ○ Configure DNS records.
9.3	Zone Management	2.0 Network Services Manage DNS servers. <ul style="list-style-type: none"> ○ Configure DNS zones. ○ Configure DNS records
9.4	DNS Records	2.0 Network Services Manage DNS servers. <ul style="list-style-type: none"> ○ Configure DNS records.
9.5	DNS Troubleshooting	
10.0	File and Share Access	
10.1	File Access	3.0 Server Management Manage files and folders. <ul style="list-style-type: none"> ○ Manage SMB share and NTFS permissions. ○ Calculate effective rights. ○ Hide a folder using a share name. Manage quotas.
10.2	Access-based Enumeration (ABE) and Volume Shadow Copy (VSS)	3.0 Server Management Manage files and folders. <ul style="list-style-type: none"> ○ Restore files and folders from backup.
10.3	SMB Shares	3.0 Server Management

		<p>Manage files and folders.</p> <ul style="list-style-type: none"> ○ Calculate effective rights. ○ Hide a folder using a share name. ○ Restore files and folders from backup.
10.4	NFS Shares	
10.5	NTFS Permission Troubleshooting	<p>3.0 Server Management</p> <p>Manage files and folders.</p> <ul style="list-style-type: none"> ○ Calculate effective rights.
11.0	Print and Document Services	
11.1	Print Servers	<p>3.0 Server Management</p> <p>Manage printing.</p> <ul style="list-style-type: none"> ○ Create and share printers. ○ Configure printer permissions.
11.2	Print Management	<p>3.0 Server Management</p> <p>Manage printing.</p> <ul style="list-style-type: none"> ○ Enable printer pooling. ○ Deploy printers using GPOs. ○ Configure printer permissions.
12.0	Server Management	
12.1	Windows Software Update Services (WSUS)	
12.2	Malware Protection	

12.3	Windows Server Backup	1.0 Storage Services Manage server backups
12.4	Windows Server Restore	
12.5	Performance Monitoring	
13.0	DHCP	
13.1	DHCP Basics	2.0 Network Services Manage DHCP servers. <ul style="list-style-type: none"> ○ Install and authorize DHCP servers. ○ Configure DHCP scopes and options.
13.2	DHCP Exclusions and Reservations	2.0 Network Services Manage DHCP servers. <ul style="list-style-type: none"> ○ Configure DHCP scopes and options. ○ Configure DHCP exclusions and reservations.
13.3	DHCP Centralization	2.0 Network Services Manage DHCP servers. <ul style="list-style-type: none"> ○ Install and authorize DHCP servers. ○ Configure DHCP scopes and options. ○ Configure DHCP exclusions and reservations.
13.4	DHCP Troubleshooting	

14.0	Containers	
14.1	Container Overview	
14.2	Container Host Installation	
14.3	Container Deployment	
14.4	Container Management	
15.0	High Availability	
15.1	Network Load Balancing	5.0 High Availability Manage Network Load Balancing clusters.
15.2	Network Load Balancing Management	5.0 High Availability Manage Network Load Balancing clusters.
15.3	Failover Clustering	5.0 High Availability Manage high availability with failover clustering. <ul style="list-style-type: none"> ○ Create and manage failover cluster. Manage failover cluster roles. <ul style="list-style-type: none"> ○ Add a failover cluster role. ○ Configure failover cluster role settings.
15.4	Failover Cluster Management	5.0 High Availability

		<p>Manage high availability with failover clustering.</p> <ul style="list-style-type: none"> ○ Create and manage failover cluster. ○ Configure a file share witness. <p>Manage failover cluster roles.</p> <ul style="list-style-type: none"> ○ Add a failover cluster role. ○ Configure failover cluster role settings.
15.5	Failover Cluster Role Management	<p>5.0 High Availability</p> <p>Manage high availability with failover clustering.</p> <ul style="list-style-type: none"> ○ Create and manage failover cluster. ○ Configure a file share witness. <p>Manage failover cluster roles.</p> <ul style="list-style-type: none"> ○ Add a failover cluster role. ○ Configure failover cluster role settings.
15.6	Hyper-V Replication and Migration	<p>4.0 Virtualization</p> <p>Manage virtualization with Hyper-V.</p> <ul style="list-style-type: none"> ○ Create virtual hard disks and volumes. ○ Create and configure virtual machines. ○ Create virtual switches. ○ Move virtual machines and virtual machine storage. <p>Manage virtual hard disk files with Disk Management.</p>
15.7	Hyper-V High Availability	<p>4.0 Virtualization</p> <p>Manage virtualization with Hyper-V.</p> <ul style="list-style-type: none"> ○ Create virtual hard disks and volumes. ○ Create and configure virtual machines. ○ Create virtual switches. ○ Move virtual machines and virtual machine storage. <p>Manage virtual hard disk files with Disk Management.</p>

15.8	Storage Replica	
15.9	Highly Available Storage Spaces	

Objective Mapping: TestOut Server Pro 2016: Install and Storage Objective to LabSim Section

#	Objective	Module.Section
1.0	<p>Storage Services</p> <p>Manage server backups.</p> <p>Manage disks and volumes.</p> <ul style="list-style-type: none"> o Create and manage volumes. o Initialize and partition disks. o Configure fault tolerance. o Create mount points. o Configure volume shadow copy service (VSS). <p>Manage storage pools.</p> <p>Manage iSCSI.</p> <ul style="list-style-type: none"> o Connect to iSCSI targets. o Create iSCSI volumes. o Create iSCSI virtual disks. 	<p>5.1, 5.2, 5.3</p> <p>5.4, 5.5</p> <p>12.3</p>
2.0	<p>Network Services</p> <p>Manage networking.</p> <ul style="list-style-type: none"> o Configure basic TCP/IP settings. o Configure Windows firewall. o Configure NIC teaming. <p>Manage DNS servers.</p> <ul style="list-style-type: none"> o Configure DNS zones. o Configure DNS records. <p>Manage DHCP servers.</p> <ul style="list-style-type: none"> o Install and authorize DHCP servers. o Configure DHCP scopes and options. o Configure DHCP exclusions and reservations. 	<p>4.1, 4.2, 4.4</p> <p>9.1, 9.2, 9.3, 9.4</p> <p>13.1, 13.2, 13.3</p>
3.0	<p>Server Management</p> <p>Configure servers.</p> <ul style="list-style-type: none"> o Install server roles. o Service Windows images. <p>Deploy and manage servers.</p>	<p>3.1, 3.2, 3.3</p> <p>3.4, 3.5, 3.6</p> <p>10.1, 10.2, 10.3, 10.5</p> <p>11.1, 11.2</p>

	<p>Manage files and folders.</p> <ul style="list-style-type: none"> o Manage SMB share and NTFS permissions. o Calculate effective rights. o Hide a folder using a share name. o Restore files and folders from backup. <p>Manage quotas.</p> <p>Manage printing.</p> <ul style="list-style-type: none"> o Create and share printers. o Enable printer pooling. o Deploy printers using GPOs. o Configure printer permissions. 	
4.0	<p>Virtualization</p> <p>Manage virtualization with Hyper-V.</p> <ul style="list-style-type: none"> o Create virtual hard disks and volumes. o Create and configure virtual machines. o Create virtual switches. o Move virtual machines and virtual machine storage. <p>Manage virtual hard disk files with Disk Management.</p>	<p>6.1, 6.2, 6.3 6.4, 6.6 15.6, 15.7</p>
5.0	<p>High Availability</p> <p>Manage Network Load Balancing clusters.</p> <p>Manage high availability with failover clustering.</p> <ul style="list-style-type: none"> o Create and manage failover cluster. o Configure a file share witness. <p>Manage failover cluster roles.</p> <ul style="list-style-type: none"> o Add a failover cluster role. o Configure failover cluster role settings. 	<p>15.1, 15.2 15.3, 15.4, 15.5</p>
6.0	<p>Active Directory</p> <p>Manage Active Directory.</p> <ul style="list-style-type: none"> o Install and manage domain controllers. o Configure sites. <p>Manage accounts in Active Directory.</p>	<p>7.1, 7.2, 7.3 7.4, 7.5, 7.6 7.7, 7.8, 7.9</p>

	<ul style="list-style-type: none"> o Configure and manage users. o Configure and manage computer accounts. o Configure and manage organizational units. <p>Manage groups in Active Directory.</p> <ul style="list-style-type: none"> o Configure and manage groups. o Configure group scopes and types. 	
7.0	<p>Group Policy</p> <p>Manage Group Policy objects (GPOs).</p> <ul style="list-style-type: none"> o Configure the default domain policy. o Create starter GPOs. o Configure user rights. <p>Manage group policies.</p> <ul style="list-style-type: none"> o Configure password policies. o Configure audit policies. <p>Manage security policies.</p> <ul style="list-style-type: none"> o Delegate permissions. o Configure UAC settings. o Configure restricted group policies. <p>Manage application restrictions.</p> <ul style="list-style-type: none"> o Configure executable application rules. 	<p>8.1, 8.2, 8.3</p> <p>8.4, 8.5, 8.6</p> <p>8.7, 8.8</p>

Objective Mapping: LabSim Section to MS 70-740 Objective

Section	Title	Objectives for MS 70-740
1.0	Introduction	
1.1	Windows as a Server	
1.2	Windows Server 2012 Interface Overview	
1.3	Windows Server 2016 Interface Overview	
2.0	Server Installation	
2.1	Server 2012 Installation	<p>101: Install, upgrade, and migrate servers and workloads</p> <p>Install and configure Windows Server Core.</p>
2.2	Server 2016 Installation	<p>101: Install, upgrade, and migrate servers and workloads</p> <p>Determine Windows Server 2016 installation requirements. Install Windows Server 2016. Install Windows Server 2016 features and roles. Install and configure Windows Server Core. Determine the appropriate activation model for server installation</p>
2.3	Server Upgrade and Migration	<p>101: Install, upgrade, and migrate servers and workloads</p> <p>Perform upgrades and migrations of servers and core workloads.</p>
3.0	Server Configuration and Management	
3.1	PowerShell	

3.2	Server Roles	
3.3	Server Core Deployment	
3.4	Remote Server Management	
3.5	Image Servicing	<p>103: Create, manage, and maintain images for deployment</p> <p>Plan for Windows Server virtualization. Assess virtualization workloads using the MAP Toolkit. Update images with patches, hotfixes, and drivers. Install roles and features in offline images.</p>
3.6	Nano Server Deployment	<p>102: Install and configure Nano Server</p> <p>Determine appropriate usage scenarios and requirements for Nano Server. Install Nano Server. Implement Roles and Features on Nano Server. Manage and configure Nano Server. Manage Nano Server remotely using Windows PowerShell.</p>
4.0	Networking	
4.1	IPv4 Addressing	
4.2	IPv6 Addressing	
4.3	Windows Firewall	
4.4	Advanced Networking	

5.0	Server Storage	
5.1	Traditional Storage	<p>201: Configure disks and volumes</p> <p>Configure GUID partition table (GPT) disks.</p>
5.2	VHD Storage	<p>201: Configure disks and volumes</p> <p>Create VHD and VHDX files using Server Manager or Windows PowerShell. Mount virtual hard disks. Determine when to use NTFS and ReFS file systems.</p>
5.3	Storage Pools	<p>202: Implement server storage</p> <p>Configure storage pools. Implement simple, mirror, and parity storage layout options for disks or enclosures. Expand storage pools. Configure Tiered Storage. Design storage spaces. Create and mount virtual hard disks (VHDs). Configure storage pools and disk pools. Create storage pools by using disk enclosures.</p>
5.4	iSCSI Storage	<p>202: Implement server storage</p> <p>Configure iSCSI target and initiator. Configure iSNS.</p>
5.5	Data Deduplication	<p>203: Implement data deduplication</p> <p>Implement and configure deduplication. Determine appropriate usage scenarios for deduplication. Monitor deduplication.</p>

		Implement a backup and restore solution with deduplication.
6.0	Hyper-V	
6.1	Virtualization Deployment	<p>301: Install and configure Hyper-V</p> <p>Determine hardware and compatibility requirements for installing Hyper-V. Install Hyper-V. Install management tools. Implement nested virtualization.</p>
6.2	Virtual Machines	<p>301: Install and configure Hyper-V</p> <p>Configure virtual machines using Windows PowerShell Direct.</p> <p>302: Configure virtual machine (VM) settings</p> <p>Add or remove memory in a running VM. Configure dynamic memory. Configure non-uniform memory access (NUMA) support. Create Linux and FreeBSD VMs. Export and import VMs. Implement discrete device assignment. Convert VMs from previous versions of Hyper-V to Windows Server 2016 Hyper-V.</p>
6.3	Virtual Machine Storage	<p>303: Configure Hyper-V storage</p> <p>Create VHDX files using Hyper-V Manager. Create shared VHDX files. Configure differencing disks. Modify virtual hard disks. Configure pass-through disks.</p>

		Manage checkpoints.
6.4	Virtual Networks	<p>303: Configure Hyper-V storage</p> <p>Implement a virtual Fibre Channel adapter.</p> <p>304: Configure Hyper-V networking</p> <p>Configure Hyper-V virtual switches.</p>
6.5	Virtual Network Optimization	<p>303: Configure Hyper-V storage</p> <p>Create VHDs and VHDX files using Hyper-V Manager. Create shared VHDX files. Configure differencing disks. Modify virtual hard disks. Configure pass-through disks. Manage checkpoints. Implement a virtual Fibre Channel adapter.</p> <p>304: Configure Hyper-V networking</p> <p>Optimize network performance. Configure MAC addresses. Configure NIC teaming in VMs. Configure Bandwidth Management.</p>
6.6	Virtual Machine Movement	<p>302: Configure virtual machine (VM) settings</p> <p>Export and import VMs.</p>
7.0	Active Directory	

7.1	Active Directory	
7.2	Domain Controllers	
7.3	Sites	
7.4	Organizational Units	
7.5	Users Accounts	
7.6	Bulk User Operations	
7.7	Computer Accounts	
7.8	Groups	
7.9	Rights Delegation	
7.10	Azure AD	
8.0	Group Policy	
8.1	Group Policy Foundation	
8.2	Group Policy Management	
8.3	Password Policies	
8.4	Audit Policies	
8.5	User Rights Assignment	
8.6	Security Options	

8.7	Restricted Groups	
8.8	Application Restriction Policies	
8.9	Group Policy Preferences	
9.0	DNS	
9.1	DNS Overview	
9.2	Name Resolution	
9.3	Zone Management	
9.4	DNS Records	
9.5	DNS Troubleshooting	
10.0	File and Share Access	
10.1	File Access	<p>201: Configure disks and volumes</p> <p>Configure file and folder permissions.</p>
10.2	Access-based Enumeration (ABE) and Volume Shadow Copy (VSS)	<p>201: Configure disks and volumes</p> <p>Configure file and folder permissions.</p>
10.3	SMB Shares	<p>201: Configure disks and volumes</p> <p>Configure NFS and SMB shares using Server Manager. Configure SMB share and session settings using Windows PowerShell. Configure file and folder permissions.</p>

10.4	NFS Shares	<p>201: Configure disks and volumes</p> <p>Configure NFS and SMB shares using Server Manager. Configure file and folder permissions.</p>
10.5	NTFS Permission Troubleshooting	<p>201: Configure disks and volumes</p> <p>Configure file and folder permissions.</p>
11.0	Print and Document Services	
11.1	Print Servers	
11.2	Print Management	
12.0	Server Management	
12.1	Windows Software Update Services (WSUS)	<p>601. Maintain server installations</p> <p>Implement Windows Server update services (WSUS) solutions. Configure WSUS groups.</p>
12.2	Malware Protection	<p>601. Maintain server installations</p> <p>Implement an antimalware solution with Windows Defender. Integrate Windows Defender with WSUS.</p>
12.3	Windows Server Backup	<p>601. Maintain server installations</p> <p>Perform backup and restore operations using Windows Server Backup.</p>
12.4	Windows Server Restore	<p>601. Maintain server installations</p>

		Perform backup and restore operations using Windows Server Backup.
12.5	Performance Monitoring	602. Monitor server installations Monitor workloads using Performance Monitor. Configure data collector sets. Determine appropriate CPU, memory, disk, and networking counters for storage and compute workloads. Configure alerts. Monitor workloads using Resource Monitor.
13.0	DHCP	
13.1	DHCP Basics	
13.2	DHCP Exclusions and Reservations	
13.3	DHCP Centralization	
13.4	DHCP Troubleshooting	
14.0	Containers	
14.1	Container Overview	401: Deploy Windows containers Determine installation requirements and appropriate scenarios for Windows containers.
14.2	Container Host Installation	401: Deploy Windows containers

		Install and configure Windows Server container host.
14.3	Container Deployment	<p>401: Deploy Windows containers</p> <p>Install Docker on Windows Server. Configure Docker daemon start-up options.</p> <p>402: Manage Windows containers</p> <p>Manage Windows containers using the Docker daemon. Manage container networking. Manage container data volumes. Create new container images using Dockerfile. Manage container images using DockerHub. Manage container images using Microsoft Azure.</p>
14.4	Container Management	<p>402: Manage Windows containers</p> <p>Manage Windows containers using the Docker daemon. Manage container networking. Manage container data volumes.</p>
15.0	High Availability	
15.1	Network Load Balancing	<p>506: Implement Network Load Balancing (NLB)</p> <p>Install NLB nodes. Configure NLB prerequisites. Configure affinity and port rules. Configure cluster operation mode. Upgrade an NLB cluster.</p>

15.2	Network Load Balancing Management	<p>506: Implement Network Load Balancing (NLB)</p> <p>Install NLB nodes. Configure NLB prerequisites. Configure affinity and port rules. Configure cluster operation mode. Upgrade an NLB cluster.</p>
15.3	Failover Clustering	<p>502: Implement failover clustering</p> <p>Configure cluster quorum settings. Configure cluster networking. Restore single node or cluster configuration. Configure cluster storage. Configure clusters without network names.</p>
15.4	Failover Cluster Management	<p>502: Implement failover clustering</p> <p>Configure cluster networking. Restore single node or cluster configuration.</p> <p>504: Manage failover clustering</p> <p>Configure role-specific settings. Configure VM monitoring.</p>
15.5	Failover Cluster Role Management	<p>502: Implement failover clustering</p> <p>Configure cluster networking. Implement scale-out file server.</p> <p>504: Manage failover clustering</p>

		<p>Configure role-specific settings. Configure VM monitoring. Configure failover and preference settings. Implement stretch and site-aware failover clusters. Enable and configure node fairness.</p>
15.6	Hyper-V Replication and Migration	<p>501: Implement high availability and disaster recovery options in Hyper-V</p> <p>Implement Hyper-V replica. Implement live migration. Implement shared nothing live migration. Implement storage migration.</p> <p>505: Manage VM movement in clustered nodes</p> <p>Perform a live migration. Perform a quick migration. Perform a storage migration. Import, export, and copy VMs.</p>
15.7	Hyper-V High Availability	<p>504: Manage failover clustering</p> <p>Configure failover and preference settings.</p>
15.8	Storage Replica	<p>502: Implement failover clustering</p> <p>Implement storage replica.</p> <p>504: Manage failover clustering</p> <p>Implement stretch and site-aware failover clusters.</p>

15.9	Highly Available Storage Spaces	503: Implement storage spaces direct Determine scenario requirements for implementing storage spaces direct. Enable storage spaces direct using Windows PowerShell.
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Objective Mapping: MS 70-740 Objective to LabSim Section

#	Objective	Module.Section
100	Install Windows Servers in host and compute environments (10–15%)	
101	<p>Install, upgrade, and migrate servers and workloads This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Determine Windows Server 2016 installation requirements. Install Windows Server 2016. Install Windows Server 2016 features and roles. Install and configure Windows Server Core. Perform upgrades and migrations of servers and core workloads. Determine the appropriate activation model for server installation. 	2.1, 2.2, 2.3
102	<p>Install and configure Nano Server This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Determine appropriate usage scenarios and requirements for Nano Server. Install Nano Server. Implement Roles and Features on Nano Server. Manage and configure Nano Server. Manage Nano Server remotely using Windows PowerShell. 	3.6
103	<p>Create, manage, and maintain images for deployment This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Plan for Windows Server virtualization. Assess virtualization workloads using the MAP Toolkit. Update images with patches, hotfixes, and drivers. Install roles and features in offline images. 	3.5
200	Implement storage solutions (10–15%)	

201	<p>Configure disks and volumes This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Configure GUID partition table (GPT) disks. Create VHD and VHDX files using Server Manager or Windows PowerShell. Mount virtual hard disks. Determine when to use NTFS and ReFS file systems. Configure NFS and SMB shares using Server Manager. Configure SMB share and session settings using Windows PowerShell. Configure file and folder permissions. 	5.1, 5.2 10.1, 10.2 10.3, 10.4, 10.5
202	<p>Implement server storage This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Configure storage pools. Implement simple, mirror, and parity storage layout options for disks or enclosures. Expand storage pools. Configure Tiered Storage. Configure iSCSI target and initiator. Configure iSNS. 	5.3, 5.4
203	<p>Implement data deduplication This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Implement and configure deduplication. Determine appropriate usage scenarios for deduplication. Monitor deduplication. Implement a backup and restore solution with deduplication. 	5.5
300	Implement Hyper-V (20–25%)	
301	<p>Install and configure Hyper-V This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Determine hardware and compatibility requirements for installing Hyper-V. Install Hyper-V. 	6.1, 6.2

	<p>Install management tools. Configure virtual machines using Windows PowerShell Direct. Implement nested virtualization.</p>	
302	<p>Configure virtual machine (VM) settings This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Add or remove memory in a running VM. Configure dynamic memory. Configure non-uniform memory access (NUMA) support. Create Linux and FreeBSD VMs. Export and import VMs. Implement discrete device assignment. Convert VMs from previous versions of Hyper-V to Windows Server 2016 Hyper-V. 	6.2, 6.6
303	<p>Configure Hyper-V storage This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Create VHDX files using Hyper-V Manager. Create shared VHDX files. Configure differencing disks. Modify virtual hard disks. Configure pass-through disks. Manage checkpoints. Implement a virtual Fibre Channel adapter. 	6.3, 6.4, 6.5
304	<p>Configure Hyper-V networking This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Add and remove virtual network interface cards. Configure Hyper-V virtual switches. Optimize network performance. Configure MAC addresses. Configure network isolation. Configure NIC teaming in VMs. Configure Bandwidth Management. 	6.4, 6.5

400	Implement Windows containers (5–10%)	
401	<p>Deploy Windows containers This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Determine installation requirements and appropriate scenarios for Windows containers. Install and configure Windows Server container host. Install Docker on Windows Server. Configure Docker daemon start-up options. Create Windows Server containers. Create Hyper-V containers. 	14.1, 14.2, 14.3
402	<p>Manage Windows containers This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Manage Windows containers using the Docker daemon. Manage container networking. Manage container data volumes. Create new container images using Dockerfile. Manage container images using DockerHub. Manage container images using Microsoft Azure. 	14.3, 14.4
500	Implement high availability (30–35%)	
501	<p>Implement high availability and disaster recovery options in Hyper-V This objective may include but is not limited to:</p> <ul style="list-style-type: none"> Implement Hyper-V replica. Implement live migration. Implement shared nothing live migration. Implement storage migration. 	15.6
502	<p>Implement failover clustering This objective may include but is not limited to:</p>	15.3, 15.4 15.5, 15.8

	<p>Configure cluster quorum settings. Configure cluster networking. Restore single node or cluster configuration. Configure cluster storage. Configure clusters without network names. Implement scale-out file server. Implement storage replica.</p>	
503	<p>Implement storage spaces direct This objective may include but is not limited to:</p> <p>Determine scenario requirements for implementing storage spaces direct. Enable storage spaces direct using Windows PowerShell.</p>	15.9
504	<p>Manage failover clustering This objective may include but is not limited to:</p> <p>Configure role-specific settings. Configure VM monitoring. Configure failover and preference settings. Implement stretch and site-aware failover clusters. Enable and configure node fairness.</p>	15.4, 15.5, 15.7, 15.8
505	<p>Manage VM movement in clustered nodes This objective may include but is not limited to:</p> <p>Perform a live migration. Perform a quick migration. Perform a storage migration. Import, export, and copy VMs.</p>	15.6
506	<p>Implement network load balancing (NLB) This objective may include but is not limited to:</p>	15.1, 15.2

	<p>Install NLB nodes. Configure NLB prerequisites. Configure affinity and port rules. Configure cluster operation mode. Upgrade an NLB cluster.</p>	
600	Maintain and monitor server environments (10–15%)	
601	<p>Maintain server installations This objective may include but is not limited to:</p> <p>Implement Windows Server update services (WSUS) solutions. Configure WSUS groups. Implement an antimalware solution with Windows Defender. Integrate Windows Defender with WSUS. Perform backup and restore operations using Windows Server Backup.</p>	<p>12.1, 12.2 12.3, 12.4</p>
602	<p>Monitor server installations This objective may include but is not limited to:</p> <p>Monitor workloads using Performance Monitor. Configure data collector sets. Determine appropriate CPU, memory, disk, and networking counters for storage and compute workloads. Configure alerts. Monitor workloads using Resource Monitor.</p>	<p>12.5</p>