

PASS4SURES.COM

A Composite Solution With Just One Click

Microsoft

70-659 PRACTICE EXAM

TS:Windows Server 2008 R2

Question: 1

HOTSPOT

A company uses Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to manage their Hyper-v environment. A VMM hardware profile is required for new SQL Server 2008 R2 Enterprise VMs. Based on company policy, VMs running SQL Server 2008 R2 Enterprise must use Dynamic Memory and the memory allocation for the VMs must be set to high. You need to configure a VMM hardware profile so that the memory allocation priority is set to high. How should you configure the hardware profile? (To answer, select the appropriate node in the answer area.)



Answer:



Question: 2

Your company has an Active Directory Domain Services (AD OS) domain that includes an AD security group named Development. You have a member server that runs Windows Server 2008 R2 with the Hyper-V role installed. You need to ensure that Development group members can only manage virtual machines (VMs). Development group members must not have administrative privileges on the host server. What should you use?

- A. Authorization Manager
- B. the net localgroup command
- C. Local Users and Groups
- D. Active Directory Administrative Center

Answer: A

Explanation:

Hyper-V security is based on Authorization Manager API (known as AZMan). Similarly to VMM's delegated administration model, an administrator can configure a set of role objects and assign Active Directory user and group accounts to those roles. Each role can be granted a set of permissions for virtual machine access and management, and securable objects can be assigned to scopes, which determine the objects against which access checks are performed. When a Hyper-V host is added to VMM, VMM applies its own authorization layer, defined by the VMM user roles, to determine the actions that VMM administrators and self-service users can perform on the Hyper-V virtual machines while working in VMM. To do this, VMM creates its own AZMan authorization store on the host computer. In VMM2008R2, the method for implementing user roles in AZMan was changed to preserve role definitions and role memberships in the root scope of the Hyper-V authorization store while VMM is managing a

Hyper-V host. In VMM2008, the Hyper-V roles are not used while a host is managed by VMM.

Question: 3

DRAG DROP

A company has a 64-bit server with a quad-core processor. The server runs Windows Hyper-v Server 2008 R2 Service pack(SP) 1. The server will host five virtual machines (VMs) with SP1 integration services installed. VM1, VM2, and VM3 use the maximum number of logical processors. Resources allocation for VMs is configured as shown in the following table.

VM Name	Operating System	VM Reserve (percentage)	VM Limit (percentage)	Relative Weight	Number of vCPUs
VM1	Windows Server 2008 SP2 64-bit	25	25	50	4
VM2	Windows Server 2008 SP2 64 bit	25	25	50	4
VM3	Windows Server 2008 R2 SP1	25	50	100	4
VM4	Windows Server 2008 R2 SP1				
VM5	Windows 7 Enterprise with SP1 64-bit	1	10	10	1

The environment must be configured to meet the following resource allocation requirements:

VM4 must be able to consume up to half of each processor

VM5 must not start if VM1, VM2, VM3, and VM4 are running.

VM4 must use the maximum number of logical processors available on the Hyper-V host - VM4 must share CPU resources evenly with VM3 during peak usage on the Hyper-V host You need to configure VM4 to meet the requirements.

How should you configure VM4? (To answer, drag the appropriate setting from the list of choices to the correct locations in the answer area.)

Answer Choices

2	4
16	24
25	40
50	100

Number of Logical Processors
VM Reserve (%)
VM Limit (%)
Relative Weight

Answer:

Answer Choices	
2	4
16	24
25	40
50	100

4	
Number of Logical Processors	
25	
VM Reserve (%)	
50	
VM Limit (%)	
100	
Relative Weight	

Explanation:

Ref: <http://www.virtualizationadmin.com/articles-tutorials/microsoft-hyper-v-articles/load-balancinghigh-availability/resource-allocation-hyper-v-part3.html>

Question: 4

You are configuring a virtual environment. The environment includes servers that run either Windows Server 2003 or Windows Server 2008 R2. You manage the environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. The servers that run Windows Server 2003 do not meet the system requirements to run Windows Server 2008 R2 or Microsoft Hyper-V Server 2008 R2. You want to host non-production virtual machines (VMs) on the Windows Server 2003 servers. You need to be able to manage the Windows Server 2003 servers by using VMM. What should you do?

- A. Install Virtual Machine Remote Control Client Plus (VMRCplus) on the Windows Server 2003 host servers.
- B. Stage the Microsoft Virtual Server 2005 R2 software on the VMM server.
- C. Stage the Microsoft Virtual Server 2005 software on the VMM server.
- D. Add the Windows Server 2003 host servers to VMM by using the Add Hosts wizard.

Answer: D

Question: 5

You manage your virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You monitor the environment by using Microsoft System Center Operations Manager 2007 R2. You need to enable automatic migration between Hyper-V host servers. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a host group and add the host servers to it.
- B. Configure reserve resources on each host server.
- C. Use Intelligent Placement to place VMs on the host servers that have the highest rating.

D. Configure Performance and Resource Optimization (PRO) Tips.

Answer: C,D

Explanation:

So what is PRO?

PRO is workload- and application-aware resource optimization. With PRO, we can create policies that act upon tips, provided by SCOM as part of its OS and application monitoring ability, to address potential resource utilization problems. In some ways, PRO is kind of like VMware DRS, but since Hyper-V doesn't provide any live migration functionality. In that regard, it falls far short of matching the DRS functionality. However, where it exceeds VMware DRS is in more detailed knowledge about the applications and services running inside the VM, instead of acting only upon the "external view" of the VM's resource requirements. This is why I think that the VMware acquisition of B-Hive is critical, because it begins to give VMware the same kind of "application awareness" inside the VM so that DRS can act upon service-level agreements or service-level status. PRO also provides an extensible framework (assuming via SCOM's management/monitoring capabilities) to allow hardware vendors to supply hardware monitoring information and other software vendors to provide more detailed information and extensions to PRO. Examples include Brocade (presumably to provide Fibre Channel fabric information), Emulex (Fibre Channel HBA information), EMC (storage array performance information), and HP (server hardware information). Example, a couple of VMs generating high CPU load on the host. By telling PRO to fix the problem, SCVMM's intelligent placement is invoked and a new host is selected for the VM. The VM is then migrated to the new host. <http://blog.scottlowe.org/2008/06/11/vir360-microsoft-system-center-vmm-2008-part-2-of-2/>

Question: 6

You manage Hyper-V host servers and virtual machines (VMs) by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You grant a user the Delegated Administrator user role. You need to provide the user with the ability to manage VMs through the VMM Self-Service Portal. What should you do?

- A. In VMM, grant the user the Administrator user role.
- B. In VMM, grant the user the Self-Service user role.
- C. Enable the Single sign-on for Terminal Services option for the VMM Self-Service Portal.
- D. Enable the Integrated Windows Authentication option for the VMM Self-Service Portal.

Answer: B

Explanation:

In virtual machine self-service, a virtual machine has an owner (by default, the user who created the virtual machine) and a self-service user role (by default, the self-service user role under which the virtual machine was created). The virtual machine's owner is the only person who can see and perform operations on a virtual machine in the VMM Self-Service Portal. A self-service user can change the owner of his own virtual machine to any other member of the self-service user role. If the owner is a member of more than one self-service user role, the user can change the virtual machine owner to any member of his other roles if the following requirements are met:

The current owner must belong to the self-service user role that is being assigned.

The virtual machine must be within the scope (host or library path) of that user role.

Delegated Administrator role—Members of a role based on the Delegated Administrator profile have full VMM administrator rights, with a few exceptions, on all objects in the scope defined by the host groups and library that are assigned to the role. A delegated administrator cannot modify VMM settings or add or remove members of the Administrator role.

Self-Service User role—Members of a role based on the Self-Service User profile can manage their own virtual machines within a restricted environment. Self-service users use the VMM Self-Service Web Portal to manage their

virtual machines. The portal provides a simplified view of only the virtual machines that the user owns and the operations that the user is allowed to perform on them. A self-service user role specifies the operations that members can perform on their own virtual machines (these can include creating virtual machines) and the templates and ISO image files that they can use to create virtual machines. The user role also can place a quota on the virtual machines that a user can deploy at any one time. Self-service users' virtual machines are deployed transparently on the most suitable host in the host group that is assigned to the user role.

Question: 7

DRAG DROP

A company has a server that runs Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 with Service Pack (SP) 1 and Windows Server 2008 R2 Enterprise with Hyper-V. The company is preparing to deploy virtual machines (VMs) from templates and has the following requirements:

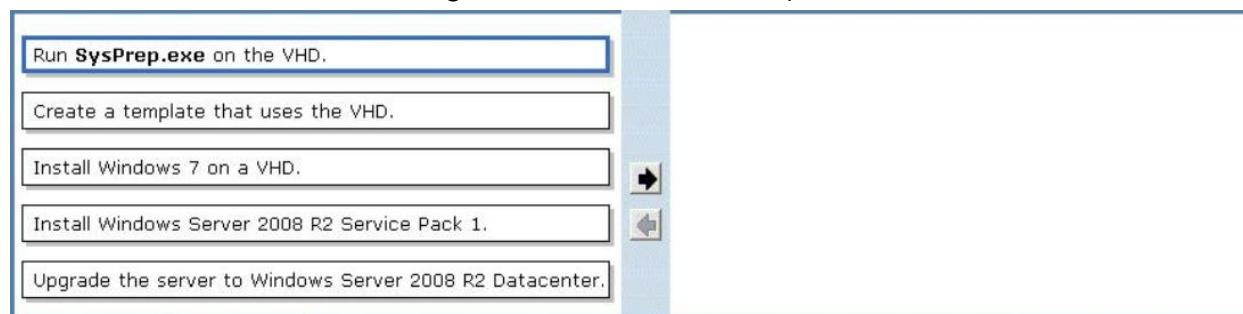
The templates must be created from virtual hard disks (VHDs).

The templates must include Windows 7.

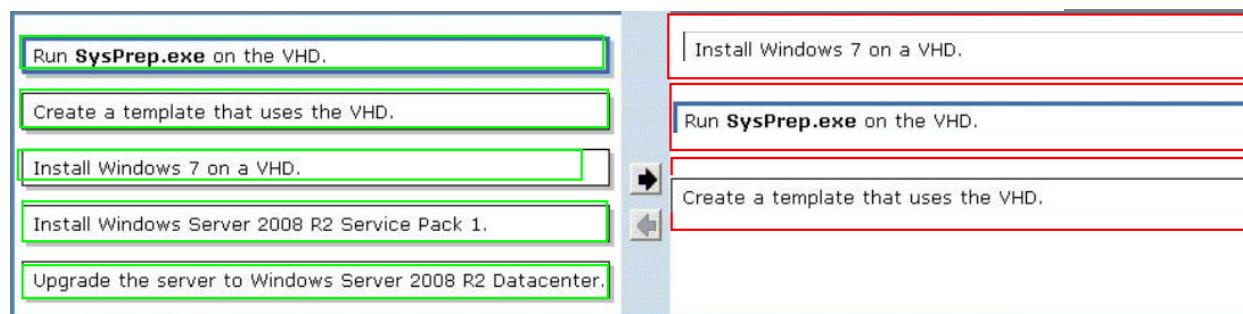
An out of the box experience (OOBE) must be provided for all guest operating systems that are deployed from the templates.

You need to create a template that meets the company requirements.

Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)



Answer:



Explanation:

<http://thedatafarm.com/blog/just-rambling/sysprep-and-win7-boot-to-vhd-for-non-admins/>

Question: 8

A company has a Hyper-V server named SERVER01 that runs Windows Server 2008 R2 Enterprise with Service Pack (SP) 1. All virtual machines (VMs) run Windows Server 2008 R2 Enterprise with SP1. All VMs are configured to use Dynamic Memory.

A VM named VM01 is exhibiting performance problems.

You need to ascertain how much memory VM01 is consuming.

What should you do?

- Use Performance Monitor to view the \Hyper-V Dynamic Memory Balancer\Available Memory performance counter.

- counter for SERVER01.
- B. Use Performance Monitor to view the \Hyper-V Dynamic Memory VM\Guest Visible Dynamic Memory performance counter for VM01.
- C. In the VM settings, view the Maximum RAM value.
- D. Use Performance Monitor to view the \Hyper-v Dynamic Memory VM\Physical Memory performance counter for VM01.

Answer: A

Explanation:

Answer changed FROM D TO A 14/06/2012

<http://technet.microsoft.com/en-us/library/ff817651%28v=ws.10%29.aspx>

<http://www.virtualizationadmin.com/articles-tutorials/microsoft-hyper-v-articles/installation-anddeployment-using-dynamic-memory-hyper-v-r2-sp1.html>

Question: 9

A company's virtualization environment contains servers that run Windows Server 2008 R2 with Hyper-v and other servers that run VMware. You manage the Hyper-V environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 SP1. You manage the VMware vSphere 4 environment by using VMware vCenter. You need to manage the VMware hosts by using VMM. What should you do?

- A. Add the vCenter server to VMM.
- B. Move the VMware host to a host group.
- C. Add a Library Server to VMM.
- D. Perform a virtual-to-virtual (V2V) migration of the VMware VMs

Answer: A

Explanation:

Add the VirtualCenter or vCenter Server To integrate a VMware infrastructure into your VMM-managed virtualized environment, begin by adding your VMware VirtualCenter or vCenter server to VMM. When you add a VirtualCenter or vCenter server, VMM discovers all ESX(i) Server hosts and clusters that the VirtualCenter or vCenter server is managing and adds the objects to VMM. Important. You cannot manage a VirtualCenter or vCenter server using more than one VMM server. If you add the VirtualCenter or vCenter server to more than one instance of VMM, VMM creates a duplicate object for each VMware virtual machine, with the duplicate virtual machine permanently in a Missing state. To add the VirtualCenter or vCenter server, use the Add VMware VirtualCenter server action, which is available in all views of the VMM Administrator Console. You must provide VirtualCenter or vCenter administrator's credentials.

<http://social.technet.microsoft.com/wiki/contents/articles/328.aspx>

<http://technet.microsoft.com/enus/>

<library/cc917961.aspx>

Question: 10

You are configuring a Windows Server 2008 R2 Hyper-V server.

You need to audit changes to Hyper-V roles and authorization rights.

Which file should you audit?

- A. AzMan.msc

- B. web.config
- C. InitialStore.xml
- D. machine.config

Answer: C

Explanation:

What is Web.Config File?

It is an optional XML File which stores configuration details for a specific asp.net web application.

Note:When you modify the settings in theWeb.Configfile, you do not need to restart the Web service for the modifications to take effect..By default, theWeb.Configfile applies to all the pages in the current directory and its subdirectories.

Extra:You can use the<location>tag to lock configuration settings in theWeb.Configfile so that they cannot be overridden by aWeb.Configfile located below it. You can use theallowOverrideattribute to lock configuration settings. This attribute is especially valuable if you are hosting untrusted applications on your server.

What is Machine.config File?

The Machine.Config file, which specifies the settings that are global to a particular machine. This file is located at the following path:

\WINNT\Microsoft.NET\Framework\[Framework Version]\CONFIG\machine.config As web.config file is used to configure one asp .net web application, same way Machine.config file is used to configure the application according to a particular machine. That is, configuration done in machine.config file is affected on any application that runs on a particular machine. Usually, this file is not altered and only web.

config is used which configuring applications.

You can override settings in the Machine.Config file for all the applications in a particular Web site by placing a Web.Config file in the root directory of the Web site as follows:

\InetPub\wwwroot\Web.Config

What can be stored in Web.configfile?

There are number of important settings that can be stored in the configuration file. Here are some of the most frequently used configurations, stored conveniently inside Web.config file.

1. Database connections.
2. Session States
3. Error Handling(CustomError Page Settings.)
4. Security(Authentication modes)

Question: 11

DRAG DROP

A company has two Windows Hyper-V Server 2008 R2 failover clusters. One is for the quality assurance (QA) group and one is for the development group.

A user from QA recently moved to the development group. The user's VM is currently running and two programs are open. You need to migrate the VM while meeting the following requirements:

The VM must reside on the development group failover cluster.

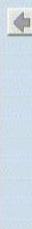
The current state of the VM must remain the same after the migration.

Which four actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

- Right-click the VM and click the **Start** option.
- Right-click the VM and click the **Save** option.
- Right-click the VM and click the **Reset** option.
- Right-click the VM and click the **Pause** option.
- Right-click the VM and click the **Export** option.
- Import the VM on the QA failover cluster.
- Import the VM on the development group failover cluster.
- Stop the Virtual Machine Management service on the development group failover cluster.

**Answer:**

- Right-click the VM and click the **Start** option.
- Right-click the VM and click the **Save** option.
- Right-click the VM and click the **Reset** option.
- Right-click the VM and click the **Pause** option.
- Right-click the VM and click the **Export** option.
- Import the VM on the QA failover cluster.
- Import the VM on the development group failover cluster.
- Right-click the VM and click the **Start** option.
- Stop the Virtual Machine Management service on the development group failover cluster.

**Explanation:**

Ref: <http://www.petri.co.il/migrate-vm-manually-between-hyper-v-hosts.htm>

Question: 12

You use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to manage your Hyper-V environment. The finance department uses a legacy application that is not supported on Windows Server 2008 R2. The application runs on a server that has the following configuration:
 Windows 2000 Server operating system
 One 10GB hard disk, FAT formatted
 512 MB of RAM
 You need to ensure that you can perform a physical-to-virtual (P2V) conversion of the server. What should you do?

- Run the convert c: /FS: NTFS command on the server.
- Use offline P2V.
- Increase the server's RAM to at least 1024 MB.
- Use online P2V.

Answer: B**Explanation:**

The following table lists some of the differences between the online and offline P2V conversions. Requirements on the Source Machine To perform a P2V conversion, your source computer:

Must have at least 512 MB of RAM.

Cannot have any volumes larger than 2040GB.

Must have an Advanced Configuration and Power Interface (ACPI) BIOS – Vista WinPE will not install on a non-ACPI

BIOS.

Must be accessible by VMM and by the host computer.

Cannot be in a perimeter network. A perimeter network, which is also known as a screened subnet, is a collection of devices and subnets placed between an intranet and the Internet to help protect the intranet from unauthorized Internet users. The source computer for a P2V conversion can be in any other network topology in which the VMM server can connect to the source machine to temporarily install an agent and can make Windows Management Instrumentation (WMI) calls to the source computer.

The following table lists the Windows operating systems for which P2V conversions are supported in VMM2008 and in VMM2008R2.

Supported Operating Systems for P2V Conversions in VMM2008 and VMM2008R2

Question: 13

Your environment includes Hyper-V and VMware ESX. You manage your virtual environment by using Microsoft System Center Virtual Machine manager (VMM) 2008 R2. You plan to perform a virtual-to-virtual (V2V) conversion of a virtual machine (VM) that is located on the ESX server.

You start the conversion by using the Convert Virtual Machine Wizard.

Communication between the destination host and the ESX server fails, and the conversion does not finish successfully.

You need to ensure that the conversion finishes successfully.

What should you change?

- A. WSMAN permissions and settings
- B. Windows Firewall exceptions for Background Intelligent Transfer Service (BITS)
- C. Secure Shell (SSH) and HTTPS settings
- D. Server Message Block (SMB) settings

Answer: C

Explanation:

We need to make sure that the conversion has right port settings in both the source and target. ESX server uses SSH (Port 22) and Hyper-V uses HTTPS (443) port for secure transmission. System Center Virtual Machine Manager (VMM) allows you to convert existing VMware Server-based virtual machines so you can manage them in a VMM environment. Requirements This section lists the V2V requirements for converting VMware Server-based virtual machines.

Source Virtual Machines To perform a V2V, your source virtual machine must contain one of the following operating systems:

Microsoft Windows 2000 Server Service Pack 4 (SP4)

The Windows Server 2003 operating systems with Service Pack 1 (SP1)

The Windows Server 2003 R2 Standard Edition operating system

The Windows XP operating systems with SP1

The source virtual machine consists of the following files that you store in the Virtual Machine Manager library:

A .vmx file, which is a VMware virtual machine configuration file. A .vmx file is the text file that describes the properties and structure of a virtual machine, including name, memory, disk assignments, network parameters, and so on.

One or more .vmdk (virtual hard disk) files, which are not passed directly as input to the wizard but are listed in the .vmx file. A .vmdk file is a VMware virtual hard disk that contains the virtual machine's guest operating system, applications, and data. Supported VMWare virtual hard disk formats include the following:

monolithicSparse

monolithicFlat

vmfs

twoGbMaxExtentSparse

twoGbMaxExtentFlat

Requirements for the Host Server

In Virtual Machine Manager, a host is a physical computer on which you can deploy one or more virtual machines. To run V2V, you need a host on which to place the converted files while the virtual machine is converted.

Requirements for the host server include:

Virtual Server R2 SP1 or later

Adequate RAM (256 MB plus memory for the virtual machine)

By default, the amount of memory reserved for the target host is 256 MB. This is in addition to the memory required by the V2V process for each source computer. If the host does not have enough memory, you will get a placement error in the Convert Virtual Machine Wizard.

If you need to configure the virtual machine memory, you must perform the V2V from the command line. You will need to run the New-V2V cmdlet and set the MemoryMB parameter to a lower memory value. How to Perform a V2V Conversion During the conversion process, the Convert Virtual Machine Wizard converts the .vmdk files to .vhdx files and makes the operating system on the virtual machine compatible with Microsoft virtualization technologies. The virtual machine created by the wizard matches VMware virtual machine properties, including name, description, memory, disk-to-bus assignment, and so on.

The process for running a V2V conversion from the UI is as follows:

Copy the .vmx file and each .vmdk file for the VMware virtual machine to the Virtual Machine Manager library.

Run the Convert Virtual Machine Wizard, which performs the following steps:

Identifies the disk formats and characteristics of the virtual machine.

Converts the .vmdk files to virtual hard disk files in Virtual Server (.vhdx) that reside on the destination host.

VMM prepares the virtual hard disks and prepares for virtual machine creation.

Convert Virtual Machine Wizard

You can use the Convert Virtual Machine Wizard to convert a VMWare virtual machine. For detailed steps, see the "How to Convert a Virtual Machine to a VMM Virtual Machine" topic in VMM Help (<http://go.microsoft.com/fwlink/?LinkId=101776>).

Performing V2V from the Command Line You can perform a V2V conversion from Windows PowerShell by using the New-V2V cmdlet.

For more information about using the New-V2V cmdlet see "Windows PowerShell Scripting in Virtual Machine Manager" (<http://go.microsoft.com/fwlink/?LinkId=91727>).

To watch a video of the V2V process as performed from the command line, see "VMM Introduction – Virtual Machine to Virtual Machine Migration"

(mms://wm.microsoft.com/ms/systemcenter/scvmm/demo/vmm_intro_04.wmv).

Troubleshooting

Before beginning a formal troubleshooting process, confirm that the source virtual machine has one of the following operating systems installed:

Windows 2000 Server with Service Pack 4 (SP4)

The Windows Server 2003 operating systems with Service Pack 1 (SP1)

Windows Server 2003 R2

The Windows XP operating systems with Service Pack 1

If you use the Convert Virtual Machine Wizard to convert a VMWare-based virtual machine running any operating system not in the preceding list, the virtual machine might not start or function correctly. Some V2V conversions might require you to add additional system files and drivers to the internal cache. If additional files or drivers are required when you run the Convert Virtual Machine Wizard, do the following:

Use information provided in an error message that appears when you run the wizard to identify what updates or drivers are required.

Obtain a copy of those update or driver files and copy the files to the Patch Import directory on the Virtual Machine Manager server (the default path is <C>:\Program Files\Microsoft System Center Virtual Machine Manager 2007\Patch Import).

Run the Add-Patch cmdlet to extract those patches and populate the patch cache.

Run the Convert Virtual Machine Wizard again, or use the New-V2V cmdlet.

General Troubleshooting Strategy Find the source of the error by opening the Jobs view, selecting a job, and clicking the Change Tracking tab in the details pane. Find the job where the Status property changed. Once you find this job, click the Summary tab of the details pane to investigate the issue.

Failed V2V Conversions

Any V2V task failure places the virtual machine in the Creation Failed state. Some of the most common causes and their associated resolution strategies are described in the following sections.

Numbered Error Codes

Cause: You receive a specific error code.

Resolution strategy: See "Virtual Machine Conversion Issues" (<http://go.microsoft.com/fwlink/?LinkId=98827>).

Communication Cause: Communication failed between: the VMM server, the library server that stores the VMware configuration and data files, and the virtual machine host on which the virtual machine will be created.

Resolution: Check WSMAN permissions and settings and Windows Firewall exceptions for the BITS and HTTPS ports.

Patches

Cause: A patch or driver file that is required for the conversion is missing.

Resolution strategy: If a patch file or driver is missing, download the requested patch and driver files to the Patch Import directory on the Virtual Machine Manager server (the default path is <C>:\Program Files\Microsoft System Center Virtual Machine Manager 2007\Patch Import), and extract the files by using the Add-Patch cmdlet.

Permissions

Cause: Virtual Machine Manager does not have permission to access one or more files involved in the V2V process from the command line.

Resolution: Ensure that the machine account for the destination host has access to the share that stores the virtual machine configuration file.

.vmx or .vmdk Files

Cause: A V2V conversion was performed on a configuration file with an unsupported or unrecognized .vmx or .vmdk file format.

Resolution: If the .vmx or .vmdk file format of the source virtual machine is not recognized, V2V conversion is not supported for that virtual machine in this version of Virtual Machine Manager.

Operating System

Cause: VMM cannot find a supported Operating System or does not recognize the physical disk layout on the new .vhdx file, and cannot complete the conversion.

Resolution: If VMM does not support the disk layout or operating system of the VMware virtual machine, VMM will create the virtual machine, but will not complete the conversion. As a result, the virtual machine might not start up or function correctly.

Question: 14

You use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to manage your Hyper-V environment.

You start a physical-to-virtual (P2V) conversion by using the Convert Physical Server (P2V) Wizard. The wizard indicates that a driver is missing.

You need to ensure that you can complete the P2V conversion.

Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Add the driver file to the Patch Import directory on the VMM server.
- B. Run the PowerShell Add-Patch cmdlet.
- C. Run the PowerShell Get-HotFix cmdlet.
- D. Add the driver file to the VMM library.

Answer: A,D

Explanation:



VMM gathers the source computer's hardware and software configuration, as follows:

The VMM agent gathers information about hardware, software, services, hotfixes, and the disk layout (file system, volume type). The VMM agent exports this information to the VMM database as a machine configuration file in XML format.

VMM determines whether the source machine can be virtualized. VMM confirms that the operating system is supported and that the physical configuration can be made compatible with the destination virtualization software. VMM verifies that the required files are present in the patch cache and downloads any missing patches to the Patch Import directory on the VMM server.

<http://technet.microsoft.com/en-us/library/cc764232.aspx>

Question: 15

A company has a Windows Hyper-v Server 2008 R2 failover cluster.

You need to perform a configuration-only export of a virtual machine (VM).

What should you do?

- A. In Hyper-V Manager, right-click the VM and select Export.
- B. In Hyper-V Manager, rename the VM.
- C. Create a custom .exp file with the VM name.
- D. Create a PowerShell script that uses the Hyper-V API.

Answer: D

Explanation:

Hyper-V R2 Import/Export – Part 6 - So, what happened to Configuration-only export?

The user can still utilize this capability via the API.

<http://blogs.technet.com/b/virtualization/archive/2009/05/29/hyper-v-r2-import-export-part-6-sowhat-happenedto-configuration-only-export.aspx>

Performing a “configuration only” export / import on Hyper-V

http://blogs.msdn.com/b/virtual_pc_guy/archive/2010/03/24/performing-a-configuration-onlyexport-import-onhyper-v.aspx

Question: 16

A company has virtual machine (VMs) running in a 16-node Hyper-v cluster. They are using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to migrate all of their existing VMware VMs to Hyper-V.

You need to configure VMM to ensure that it places VMs on each host until each host is fully utilized. What should you do?

- A. Configure placement settings for resource maximization.
- B. Prioritize resources for memory free.
- C. Prioritize resources for disk I/O.
- D. Prioritize resources for network utilization.
- E. Configure placement settings for load balancing.

Answer: A,E

Explanation:

<http://technet.microsoft.com/en-us/library/dd250807.aspx>

You can alter how the Intelligent Placement algorithm works on your VMM server. There are two basic models:

Resource Maximisation: This is the model you take when you want VMM to make the very most out of each and every host. VMM will try to place as many VM's on a single host as is reasonable.

Load Balancing: The goal here is to get the very best performance from your VM's that you can.

VMM will locate VM's in an effort to balance the resource utilisation across all hosts.

<http://www.aidanfinn.com/?p=10201>

Question: 17

You manage your Hyper-V environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You plan to perform a virtual-to-virtual (V2V) conversion of several virtual machines (VMs). In VMM, you need to configure the default placement options to consolidate the VMs on the fewest possible host servers.

What should you do?

- A. In the Convert Virtual Machine (V2V) Wizard, set the placement goal to Resource maximization.
- B. In Administration view, set the placement goal to Resource maximization.
- C. In Administration view, set the placement goal to Load balancing.
- D. In the Convert virtual Machine (V2V) Wizard, set the placement goal to Load balancing.

Answer: B

Explanation:

Resource maximization

One of two placement goals during virtual machine placement. When resource maximization is the goal, the suitability of each virtual machine host is rated based on the purpose of consolidating multiple low-utilization workloads on a single host. Virtual machine placement in these cases involves determining the capacity limits for a particular host and placing virtual machines on that host until the limits are reached.

Source: <http://technet.microsoft.com/en-us/library/bb740741.aspx>

Question: 18

You use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to manage your Hyper-V environment. Failures occur when you perform offline physical-to-virtual (P2V) conversions by using VMM. You need to ensure that you have the information that is necessary to troubleshoot the problem. What should you do?

- A. Create the x:\Windows\inf\setupapi.dev.log file in Windows PE.
- B. Create the scvmm_winpe.etl file on the root of the source computers boot volume
- C. Create the scvmm_winpe_setupapi.log file on the root of the source computers boot volume
- D. Create the scvmm_enable_winpe_tracing.txt file on the root of the source computers boot volume

Answer: D

Explanation:

Offline P2V

Cause: Cannot troubleshoot offline P2V.

Resolution strategy: To enable tracing on the source computer during an offline P2V, create a file named scvmm_enable_winpe_tracing.txt and save it to the root of the source computer's boot volume. This file does not need to contain any data or information. A trace file named scvmm_winpe.etl will be created and saved on the Source system.

Source: <http://technet.microsoft.com/en-us/library/bb963740.aspx>

Question: 19

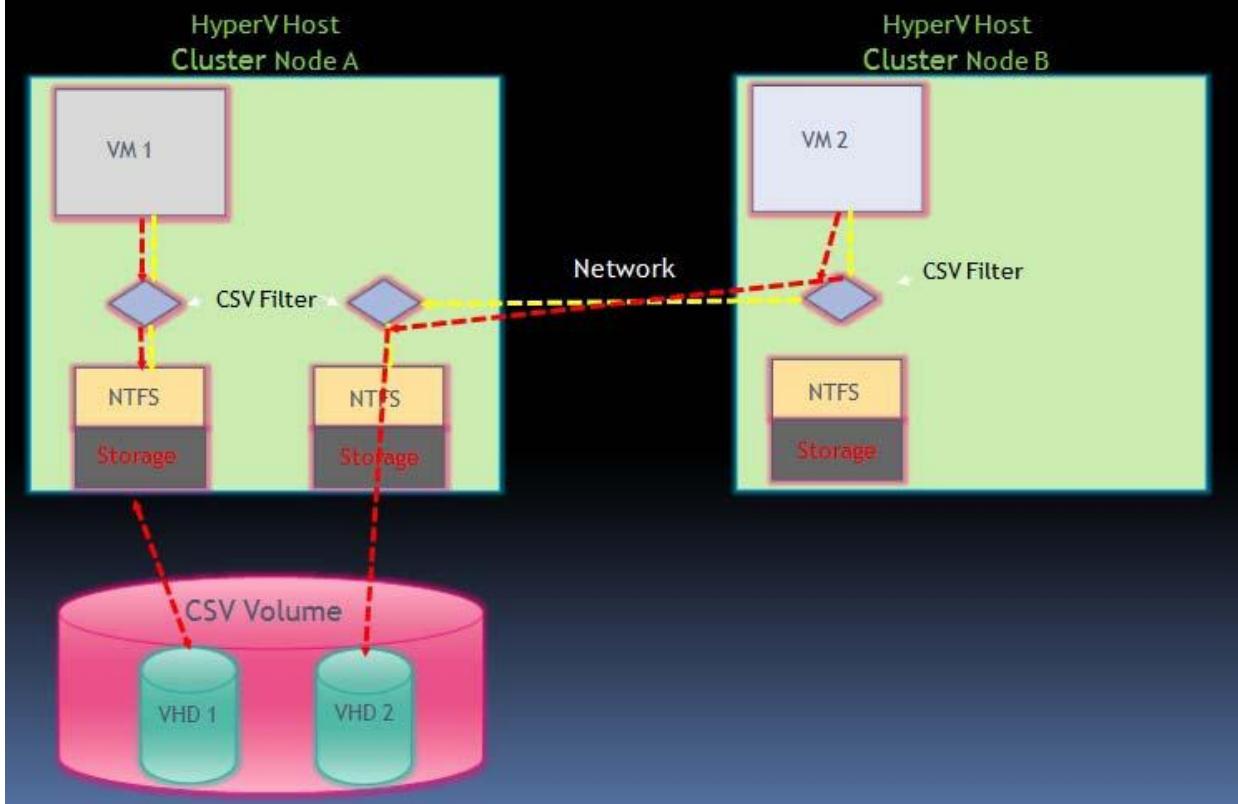
You use Hyper-V server 2008 R2 and failover clustering to host several virtual machines (VMs). You plan to perform a Volume Shadow Copy (VSS) backup of a Cluster Shared Volume (CSV). You need to ensure that resources can continue to use the CSV during the VSS backup. What should you do?

- A. Turn on maintenance mode for the CSV.
- B. Configure your VSS-aware backup utility as a generic application in failover clustering.
- C. Use Failover Cluster Manager to remove dependences from your disk resources.
- D. Turn on redirected access for the CSV.

Answer: D

Explanation:

How Redirected I/O Works



Cluster shared Volumes (CSV) is a new feature implemented in Windows Server 2008 R2 to assist with new scale-up\out scenarios. CSV provides a scalable fault tolerant solution for clustered applications that require NTFS file system access from anywhere in the cluster. In Windows Server 2008 R2, CSV is only supported for use by the Hyper-V role.

The purpose of this blog is to provide some basic troubleshooting steps that can be executed to address CSV volumes that show a Redirected Access status in Failover Cluster Manager. It is not my intention to cover the Cluster Shared Volumes feature. For more information on Cluster Shared Volumes consult TechNet.

Before diving into some troubleshooting techniques that can be used to resolve Redirected Access issues on Cluster Shared Volumes, let's list some of the basic requirements for CSV as this may help resolve other issues not specifically related to Redirected Access.

- Disks that will be used in the CSV namespace must be MBR or GPT with an NTFS partition.
- The drive letter for the system disk must be the same on all nodes in the cluster.
- The NTLM protocol must be enabled on all nodes in the cluster.
- Only the in-box cluster "Physical Disk" resource type can be added to the CSV namespace. No third party storage resource types are supported.
- Pass-through disk configurations cannot be used in the CSV namespace.
- All networks enabled for cluster communications must have Client for Microsoft Networks and File and Printer Sharing for Microsoft Networks protocols enabled.
- All nodes in the cluster must share the same IP subnets between them as CSV network traffic cannot be routed. For multi-site clusters, this means stretched VLANs must be used.

Let's start off by looking at the CSV namespace in a Failover Cluster when all things appear to be 'normal.' In Figure 1, all CSV volumes show Online in the Failover Cluster Management interface.

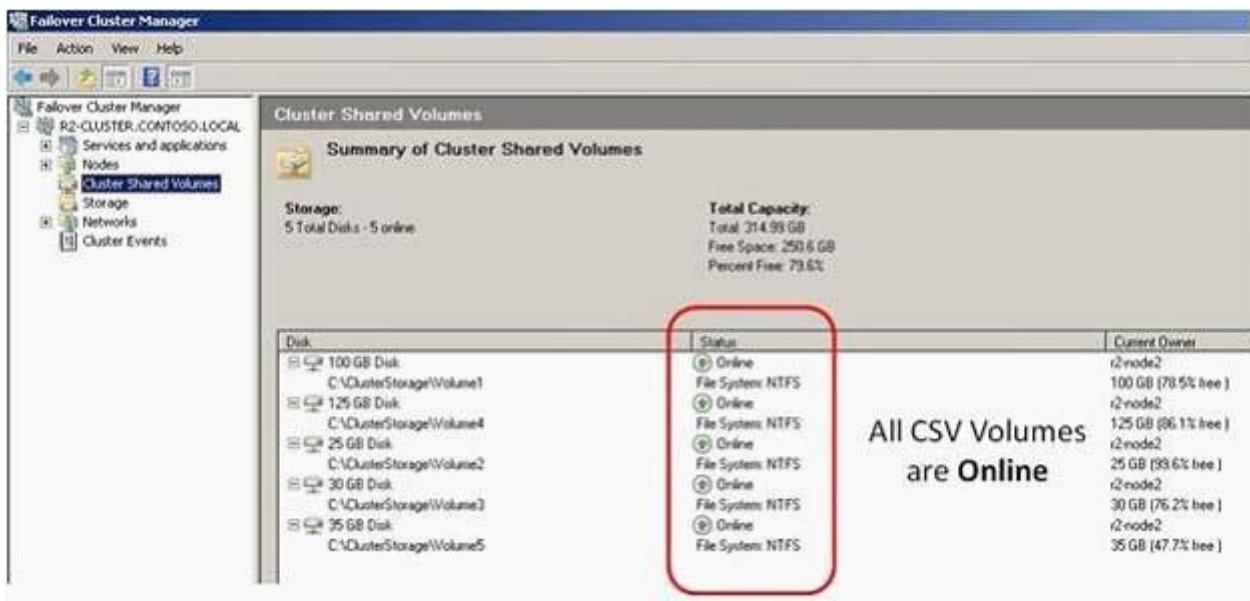


Figure 1

Looking at a CSV volume from the perspective of a highly available Virtual Machine group (Figure 2), the Virtual Machine is Online on one node of the cluster (R2-NODE1), while the CSV volume hosting the Virtual Machine files is Online on another node (R2-NODE2) thus demonstrating how CSV completely disassociates the Virtual Machine resources (Virtual Machine; Virtual Machine Configuration) from the storage hosting them.

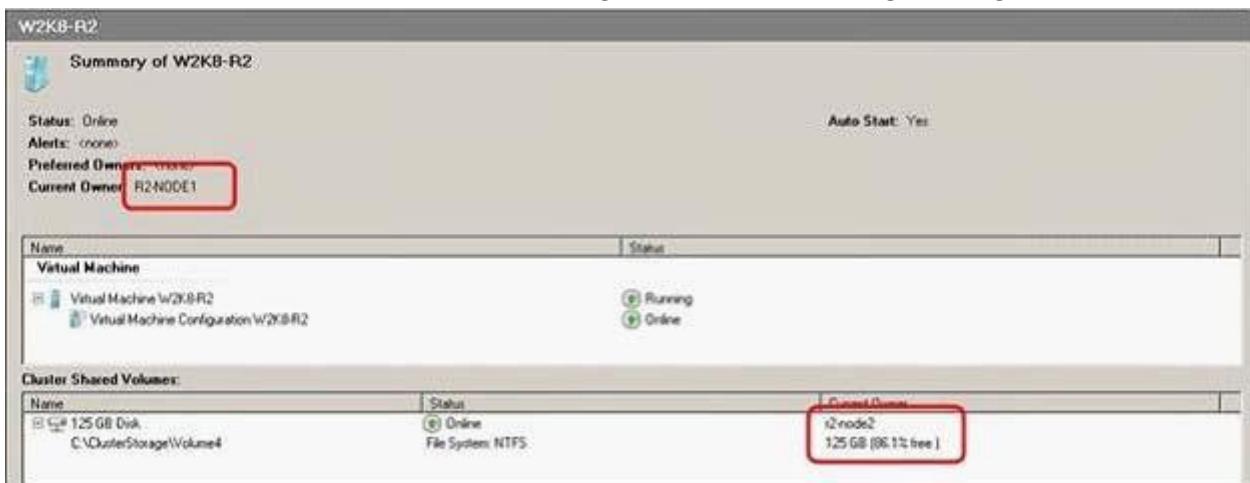
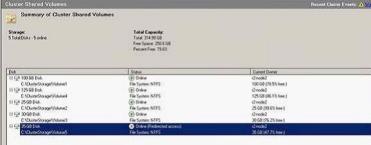


Figure 2

When all things are working normally (no backups in progress, etc...) in a Failover Cluster with respect to CSV, the vast majority of all storage I/O is Direct I/O meaning each node hosting a virtual machine(s) is writing directly (via Fibre Channel, iSCSI, or SAS connectivity) to the CSV volume supporting the files associated with the virtual machine(s). A CSV volume showing a Redirected Access status indicates that all I/O to that volume, from the perspective of a particular node in the cluster, is being redirected over the CSV network to another node in the cluster which still has direct access to the storage supporting the CSV volume. This is, for all intents and purposes, a 'recovery' mode. This functionality prevents the loss of all connectivity to storage. Instead, all storage related I/O is redirected over the CSV network. This is very powerful technology as it prevents a total loss of connectivity thereby allowing virtual machine workloads to continue functioning. This provides the cluster administrator an opportunity to evaluate the situation and live migrate workloads to other nodes in the cluster not experiencing connectivity issues. All this happens behind the scenes without users knowing what is going on. The end result may be slower performance (depending on the speed of the network interconnect, for example, 10 GB vs. 1 GB) since we are no longer using direct, local, block level access to storage. We are, instead, using remote file system access via the network using SMB.

There are basically four reasons a CSV volume may be in a Redirected Access mode.



- The user intentionally places the CSV Volume in Redirected Access mode.
 - There is a storage connectivity failure for a node in which case all I/O is redirected over a cluster network designated for CSV traffic to another node.
 - A backup of a CSV volume is in progress or failed.
 - An incompatible filter driver is installed on the node.
- Lets' take a look at a CSV volume in Redirected Access mode (Figure 3).

Figure 3

When a CSV volume is placed in Redirected Access mode, a Warning message (Event ID 5136) is registered in the System Event log. (Figure 4).

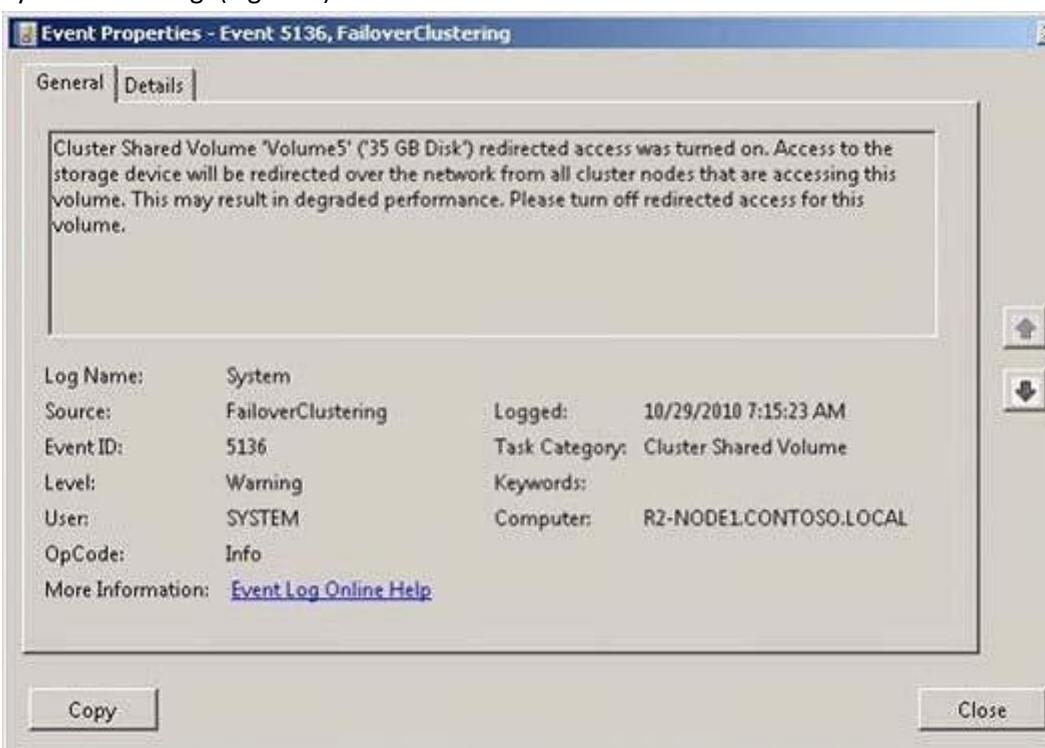


Figure 4

For additional information on event messages that pertain specifically to Cluster Shared Volumes please consult TechNet.

Let's look at each one of the four reasons I mentioned and propose some troubleshooting steps that can help resolve the issue.

User intentionally places a CSV volume in Redirected Access mode:

Users are able to manually place a CSV volume in Redirected Access mode by simply selecting a CSV volume, Right-Click on the resource, select More Actions and then select Turn on redirected access for this Cluster shared

volume(Figure 5).

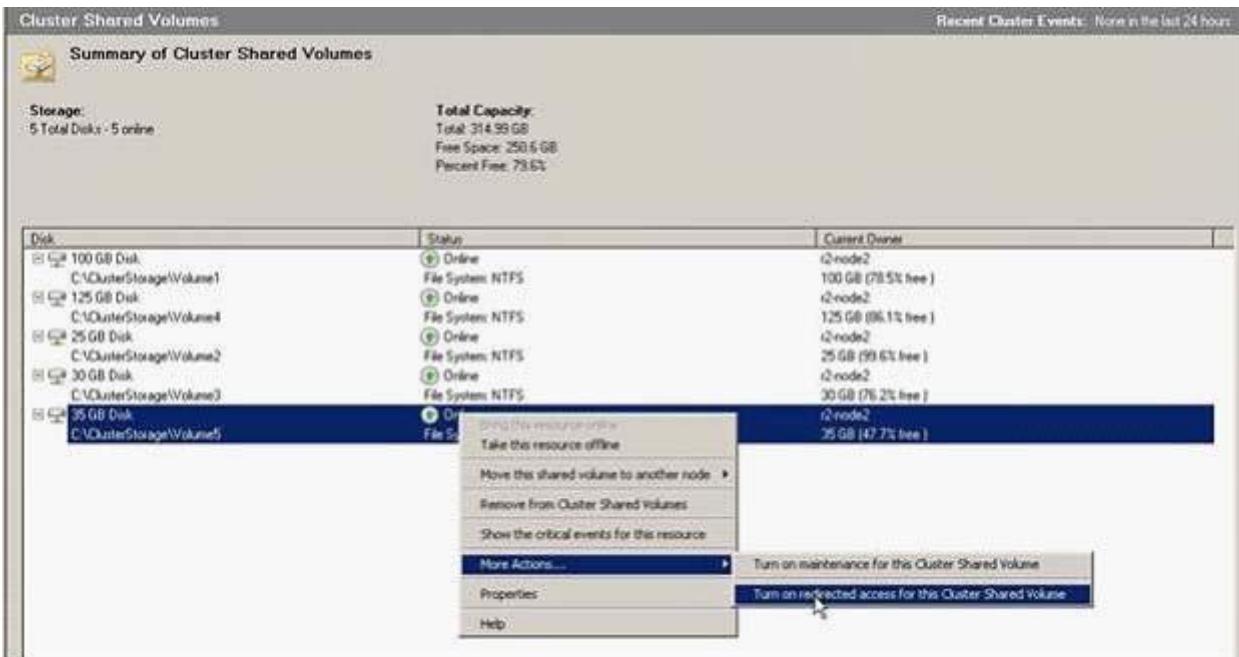


Figure 5

Therefore, the first troubleshooting step should be to try turning off Redirected Access mode in the Failover Cluster Management interface.

2. There is a storage connectivity issue: When a node loses connectivity to attached storage that is supporting a CSV volume, the cluster implements a recovery mode by redirecting storage I/O to another node in the cluster over a network that CSV can use. The status of the cluster Physical Disk resource associated with the CSV volume is **Redirected Access** and all storage I/O for the associated virtual machine(s) being hosted on that volume is redirected over the network to another node in the cluster that has direct access to the CSV volume. This is by far the number one reason CSV volumes are placed in **Redirected Access** mode.

Troubleshoot this as you would any other loss of storage connectivity on a server. Involve the storage vendor as needed. Since this is a cluster, the cluster validation process can also be used as part of the troubleshooting process to test storage connectivity.

Look for the following event ID in the system event log.

Log Name: System

Source: Microsoft-Windows-FailoverClustering

Date: 10/8/2010 6:16:39 PM

Event ID: 5121

Task Category: Cluster Shared Volume

Level: Error

Keywords:

User: SYSTEM

Computer: Node1.cluster.com

Description: Cluster Shared Volume 'DATA-LUN1' ('DATA-LUN1') is no longer directly accessible from this cluster node. I/O access will be redirected to the storage device over the network through the node that owns the volume. This may result in degraded performance. If redirected access is turned on for this volume, please turn it off. If redirected access is turned off, please troubleshoot this node's connectivity to the storage device and I/O will resume to a healthy state once connectivity to the storage device is reestablished.

3.A backup of a CSV volume fails: When a backup is initiated on a CSV volume, the volume is placed in **Redirected Access** mode. The type of backup being executed determines how long a CSV volume stays in redirected mode. If a software backup is being executed, the CSV volume remains in redirected mode until the backup completes.

If hardware snapshots are being used as part of the backup process, the amount of time a CSV volume stays in redirected mode will be very short.

For a backup scenario, the CSV volume status is slightly modified. The status actually shows asBackup in progress, Redirected Access (Figure 6) to allow you to better understand why the volume was placed in Redirected Access mode. When the backup application completes the backup of the volume, the cluster must be properly notified so the volume can be brought out of redirected mode.

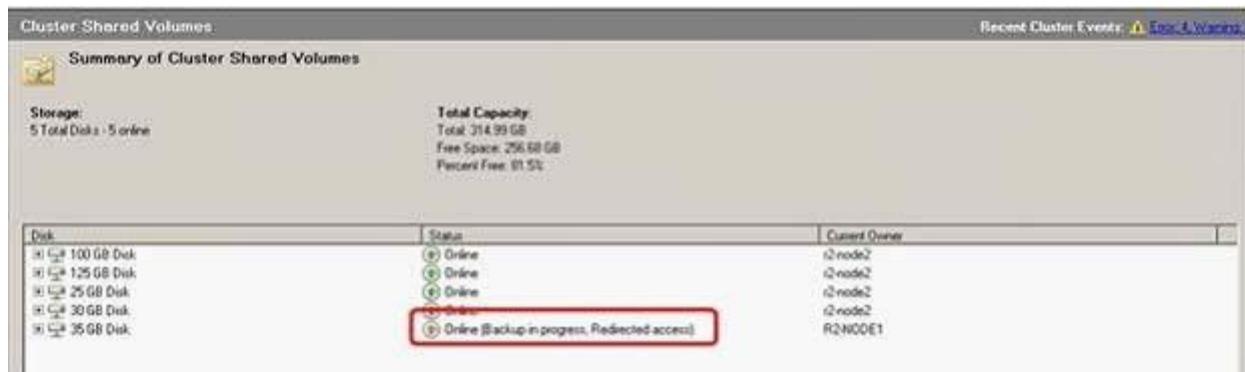


Figure 6

A couple of things can happen here. Before proceeding down this road, ensure a backup is really not in progress. The first thing that needs to be considered is that the backup completes but the application did not properly notify the cluster that it completed so the volume can be brought out of redirected mode. The proper call that needs to be made by the backup application is `ClusterClearBackupStateForSharedVolume` which is documented on MSDN. If that is the case, you should be able to clear the Backup in progress, Redirected Access status by simulating a failure on the CSV volume using the cluster PowerShell cmdlet `Test-ClusterResourceFailure`.

Using the CSV volume shown in Figure 6, an example would be –

`Test-ClusterResourceFailure "35 GB Disk"`

If this clears the redirected status, then the backup application vendor needs to be notified so they can fix their application.

The second consideration concerns a backup that fails, but the application did not properly notify the cluster of the failure so the cluster still thinks the backup is in progress. If a backup fails, and the failure occurs before a snapshot of the volume being backed up is created, then the status of the CSV volume should be reset by itself after a 30 minute time delay. If, however, during the backup, a software snapshot was actually created (assuming the application creates software snapshots as part of the backup process), then we need to use a slightly different approach. To determine if any volume shadow copies exist on a CSV volume, use the `vssadmin` command line utility and `runvssadmin list shadows` (Figure 7).

```
C:\Users\administrator.CONTOSO>vssadmin list shadows
vssadmin 1.1 - Volume Shadow Copy Service administrative command-line tool
(C) Copyright 2001-2005 Microsoft Corp.

Contents of shadow copy set ID: {2fcfb968c-7b52-452e-#5c1-#863b42d8bf9}
  Contained 1 shadow copies at creation time: 10/22/2010 2:18:56 PM
    Shadow Copy ID: {5c2526d5-#9bc-4db5-#1c1-#46bfa6d4bf06}
      Original Volume: \\?\GLOBALROOT\Device\HarddiskVolumeShadowCopy1
      Shadow Copy Volume: \\?\GLOBALROOT\Device\HarddiskVolumeShadowCopy1
      Originating Machine: R2-NODE1.CONTOSO.LOCAL
      Service Machine: R2-NODE1.CONTOSO.LOCAL
      provider: 'Microsoft Software Shadow Copy provider 1.0'
      Type: ClientAccessible
      Attributes: Persistent, Client-accessible, No auto release, No writers, Differential

C:\Users\administrator.CONTOSO>
```

Figure 7

Figure 7 shows there is a shadow copy that exists on the CSV volume that is in Redirected Access mode. Use the `vssadmin` utility to delete the shadow copy (Figure 8). Once that completes, the CSV volume should come Online normally. If not, change the Coordinator node by moving the volume to another node in the cluster and verify the volume comes Online.

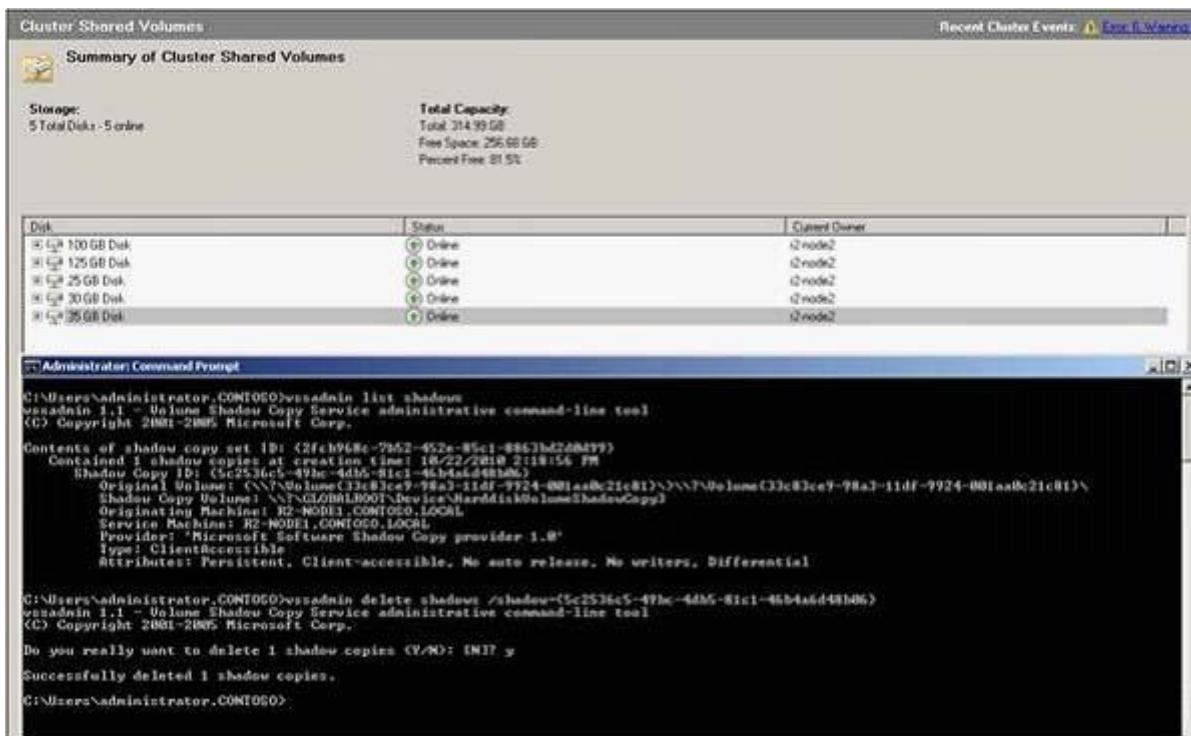


Figure 8

4.An incompatible filter driver is installed in the cluster:The last item in the list has to do with filter drivers introduced by third party application(s) that may be running on a cluster node and are incompatible with CSV.

When these filter drivers are detected by the cluster, the CSV volume is placed in redirected mode to help prevent potential data corruption on a CSV volume.When this occurs anEvent ID 5125[EC4]Warningmessage is registered in the System Event Log.Here is a sample message – 17416 06/23/2010 04:18:12 AMWarning<node_name>5125Microsoft-Windows-FailoverClusterin Cluster Shared Vol NT AUTHORITY\SYSTEMCluster Shared Volume 'Volume2' ('Cluster Disk 6') has identified one or more active filter drivers on this device stack that could interfere with CSV operations. I/O access will be redirected to the storage device over the network through another Cluster node. This may result in degraded performance. Please contact the filter driver vendor to verify interoperability with Cluster Shared Volumes.

Active filter drivers found: <filter_driver_1>,<filter_driver_2>,<filter_driver_3>

The cluster log will record warning messages similar to these –

7c8:088.06/10[06:26:07.394](000000) WARN[DCM] filter <filter_name> found at unsafe altitude <altitude_numeric>
 7c8:088.06/10[06:26:07.394](000000) WARN[DCM] filter <filter_name>found at unsafe altitude <altitude_numeric>
 7c8:088.06/10[06:26:07.394](000000) WARN[DCM] filter <filter_name>found at unsafe altitude <altitude_numeric>
 Event ID 5125 is specific to a file system filter driver.If, instead, an incompatible volume filter driver were detected, anEvent ID 5126would be registered.For more information on the difference between file and volume filter drivers, consultMSDN.

Note:Specific filter driver names and altitudes have been intentionally left out.The information can be decoded by downloading the ‘File System Minifilter Allocated Altitudes’ spreadsheetposted on the Windows Hardware Developer Central public website. Additionally, thefltmcc.exe command line utility can be run to enumerate filter drivers.An example is shown in Figure 9.

Filter	Volume Name	Altitude	Instance Name	Frame	UIStatus
CSVFilter	\Device\Map	4849000	CSVFilter Instance	0	
CSVFilter	C:	4849000	CSVFilter Instance	0	
CSVFilter		4849000	CSVFilter Instance	0	
CSVFilter		4849000	CSVFilter Instance	0	
CSVFilter		4849000	CSVFilter Instance	0	
CSVFilter		4849000	CSVFilter Instance	0	
CSVFilter		4849000	CSVFilter Instance	0	
luafv	C:	1350000	luafv	0	

Figure 9

Once the Third Party filter driver has been identified, the application should be removed and\or the vendor contacted to report the problem. Problems involving Third Party filter drivers are rarely seen but still need to be considered. Hopefully, I have provided information here that will get you started down the right path to resolving issues that involve CSV volumes running in a Redirected Access mode.

Question: 20

You have a stand-alone server named SERVER01 that runs Windows Server 2008 R2 Enterprise with service Pack 1 and Hyper-V. The server hosts 12 virtual machines (VMs). You add Hyper-V on a new server named SERVER02. SERVER02 runs Windows Server 2008 R2 Enterprise. One of the VMs on SERVER01 is configured to use dynamic memory. You export the VM.

The VM cannot be imported on SERVER02. You prepare to export the VM again.

You need to ensure that the exported VM can be imported on SERVER02.

What should you do?

- A. Remove all DVD drive media from the VM.
- B. Configure the VM to use static memory.
- C. Start the VM and allow it to run.
- D. Start and then pause the VM.

Answer: B

Explanation:

You cannot export a paused VM.

Caution When Export Dynamic Memory enabled Virtual Machine

You will see below warning when try to export a Dynamic Memory enabled Virtual machine.



You can export and import this Virtual machine when your physical host is running on R2 with SP1.

SERVER02 runs Windows Server 2008 R2 Enterprise WITHOUT SP1

However, if you export and import to Hyper V R2 (without SP1), then the import will fail. To avoid this issue, change the memory to "Static" if you would like the VM to run on Hyper V R2 (without SP1).

<http://www.ms4u.info/2010/11/caution-when-export-dynamic-memory.html>

Question: 21

You use Hyper-V Server 2008 R2 and failover clustering to host several virtual machines (VMs). You need to place a disk in maintenance mode.

Which Windows PowerShell cmdlet should you run?

- A. Suspend-ClusterResource
- B. Stop-ClusterResource
- C. Set-ClusterResourceDependency
- D. Block- ClusterAccess

Answer: A

Explanation:

Suspend-ClusterResource: Turn on maintenance for a disk resource or Cluster Shared Volume so that you can run a disk maintenance tool without triggering failover.

Block-ClusterAccess: Prevent the specified user or users from accessing a failover cluster.

Stop-Cluster: Stop the Cluster service on all nodes in a failover cluster, which will stop all services and applications configured in the cluster.

Add-ClusterResourceDependency : Add a resource to the list of resources that a particular resource depends on (using AND as the connector) within a failover cluster. Existing dependencies will remain in the list.

Set-ClusterResourceDependency : Specify the resources that a particular resource depends on within a failover cluster. Existing dependencies will be overwritten by the dependencies that you specify.

Syntax

Suspend-ClusterResource [-InputObject <psobject>] [[-Name] <string>] [-Cluster <string>] [-Force] [-RedirectedAccess] [-VolumeName <string>] [<CommonParameters>]

Detailed Description

This cmdlet applies to disks and Cluster Shared Volumes only. For Cluster Shared Volumes, turning on maintenance takes dependent resources offline, which interrupts client access. For other disks (LUNs) in cluster storage, turning on maintenance leaves dependent resources online.

C:\PS>

Stop-Cluster cluster1

Description

This command stops the Cluster service on all nodes in cluster1, which will stop all services and applications configured in the cluster.

Question: 22

A company has a Windows server 2008 R2 Hyper-V server environment. You need to back up the Windows Authorization Manager (AzMan) policy.

What should you back up?

- A. the InitialStore.ini file
- B. the InitialStore.xml file
- C. the System state
- D. the registry

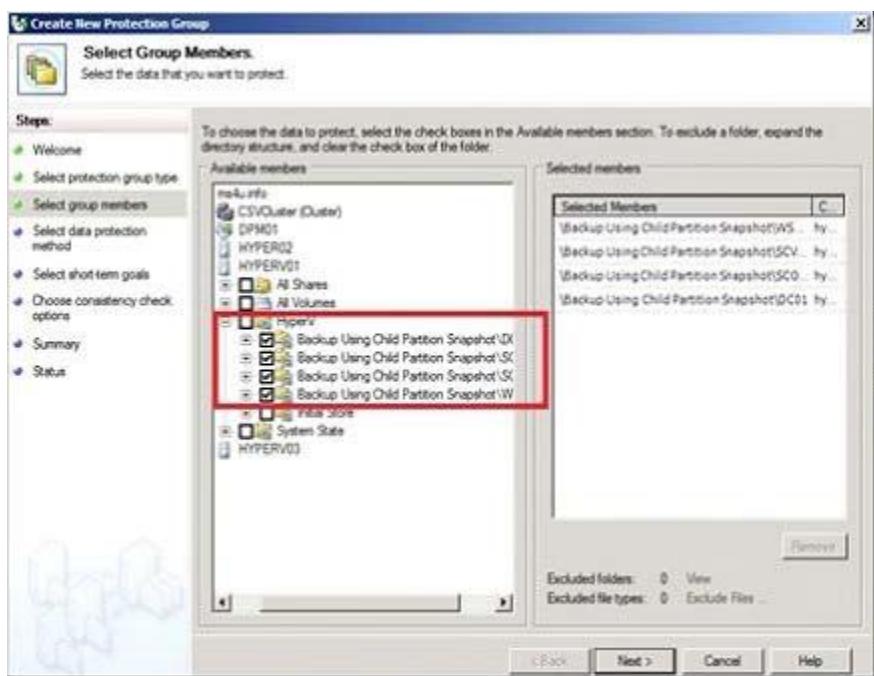
Answer: B

Explanation:

Easy way is navigate to the location where InitialStore.xml is residing and manual backup the file.



Another way is by using DPM 2010. Normally we overlook the setting and click Next all the way. Let me show you the place where the Initial Store is? This picture is taken from my previous article. Concentrate looking at below the “red box”.



Tick Initial Store will automatically backup AzMan configuration.

The initial store contains the security permissions for Hyper-V’s Authorization Manager (azman). This is an xml file located in %systemdrive%\ProgramData\Microsoft\Windows\Hyper-V\. You would only need to perform a restore if this xml file becomes corrupt or is deleted somehow.

Backing up virtual machines and the initial store are independent of each other. You only need to back up the initial store if you are using the Authorization Manager in Hyper-V and don’t want to lose your settings.

<http://www.ms4u.info/2011/06/backup-azman-using-dpm-2010.html>

Authorization Manager

Authorization Manager provides a flexible framework for integrating role-based access control into applications.

It enables administrators who use those applications to provide access through assigned user roles that relate to job functions.

Authorization Manager applications store authorization policy in the form of authorization stores that are stored in Active Directory Domain Services (AD DS), Active Directory Lightweight Directory Services (AD LDS), XML files, or Microsoft SQL Server databases. These policies are then applied at runtime.

[http://technet.microsoft.com/en-us/library/cc726036\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc726036(WS.10).aspx)

Question: 23

You have a windows server 2008 R2 Hyper-V server. The virtual machines (VMs) that are hosted on the server have directly attached physical disks. You need to back up the VMs and the Hyper-V configuration. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two)

- A. Perform a critical-volume backup on the host server.
- B. Perform a full server backup on the VM.
- C. Perform a critical-volume backup on the VM.
- D. Perform a full server backup on the host server.

Answer: A,B

Explanation:

The Jury is out on this one! (AB)

You need to back up the Hyper-V configuration. A: Perform a critical-volume backup on the host server. Because VMs have directly attached physical disks so don't need full backup for server.

You need to back up the VMs have directly attached physical disks. B: Perform a full server backup on the VM. Backing Up Hyper-V Virtual Machines Understanding the backup options and considerations The backup integration service and the Hyper-V Volume Shadow Copy Service (VSS) Writer provide the mechanism for backing virtual machines as well as system-wide settings that apply to Hyper-V. There are two basic methods you can use to perform a backup. You can:

- Perform a backup from the server running Hyper-V. Using this method to perform a full server backup is the recommended method because it captures more data than the other method. If the storage is compatible with Hyper-V and the Hyper-V VSS Writer, you can perform a full server backup that helps protect all of the data required to fully restore the server. The data included in such a backup includes the configuration of virtual machines and virtual networks, snapshots associated with the virtual machines, and virtual hard disks used by the virtual machines. As a result, using this method can make it easier to recover the server if the need arises, because you will not have to recreate virtual machines or system-wide settings such as virtual networks.
- Perform a backup from within the guest operating system of a virtual machine. This method is useful when you need to back up data from storage that is not supported by the Hyper-V VSS writer.

Storage considerations As you plan your backup strategy, consider the compatibility between the storage and backup solutions:

- Virtual hard disks offer the best compatibility and can be stored on many types of physical media.

For more information about the types of storage you can use with Hyper-V, see "Hardware Considerations" in the Hyper-V Planning and Deployment Guide on TechNet

(<http://technet.microsoft.com/en-us/library/cc816844.aspx>).

- Network-based storage such as shared folders should be used with caution. If the network-based storage is unavailable when a backup is attempted, the backup will fail.
- Physical disks that are directly attached to a virtual machine (sometimes referred to as 'passthrough disks') cannot be backed up by the Hyper-V VSS writer. As a result, this type of disk will not be included in any backup performed by a backup program that uses the Hyper-V VSS writer.

In this situation, you would need to use some other process to back up the physical disk. For example, you could run a backup of the data on the iSCSI storage from a backup application running in the guest operating system.

· Storage accessed from a virtual machine by using an Internet SCSI (iSCSI) initiator within the guest operating system will not be included in a backup of the physical computer. In this scenario, you must use another process to back up the data from the iSCSI-based storage before you perform a full server backup. For example, you could run a backup of the data on the iSCSI storage from a backup application running in the guest operating system.

· iSCSI-based storage is supported for backup by the Hyper-V VSS writer when the storage is connected through the parent partition and the storage is used for virtual hard disks.

<http://blogs.technet.com/b/virtualization/archive/2008/08/29/backing-up-hyper-v-virtualmachines.aspx> Physical disks that are directly attached to a virtual machine. These disks cannot be backed up by the Hyper-V VSS writer. As a result, this type of disk will not be included in any backup performed by a backup program that uses the Hyper-V VSS writer. In this situation, you would need to use some other process to back up the physical disk, such as running a backup application within the guest operating system.

[http://technet.microsoft.com/en-us/library/dd252619\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/dd252619(v=ws.10).aspx)

Physical disks that are directly attached to a virtual machine.

These disks cannot be backed up by the Hyper-V VSS writer. As a result, this type of disk will not be included in any backup performed by a backup program that uses the Hyper-V VSS writer. In this situation, you would need to use some other process to back up the physical disk, such as running a backup application within the guest operating system.

Perform a backup from the server running Hyper-V.

We recommend that you use this method to perform a full server backup because it captures more data than the other method. If the backup application is compatible with Hyper-V and the Hyper-V VSS writer, you can perform a full server backup that helps protect all of the data required to fully restore the server, except the virtual networks. The data included in such a backup includes the configuration of virtual machines, snapshots associated with the virtual machines, and virtual hard disks used by the virtual machines. As a result, using this method can make it easier to recover the server if you need to, because you do not have to recreate virtual machines or reinstall Hyper-V. However, virtual networks are not included in a full server backup. You will need to reconfigure the virtual networking by recreating the virtual networks and then reattaching the virtual network adapters in each virtual machine to the appropriate virtual network. As part of your backup planning, make sure you document the configuration and all relevant settings of your virtual network if you want to be able to recreate it.

<http://technet.microsoft.com/en-us/library/dd252619%28v=ws.10%29.aspx>

Question: 24

A company has a server that runs Microsoft System Center Virtual Machine Manager (VMM) 2008 R2, System Center Data Protection manager (DPM) 2010, and Windows Server 2008 R2 with Hyper-V. A Hyper-V host has a virtual machine (VM) that uses a basic disk. You need to perform a backup of the VM configuration and its virtual hard disk while minimizing downtime. What should you do?

- A. Perform an offline backup by using DPM.
- B. Perform an online backup by using DPM.
- C. Perform a system state backup by using windows Server Backup.
- D. Perform a VMM database backup by using VMM.

Answer: B

Explanation:

Backing up Hyper-V

Host-Based Backups One exciting benefit of server virtualization is the prospect of no longer having to individually back up the virtualized systems. Now that these systems are simply files living on a host's file system, you can just back up the files and call it a day, right? Not exactly. Because these are live computers consisting of in-memory data, data on disk, system configurations, and open files, there are a few things to consider. So how do we ensure backup data consistency given all these moving parts?

A significant improvement to the Windows Server backup story came with Windows Server 2003 and the advent of VSS, which provides a standard set of extensible APIs that VSS writers (hooks in applications and services that help provide consistent shadow copies) use in order to create backups of open files and applications. With the help of the VSS service, providers, and writers, the backup application can generate a point-in-time copy of a volume very quickly, one that the application is aware of and can process appropriately. Hyper-V comes with its own VSS writer that allows software makers to create compelling backup solutions. The writer lets backup applications achieve host-based VSS

backups of running VMs. If the operating system running within the VM has the Hyper-V Integration Components installed as well as the VSS service (available in Windows XP SP1 and Windows Server 2003 and later), the host-based backup will occur as if it were run inside the guest; the backup will be performed with the VM running and the data will be consistent (see Figure 4).

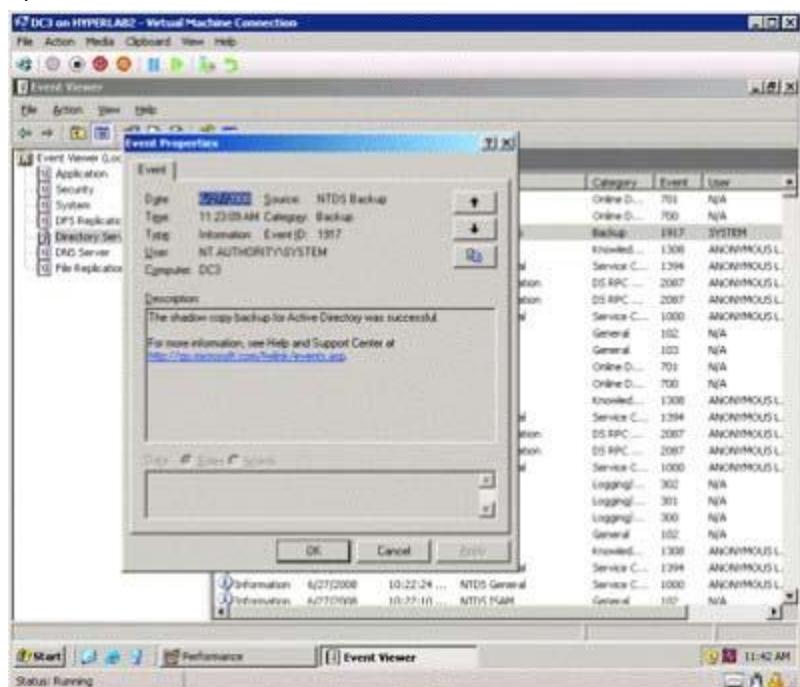


Figure 4 VSS backup (Click the image for a larger view)

However, if the guest operating system does not support the Integration Components or VSS, the backup process requires that the guest machine be put into a saved state and that a host-based VSS snapshot is taken of VM data files that can be used for point-in-time recovery. Saved-state VSS snapshots will incur some VM downtime (this can typically be limited to 5-10 minutes), with full backup-to-tape procedures taking place against the VSS copy of the data. Guest-Based Backups In a physical environment, servers and applications need to be backed up on an individual basis, and such backups can certainly continue in a virtualized datacenter. In this situation, the same considerations need to be taken into account when backing up a VM, such as network capacity requirements for network-based backups and performance impact to the system during the backup window. With guestbased backups, you can choose to have a dedicated physical NIC in the host that is bound to a virtual network that all guests use.

Windows Server Backup Included with Windows Server 2008 is the VSS-capable Windows Server Backup (WSB), which can be used to perform Hyper-V host- and guest-based backups of your VMs. Because it's fully VSS-capable, it can perform host-based backups of your running VMs, which of course is preferable.

But if you have VMs without the Integration Components installed, VSS will not be used. In that case, you have a couple of options from which to choose. You can still use WSB to back up a VM that does not have the Integration Components installed, which means the VM's state will be saved and then the backup will grab the VM's virtual disks and configuration files. However, this may not be desirable with an application such as Exchange because the application will not be aware a backup has run and application logs will not be truncated. Moreover, downtime will occur on the VM, which will vary depending on how long the backup takes.

Alternatively, a backup can be run from inside the VM just as if it were a physical machine using either NTBackup or WSB, depending on the VM's OS. Let's see how to use WSB for supported guests that have the Integration Components installed.

Backing up VMs with WSB Hyper-V does not automatically register its VSS writer for use with WSB. You must manually add the registry key and value shown in Figure 5 before WSB will support a Hyper-V backup. You can add them via the command line, like so:

Copy Code

```
reg add "HKLM\Software\Microsoft\windows nt\
```

```
currentversion\WindowsServerBackup\Application  
Support\{66841CD4-6DED-4F4B-8F17-FD23F8DDC3DE}"  
reg add "HKLM\Software\Microsoft\windows nt\  
currentversion\WindowsServerBackup\Application  
Support\{66841CD4-6DED-4F4B-8F17-FD23F8DDC3DE}" /v  
"Application Identifier" /t REG_SZ /d Hyper-v
```

Question: 25

You take daily snapshots of a virtual machine (VM). You need to restore the state of the VM as it was three days ago onto another host server and minimize the storage space requirements. What should you do first?

- A. Export the VM.
- B. Export all snapshots.
- C. Export only one snapshot.
- D. Merge all snapshots.

Answer: A

Explanation:

Understanding Hyper-V Snapshots So what is a Snapshot exactly. A Snapshot in Hyper-V is basically a spot in time where the current running configuration of the Virtual Machines is saved to a Snapshot Differencing Disk file (AVHD), from which you can return to from the future. This point in time is linked back to the original VHD Base disk. When you take another Snapshot it links to the first snapshot which links the the Base VHD (like a daisy chain).

<http://networkfoo.org/server-infrastructure/recovering-your-virtual-machine-how-manually-mergehypervsnapshots-back-one>

<http://social.technet.microsoft.com/Forums/is/winserverhyperv/thread/6ca61c0b-70a9-4cc2-a012-331098eba738>

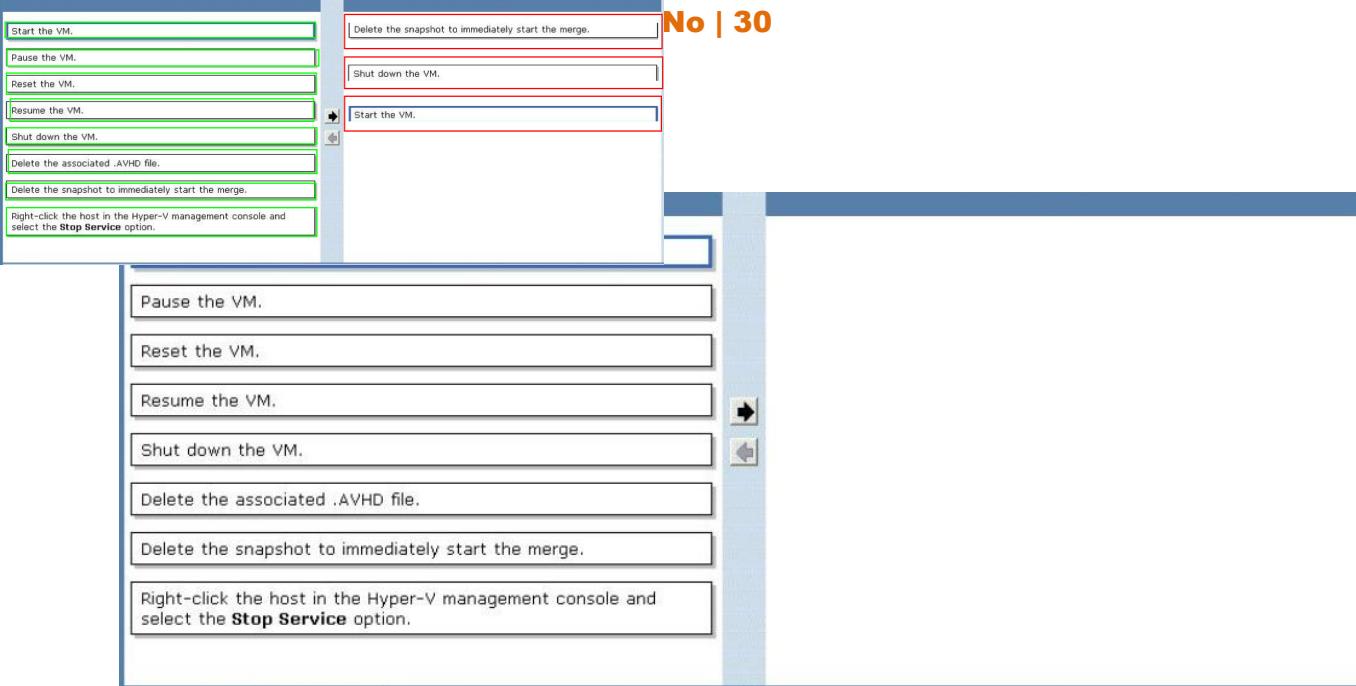
http://blogs.msdn.com/b/virtual_pc_guy/archive/2008/08/26/hyper-v-export-import-part-1.aspx

Question: 26

DRAG DROP

You create a snapshot of a running virtual machine (VM) before installing a new application. You receive an alert that the host is running low on disk space on the volume where you took a snapshot of the VM.

You need to free up disk space on the volume while ensuring that future restarts of the VM are successful. Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and I arrange them in the correct order.)

**Answer:****Explanation:**

Ref: [http://technet.microsoft.com/en-us/library/dd560637\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/dd560637(v=ws.10).aspx)

Question: 27

Your virtual environment includes a Windows Server 2008 R2 Hyper-V failover cluster. You manage the environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You need to configure the live migration network priorities for all virtual machines (VMS). What should you do?

- In Failover Cluster Manager, edit the properties of a single VM.
- In Hyper-V Manager, take each VM offline and edit the settings of each VM.
- Enable Cluster Shared Volumes (CSVs).
- In Virtual Network Manager, edit the properties of the virtual network.

Answer: A**Explanation:**

Managing the network used for Cluster Shared Volumes

Failover clusters include a setting to prioritize the networks used for communication between the nodes in the cluster and for the network used for CSV traffic. You can identify the network used for CSV traffic and change the settings of the network using the Windows PowerShell cmdlet, Get-ClusterNetwork.

Each network in a cluster has two settings for network prioritization – Metric and AutoMetric. The Metric setting is used to determine the priority of the network (the network with the lowest value is the most preferred for CSV). The

AutoMetric setting identifies whether the Metric setting was set manually or automatically by the failover cluster. For private networks, the Metric settings are between 1000 and 10,000, and for public networks, the Metric settings start at 10,000.

Live migration will be attempted in the order of the networks specified in the list of cluster networks. If the connection to the destination node using the first network is not successful, the next network in the list is used until the complete list is exhausted, or there is a successful connection to the destination node using one of the networks.

Initiate a live migration of a virtual machine You can use either Failover Cluster Manager or PowerShell to initiate live migration to move a virtual machine from one node to another node in a failover cluster.

The amount of time it takes to move a virtual machine using live migration is dependent on the following items:

The network connection speed and bandwidth that is available between the source cluster node and the destination cluster node.

The load on the source cluster node and the destination cluster node.

The amount of RAM configured for the virtual machine.

Question: 28

Your company has a Microsoft Hyper-V Server 2008 failover cluster and a Microsoft Hyper-V Server 2008 R2 failover cluster.

You manage the virtual environment by using Microsoft System center Virtual Machine Manager (VMM) 2008 R2.

You need to ensure that you can migrate child partitions between the failover clusters.

What are two possible methods that you can use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. network migration
- B. live migration
- C. SAN migration
- D. quick migration

Answer: A,C

Explanation:

Migrate child partitions between failover clusters

- Network
- SAN

[http://technet.microsoft.com/en-us/library/ff182337\(v=WS.10\).aspx](http://technet.microsoft.com/en-us/library/ff182337(v=WS.10).aspx)

Question: 29

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You manage MAC addresses in Hyper-V by using the MinimumMacAddress and MaximumMacAddress registry keys.

The company is experiencing a high number of MAC address collisions.

You need to lower the number of collisions, provide room for growth, and lower the administration requirements for MAC addresses.

What should you do first?

- A. Change the MaximumMacAddress registry key on each host server to a higher number in the first three octets.
- B. Remove the MinimumMacAddress and MaximumMacAddress registry keys on each host server, and restart the Virtual Machine Management Service.
- C. Change the MaximumMacAddress registry key on each host server to a higher number in the last three octets.

D. Change the MinimumMacAddress registry key on each host server to a lower number in the last three octets.

Answer: B

Explanation:

<http://www.virtualizationadmin.com/articles-tutorials/microsoft-hyper-v-articles/networking/macaddress-poolduplication-hyper-v.html>

<http://buildyourwindows.blogspot.com.au/2011/11/hyper-v-mac-addresses-duplication-org>

Question: 30

You install Windows Server 2008 R2 Enterprise (Full Installation).

You need to add the Hyper-V role to the server.

What are two possible ways to achieve this goal?

(Each correct answer presents a complete solution. Choose two.)

- A. Run the start /w hvconfig command.
- B. Run the start /w ocsetup Microsoft-Hyper-V command.
- C. Run the Add-WindowsFeature Hyper-V PowerShell cmdlet.
- D. Run the Add-WindowsFeature RSAT-Hyper-V PowerShell cmdlet.

Answer: B,C

Explanation:

You can install Hyper-V on either a full installation or a Server Core installation. You can use Server Manager to install Hyper-V on a full installation, as described in the following procedure. To install on a Server Core installation, you must perform the installation from a command prompt. Run the following command:

Start /w ocsetup Microsoft-Hyper-V

Windows PowerShell cmdlets for Server Manager

Windows PowerShell cmdlets for Server Manager accept parameters to install or remove one or more roles, role services, and features that are separated by commas.

The following three cmdlets let you install, remove, or view information about available roles by using Windows PowerShell. For more information about and examples of how to use any of these cmdlets, in a Windows PowerShell session into which the Server Manager module is loaded, enter Get-Help cmdlet_name-full, in which cmdlet_name represents one of the following values.

Add-WindowsFeature Installs specified roles, role services, and features on the computer. For more information about how to add roles, role services, and features by using this cmdlet, see Adding Server Roles and Features.

Get-WindowsFeature Returns a list of all roles, role services, and features that are available for installation on the computer, and displays by using check boxes ([X]) those that are installed. The Get-WindowsFeature cmdlet also returns a list of the command names that you provide in the Add-WindowsFeature and Remove-WindowsFeature cmdlets when you want to add or remove roles, role services, and features. Results of the Get-WindowsFeature cmdlet can be piped into either of the other two Server Manager cmdlets, or into cmdlets that run scans for Best Practices Analyzer, for example.

Remove-WindowsFeature Removes specified roles, role services, and features from the computer. For more information about how to remove roles, role services, and features by using this cmdlet

Question: 31

A company has two Windows Server 2008 R2 Datacenter servers with Hyper-V. A single logical unit number (LUN) is presented to both servers.

The company has the following requirements:

Both hosts must be able to access the LUN simultaneously.

All virtual machines (VMs) will be highly available virtual machines.

You need to configure the environment to meet the company requirements.

Which two actions should you perform? (Each answer presents part of the solution. Choose two.)

- A. Install the Internet Storage Name Server (iSNS) feature.
- B. Install the Network Load Balancing feature.
- C. Install the Failover Clustering feature.
- D. Enable the Clustered Shared Volume (CSV) feature.
- E. Enable dynamic memory on the VMs.
- F. Install the Storage Manager for SANs feature.

Answer: C,D

Question: 32

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. A template in the VMM library can be deployed only to a host server that has a network adapter in the perimeter network (also known as DMZ). You need to configure a host server network adapter to support the template deployment. In the network adapter profile, which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Set the network location to Perimeter Network.
- B. Select the Override discovered network location check box.
- C. Rename the parent network adapter to Perimeter Network.
- D. Set the network tag to Perimeter Network.

Answer: A,D

Question: 33

You add the Hyper-V role to your Windows Server 2008 R2 Datacenter server.

You see the following error in the Windows system event log.

Hyper-V launch failed: No-execute (NX) or DEP not enabled on processor 0x0 (Check BIOS settings).

You need to be able to start the Hyper-V services.

What should you do?

- A. Enable the Intel XD bit (execute disable bit) or AMD NX bit (no execute bit).
- B. Remove and re-add the Hyper-V role.
- C. Restart the Hyper-V Virtual Machine Management service.
- D. Enable the Intel Visualization Technology (Intel VT) or AMD Visualization (AMD-V).

Answer: A

Explanation:

Supported Operating Systems: Hyper-V Server 2008

Processor: x64 compatible processor with Intel VT or AMD-V technology enabled.

Hardware Data Execution Prevention (DEP), specifically Intel XD bit (execute disable bit) or AMD NX bit (no execute bit), must be available and enabled.

Minimum CPU speed: 1.4 GHz; Recommended: 2 GHz or faster

RAM: Minimum: 1 GB RAM; Recommended: 2 GB RAM or greater (additional RAM is required for each running guest operating system); Maximum 1 TB Available disk space: Minimum: 8 GB;

Recommended: 20 GB or greater (additional disk space needed for each guest operating system)

DVD ROM drive

Display: Super VGA (800 × 600) or higher resolution monitor

Other: Keyboard and Microsoft Mouse or compatible pointing device

Note: The actual system requirements will vary based on your system configuration and hosted guest operating systems.

Note: You must have administrative rights on the computer to install Hyper-V Server 2008 R2.

Question: 34

You manage your virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 running on the internal network. You have several host servers in a perimeter network (also known as DMZ).

You are installing VMM agents on the host servers.

You need to ensure that the agents can communicate with the VMM server.

Which two elements should you configure? (Each correct answer presents part of the solution. Choose two.)

- A. An encryption key
- B. The VMM server name
- C. The URL of the VMM Self-Service Portal
- D. A port number

Answer: A,D

Explanation:

Hosts in a non-trusted Active Directory domain

For a Windows Server-based host in an Active Directory domain that does not have a two-way trust relationship with the domain of the VMM server, VMM uses the same authentication and encryption methods that it uses for a Windows Server-based host on a perimeter network. For that reason, security requirements for those two topologies will be discussed together. Hosts that don't run on a Windows Server operating system Non-Windows Server-based hosts in a managed VMware Infrastructure 3 (VI3) environment have different security requirements than do Windows Server-based hosts, and are discussed separately. For Windows-based hosts running either Hyper-V or Windows Server, VMM uses the WSManagement protocol to transfer control data. WS-Management is an HTTP protocol that connects via port 80 by default.

Windows Remote Management (WinRM), the Microsoft implementation of the WS-Management protocol, handles authentication and encryption internally.

The authentication method that is used depends on the host location:

Trusted Active Directory domain—For Windows-based hosts in an Active Directory domain that has a two-way trust relationship with the domain of the VMM server, Kerberos is used for authentication.

Non-trusted Active Directory domain or perimeter network—For Windows Server-based hosts in a nontrusted Active Directory domain or on a perimeter network, the VMM agent uses NTLM for authentication and a CA-signed certificate that is installed on the host during agent installation to encrypt communications between VMM and the host. The credentials are created at random and support mutual authentication.

A host on a perimeter network requires local installation of the VMM agent. The host then must be added to VMM by using the Add Hosts Wizard to provide credentials and to retrieve the certificate and public key that were generated during agent installation. Any updates to the VMM agent on a host on a perimeter network also require manual agent installation followed by updating the host credentials in VMM. In a non-trusted Active Directory domain, local installation of the VMM agent or any future updates to the agent is not required. VMM installs the agent when the host is added to VMM.

Question: 35

You have a Windows Server 2008 R2 Hyper-V server with a single network adaptor that is connected to a virtual network. The virtual network is configured as External. Virtual machines (VMs) running on the server are not able to communicate with the host server over the network. You need to ensure that VMs running on the server are able to communicate with the host server over the network. In Virtual Network Manager, what should you do?

- A. Select the Internal only connection type.
- B. Select the Private virtual machine network connection type.
- C. Select the Allow management operating system to share this network adaptor check box.
- D. Clear the Allow management operating system to share this network adapter check box.

Answer: C

Explanation:



Question: 36

You are configuring failover clustering.

You need to install multipath support on the servers.

What should you do?

- A. Run the Dism /online /enable-feature: MultipathIo command.
- B. Run the mpiocpl.exe command.
- C. Run the mpclaim.exe command.
- D. Run the ocsetup /w MultipathIo command.

Answer: D

Explanation:

To install MPIO on Server core on Windows Server 2008 run this command from a command prompt “ocsetup MultipathIo /norestart” and then run “mpclaim -r -i -a ””

This command Installs the Microsoft MPIO Optional Component on non Server Core installations and then sets the Microsoft MPIO DSM (MSDSM) to claim all unclaimed Microsoft MPIO devices in the system.

MPCLAIM Command Line Reference:

Usage: mpclaim reboot_option install_switch device_switch device_hwid(s) reboot_option Whether to automatically reboot or not

-r automatically reboot without prompting

-n suppress reboot request (CALLER IS EXPECTED TO REBOOT) install_switch Whether to add or remove MPIO support

-i install MPIO optional component and add multipath support for device
-u remove multipath support for device and uninstall MPIO OC if no remaining devices are configured for MPIO
device_switch Whether to apply above options to all devices or passed-in devices
-d following parameters indicate hardware ids of devices
-a work on all applicable devices
-c work on only all SPC3-compliant devices (meaningful only in the context of install. If used with '- u', it is treated as '- a')
device_hwid HardwareIDs of Devices to be MPIO'd, as strings of vendor8product16, delimited by a space (Note: Use empty string with '-a' option)
<http://blogs.msdn.com/b/san/archive/2008/07/27/microsoft-mpio-command-line-referencempclaim-and-servercore-configuration.aspx>
Wrong answer:
Enable MPIO --> Dism /online /enable-feature:MultipathIo
Important
When using DISM to enable or disable features, the feature name is case-sensitive.
[http://technet.microsoft.com/en-us/library/ee619752\(v=WS.10\).aspx](http://technet.microsoft.com/en-us/library/ee619752(v=WS.10).aspx)

Question: 37

A company uses an iSCSI storage area network (SAN). A 6-terabyte logical unit number (LUN) is presented to a Windows Server 2008 R2 Datacenter host server. You open Disk Management on the host server and find that the LUN contains only a fully allocated 2-terabyte partition. You need to configure the environment to ensure that the partition can be extended to 6 terabytes. What should you do?

- A. Change the disk to a Master Boot Record (MBR) disk.
- B. Change the disk to a dynamic disk.
- C. Change the disk to a GUID Partitioning Table (GPT) disk.
- D. Create a disk mirror.

Answer: C

Explanation:

MBR max out at 2Tb GPT disk starts at 2Tb to 9.4 zettabytes

GUID Partition Table In computer hardware, GUID Partition Table (GPT) is a standard for the layout of the partition table on a physical hard disk. It forms a part of the Extensible Firmware Interface (EFI) standard, which is Intel's proposed replacement for the PC BIOS. It is also used on some BIOS systems because of the limitations of MBR partition tables. GPT allows for a maximum disk and partition size of 9.4 zettabytes (9.4×1021 bytes[1]). As of 2010, most current operating systems support GPT, although some operating systems (including Mac OS X and Windows) require systems with EFI hardware to support booting from GPT partitions.

GUID Partition Table Scheme

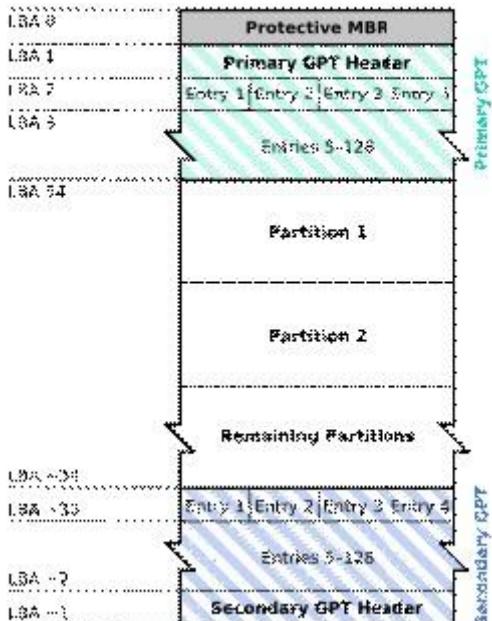


Diagram illustrating the layout of the GUID Partition Table scheme. In this example, each logical block (LBA) is 512 bytes in size, and each partition entry is 128 bytes. LBA addresses that are negative indicate position from the end of the volume, with 1 as the last addressable block. http://en.wikipedia.org/wiki/GUID_Partition_Table

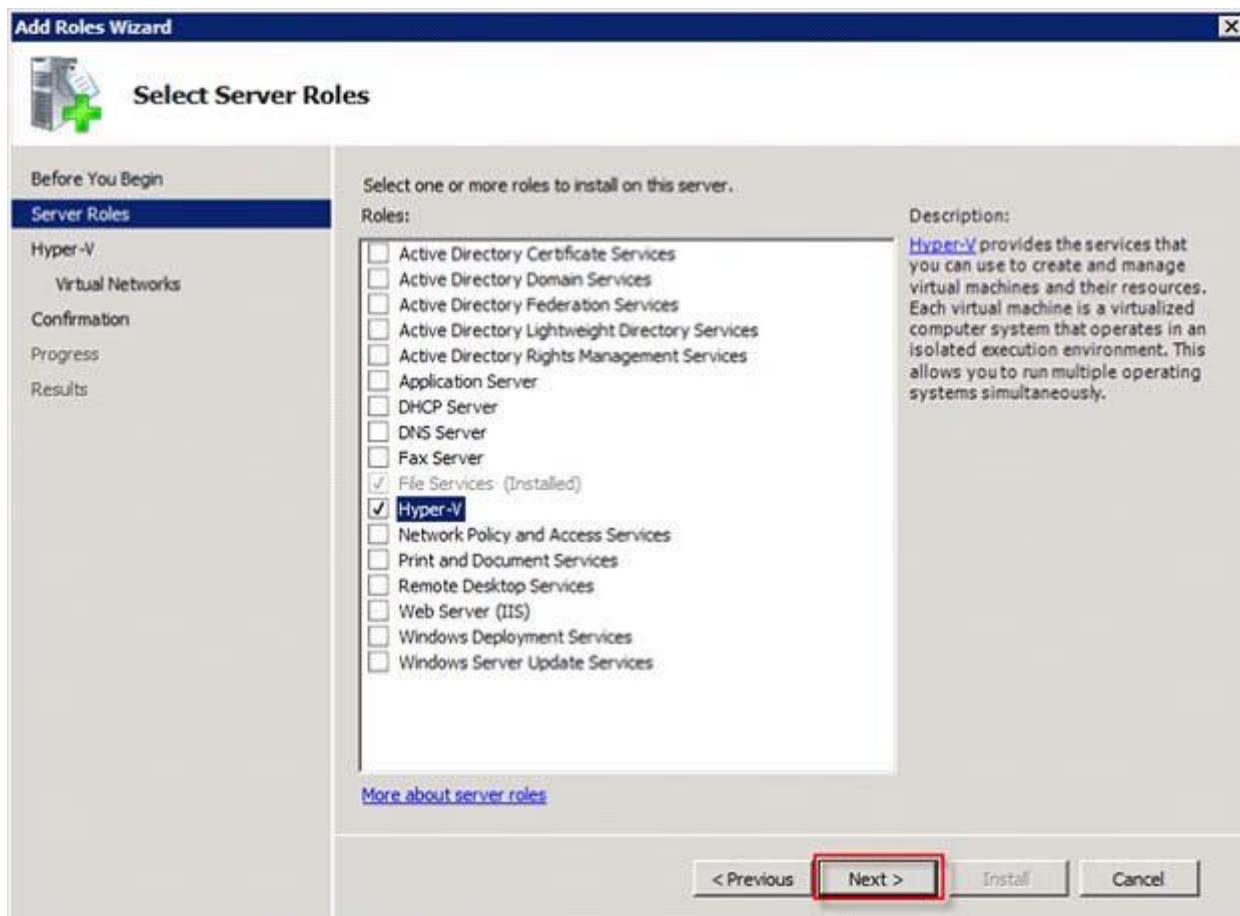
Question: 38

You install Windows Server 2008 R2 Enterprise on a new physical server. You need to prepare the server to host virtual machines. What should you do?

- Run the Import-Module ServerManager cmdlet.
- Run the new-item Hyper-V -type role cmdlet.
- Run the servermanagercmd -Install Hyper-V command.
- Run the Add-WindowsFeatures RSAT-Hyper-V cmdlet.

Answer: C

Explanation:



```
C:\>Administrator: C:\Windows\system32\cmd.exe
C:\>Users\administrator.HYPERU>servermanagercmd -install hyper-v
Servermanagercmd.exe is deprecated, and is not guaranteed to be supported in future releases of Windows. We recommend that you use the Windows PowerShell cmdlets that are available for Server Manager.

.
.
Start Installation...
Warning: [Installation] Succeeded: [Hyper-V] Hyper-V. You must restart this server to finish the installation process.

<100/100>
Success: A restart is required to complete the installation.
C:\>Users\administrator.HYPERU>_
```

<http://www.wongchonkit.com/2011/09/installation-option-for-hyper-v-role-in.html>

Question: 39

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. There is an existing web server farm that uses Windows Network Load Balancing (NLB). You need to add a virtual machine (VM) to the web server farm while meeting the following requirements:

The operating system must be deployed to the VM by using PXE and System Center Configuration Manager (ConfigMgr) 2007 R2.

After deployment, the VM must converge with the existing NLB cluster.

CPU utilization must be minimized.

What should you do?

- A. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- B. Add a disk drive to the VM by using the Add ClusterSharedVolume PowerShell cmdlet.
- C. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- D. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- E. Install the server application in a VM with the latest supported integration components.
- F. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- G. Assign 4 GB of static memory to the VM.
- H. Add a disk drive to the VM by using the New-VirtualDiskDrive PowerShell cmdlet.
- I. Assign 1 GB of startup RAM and 4 GB of maximum RAM to the VM.
- J. Install the server application on a physical server.
- K. Add a disk drive to the VM by using the iscsicli.exe command line tool.
- L. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.

Answer: L

Explanation:

Deploy VM using PXE boot and SCCM 2007 R2

Add an emulated network adapter to the VM and select the Enable spoofing of MAC address option.

Question: 40

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You need to add a new dynamic virtual hard disk (VHD) to an existing virtual machine (VM). What should you do?

- A. Assign 1 GB of startup RAM and 4 GB of maximum RAM to the VM.
- B. Add a disk drive to the VM by using the New-VirtualDiskDrive PowerShell cmdlet.
- C. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- D. Install the server application on a physical server.
- E. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- F. Install the server application in a VM with the latest supported integration components.
- G. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- H. Add a disk drive to the VM by using the iscsicli.exe command line tool.
- I. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- J. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- K. Add a disk drive to the VM by using the Add ClusterSharedVolume PowerShell cmdlet.
- L. Assign 4 GB of static memory to the VM.

Answer: B

Explanation:

How to Add a Virtual Hard Disk to a Virtual Machine

Applies To: Virtual Machine Manager 2008, Virtual Machine Manager 2008 R2, Virtual Machine Manager 2008 R2 SP1

You can add a virtual hard disk to an IDE device or a SCSI adapter with the following procedure.

By default, any hardware profile includes a built-in IDE drive. You can add and configure up to four virtual SCSI adapters to a virtual machine.

Use this procedure when modifying a hardware profile or configuring hardware profile settings from the New Template Wizard or the New Virtual Machine Wizard.

Note In VMM 2008 R2, if a virtual machine is deployed on a host that is using the Hyper-V implementation of the SCSI controller, you can add or remove a virtual hard disk or pass-through disk from the SCSI controller while the virtual machine is running. On all other storage configurations, you must stop the virtual machine before adding or removing a disk.

To add a virtual hard disk

To add a virtual hard disk, take one of the following actions:

To add a virtual hard disk to an IDE bus, in the left pane, under Bus Configuration, click IDE Devices, and then click VHD on the top toolbar.

To add a virtual hard disk to a SCSI bus, click SCSI Adapter on the top toolbar and then click VHD on the toolbar.

Under Channel, select a channel to attach to this virtual hard disk.

Under Virtual Hard Disk, select one of the following options:

Use an existing virtual hard disk. Select this option if you want to add an existing virtual hard disk to the virtual machine. Click Browse to display the Select a virtual hard disk dialog box, and then select the virtual hard disk that you want to use from the list that displays on this screen.

Create a new virtual hard disk (available on the hardware profile for a virtual machine). Select this option if you want to create a new virtual hard disk. Modify the values for the following options:

Type. Select Dynamic (default) or Fixed.

Size. Specify, in gigabytes (GB), the size of a fixed virtual hard disk or the maximum size of a dynamically expanding virtual hard disk.

Destination file name. Specify the name of a new virtual hard disk.

Question: 41

A company has a Windows Server 2008 R2 Hyper-V environment. The environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2.

A virtual machine (VM) is a node in a Windows failover cluster.

You need to add a new disk drive to the VM. The disk drive will be shared with all other nodes in the failover cluster.

What should you do?

- A. Add a disk drive to the VM by using the Add-ClusterSharedVolume PowerShell cmdlet.
- B. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- C. Install the server application in a VM with the latest supported integration components.
- D. Add a disk drive to the VM by using the New-VirtualDiskDrive PowerShell cmdlet.
- E. Assign 4 GB of static memory to the VM.
- F. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- G. Assign 1 GB of startup RAM and 4 GB of maximum RAM to the VM.
- H. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- I. Install the server application on a physical server.
- J. Add a disk drive to the VM by using the iscsicli.exe command line tool.
- K. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- L. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.

Answer: J

Question: 42

A company has an environment that includes servers that run Windows Server 2008 R2 with Hyper-V. The company requires that all server operating systems be provisioned as virtual machines (VMs). A server operating system should be provisioned as a physical server only if it does not function properly as a VM. A new application that runs a Hyper-V supported version of Linux requires four CPUs and access to 3 terabytes of storage. You need to install the application to meet the company requirements.

What should you do?

- A. Install the server application on a physical server with four CPUs.
- B. Add a disk dove to the VM by using the iscsicli.exe command line tool.
- C. Assign 4 GB of static memory to the VM.
- D. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- E. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- F. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- G. Add a disk drive to the VM by using the New-VirtualDiskDrive PowerShell cmdlet.
- H. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- I. Install the server application in a VM with the latest supported integration components.
- J. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- K. Add a disk drive to the VM by using the Add-SharedVirtualDiskDrive PowerShell cmdlet.
- L. Assign 1 GB of startup RAM and 16 GB of maximum RAM to the VM.
- M. Set the network adapter to use an iSCSI network tag.

Answer: A

Explanation:

Answer changed 13/06/2012 FROM I to A

To connect a 3TB storage the disk needs to be setup as a pass-through disk. None of the options allow for the addition of pass-through disk

Question: 43

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. There is an existing 10 GB iSCSI storage area network (SAN). A logical unit number (LUN) will be mounted from the iSCSI SAN. The LUN will be used as a disk drive inside of a virtual machine (VM). The VM must meet the following requirements:

Support VM Queuing (VMQ)

Have a network speed of at least 10 Gbps

Minimize CPU utilization

You need to prepare the VM to support the LUN.

What should you do?

- A. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses o
- B. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- C. Add a disk drive to the VM by using the iscsicli.exe command line tool.
- D. Install the server application n a VM with the latest supported integration components.
- E. Add a disk drive to the VM by using the New- VirtualDiskDrive PowerShel cmdlet
- F. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- G. Assign 1 GB of startup RAM and 4 GB of maximum RAM to the VM.
- H. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- I. Assign 4 GB of static memory to the VM.
- J. Install the server application on a physical server.
- K. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.

L. Add a disk drive to the VM by using the Add ClusterSharedVolume PowerShell cmdlet.

Answer: B

Explanation:

Add a synthetic network adapter

Question: 44

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. The company requires that all server operating systems be provisioned as virtual machines (VMs). A server operating system should be provisioned as a physical server only if it does not function properly as a VM. You are preparing to deploy a VM that will run Windows Server 2008 R2 Standard. The VM will run a server application that has the following characteristics:

The server application will use a minimum of 512 MB of memory.

Based on performance monitoring data, the server application consumes 4 GB of memory during nightly processing.

The network adapter speed must be 10 Gbps or faster.

YOU need to prepare the environment for the server application and ensure that application performance is maximized.

What should you do?

- A. Add a disk drive to the VM by using the New-VirtualDiskDrive PowerShell cmdlet.
- B. Install the server application on a physical server.
- C. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- D. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- E. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- F. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- G. Add a disk drive to the VM by using the Add-ClusterSharedVolume PowerShell cmdlet.
- H. Add a disk drive to the VM by using the iscsicli.exe command line tool.
- I. Install the server application in a VM with the latest supported integration components.
- J. Assign 1 GB of startup RAM and 4 GB of maximum RAM to the VM.
- K. Assign 4 GB of static memory to the VM.
- L. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.

Answer: I

Explanation:

Deploy a VM that will run Windows Server 2008 R2 Std, the VM will run server application that has

- Min 512Mb RAM
- Consume 8Gb memory
- Network speeds > 10Gbps

Install the server application in a VM with the latest supported integration components.

Question: 45

All servers on your network run Windows Server 2008 R2. You deploy Remote Desktop Services (RDS). You are configuring the Remote Desktop Session Host (RD Session Host) role service. You install an application on all of the RD Session Host servers. The application communicates with a server that allows only one connection per IP address. You need to configure the Remote Desktop IP Visualization settings for this application. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Enable Remote Desktop IP Visualization,
- B. Set the IP Visualization mode to Per session,
- C. Set the IP Visualization mode to Per program.
- D. Disable Remote Desktop IP Visualization.

Answer: A,C

Explanation:

12/06/2012 Changed answer from BC to AC, because it states in the question "The application communicates with a server that allows only one connection per IP address." there is no need to set Set the IP Visualization mode to Per session, <http://blogs.msdn.com/b/rds/archive/2009/07/09/configuring-remote-desktop-ip-virtualization-part-1.aspx> Remote Desktop IP Virtualization allows IP addresses to be assigned to remote desktop connections on a per session or per program basis. This can be useful if a program communicates with a server that only allows one connection per IP address. Prior to Windows Server 2008 R2, every session on an RD Session Host server was assigned the same IP address. With Windows Server 2008 R2, you can use Remote Desktop IP Virtualization to assign IP addresses on a per session or per program basis. If you assign IP addresses for multiple programs, they will share a per session IP address. If you have more than one network adapter on the server, you must also choose one network adapter for Remote Desktop IP Virtualization.

Remote Desktop IP Virtualization is configured by using the Remote Desktop Session Host Configuration tool.

On the RD IP Virtualization tab of Remote Desktop Session Host Configuration, you can do the following:

Enable or disable Remote Desktop IP Virtualization.

Select the network adapter to be used for Remote Desktop IP Virtualization.

Configure whether the Remote Desktop IP Virtualization mode is per session or per program.

If Remote Desktop IP Virtualization is configured per program, you can add a list of programs that Remote Desktop IP Virtualization can use.

Membership in the local Administrators group, or equivalent, on the RD Session Host server that you plan to configure, is the minimum required to complete this procedure. Review details about using the appropriate accounts and group memberships at

<http://go.microsoft.com/fwlink/?LinkId=83477>.

To configure Remote Desktop IP Virtualization settings

On the RD Session Host server, open Remote Desktop Session Host Configuration. To open Remote Desktop Session Host Configuration, click Start, point to Administrative Tools, point to Remote Desktop Services, and then click Remote Desktop Session Host Configuration.

In the Edit settings area, under RD IP Virtualization, double-click IP Virtualization.

In the Properties dialog box, click the RD IP Virtualization tab.

To enable or disable Remote Desktop IP Virtualization, do one of the following:

Select the Enable IP virtualization check box to enable Remote Desktop IP Virtualization.

Clear the Enable IP virtualization check box to disable Remote Desktop IP Virtualization.

To select the network adapter to be used for Remote Desktop IP Virtualization, in the Select the network adapter to be used for IP virtualization list, select the appropriate network adapter.

To select the Remote Desktop IP Virtualization mode, under IP virtualization mode:

Click Per session to configure Remote Desktop IP Virtualization to run in per session mode.

Click Per program to configure Remote Desktop IP Virtualization to run in per program mode.

To assign which programs use Remote Desktop IP Virtualization, under Assign virtual IP addresses to these programs, click Add Program.

<http://technet.microsoft.com/en-us/library/dd759263.aspx>

Question: 46

All servers on your network run Windows Server 2008 R2. You deploy Remote Desktop Services (RDS). You are

configuring the Remote Desktop Session Host (RD Session Host) role service. You need to ensure that programs that are running continue to run when users are no longer actively connected to the RD Session Host server. Which setting should you configure?

- A. Idle session limit
- B. When a session limit is reached or connection is broken
- C. Active session limit
- D. End a disconnected session

Answer: D

Explanation:

Remote Desktop Connection Broker (RDConnection Broker), formerly Terminal Services Session Broker (TSSession Broker), is a role service that provides the following functionality:

Allows users to reconnect to their existing sessions in a load-balanced RDSession Host server farm. This prevents a user with a disconnected session from being connected to a different RDSession Host server in the farm and starting a new session.

Question: 47

A company deploys Remote Desktop Services (RDS) on the following servers.

Description	Name
Remote Desktop Web Access (RD Web Access)	Server1
Remote Desktop Session Host (RD Session Host)	Server2

You need to use RD Web Access to give users access to RemoteApp applications that they have permissions for. What should you do?

- A. Use the Remote Desktop Web Access Configuration tool to configure Server2 to use Server1 as the RemoteApp source.
- B. Use the Remote Desktop Web Access Configuration tool to configure Server1 to use Server2 as the RemoteApp source.
- C. Use the RemoteApp Manager tool to configure Server2 to use Server1 as the RemoteApp source.
- D. Use the RemoteApp Manager tool to configure Server1 to use Server2 as the RemoteApp source.

Answer: B

Question: 48

Your company has a load-balanced remote Desktop Session Host (RD Session Host) cluster. You are configuring the Remote Desktop Gateway (RD Gateway) role service on servers that run Windows Server 2008 R2. You need to centralize the storage of Remote Desktop connection authorization policies (RD CAPs). Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Configure the RD Gateway servers to use a remote RD CAP store.
- B. Configure the RD Gateway servers to use a local RD CAP store.
- C. Install the Distributed File System role service.
- D. Install the Network Policy Server role service.

Answer: A,D

Explanation:

Network Policy Server (NPS) is the Microsoft implementation of a Remote Authentication Dial-in User Service (RADIUS) server and proxy in Windows Server 2008. NPS is the replacement for Internet Authentication Service (IAS) in Windows Server 2003.

As a RADIUS server, NPS performs centralized connection authentication, authorization, and accounting for many types of network access, including wireless and virtual private network (VPN) connections. As a RADIUS proxy, NPS forwards authentication and accounting messages to other RADIUS servers. NPS also acts as a health evaluation server for Network Access Protection (NAP).

Distributed File System (DFS) Namespaces and DFS Replication offer simplified, highly-available access to files, load sharing, and WAN-friendly replication. In the Windows Server® 2003 R2 operating system, Microsoft revised and renamed DFS Namespaces (formerly called DFS), replaced the Distributed File System snap-in with the DFS Management snap-in, and introduced the new DFS Replication feature. In the Windows Server® 2008 operating system, Microsoft added the Windows Server 2008 mode of domain-based namespaces and added a number of usability and performance improvements.

What does Distributed File System (DFS) do?

The Distributed File System (DFS) technologies offer wide area network (WAN)-friendly replication as well as simplified, highly-available access to geographically dispersed files. The two technologies in DFS are the following:

DFS Namespaces. Enables you to group shared folders that are located on different servers into one or more logically structured namespaces. Each namespace appears to users as a single shared folder with a series of subfolders. This structure increases availability and automatically connects users to shared folders in the same Active Directory Domain Services site, when available, instead of routing them over WAN connections. DFS Replication. DFS Replication is an efficient, multiple-master replication engine that you can use to keep folders synchronized between servers across limited bandwidth network connections. It replaces the File Replication Service (FRS) as the replication engine for DFS Namespaces, as well as for replicating the AD DS SYSVOL folder in domains that use the Windows Server 2008 domain functional level.

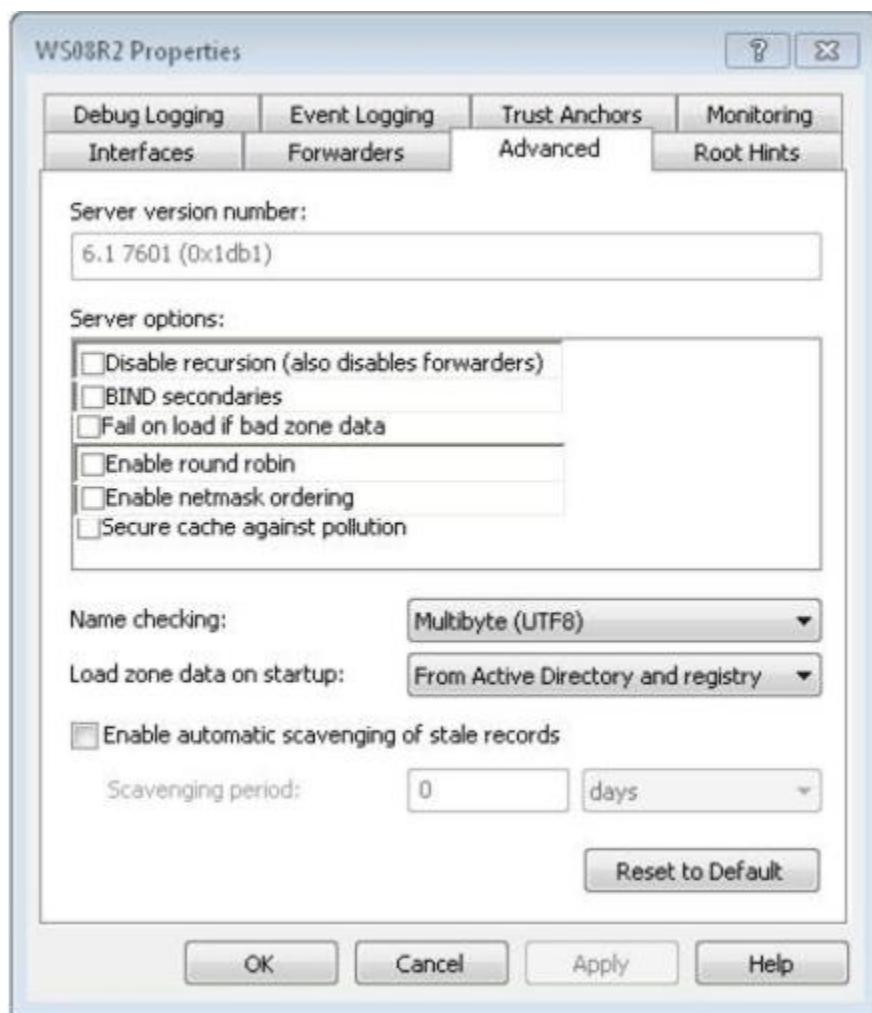
Question: 49

HOTSPOT

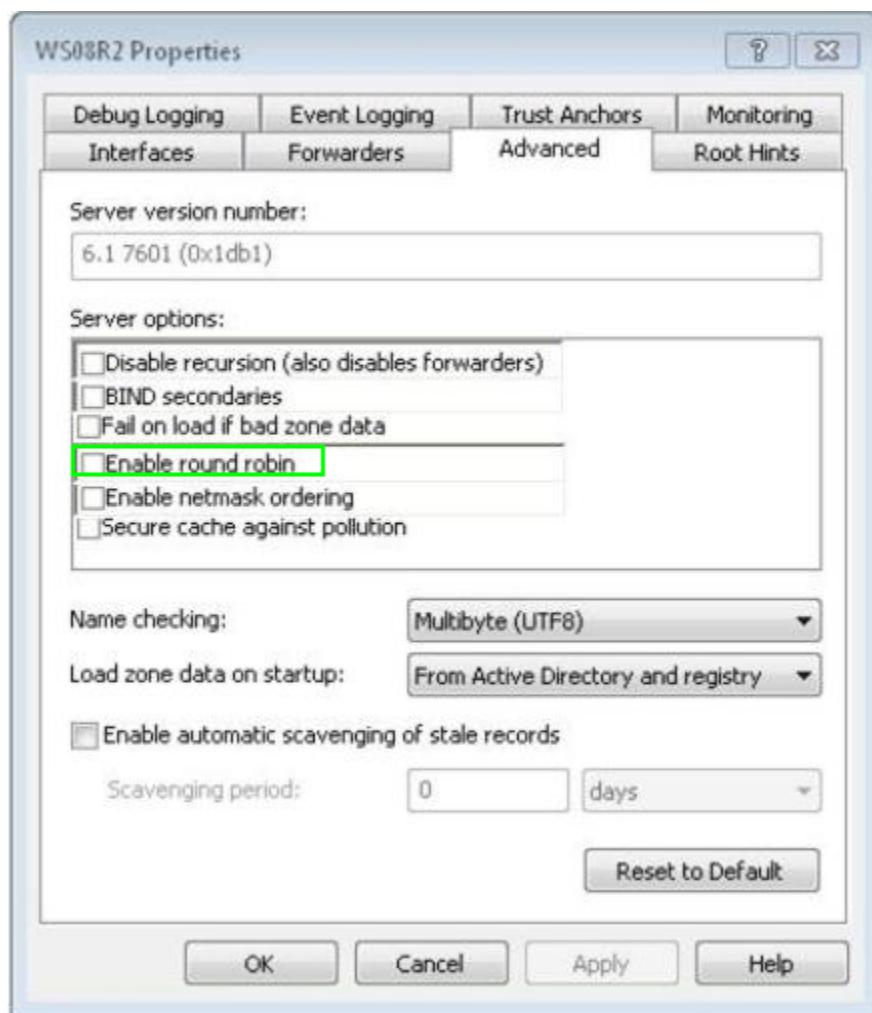
A company uses Windows Server 2008 R2 Domain Name System (DNS). You are configuring Remote Desktop (RD) Connection Broker load balancing. You add the necessary DNS entries for each RD Session Host server.

RD Connection Broker load balancing is not working.

You need to ensure that the Remote Desktop sessions are load-balanced across the RD Session Host server farm. Which server option should you use? (To answer, select the appropriate setting or settings in the answer area.)



Answer:



Explanation:

Select "Enable round robin".

To load balance sessions in an RD Session Host server farm, you can use the RD Connection Broker Load Balancing feature together with Domain Name System (DNS) round robin. To configure DNS, you must create a DNS host resource record for each RD Session Host server in the farm that maps the RD Session Host server's IP address to the RD Session Host server farm name in DNS. The following procedure provides the steps to configure DNS on a Windows Server 2008 R2-based domain controller. You must be a member of the Domain Admins, Enterprise Admins, or the DnsAdmins group to complete this procedure. To add DNS entries for each RD Session Host server in the farm Open the DNS snap-in. To open the DNS snap-in, log on to a computer where the DNS snap-in has been installed, click Start, point to Administrative Tools, and then click DNS. Expand the server name, expand Forward Lookup Zones, and then expand the domain name. Right-click the appropriate zone, and then click New Host (A or AAAA). In the Name (uses parent domain name if blank) box, type the RD Session Host server farm name. The farm name is the virtual name that clients will use to connect to the RD Session Host server farm. Do not use the name of an existing server. For management purposes, we recommend that you use the same farm name that you specified when you configured the RD Session Host servers to join a farm in RD Connection Broker. In the IP address box, type the IP address of an RD Session Host server in the farm. Click Add Host. Repeat steps three through six for each RD Session Host server in the farm. Important You must specify the same farm name in the Name (uses parent domain name if blank) box for each DNS entry. For example, if you have three RD Session Host servers in a farm named FARM1, with IP addresses of 192.168.1.20, 192.168.1.21, and 192.168.1.22, the entries would look similar to the following:

Copy

Farm1 Host(A) 192.168.1.20

Farm1 Host(A) 192.168.1.21

Farm1 Host(A) 192.168.1.22

When you are finished, click Done.

Note

By default, DNS round robin is enabled when using DNS on a

Windows Server 2008 R2-based domain controller. The Enable round robin setting is available on the Advanced tab when you view the properties of the server in DNS.

<http://technet.microsoft.com/en-us/library/cc772506.aspx>

Question: 50

A company is deploying Windows Server 2008 R2 Remote Desktop services (RDS). Another administrator has installed RDS client access licenses (CALs) on the Remote Desktop license server. You need to ensure that the Remote Desktop Session Host (RD Session Host) server requests licenses from the Remote Desktop license server.

What should you do first?

- A. Configure Remote Desktop licensing mode on the RD Session Host.
- B. Create an RDS farm and add the RD Session Host to the farm.
- C. Activate the Remote Desktop license server.
- D. Install the RD Licensing role service.

Answer: A

Explanation:

"Another administrator has installed RDS client access licenses (CALs) on the Remote Desktop license server"

<http://technet.microsoft.com/en-us/library/cc754487.aspx>

<http://technet.microsoft.com/en-us/library/dd883253%28v=ws.10%29.aspx>

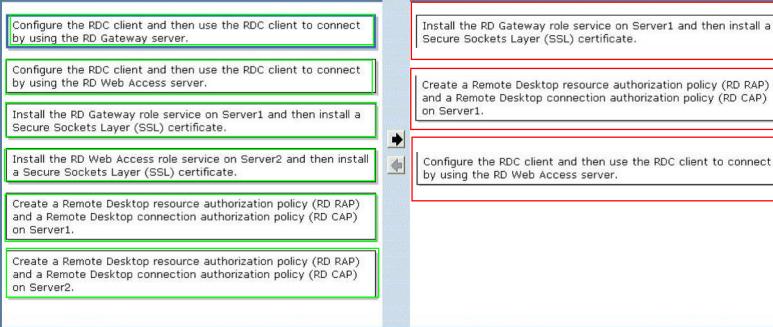
Question: 51

DRAG DROP

A company plans to deploy Remote Desktop Services on the following servers.

Description	Name
Remote Desktop Gateway (RD Gateway)	Server1
Remote Desktop Web Access (RD Web Access)	Server2
Remote Desktop Session Host (RD Session Host)	Server3

You need to enable authorized remote users to connect to resources on an internal corporate network from any Internet-connected device that can run the Remote Desktop Connection (RDC) client. Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)



Answer:

Explanation:

1. Install RD Gateway role services on Server1 and then instal a Secure Socctes Layer (SSL) Certificate.
2. Create a Remote Desktop resource authorization policy (RD RAP) and Remote Desktop connection authorization policy (RD CAP) on Server1.
3. Configure the RDC client and then use the RDC client to connect by using the RD Gateway server.

Checklist: Configure Remote Desktop Gateway

This checklist lists the tasks that you need to complete to successfully configure RD Gateway for the RD Gateway core scenario. This scenario enables you to configure an RD Gateway server so that a remote user can access an internal corporate or private network resource over the Internet, through the RD Gateway server. In this scenario, an internal network resource can be a Remote Desktop Session Host (RD Session Host) server, an RD Session Host server running RemoteApp programs, or a computer with Remote Desktop enabled.

Task	Reference
Install the Remote Desktop Gateway role service.	Install the Remote Desktop Gateway Role Service
Obtain a certificate for the RD Gateway server.	Obtain a Certificate for the Remote Desktop Gateway Server
Create a Remote Desktop connection authorization policy (RD CAP).	Create an RD CAP
Create a Remote Desktop resource authorization policy (RD RAP).	Create an RD RAP
Configure the Remote Desktop Services client for RD Gateway.	Configuring the Remote Desktop Services Client for Remote Desktop Gateway

For more information about RD Gateway, see the Remote Desktop Services page on the Windows Server 2008 R2 TechCenter (<http://go.microsoft.com/fwlink/?LinkId=140433>).
<http://technet.microsoft.com/en-us/library/cc732654>

Question: 52

You are configuring a Windows Server 2008 R2 server to support a virtual machine (VM) that uses a pass-through disk. You need to install the operating system on the VM. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Place the VM configuration file on the host server.
- B. Attach the pass-through disk to an IDE controller.
- C. Place the VM configuration file on the pass-through disk.
- D. Attach the pass-through disk to a SCSI controller.

Answer: A,B

Explanation:

The virtual machine is using non-clustered storage.

If the HAVM is stored on system drive C: or any disk that is not clustered, the virtual machine is placed in Unsupported Cluster Configuration state. To resolve this issue, ensure that all files and pass-through disks belonging to the virtual machine reside on clustered disks.

Question: 53

DRAG DROP

A company has a Widows Server 2008 R2 Hyper-V server environment. The environment is managed by using Microsoft System a Mach.ne Manager (VMM) 2008 R2 on a server named VMM01.contoso.com.

The company has requested a new virtual machine (VM) based on the following requirements:

The VM must be deployed from a template named "Windows Server 2008 R2 Base."

The VM must be deployed in a scripted manner by using Windows PowerShell.

The VM must be deployed onto the VMM01.contoso.com host.

The VM must be named WEB01.

You need to deploy the VM based on the company requirements.

How should you build the PowerShell script? (To answer, drag the approbate PowerShell cmdlet from the list to the proper locations in the script)

Windows commands	VMware ESX commands
Set-Vm	Set-VMHost
Get-VMServer	Get-VMHost
New-VM	Get-Template
New-Template	

Answer Choices

- Set-VM**
- Set-VMHost**
- Get-VMHost**
- Get-Template**
- Get-VMMServer**
- New-VM**
- New-Template**

```
$Template = [REDACTED]
-VMMServer "VMM01.contoso.com" | where
{$_.Name -eq "Windows Server 2008 R2 Base"}
```



```
$VMHost = [REDACTED]
| where {$_.Name -eq "VMM01.contoso.com"}
```



```
[REDACTED] -Template $Template -Name "WEB01"
-VMHost $VMHost -Path "D:\VMM\" -ComputerName "WEB01"
```

Answer:

Answer Choices

- Set-VM**
- Set-VMHost**
- Get-VMHost**
- Get-Template**
- Get-VMMServer**
- New-VM**
- New-Template**

```
$Template = [REDACTED] Get-Template [REDACTED]
-VMMServer "VMM01.contoso.com" | where
{$_.Name -eq "Windows Server 2008 R2 Base"}
```



```
$VMHost = [REDACTED] Get-VMMServer [REDACTED]
| where {$_.Name -eq "VMM01.contoso.com"}
```



```
[REDACTED] New-VM [REDACTED] -Template $Template -Name "WEB01"
-VMHost $VMHost -Path "D:\VMM\" -ComputerName "WEB01"
```

Explanation:

(This question is open to discussion/correction)

VMware ESX (VMware ESX cmd)

Set-VMHost

To change the state of a VMHost

Set-VmHost -VmHost ESX01 -State "Disconnected"

Disconnect Host

Set-VmHost -VmHost (Get-VmHost -Name "ESX01") -State "Maintenance"

Enter Host

Connect Host or Exit Maintenance

Set-VmHost -VmHost (Get-VmHost -Name "ESX01") -State "Connected"

Set-VMHost

Synopsis

Changes the configuration of the host.

Syntax

```
Set-VMHost [-VMHost] <VMHost> [[-State] <VMHostState>] [-VMSwapfilePolicy]
<VMSwapfilePolicy> [-VMSwapfileDatastore <Datastore>] [-Profile <VMHostProfile>] [-Evacuate]
[-TimeZone <VMHostTimeZone>] [-Server <VIserver[]>] [-RunAsync] [-WhatIf] [-Confirm]
[<CommonParameters>]
```

<http://www.vmware.com/support/developer/windowstoolkit/wintk40u1/html/Set-VMHost.html>

VMware ESX (VMware ESX cmd)

Get-VMHost

To list all the VMware Infrastructure Servers (VMHost) on the connected

VI Server

Get-VMHost

Get all Hosts member of a Cluster

Get-Cluster Cluster01 | Get-VmHost

To remove a VMHost

Get-VMHost ESX01 | Remove-VmHost

Get-VMHost

Synopsis

Retrieves the hosts on a vSphere server.

Syntax

```
Get-VMHost [-Datastore <Datastore[]>] [-State <VMHostState[]>] [-Location <VIContainer[]>] [[-Name] <String[]>] [-Id
<String[]>] [-NoRecursion] [-Server <VIserver[]>]
[<CommonParameters>]Get-VMHost [-VM <VirtualMachine[]>] [-ResourcePool <ResourcePool[]>]
[-Datastore <Datastore[]>] [-Location<VIContainer[]>] [[-Name] <String[]>] [-Id <String[]>] [-NoRecursion] [-Server
<VIserver[]>][<CommonParameters>]
```

<http://www.vmware.com/support/developer/windowstoolkit/wintk40u1/html/Get-VMHost.html>

Get-Template

Synopsis

Retrieves the virtual machine templates available on a vSphere server.

Syntax

```
Get-Template [-Location <VIContainer[]>] [[-Name] <String[]>] [-Id <String[]>] [-NoRecursion] [-Server<VIserver[]>]
[<CommonParameters>]
```

<http://www.vmware.com/support/developer/PowerCLI/PowerCLI41U1/html/Get-Template.html>

Windows commands

Get-VMMServer (Windows cmd)

Connecting to the Virtual Machine Manager Server

Applies To: Virtual Machine Manager 2008, Virtual Machine Manager 2008 R2, Virtual Machine Manager 2008 R2 SP1

You can display Help about System Center Virtual Machine Manager (VMM) cmdlets at any time in the Windows PowerShell – Virtual Machine Manager command shell. However, you can use the VMM cmdlets only after you connect to a VMM server.

Connecting to a VMM server retrieves the server object from the VMM database and gives you access to all the other objects in the database. You retain access to the objects in the database until you close the server connection, which you can do by closing the VMM command shell.

To connect to the Virtual Machine Manager server

Type the following command, and then review the output. Replace the placeholders with your own server and domain names:

```
Get-VMMServer –Computername "<YourVMMServerName>.<YourDomainName>.com"
```

When the command has successfully completed, the server object is returned. The command shell displays information about the properties of the VMM server object. And, you are connected to the VMM database that is provided by the VMM server.

If a command does not work in the command shell, run the command to connect to the VMM server again. If you encounter problems, open the Services tool in Administrative Tools, and then restart the VMM service. Or, restart the service in the command shell. For information about how to restart a service in the command shell, type Get-Help Restart-Service -detailed.

If you are working on the server on which VMM is installed, you can substitute "localhost" for the fully qualified domain name (FQDN). You cannot do this if you are accessing the server remotely.

To connect to Virtual Machine Manager if it is installed on the local host Type the following command, and then review its output:

```
Get-VMMServer –Computername localhost  
http://technet.microsoft.com/en-us/library/cc764276.aspx  
Virtual Machines (Windows cmd)  
Set-Vm Change the configuration of a VM  
Set-VM -VM (Get-VM -Name "Win XP SP1") -Name "Win XP SP2" -GuestId "winXPProGuest"  
-Description "My updated Win XP virtual machine."
```

The Set-VM cmdlet configures a virtual machine.

Examples

Example 1

Configures virtual machine TestVM to shut down when the Hyper-V host shuts down.

```
PS C:\> Set-VM –Name TestVM –AutomaticStopAction Shutdown
```

Example 2

Stops virtual machine TestVM, sets it to use dynamic memory, sets its maximum amount of memory to 2GB, sets it to use 2 virtual processors, and starts it.

```
PS C:\> Stop-VM -Name TestVM -Passthru | Set-VM -ProcessorCount 2 -DynamicMemory -MemoryMaximumBytes 2GB -Passthru | Start-VM
```

Provision VM (Windows cmd)

VI PowerScripter

To create a new VM (Windows cmd)

```
$esxhost = Get-VMHost "ESXHost01 .mydomain.com"  
New-VM -Name XPVM -VMHost $esxhost -DiskMB 4000 -MemoryMB 256
```

Creates a new virtual machine.

Examples

Example 1

Creates a new virtual machine named new 1 that has 512MB of memory.

```
PS C:\> New-VM –Name "new 1" –MemoryStartupBytes 512MB
```

Example 2

Creates a virtual machine named new 2 that has 1GB of memory and that is connected to a new 40GB VHDX file.

```
PS C:\> New-VM –Name "new 2" –MemoryStartupBytes 1GB –NewVHDPath d:\vhd\base.vhdx
```

Example 3

Creates a virtual machine named new 3 that has 1GB of memory and is connected to an existing VHDX file.

```
PS C:\> New-VM –Name "new 3" –MemoryStartupBytes 1GB –VHDPath d:\vhd\BaseImage.vhdx
```

To Remove a VM:

```
Remove-VM ( Get-VM "myVM" ) –DeleteFromDisk
```

Templates (Windows cmd)

```
$template = Get-Template -Name Templ* -Location (Get-Datacenter DC)
```

Remove-Template –

Template \$template

```
New-Template -VM ( Get-VM XPVM ) -Name Template01 -Location (Get-Datacenter DC)
```

```
Set-Template -Template $template -ToVM
```

convert Template to VM

How to Create a Virtual Machine Template

```
http://technet.microsoft.com/en-us/library/bb740832.aspx
```

Guest Customization Specification

```
$osSpec = Get-OSCustomizationSpec WinXP
# reads Guest Customization Specification object
New-VM -Name MyVM2 -Template Template01 -VMHost ESX01 -OSCustomizationSpec $osSpec
other OS Customization CmdLets:
New-OSCustomizationSpec
Set-OSCustomizationSpec
```

Question: 54

You plan to use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to manage virtual machines (vMs). You install and configure the VMM Self-Service Portal on the VMM server. You add a default virtual machine path on a new stand-alone host in VMM. Users are unable to deploy VMs by using the Self-Service Portal. You need to enable users to deploy VMs to the new stand-alone host. What should you do?

- A. Manually create the folder in the specified path.
- B. In Authorization Manager, assign the Create Virtual Machine right to the User role.
- C. In Authorization Manager, create a role named VM-Add, and assign the affected users to the role.
- D. Restart the Virtual Machine Manager Agent service.

Answer: D

Question: 55

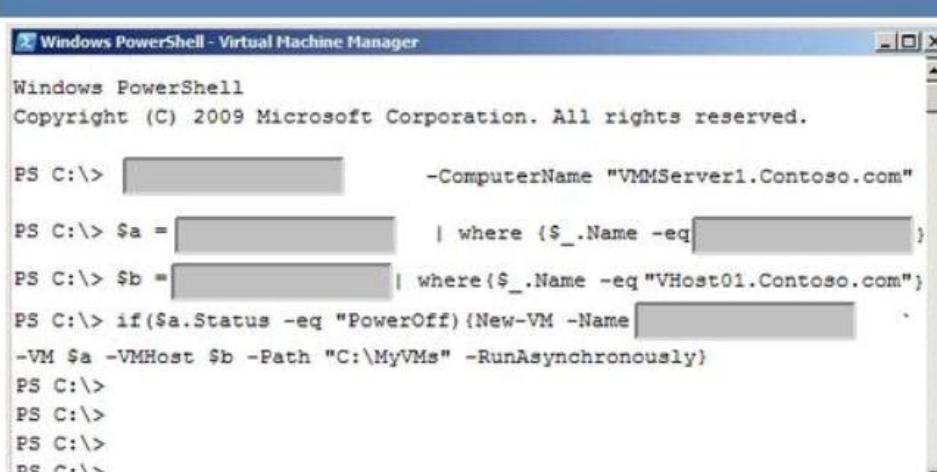
DRAG DROP

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed by using Microsoft Machine Manager (VMM) 2008 R2.

An existing virtual machine (VM) named VM04 must be cloned to a new VM, named VM03, on the same host. The VM must be stored on a local disk.

You need to clone VM04 to VM03.

How should you build a set of PowerShell commands to achieve this goal? (To answer, drag the appropriate phrase from the list of answer choices to the correct location or locations in the answer area.)

Answer Choices <input type="button" value="Get-VMHost"/> <input type="button" value="Get-VM"/> <input type="button" value="Get-VMMServer"/> <input type="button" value="“VM03”"/> <input type="button" value="“VM04”"/> <input type="button" value="Set-VM"/> <input type="button" value="Set-VMMServer"/>	 <pre>Windows PowerShell - Virtual Machine Manager Windows PowerShell Copyright (C) 2009 Microsoft Corporation. All rights reserved. PS C:\> [REDACTED] -ComputerName "VMMServer1.Contoso.com" PS C:\> \$a = [REDACTED] where {\$_.Name -eq [REDACTED]} PS C:\> \$b = [REDACTED] where{\$_.Name -eq "VHost01.Contoso.com"} PS C:\> if(\$a.Status -eq "PowerOff") {New-VM -Name [REDACTED] -VM \$a -VMHost \$b -Path "C:\MyVMs" -RunAsynchronously} PS C:\> PS C:\> PS C:\> PS C:\></pre>
--	---

Answer:

Answer Choices
Get-VMHost
Get-VM
Get-VMMServer
"VM03"
"VM04"
Set-VM
Set-VMMServer

```

Windows PowerShell
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

PS C:\> Get-VMMServer -ComputerName "VMMServer1.Contoso.com"
PS C:\> $a = Get-VM | where {$_.Name -eq "VM04"}
PS C:\> $b = Get-VMHost | where{$_.Name -eq "VHost01.Contoso.com"}
PS C:\> if($a.Status -eq "PowerOff") {New-VM -Name "VM03" -VM $a -VMHost $b -Path "C:\MyVMs" -RunAsynchronously}
PS C:\>
PS C:\>
PS C:\>
PS C:\>

```

Explanation:

(Question is open to discussion)

Answer changed 12/06/2012

FROM Get-VMMServer, Get-VM, VM04, Set-VM, VM03 TO Get-VMMServer, Get-VM, VM04, Get- VMHost, VM03

Windows commands

Get-VMMServer (Windows cmd)

Connecting to the Virtual Machine Manager Server

Applies To: Virtual Machine Manager 2008, Virtual Machine Manager 2008 R2, Virtual Machine Manager 2008 R2 SP1

You can display Help about System Center Virtual Machine Manager (VMM) cmdlets at any time in the Windows PowerShell – Virtual Machine Manager command shell. However, you can use the VMM cmdlets only after you connect to a VMM server.

Connecting to a VMM server retrieves the server object from the VMM database and gives you access to all the other objects in the database. You retain access to the objects in the database until you close the server connection, which you can do by closing the VMM command shell.

To connect to the Virtual Machine Manager server

Type the following command, and then review the output. Replace the placeholders with your own server and domain names:

Get-VMMServer –Computername "<YourVMMServerName>.<YourDomainName>.com"

When the command has successfully completed, the server object is returned. The command shell displays information about the properties of the VMM server object. And, you are connected to the VMM database that is provided by the VMM server.

If a command does not work in the command shell, run the command to connect to the VMM server again. If you encounter problems, open the Services tool in Administrative Tools, and then restart the VMM service. Or, restart the service in the command shell. For information about how to restart a service in the command shell, type Get-Help Restart-Service -detailed.

If you are working on the server on which VMM is installed, you can substitute "localhost" for the fully qualified domain name (FQDN). You cannot do this if you are accessing the server remotely.

To connect to Virtual Machine Manager if it is installed on the local host

Type the following command, and then review its output:

Get-VMMServer –Computername localhost

<http://technet.microsoft.com/en-us/library/cc764276.aspx>

Virtual Machines (Windows cmd)

Set-Vm

Change the configuration of a VM

Set-VM -VM (Get-VM -Name "Win XP SP1") -Name "Win XP SP2" -GuestId "winXPProGuest"

-Description "My updatedWin XP virtual machine."

The Set-VM cmdlet configures a virtual machine.

Examples

Example 1

Configures virtual machine TestVM to shut down when the Hyper-V host shuts down.

```
PS C:\> Set-VM –Name TestVM –AutomaticStopAction Shutdown
```

Example 2

Stops virtual machine TestVM, sets it to use dynamic memory, sets its maximum amount of memory to 2GB, sets it to use 2 virtual processors, and starts it.

```
PS C:\> Stop-VM -Name TestVM -Passthru | Set-VM -ProcessorCount 2 -DynamicMemory -  
MemoryMaximumBytes 2GB -Passthru | Start-VM
```

Provision VM (Windows cmd)

VI PowerScripter

To create a new VM (Windows cmd)

```
$esxhost = Get-VMHost "ESXHost01 .mydomain.com"
```

```
New-VM -Name XPVM -VMHost $esxhost -DiskMB 4000 -MemoryMB 256
```

Creates a new virtual machine.

Examples

Example 1

Creates a new virtual machine named new 1 that has 512MB of memory.

```
PS C:\> New-VM –Name "new 1" –MemoryStartupBytes 512MB
```

Example 2

Creates a virtual machine named new 2 that has 1GB of memory and that is connected to a new 40GB VHDX file.

```
PS C:\> New-VM –Name "new 2" –MemoryStartupBytes 1GB –NewVHDPath d:\vhdx\base.vhdx
```

Example 3

Creates a virtual machine named new 3 that has 1GB of memory and is connected to an existing VHDX file.

```
PS C:\> New-VM –Name "new 3" –MemoryStartupBytes 1GB –VHDPath d:\vhdx\BaseImage.vhdx
```

To Remove a VM:

```
Remove-VM ( Get-VM "myVM" ) –DeleteFromDisk
```

Templates (Windows cmd)

```
$template = Get-Template -Name Templ* -Location (Get-Datacenter DC)
```

Remove-Template –

Template \$template

```
New-Template -VM ( Get-VM XPVM ) -Name Template01 -Location (Get-Datacenter DC)
```

```
Set-Template -Template $template -ToVM
```

convert Template to VM

How to Create a Virtual Machine Template

<http://technet.microsoft.com/en-us/library/bb740832.aspx>

Guest Customization Specification

```
$osspec = Get-OSCustomizationSpec WinXP
```

reads Guest Customization Specification object

```
New-VM -Name MyVM2 -Template Template01 -VMHost ESX01 -OSCustomizationSpec $osspec
```

other OS Customization CmdLets:

```
New-OSCustomizationSpec
```

```
Set-OSCustomizationSpec
```

<http://technet.microsoft.com/en-us/library/cc967317>

Question: 56

A company has virtual machine (VMs) in a 16-node Hyper-V failover cluster. They are using Microsoft system center virtual machine manager (VMM) 2008 R2 to migrate all of their existing VMware VMs to hyper-V. You need to minimize the impact on the Hyper-V hosts and on the existing VMs throughout the migration. What should you do?

- A. Prioritize resources for disk I/O.
- B. Configure placement settings for resource maximization.
- C. Prioritize resources for memory free.
- D. Configure placement settings for load balancing.
- E. Prioritize resources for network utilization.

Answer: D

Question: 57

A company has 12 servers that run Windows Server 2008 R2 with Hyper-V. All existing virtual machines (VMs) are currently running on a Hyper-V host server named SERVER01. You need to create five functioning VMs from an existing VM. What should you do?

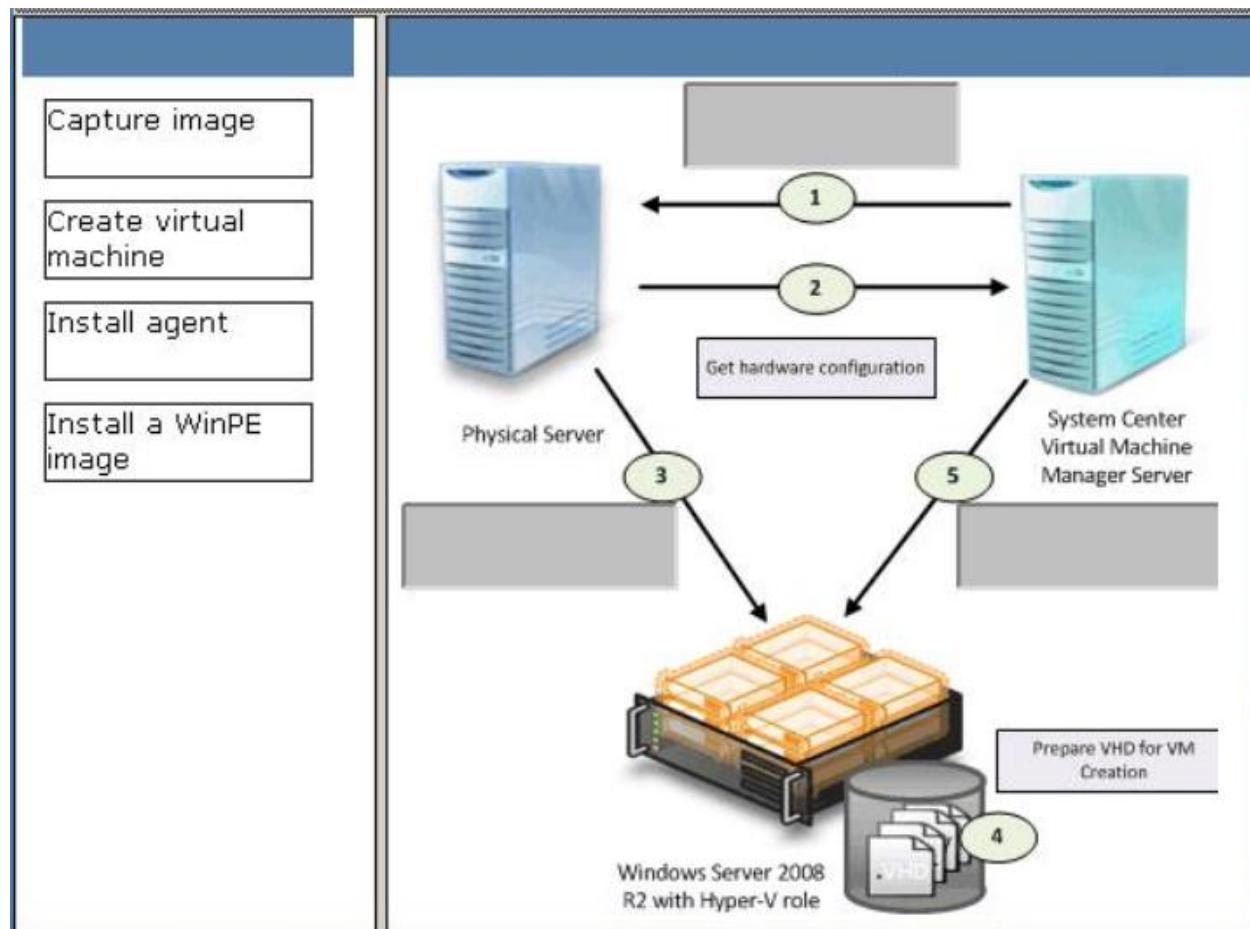
- A. Export the VM, copy the files onto five different host servers, import the VMs on those host servers, and then power on the VMs.
- B. Copy the .VHD file and the VM configuration file to the five different host servers and then power on the VMs.
- C. Copy the VHD to five different host servers and then power on the VMs.
- D. Create five snapshots and export the VM. Import the VM one time and duplicate the files to five different host servers.

Answer: A

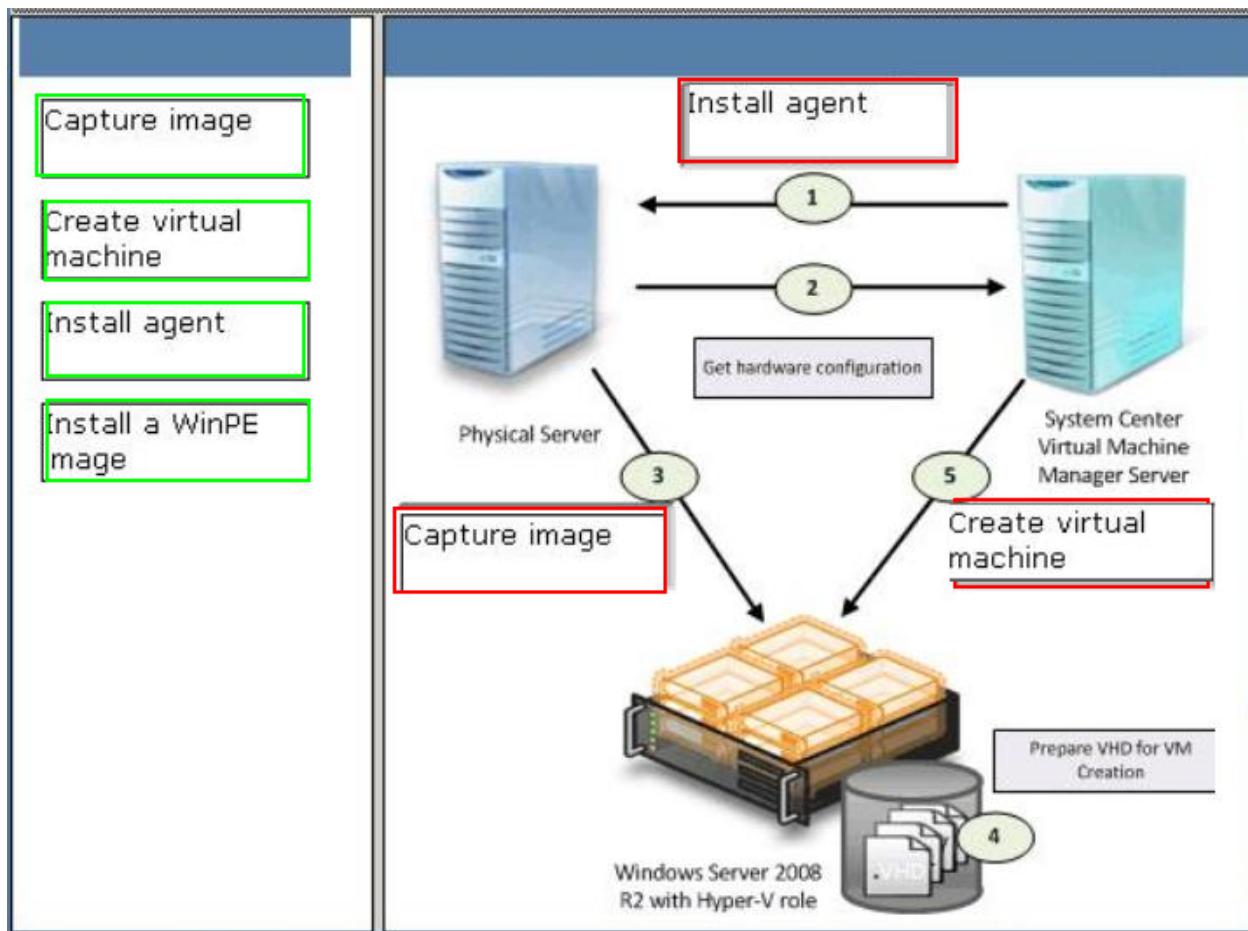
Question: 58

DRAG DROP

A company has a physical Windows 2008 R2 server that they plan to migrate to a virtual machine (VM). You need to document the migration process. How should you complete the diagram? (To answer, drag the appropriate answers from the list of answer choices to the correct locations in the answer area)



Answer:



Explanation:

1. (1) Install agent.
 2. (3) Capture Image.
 3. (5) Create Virtual machine.
- <http://technet.microsoft.com/en-us/library/bb963740.aspx>

Question: 59

You are using Microsoft System Center Virtual Manager (VMM) 2008 R2 to perform physical-to-virtual (P2V) conversions. Your company network includes computers that each run one of the following operating systems:

Windows NT 4.0 Server with NTFS volumes

Windows Server 2003 Standard Edition with FAT volumes

Windows Server 2003 Enterprise Edition x64 with NTFS volumes

Windows Server 2003 Enterprise Edition for Itanium-based Systems with FAT volumes

You need to choose the operating system that can be reliably converted only by using the office P2V method.

You need to choose the operating system that can be readily converted only by using the office P2V method.

Which operating system should you choose?

- A. Windows server 2003 Enterprise Edition x64 with NTFS volumes
- B. Windows Server 2003 Standard Edition with FAT volumes
- C. Windows Server 2003 Enterprise Edition for Itanium-based Systems with FAT volumes
- D. Windows NT 4.0 Server with NTFS volumes

Answer: B

Explanation:

Windows NT 4 SP6a is not supported you would have to user MS Virtual Server 2005 support tools x64 not supported on 2003 Windows 2003 itanium-based is not supported

Question: 60

You are considering your data center by using Windows Server 2008 R2 Hyper-V servers. You are performing virtual-to-virtual (V2V) conversions from Microsoft Virtual Server R2 and Windows ESX environments by using Microsoft System Center Virtual Machine (VMM) 2008 R2. You need to place the virtual machines (VMs) to fully utilize the Windows Server 2008 R2 host servers. What should you do?

- A. Set the placement goal to load balancing.
- B. Implement Windows System Resource Monitor (WSRM).
- C. Set the placement goal to Resource maximization.
- D. Implement Performance and Resource optimization.

Answer: C

Explanation:

When you deploy or migrate a virtual machine to a host, the evaluation and selection of the most suitable host for the virtual machine is known as virtual machine placement, or placement. During placement, Virtual Machine Manager (VMM) evaluates the suitability of available hosts and assigns each host a rating of 0 stars (not suitable) through 5 stars (very suitable), in half-star increments. Each host's rating is based on several factors, including the virtualization software on the host, the hardware and networking configuration of the host and the virtual machine, the virtual machine's resource requirements, and whether the virtual machine is highly available.

A new feature in VMM 2008 R2 is the host compatibility check, which VMM performs before migrating a virtual machine that is deployed on a Hyper-V host cluster created in Windows Server 2008 R2. To prevent a migration from failing, the host compatibility check ensures that the destination host's hardware, such as CPU model, is compatible with the source host. VMM uses the Hyper-V compatibility check API in Windows Server 2008 R2 and the VMware compatibility check APIs to ensure that hardware requirements are met for each type of virtualization software. This feature is not available for failover clusters created in Windows Server 2008. Using Host Ratings to Select Hosts You can establish customized default criteria for VMM to use when rating hosts during placement.

This helps you to place virtual machines on the most suitable host. You can specify the placement goal that VMM should use to calculate hosts ratings. The placement goals are described in the following table:

You can also specify the relative importance of each of the following resources that VMM should use when rating hosts:

- CPU utilization
- Memory utilization
- Disk I/O
- Network utilization

For example, if you create a Windows Server 2008-based virtual machine for developers and you know that the virtual machine requires significant CPU, however the host has relatively little hard disk or network resources, you might customize the default ratings to increase the priority of free CPU while lowering the priority of the hard disk and network.

Question: 61

Your company has a load-balanced Remote Desktop Session host (RD Session Host) cluster. You need to track user session information for the load-balanced RD Session Host cluster. What should you do?

- A. Create a Remote Desktop connection authorization policy (RD CAP).
- B. Create a Remote Desktop authorization policy (RD RAM).
- C. Install and configure the remote Desktop Connection Broker role service.
- D. Install and configure the remote Desktop licensing role service.

Answer: C

Explanation:

Remote Desktop Connection Broker (RD Connection Broker), formerly Terminal Services Session Broker (TS Session Broker), is a role service that provides the following functionality:

Allows users to reconnect to their existing sessions in a load-balanced RD Session Host server farm.

This prevents a user with a disconnected session from being connected to a different RD Session Host server in the farm and starting a new session.

Enables you to evenly distribute the session load among RD Session Host servers in a loadbalanced RD Session Host server farm Provides users access to virtual desktops hosted on RD Virtualization Host servers and to RemoteApp programs hosted on RD Session Host servers through RemoteApp and Desktop Connection.

Remote Desktop Connection Broker (RD Connection Broker), formerly Terminal Services Session Broker (TS Session Broker), is used to provide users with access to RemoteApp and Desktop Connection. RemoteApp and Desktop Connection provides users a single, personalized, and aggregated view of RemoteApp programs, session-based desktops, and virtual desktops to users.

RD Connection Broker supports load balancing and reconnection to existing sessions on virtual desktops, Remote Desktop sessions, and RemoteApp programs accessed by using RemoteApp and Desktop Connection. RD Connection Broker also aggregates RemoteApp sources from multiple Remote Desktop Session Host (RD Session Host) servers that may host different RemoteApp programs.

To configure which RemoteApp programs and virtual desktops are available through RemoteApp and Desktop Connection, you must add the RD Connection Broker role service on a computer running Windows Server 2008 R2, and then use Remote Desktop Connection Manager (RD Connection Manager).

Question: 62

A company is preparing to deploy Windows Server 2008 R2 Remote Desktop Services (RDS). You have obtained RDS Client access licenses (CALs). You need to prepare the environment for the installation of the RDS CALs. What should you do?

- A. Install the RD licensing role services.
- B. Configure Remote Desktop licensing mode on the RD session Host.
- C. Create an RDS farm and add the Rd session Host to the farm.
- D. Activate the Remote Desktop license server.

Answer: A

Explanation:

"prepare the environment for the installation of the RDS CALs"

Question: 63

Your company uses Remote Desktop Services (RDS). You install and configure the Remote Desktop Gateway (RD Gateway) role service on a server that runs Windows Server 2008 R2. Employees connect to RDS from unmanaged remote computers Employees are unable to access the RD Gateway server from the unmanaged remote computers. You need to ensure that employees can access the RD Gateway server. What should you do?

- A. On the RD Gateway server, open port 3389 on the Windows Firewall.
- B. Create a Remote Desktop connection authorization policy (RD CAP).
- C. Create a Remote Desktop resource authorization policy (RD RAP).
- D. On the RD Gateway server, configure Network Access Protection (NAP) health policy checking.

Answer: B

Explanation:

Remote Desktop Gateway (RD Gateway) is a role service that enables authorized remote users to connect to resources on an internal corporate or private network, from any Internet-connected device that can run the Remote Desktop Connection (RDC) client. The network resources can be Remote Desktop Session Host (RD Session Host) servers, RD Session Host servers running RemoteApp programs, or computers with Remote Desktop enabled. RD Gateway uses the Remote Desktop Protocol (RDP) over HTTPS to establish a secure, encrypted connection between remote users on the Internet and the internal network resources on which their productivity applications run. Users on Remote Desktop Services clients must meet specific requirements before they can connect to RDGateway. These requirements include the following:

Supported Windows authentication method (required). You can configure the authentication methods that the RDGateway server will allow by using Remote Desktop Gateway Manager. On clients, you can configure the authentication method to be used to connect to the RDGateway server by using Group Policy.

User group membership (required). You configure the user group membership requirement by using Remote Desktop Gateway Manager.

Client computer group membership (optional). You configure the client computer group membership requirement by using Remote Desktop Gateway Manager.

For remote clients to successfully connect to internal network resources (computers) through a Remote Desktop Gateway (RD Gateway) server, clients must meet the conditions specified in at least one Remote Desktop connection authorization policy (RD CAP) and Remote Desktop resource authorization policy (RD RAP). RD CAPs specify who can connect to an RD Gateway server and the authentication method that must be used. RD RAPs specify the computers that clients can connect to through an RD Gateway server.

Note: A limit can be set on the RD Gateway server to restrict the maximum number of simultaneous client connections.

Question: 64

All servers on your network run Windows Server 2008 R2. You deploy Remote Desktop Services (RDS). You are configuring the Remote Desktop Session Host (RD Session Host) role service. You need to ensure that authentication occurs before the Remote Desktop Connection logon screen appears. What should you do?

- A. In the Group Policy Object Editor, configure the Set TS Gateway authentication method setting to Use smart card.
- B. In the Group Policy Object Editor, configure the Set TS Gateway authentication method setting to Use locally logged-on credentials.
- C. In the RD Session Host Configuration tool, select the Allow connections from computers running any version of Remote Desktop option.
- D. In the RD Session Host Configuration tool, select the Allow connections only from computers running Remote Desktop with Network Level Authentication option.

Answer: D

Explanation:

Network Level Authentication is an authentication method that can be used to enhance RD Session Host server

security by requiring that the user be authenticated to the RD Session Host server before a session is created. Network Level Authentication completes user authentication before you establish a remote desktop connection and the logon screen appears. This is a more secure authentication method that can help protect the remote computer from malicious users and malicious software. The advantages of Network Level Authentication are:

It requires fewer remote computer resources initially. The remote computer uses a limited number of resources before authenticating the user, rather than starting a full remote desktop connection as in previous versions.

It can help provide better security by reducing the risk of denial-of-service attacks.

To use Network Level Authentication, you must meet the following requirements:

The client computer must be using at least Remote Desktop Connection 6.0.

The client computer must be using an operating system, such as Windows 7, Windows Vista, or Windows XP with Service Pack 3, that supports the Credential Security Support Provider (CredSSP) protocol.

The RD Session Host server must be running Windows Server 2008 R2 or Windows Server 2008.

Question: 65

All servers on your network run Windows Server 2008 R2. All client computers run Windows 7. You deploy remote desktop Services (RDS).

You are configuring the Remote Desktop Session Host (RD Session Host) role services.

You need to configure the RD Session Host Servers to ensure that all communication between client computers and servers uses 128-bit encryption.

What should you do?

- A. In the Group Policy Object Editor, configure the Set client encryption level setting to the FIPS Compliant.
- B. In the RD Session Host Configuration tool, require the SSL (TLS 1.0) security layer.
- C. In the RD Session Host Configuration tool, require the RDP security layer.
- D. In the Group Policy Object Editor, configure the set client encryption level setting to high.

Answer: D

Explanation:

<http://technet.microsoft.com/en-us/library/cc770833>

As clients are all Windows 7, Defaults to Highest supported encryption, however you must force 128-bit which is equivalent to Group Policy setting High.

SSL 1.0 is greater than 128-bit encryption and requires a certificate.

Question: 66

DRAG DROP

A company has a two-node Microsoft Hyper-v failover cluster that hosts virtual machines (VMs). The company has the following VM administrative requirements:

Users must be able to provision their own VMs.

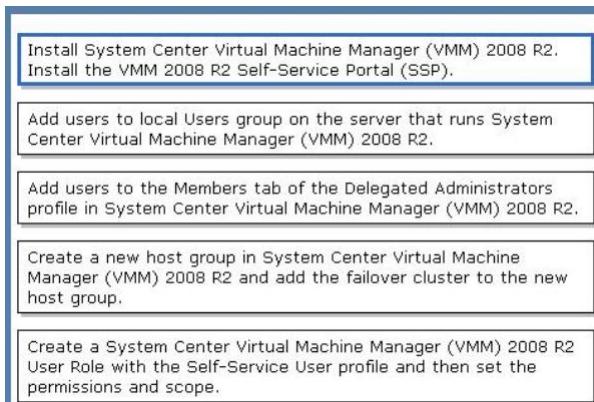
All VMs must be provisioned from Microsoft Internet Explorer.

Users must be able to connect to the VMs remotely.

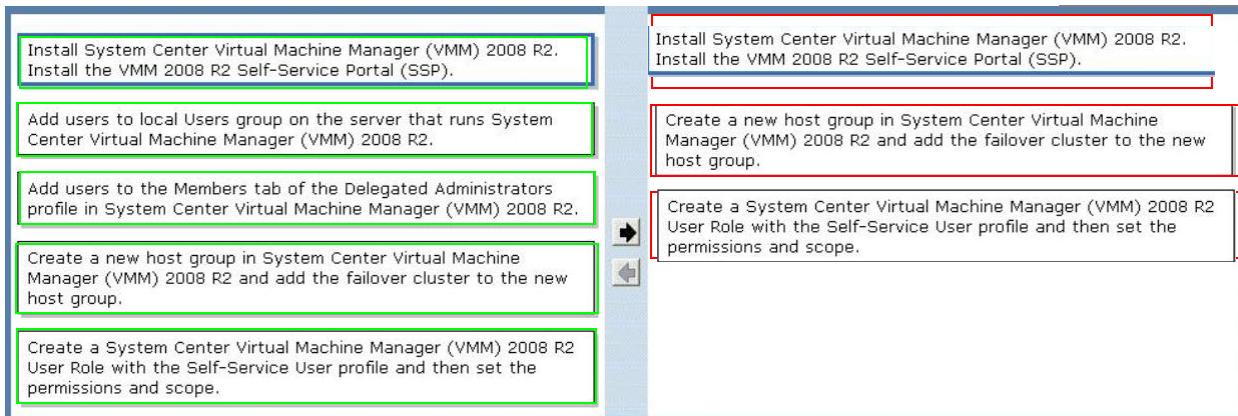
Delegated settings must not impact failover clusters that are deployed in future.

You need to deploy a solution to meet the administrative requirements.

Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of answers choices to the answer and arrange them in the correct order)



Answer:



Question: 67

Your company has an Active Directory Domain Services (AD DS) domain that includes an AD security group named Monitoring.

You are configuring a Windows Server 2008 R2 Hyper-V server.

You need to ensure that members of the Monitoring group can view virtual machines (VMs) but cannot make changes to them.

What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

A.

In Active Directory, create a group named HVMonitor.

Grant the Read permission to the HVMonitor group for the VM configuration files and the VHD files.

Add the Monitoring group to the HVMonitor group.

B.

In Local Users and Computers, create a group named HVMonitor.

Grant the Read permission to the HVMonitor group for the VM configuration files and the VHD files.

Add the Monitoring group to the HVMonitor group.

C.

In Authorization Manager, create a role named HVMonitor.

Add all the View operations and the Read Service Configuration operation to the role.

Assign the role to the Monitoring group.

D.

In Authorization Manager, create a role named HVMonitor.

Create a task that includes all the View operations and the Read Service Configuration operation.

Add this task to the HVMonitor role. Assign the role to the Monitoring group.

Answer: C,D

Explanation:

AD security group named Monitoring has already been created, A and B are invalid.

Question: 68

A company has a Hyper-V server named SERVER01 that Runs Windows Server 2008 R2 Enterprise with Service pack (SP) 1. All virtual machines (VMs) runs Windows Server 2008 R2 Enterprise with SP1. All VMs are configured to use Dynamic Memory. A VM named VM01 is exhibiting performance problems. You need to assertions how much memory VM01 is consuming. What should you do?

- A. In Hyper-V manager, view the Memory Demand value.
- B. User performance Monitor to view the \Hyper-V Dynamic VM\Guest visible Dynamic memory performance counter for Vm01.
- C. Use Performance Monitor to view the \Hyper-V Dynamic memory balancer \ Availability Memory performance counter for SERVER01.
- D. In Hyper-V manager, view the assigned memory value.

Answer: A

Question: 69

Your company has a single active Directory Domain Services (AD DS) domain that includes AD Security group named test and development. You are configuring a Windows server 2008 R2 Hyper-V server. The server hosts five virtual machines (VMs) that are used by test group members can manage only the Development VMs. You need to ensure that Test group members can manage only the Test VMs and that development group members can manage only the Development VMs. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two)

- A. In the authorization manager, create a group named AzManTest and group named AzmanDev. Add the test group members to the AzManTest group, and add the development group membersto the AzmanDev group. Assign the AzManTest and AzManDev group to the administrator role in the default scope.
- B. Add the Test VM computer accounts to the Test group, and add the Development VM computer accounts to the development group.
- C. Create and run a script that uses windows management instrument (VMI) to assign each VM to the appropriate scope.
- D. In Authorization Manager, create a scope named Test and a scope named Development. In each scope, create an Administrator role, and add all the Hyper-V operations to the role. Assign the Test group to the Test scope Administrator role, and assign the Development group to the Development scope Administrator role.

Answer: B,D

Question: 70

DRAG DROP

A company has an environment that includes Microsoft Hyper-V Servers 2008 R2, Microsoft System Center Virtual manager (VM) and the VMM self service portal (SSP). That company's network consists of one Active Directory

Domains Services (AD DS) forest domain. All virtual machines (VMs) are currently owned by individual database team members. The company wants to delegate rights for virtual machines (VMs) and has the following requirements:

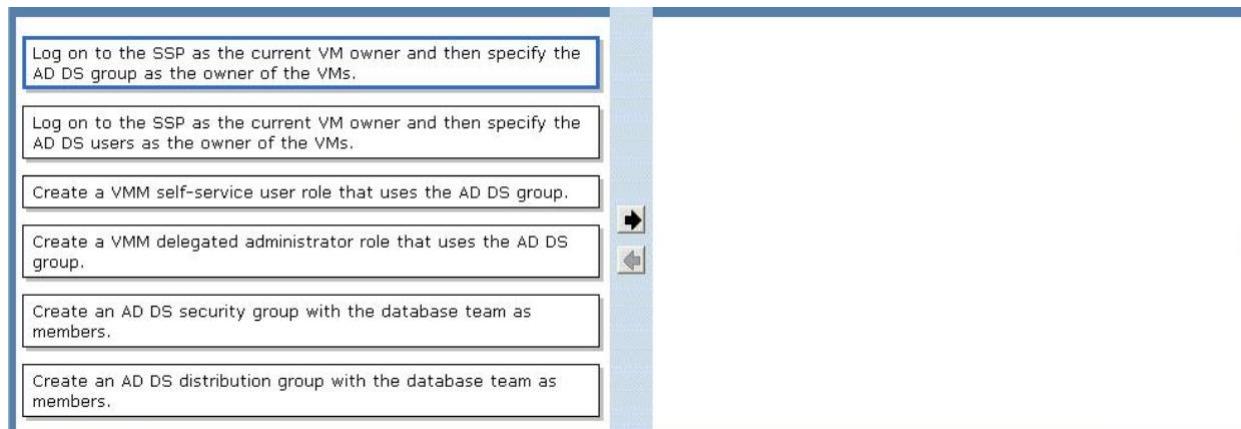
The database team must be able to create VMs and administer them by using the SSP.

The database team must be able to share the VMs with other members of the database team.

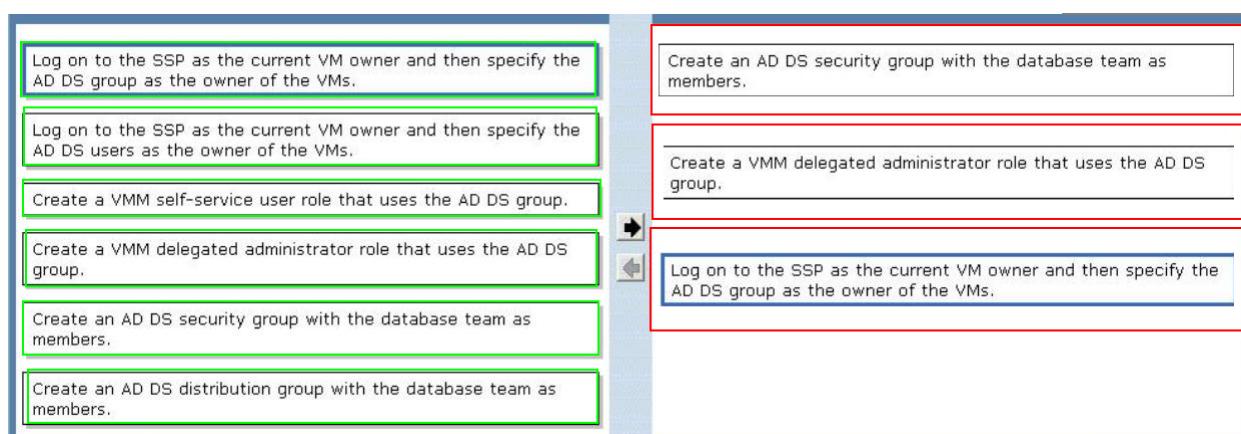
- The principle of the least privilege must be used.

You need to provide a solution to meet the requirements.

Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer, arrange them in the correct order)



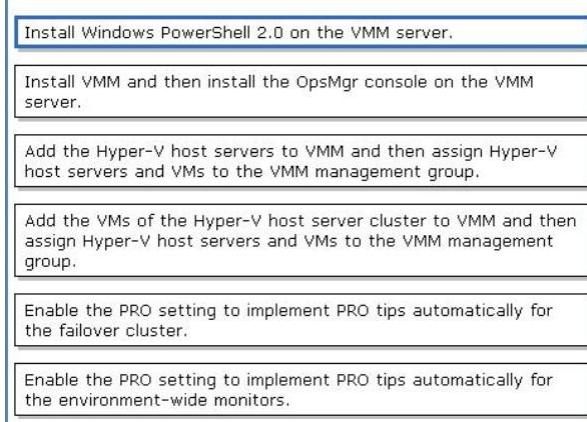
Answer:



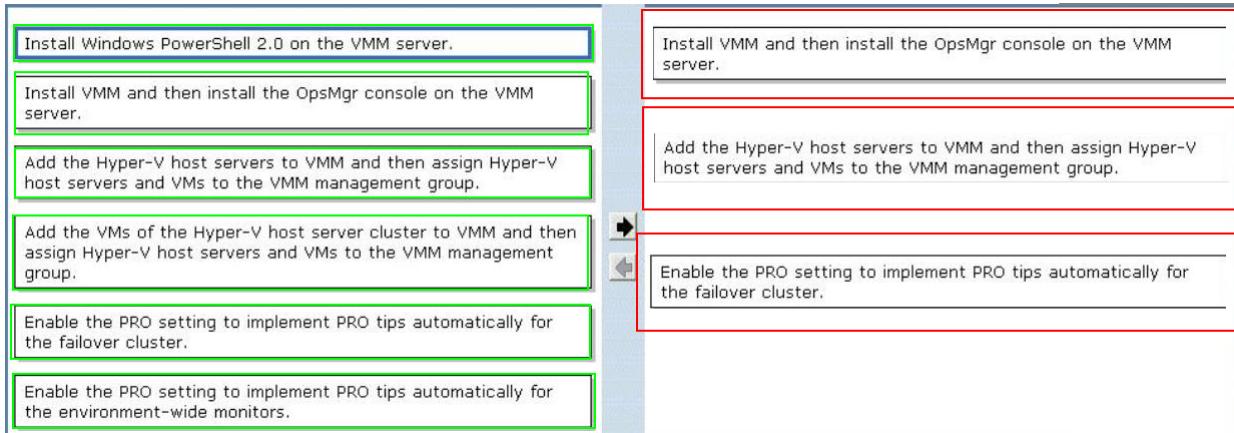
Question: 71

DRAG DROP

A company has a 16-node Windows Hyper-V Server 2008 R2 failover cluster. The company plans to use Microsoft System Center Virtual machine manager (VMM) 2008 R2 and Microsoft System Center Operations Manager (OpsMgr) 2007 R2 to manage and monitor the environment. You install OpsMgr and import the VMM 2008 R2 management packs. Then you install the OpsMqr agent on the Hyper-V host servers. During peak usage times, many services running on the virtual machines (VMs) become unresponsive. You need to enable VMM performance and Resource Optimization (PRO) to move VMs to other hosts automatically if the performance of a host degrades due to resource contention. You must not impact other failover clusters that are added to VMM in the future. Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer, arrange them in the correct order)



Answer:



Explanation:

1. Install VMM and then install the OpsMgr console on the VMM server.
2. Add Hyper-V host server to VMM and then assign Hyper-V host servers and VMs to the VMM management group.
3. Enable PRO settings to implement PRO type automatically for failover cluster.

Question: 72

You are configuring your Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 environment. A VMware ESX 3.5 host server named Host1 is added to the existing VMware Infrastructure 3 (VI3) environment that you manage by using VMM. You need to add Host1 to your VMM environment. What should you do?

- A. In the Computer name field of the Add VMware VirtualCenter server dialog box, type the fully qualified domain name (FQDN) of Host1.
- B. In the Computer name field of the Add VMware VirtualCenter server dialog box, type the fully qualified domain name (FQDN) of the VMware VirtualCenter server that manages Host1.
- C. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of Host1.
- D. In the Add Hosts wizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of the VMware VirtualCenter server that manages Host1.

Answer: C

Explanation:

How to Add an ESX Server Host to VMM

To add ESX Server hosts

1. If you are managing your VMware environment in secure mode, retrieve the following security information from the host computers before you add the hosts:

a. For all versions of ESX Server, secure mode requires a certificate. If you plan to use the selfsigned certificates that VMware created when ESX Server was installed on the hosts, retrieve the certificates from the host computers. This is not required if you are using a certificate from a trusted certification authority.

For hosts that are running VMware ESX Server 3.5 or VMware ESX Server 3.0.2, also retrieve the SSH public key from the host computer. A public key is not required for hosts running ESX Server 3i.

b. For instructions for automating the preceding tasks, see Configuring Security for a Managed VMware Environment in VMM (<http://go.microsoft.com/fwlink/?LinkId=145051>).

2. In any view in the VMM Administrator Console, on the Actions pane, click Add hosts to open the Add Hosts Wizard.

3. On the Select Host Location page, click VMware ESX Server host, enter the credentials for an account with administrative privileges on the host, and then click Next.

4. On the Select Host Servers page, do the following:

a. In the Computer name or IP address box, type the computer name or IP address of an ESX Server host.

b. In the Virtualization VirtualCenter list, select the VMware VirtualCenter Server you want to add the host to.

Important

If the specified host is already being managed by VMM under a different VirtualCenter server, it will be moved from its current VirtualCenter server and added to the newly specified VirtualCenter Server.

c. In the Host group list, select a host group for the host you want to add.

Note

A VMware ESX Server host can be added only to the VirtualCenter

Server's root host group or one of its children.

d. Depending on whether you are managing your VMware environment in secure mode, do one of the following:

- If secure mode is not turned on, click Add Host.

- If secure mode is turned on, and you did not retrieve the certificate and public key manually, click Retrieve to have VMM connect to the host computer and retrieve the certificate and, if required, the SSH public key. For ESX Server 3i, the certificate is imported, but not a public key. Visually verify the authenticity of the items. Then select the Accept both the certificate and public key for this host check box, or, for a host running ESX Server 3i, select the Accept the certificate check box. Then click Add Host.

For more information about secure mode, see Configuring Security for a Managed VMware Environment in VMM (<http://go.microsoft.com/fwlink/?LinkId=145051>).

<http://technet.microsoft.com/en-us/library/ee236437.aspx>

Question: 73

You are configuring a new Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 environment to manage your existing virtual infrastructure. The existing infrastructure includes Windows Server 2008 R2 host servers and VMware ESX host servers. You need to add a VMware ESX host server named Host1 to your VMM environment. What should you do?

A. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of the VMware VirtualCenter server that manages Host1.

B. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of Host1.

C. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of the VMware VirtualCenter server that manages Host1.

D. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of Host1.

Answer: A

Explanation:

To add a vCenter Server

Open theFabricworkspace.

In theFabricpane, expandServers, and then click vCenter Servers.

On the Home tab, in the Add group, click Add Resources, and then click VMware vCenterServer.

The Add VMware vCenterServer dialog box opens.

In the Add VMware vCenter Server dialog box, do the following:

In the Computer name box, enter the fully qualified domain name (FQDN), NetBIOS name, or IP address of the vCenter Server.

In the TCP/IP portbox, enter the port to use to connect to the vCenterServer. By default, VMM uses TCP/IP port 443 to connect to the server through Secure Socket Layer (SSL).

Question: 74

You have a Windows Server 2008 R2 Hyper-V failover cluster with a single iSCSI logical unit number (LUN) and one highly available virtual machine (HAVM). You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You monitor the environment by using Microsoft System Center Operations Manager 2007 R2. You configure a new virtual machine (VM) by deploying a VHD from the VMM library and placing the VHD on the existing iSCSI LUN. You create an HAVM configuration, and you attach the VHD to the configuration. VMM reports the status of the VMs as Unsupported Cluster Configuration. You need to be able to manage the VMs by using VMM. What should you do?

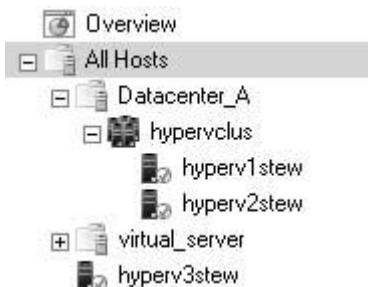
- A. Configure Windows System Resource Manager (WSRM) on the Windows Server 2008 R2 cluster nodes.
- B. Configure Performance and Resource Optimization (PRO) on the Windows Server 2008 R2 cluster nodes.
- C. Move the VHD of one HAVM to the system volume of a cluster node.
- D. Move the VHD of one HAVM to a new iSCSI LUN.

Answer: D

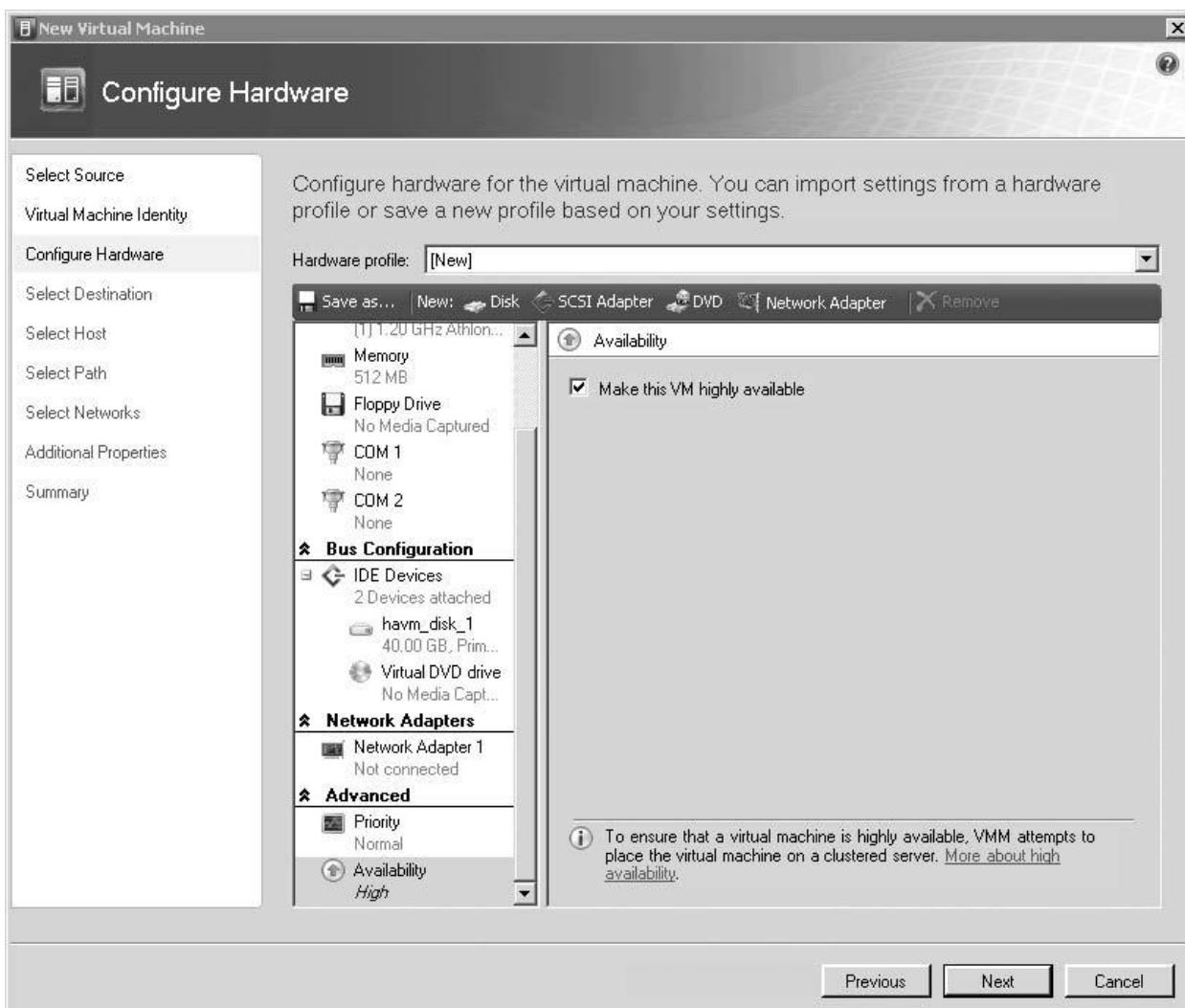
Explanation:

The next step for proper network planning and utilization involves iSCSI. Will the VMs be using iSCSI, or will the host be using iSCSI? Regardless of whether it's a host or a guest, you should set aside a separate interface for each instance of iSCSI traffic. If the host is using iSCSI (for failover clustering, for example), then it should have a separate adapter port that is different from any adapter port being used for guest VMs using iSCSI. iSCSI can be used in a VM—in fact, it's the only way to set up a cluster Note of VMs. It's recommended that if a VM is using iSCSI, you should create a separate virtual network to ensure sufficient bandwidth. Creating Highly Available Virtual Machines Last but not least, one of the most important provisioning options is the ability to make a VM highly available. Doing so provides availability in the event that the virtualization host experiences planned or unplanned downtime. Planned downtime can occur when you perform maintenance on a host; unplanned downtime can occur when a virtualization host goes down completely for any reason. In the event of planned downtime, the VM state is saved and migrated to another virtualization host in a Hyper-V Quick Migration cluster. If a virtualization host crashes that is a part of a Quick Migration cluster, the VM and associated resources are restarted on another Hyper-V host in the Quick Migration cluster. To provision highly available VMs, you first must have set up a Quick Migration cluster Then, you're almost ready to use SCVMM to create highly available VMs. You have to make SCVMM aware of the host cluster the same way you add any host to SCVMM for management. Let's walk through the steps for making a VM highly available:

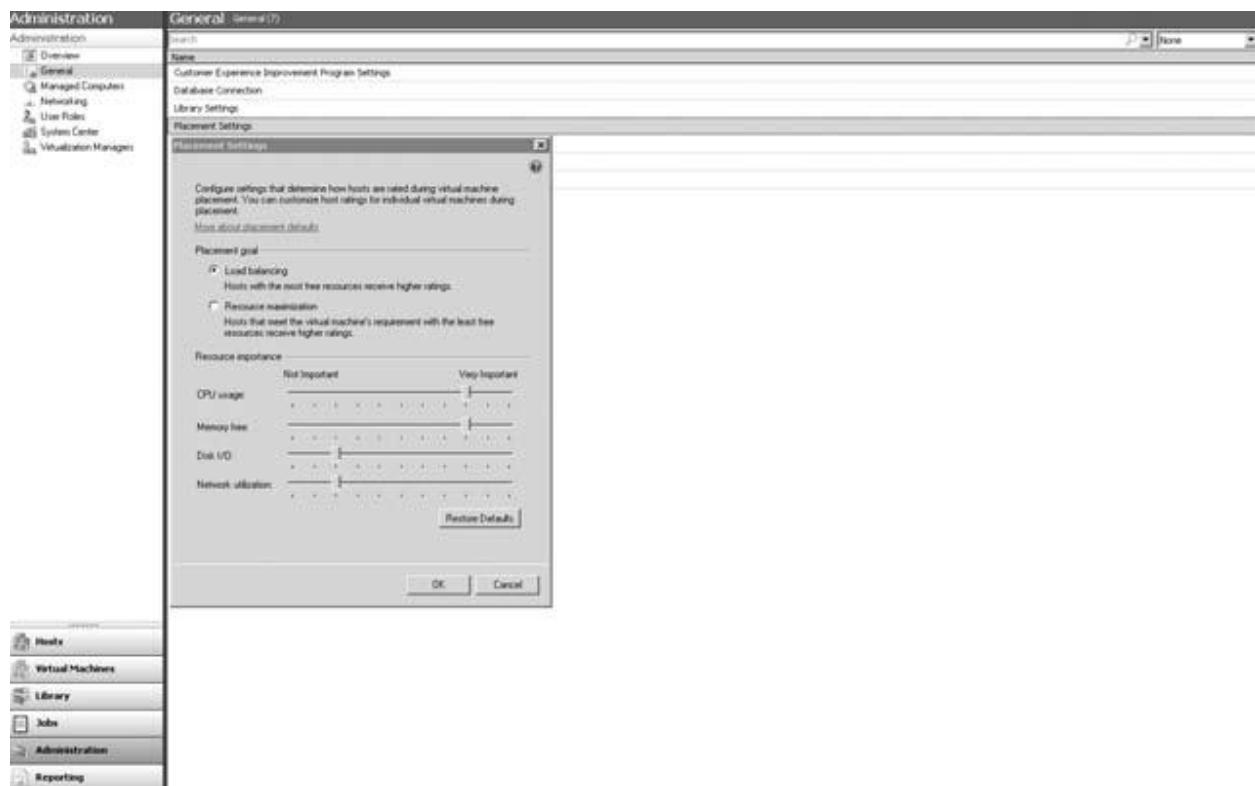
1. Add the Quick Migration cluster to SCVMM via the SCVMM administrator console using the Add Host option. SCVMM detects that you're adding a node to the Quick Migration cluster and adds SCVMM agents to each host in the cluster. A cluster object is created and available in the SCVMM console. See Figure for a view of the new cluster object.



2. You're ready to configure a highly available VM. Open the SCVMM administrator console.
3. Select New Virtual Machine to start the New Virtual Machine Wizard.
4. Select the source for the new VM. Create the new machine with a blank hard drive.
5. Select the name of the VM, the owner of the VM (AD user or group), and enter a description of the VM.
6. Set up the hardware profile of the VM, including the VHD, the processor count, the network adapters, and either IDE or SCSI adapters.
7. The most important step is to scroll down to the Availability option and select the check box to make this VM highly available



8. Select the destination. You can either deploy directly to an existing host or store the VM on an SCVMM library server.
9. Intelligent Placement determines the best host for the workload using the star rating system. The host with the most stars represents the best host for placement of this VM (driven by the Intelligent Placement settings shown in Figure



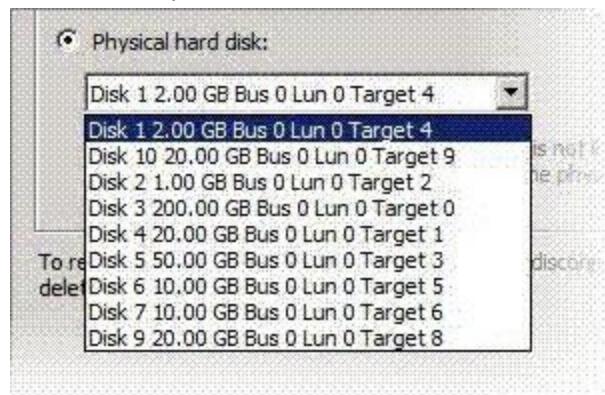
10. Select a VM path that is in the Quick Migration cluster and a SAN volume.
11. Click Create The Virtual Machine, and verify that the VM is created on the selected cluster node.
12. Verify the high-availability configuration for the VM by right-clicking the VM and performing a migration of the VM to another node in the Quick Migration cluster.

Question: 75

Your environment includes a Windows Server 2008 R2 Hyper-V server. The server hosts several virtual machines (VMs). You are configuring a VM to use pass-through disks. In the Hyper-V Manager Settings window for the VM, Disk 1 through Disk 7, Disk 9, and Disk 10 are available in the Physical hard disk list. Disk 8 does not appear in the list, as shown in the following display.

You need to configure the VM to use Disk 8 as a pass-through disk.

What should you do?



- A. Take Disk 8 offline.
- B. Convert Disk 8 to a dynamic disk.
- C. Format Disk 8, and mark the partition as active.
- D. Run the Diskpart command. At the Diskpart prompt, type select disk 8, and then type recover.

Answer: A

Explanation:**Configuring Pass-through Disks in Hyper-V****Pass -through Disk Configuration**

Hyper-V allows virtual machines to access storage mapped directly to the Hyper-V server without requiring the volume be configured. The storage can either be a physical disk internal to the Hyper-V server or it can be a Storage Area Network (SAN) Logical Unit (LUN) mapped to the Hyper-V server.

To ensure the Guest has exclusive access to the storage, it must be placed in an Offline state from the Hyper-V server perspective. Additionally, this raw piece of storage is not limited in size so, hypothetically, it can be a multi-terabyte LUN.

After storage is mapped to the Hyper-V server, it will appear as a raw volume and will be in an Offline state (depending on the SAN Policy (Figure 1-1)) as seen in Figure 1.

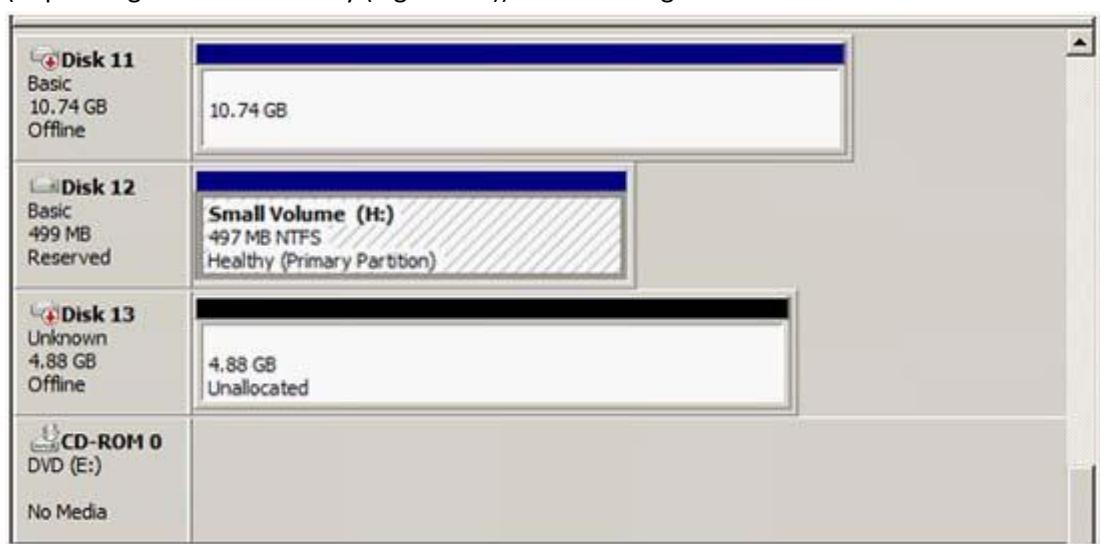


Figure 1: Raw disk is Offline

```
C:\>DISKPART
Microsoft DiskPart version 6.0.6001
Copyright (C) 1999-2007 Microsoft Corporation.
On computer: W2K8-CLI

DISKPART> SAN
SAN Policy : Offline Shared
DISKPART>
```

Figure 1-1 SAN Mode determination usingdiskpart.exe

I stated earlier that a disk must be Offline from the Hyper-V servers' perspective in order for the Guest to have exclusive access. However, a raw volume must first be initialized before it can be used. To accomplish this in the Disk Management interface, the disk must first be brought Online.

Once Online, the disk will show as being Not Initialized (Figure 2).

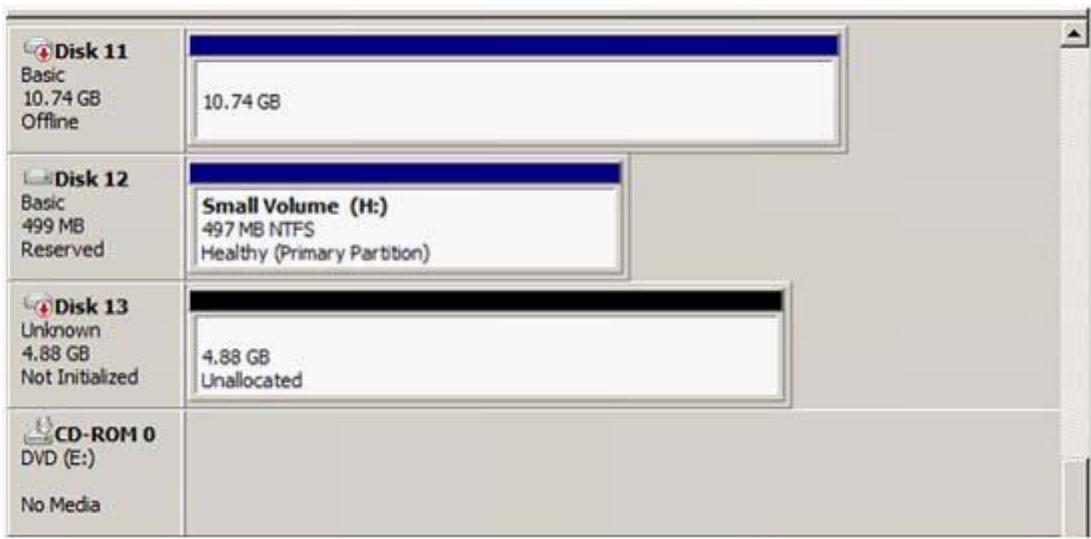


Figure 2: Disk is Online but Not Initialized
Right-click on the disk and select Initialize Disk(Figure 3).

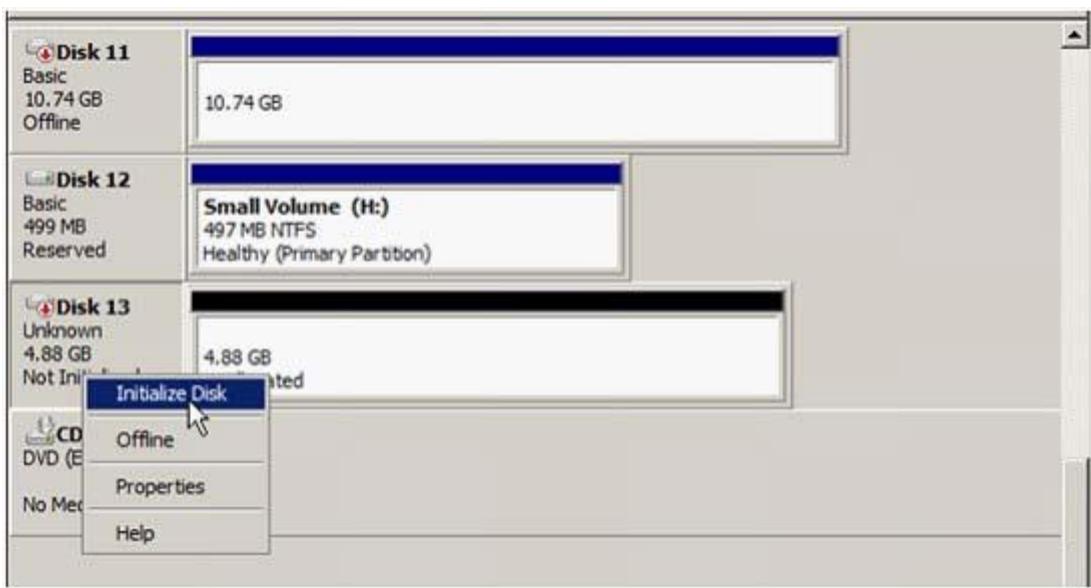


Figure 3: Initialize the disk
Select either an MBR or GPT partition type (Figure 4).

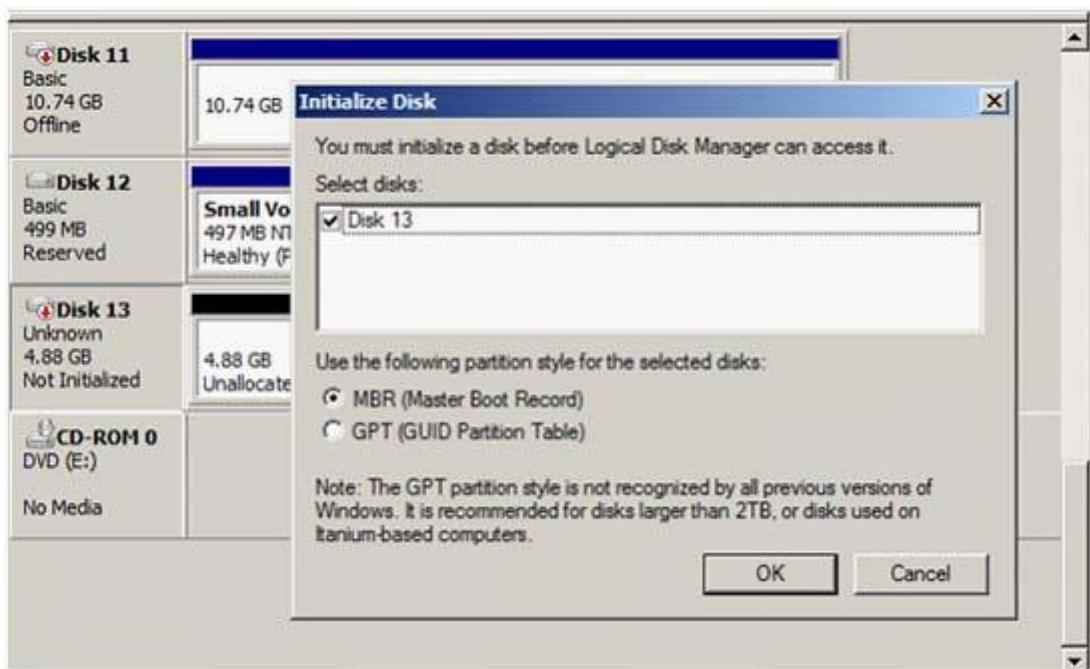


Figure 4: Selecting a partition type Once a disk is initialized, it can once again be placed in an Offline state. If the disk is not in an Offline state, it will not be available for selection when configuring the Guest's storage.

In order to configure a Pass-through disk in a Guest, you must select Attach a virtual disk later in the new Virtual Machine Wizard (Figure 5).

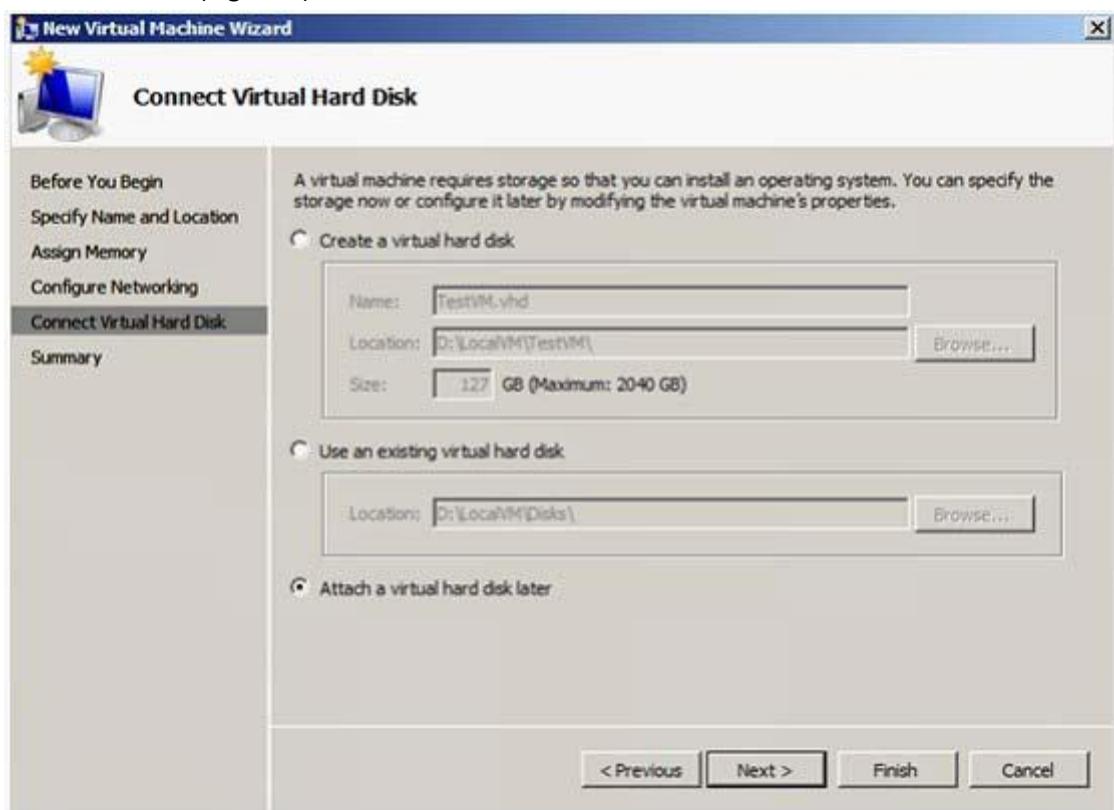


Figure 5: Choosing to attach a virtual disk later

If the Pass-through disk will be used to boot the operating system, it must be attached to an IDE Controller. Data disks can take advantage of SCSI controllers. In Figure 6, a Pass-through disk is attached to IDE Controller 0.

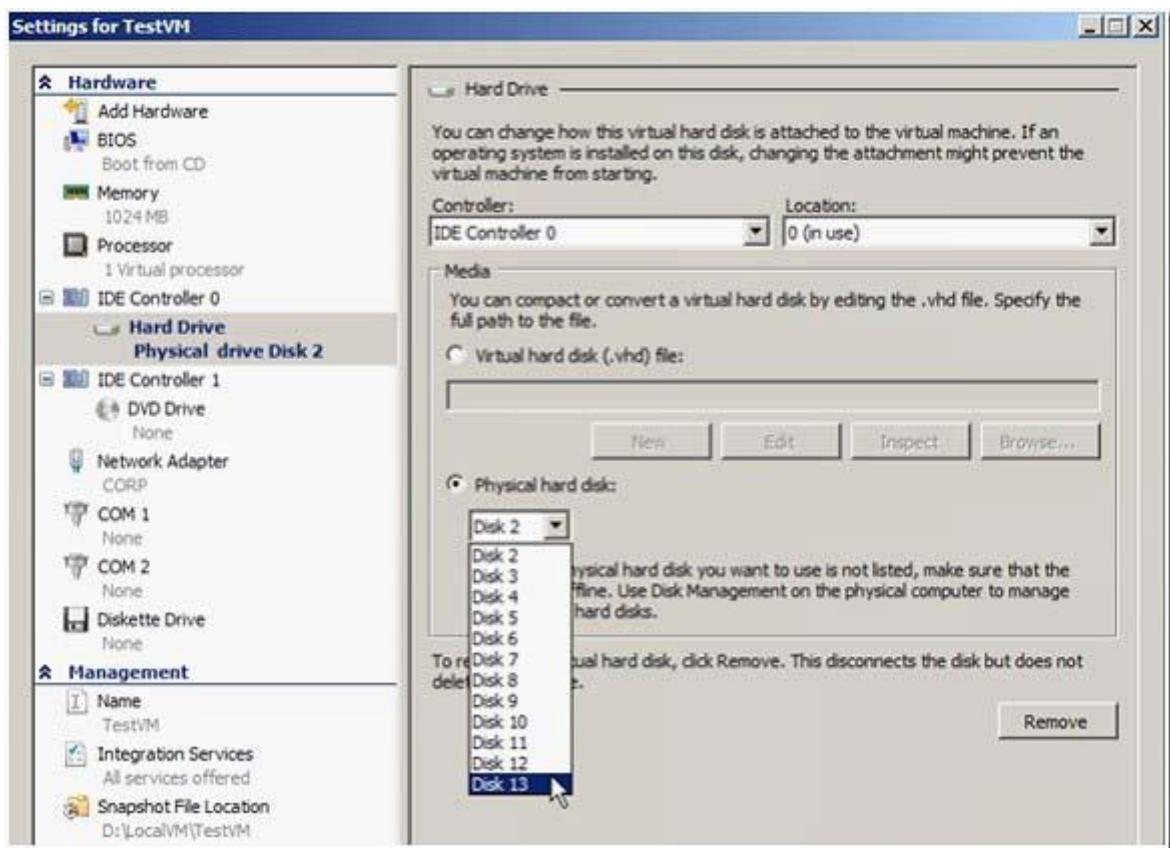


Figure 6: Attaching a pass-through disk to an IDE Controller

Note: If the disk does not appear in the drop down list, ensure the disk is Offline in the Disk Management interface (In Server CORE, use the diskpart.exe CLI).

Once the Pass-through disk is configured, the Guest can be started and data can be placed on the drive. If an operating system will be installed, the installation process will properly prepare the disk.

If the disk will be used for data storage, it must be prepared in the Guest operating system before data can be placed on it.

If a Pass-through disk, being used to support an operating system installation, is brought Online before the Guest is started, the Guest will fail to start. When using Pass-through disks to support an operating system installation, provisions must be made for storing the Guest configuration file in an alternate location. This is because the entire Pass-through disk is consumed by the operating system installation. An example would be to locate the configuration file on another internal drive in the Hyper-V server itself. Or, if it is a cluster, the configuration file can be hosted on a separate cluster providing highly available file services. Be aware that Pass-through disks cannot be dynamically expanded. Additionally, when using Pass-through disks, you lose the capability to take snapshots, and finally, you cannot use differencing disks with Pass-through disks.

Note: When using Pass-through disks in a Windows Server 2008 Failover Cluster, you must have the update documented in KB951308: Increased functionality and virtual machine control in the Windows Server 2008 Failover Cluster Management console for the Hyper-V role installed on all nodes in the cluster.

Question: 76

You use Hyper-V Manager to create a new virtual machine named VM1. VM1 has the configuration shown in the following display.



You start VM1 and begin installing Windows Server 2008 R2 from a DVD. An error message appears, and you are unable to complete Windows Setup. You need to be able to install Windows Server 2008 R2 on VM1. What should you do?

- A. Increase the Memory setting to 2048 MB.
- B. Move VM1.vhd to IDE Controller 0.
- C. Change the Processor setting to 1 Virtual Processor.
- D. Change the Bios setting to Boot from IDE.

Answer: B

Explanation:

Determining your storage configuration options on virtual machines

You can select either integrated device electronics (IDE) or SCSI devices on virtual machines:

IDE devices. Hyper-V uses emulated devices with IDE controllers. You can have up to two IDE controllers with two disks on each controller. The startup disk (sometimes referred to as the boot disk) must be attached to one of the IDE devices. The startup disk can be either a virtual hard disk or a physical disk. Although a virtual machine must use an IDE device as the startup disk to start the guest operating system, you have many options to choose from when selecting the physical device that will provide the storage for the IDE device. For example, you can use any of the types of physical storage identified in the introduction section.

SCSI devices. Each virtual machine supports up to 256 SCSI disks (four SCSI controllers with each controller supporting up to 64 disks). SCSI controllers use a type of device developed specifically for use with virtual machines and use the virtual machine bus to communicate. The virtual machine bus must be available when the guest operating system is started. Therefore, virtual hard disks attached to SCSI controllers cannot be used as startup disks.

Question: 77

Your company has an Active Directory Domain Services (AD DS) domain. You have a Windows Server 2008 R2 Hyper-V server. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008

R2. You need to ensure that a user can create new virtual machines (VMs) on only a specific set of servers. The user must not be able to see or manage servers outside of that set within VMM. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Create a host group. Add the host servers that the user will manage to the host group.
- B. Using Authorization Manager, assign the user to a role with the necessary permission to manage the servers by using VMM.
- C. Create a failover cluster. Join the host servers that the user will manage to the failover cluster.
- D. Using Authorization Manager, assign the user to a role with the necessary permission to manage the servers by using the VMM Self-Service Portal.

Answer: A,D

Explanation:

Create a host group. Add the host servers that the user will manage to the host group. > to ensure that a user can create new virtual machines (VMs) on only a specific set of servers .

The user must not be able to see or manage servers outside of that set within VMM > Using Authorization Manager, assign the user to a role with the necessary permission to manage the servers by using the VMM Self-Service Portal.

Question: 78

You manage your virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You plan to install the VMM Self-Service Portal. You need to install the prerequisite Web Server (IIS) role services. Which two role services should you choose? (Each correct answer presents part of the solution. Choose two.)

- A. ASP.NET
- B. IIS Management Scripts and Tools
- C. ASP
- D. IIS 6 Management Compatibility

Answer: A,D

Explanation:

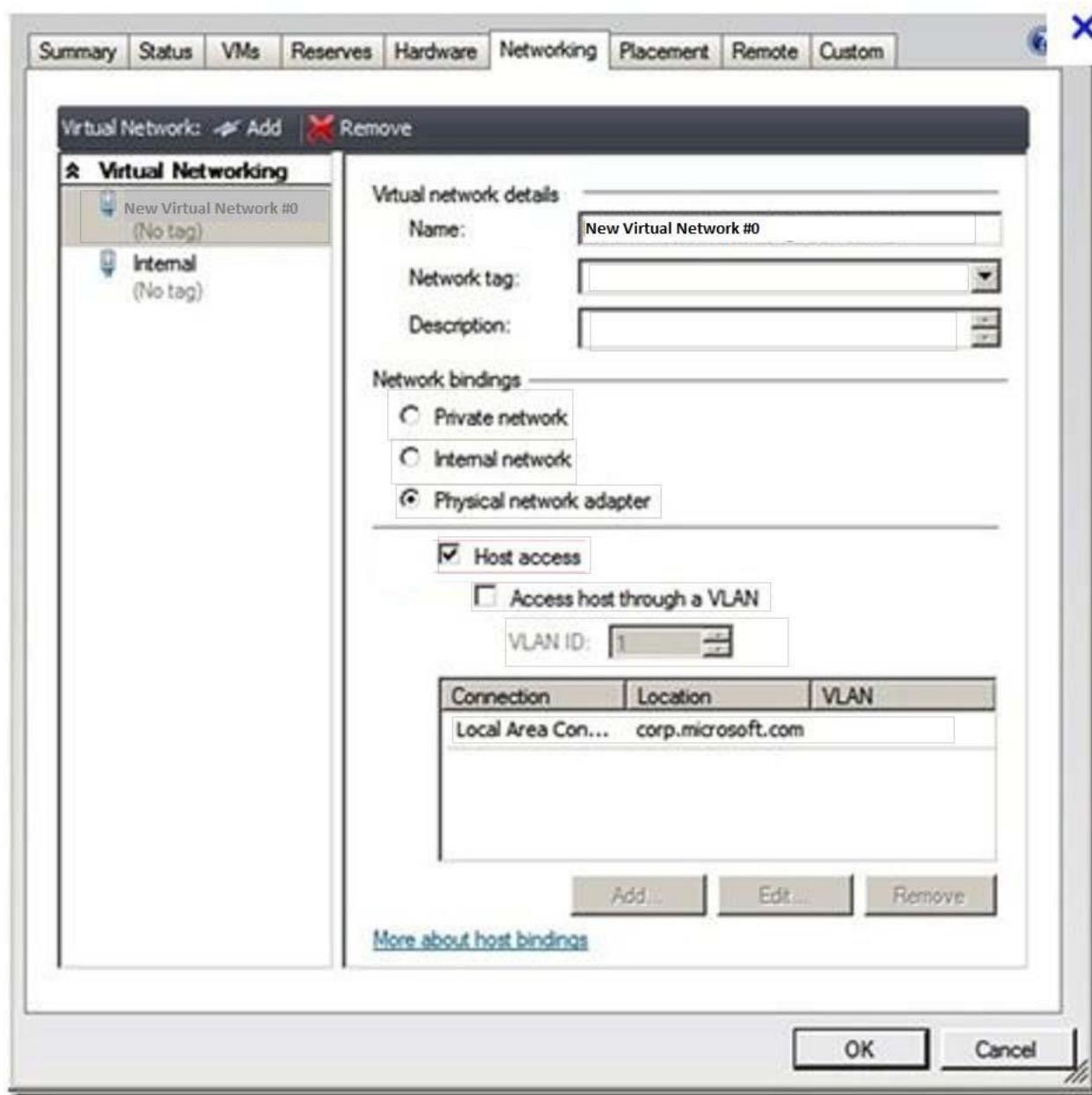
Software Requirements

The following software must be installed prior to installing the VMM Self-Service Portal.

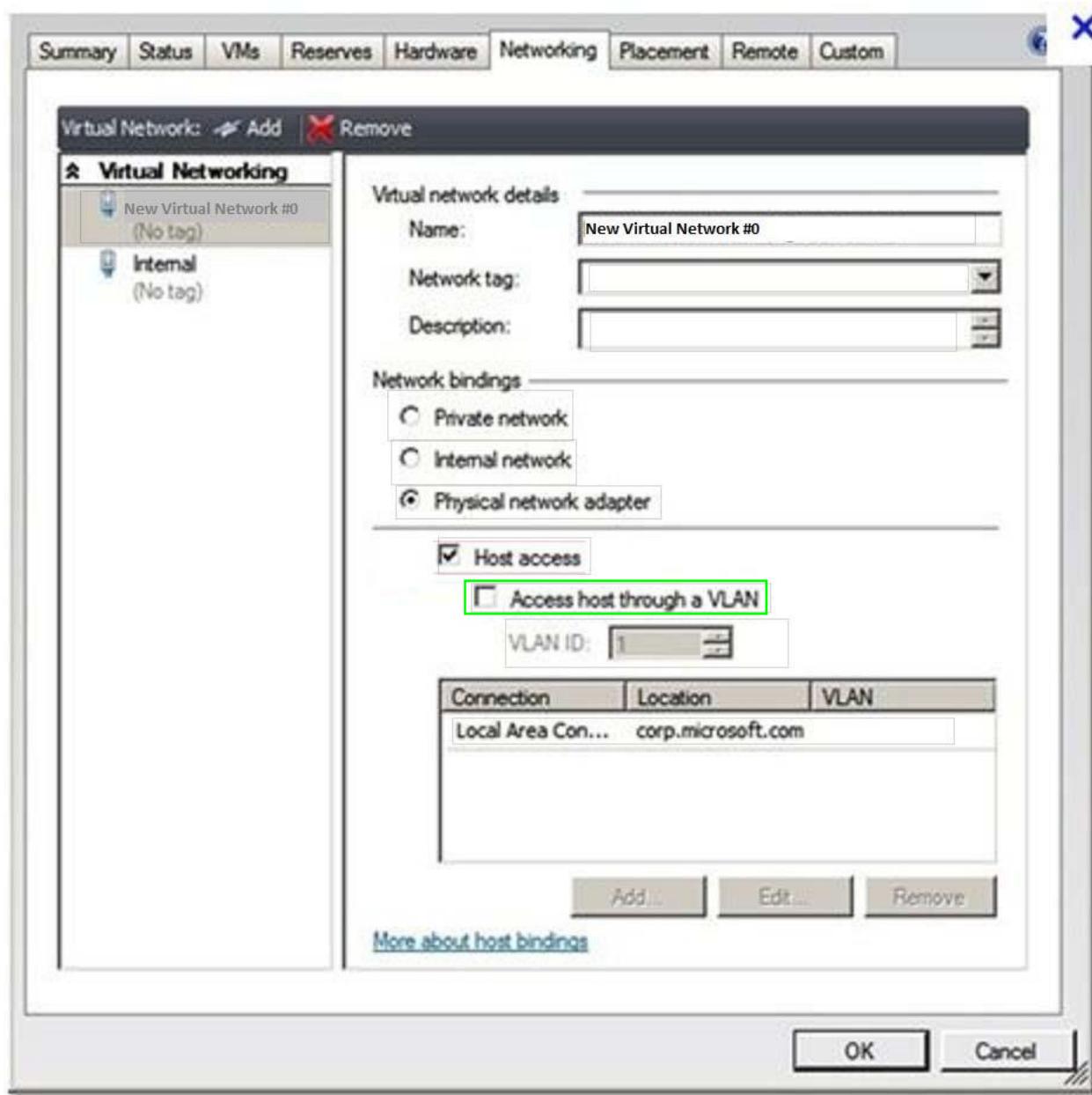
Question: 79

HOTSPOT

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You deploy a new Hyper-V host server. New Virtual Network #0 is attached to a switch that is configured with an 802.1q trunk port. You need to ensure that the host server can communicate on the New Virtual Switch #0 to access VLAN 325. Which option should you select first? (To answer, select the appropriate setting in the work area.)



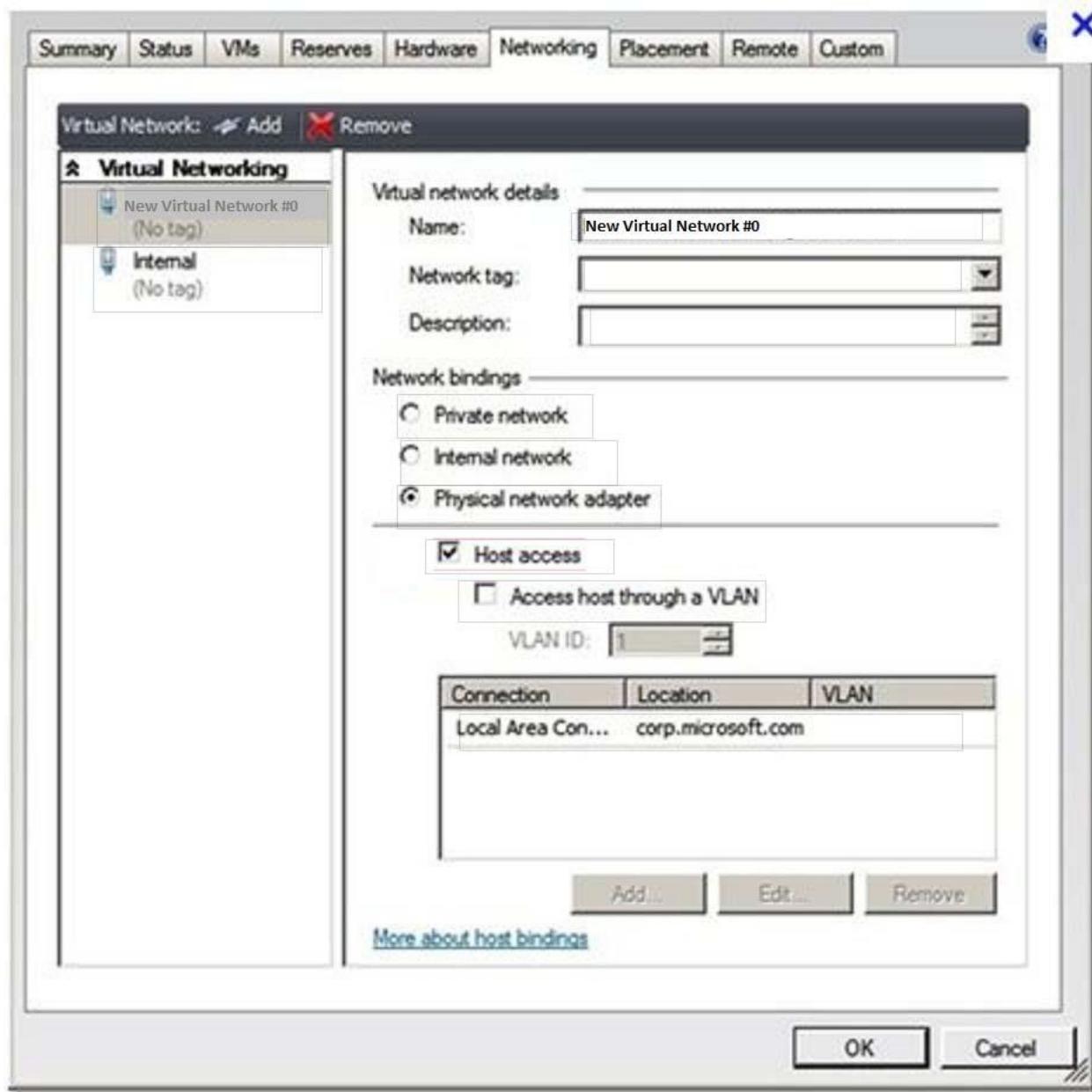
Answer:

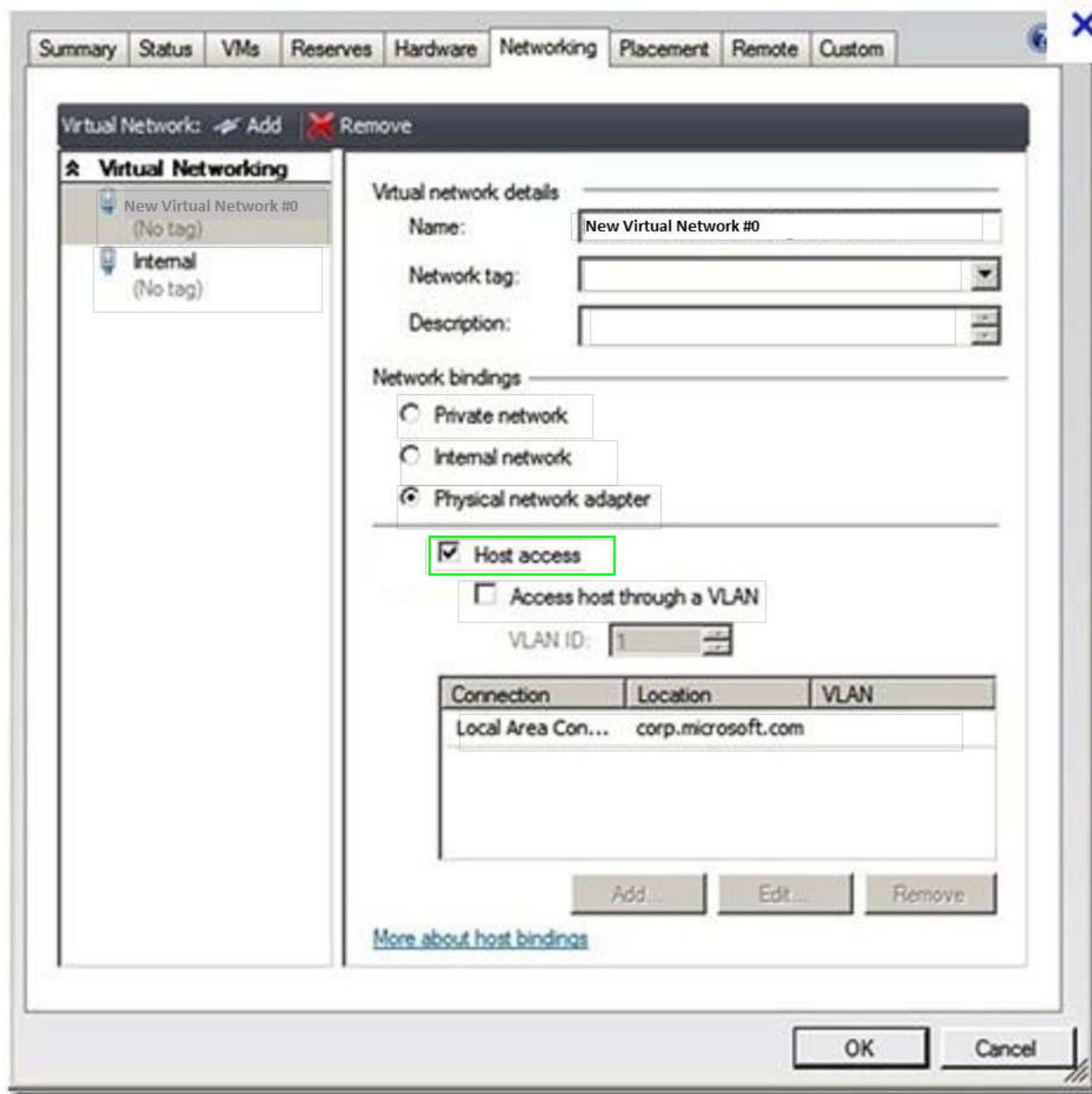


Question: 80

HOTSPOT

A company has a Windows Server 2008 R2 Hyper-V environment. the environment is managed by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You are deploying a new Hyper-V host server. New Virtual Network #0 is attached to a switch that has access to a perimeter network. You need to ensure that the parent partition does not have access to the perimeter network through New Virtual Network #0. Which option should you modify? (To answer, select the appropriate option in the answer area.)

**Answer:**



Question: 81

You create a virtual machine (VM) on a Windows Server 2008 R2 Hyper-V server. You plan to use this VM as the base image for new VMs. You need to ensure that you can import the base image multiple times on the original host server. In the Import Virtual Machine Wizard, which settings should you configure during each import process?

- A. Select the Copy the virtual machine option and the Duplicate all files check box.
- B. Select the Copy the virtual machine option. Clear the Duplicate all files check box.
- C. Select the Move or restore the virtual machine option and the Duplicate all files check box.
- D. Select the Move or restore the virtual machine option. Clear the Duplicate all files check box.

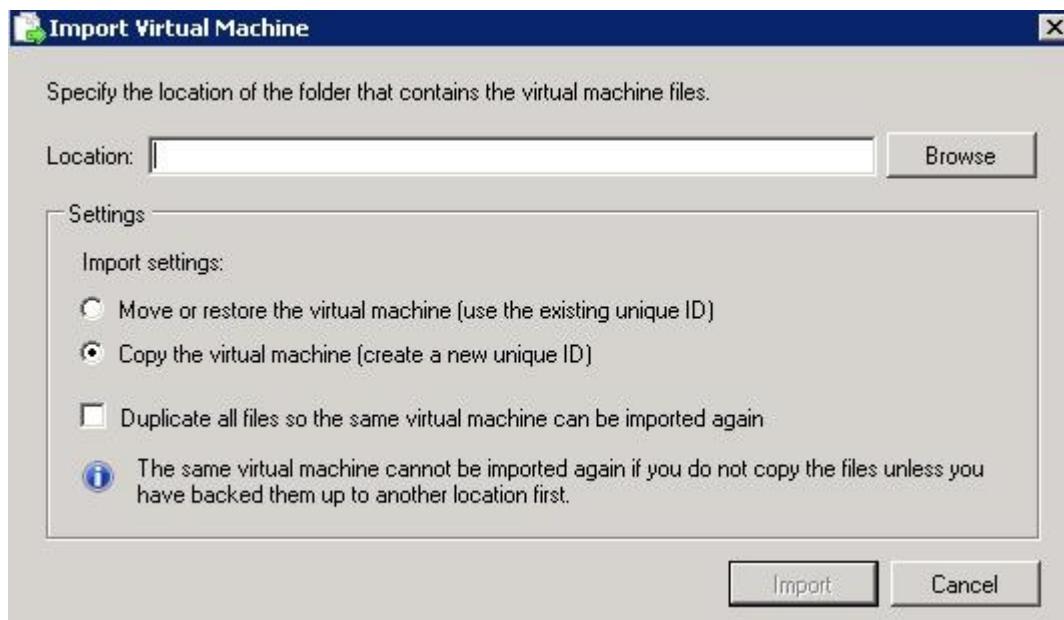
Answer: A

Explanation:

Importing a virtual machine was a onetime operation unless you kept a backup of the files. Hyper-V now provides the

ability to backup the files for you.

Hyper-V R2 Import Virtual Machine wizard now has the ability to duplicate the files of a virtual machine you are attempting to import so that you can import it another time. This is presented by a checkbox option on the import wizard screen that reads.



Duplicate all files so the same virtual machine can be imported again.

By selecting this option when you import a virtual machine, Hyper-V will make a backup of the required files so that you can import this virtual machine again if needed.

Question: 82

You install Windows Server 2008 R2 (Server Core Installation) on a server. You need to be able to remotely manage storage on the server by using Disk Manager. What should you do?

- A. Run the netshadvfirewall Firewall set rule group="Remote Administration" new enable=yes command.
- B. Use the DISKPART utility to run the attributes volume clear readonly command for each volume.
- C. Install the Microsoft Remote Server Administration Tools (RSAT).
- D. Run the netshadvfirewall Firewall set rule group="Remote Volume Management" new enable=yes command.

Answer: D

Explanation:

Enable specific services

Before you can make any changes to the firewall settings remotely you must first enable remote administration of the firewall by typing the following command at a command prompt:

Netsh advfirewall firewall set rule group="Windows Firewall Remote Management" new enable
=yes Once the firewall has been configured for remote administration you can begin to allow remote management through MMC snap-ins. You can configure the firewall to allow remote management via all MMC snap-ins or you can specify particular MMC snap-ins.

The following command will allow you to remotely manage a Server Core installation through all MMC snap-ins.

Netsh advfirewall firewall set rule group="remote administration" new enable=yes

To allow remote management via specific MMC snap-ins, run the following command.

Netsh advfirewall firewall set rule group="<rulename>" new enable=yes

Note: You can reference the table below for available rulegroups. Some snap-ins will require more configuration

before you can connect to them through a firewall. Also, some MMC snap-ins do not have an associated rule group that allows connections through firewalls.

MMC snap-in	Rule group
Event Viewer	Remote Event Log Management
Services	Remote Services Management
Shared Folders	File and Printer Sharing
Task Scheduler	Remote Scheduled Tasks Management
Reliability and Performance	<ul style="list-style-type: none"> • Performance Logs and Alerts • File and Printer Sharing
Disk Management	Remote Volume Management
Windows Firewall with Advanced Security	Windows Firewall Remote Management

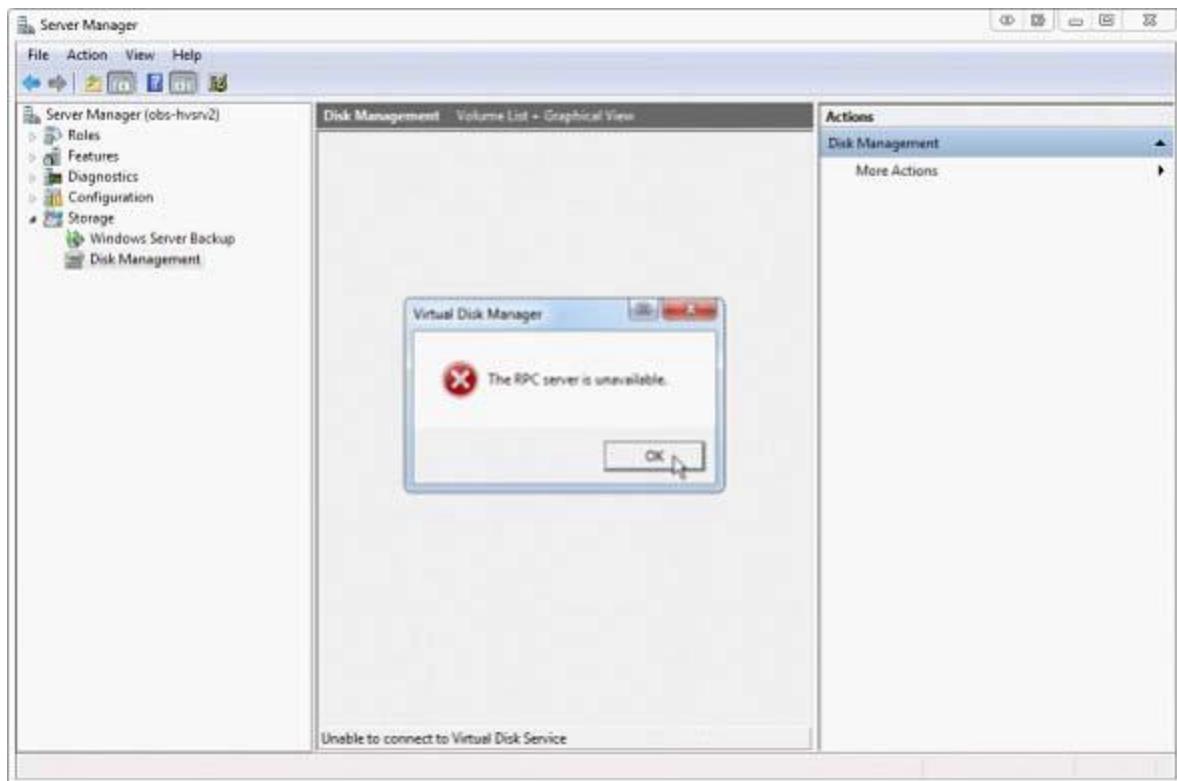
If you look at the chart above you will see Disk Management and its corresponding rule group. This is one of the MMC snap-ins that will need additional configuration. In order to use this snap-in for remote management you must first start the Virtual Disk Service (VDS) on the computer that is running the Server Core installation. You also have to configure the Disk Management rules on the computer that is running the MMC snap-in. The command to enable the Remote Volume Management Rule group is as follows.

Netsh advfirewall set rule group="Remote Volume Management" new enable=yes
Running this command will enable the Remote Volume Management – Virtual Disk Service Loader (RPC), Remote Volume Management – Virtual Disk Service (RPC), and Remote Volume Management – Virtual Disk Service (RPC-EPMAP) inbound rules. Remember these rules must be enabled on both the server that is running the MMC and the remote Server Core installation. whenever they tried to connect to a remote server and use the Disk Management snap-in, they got this error:

Virtual Disk Manager

The RPC server is unavailable

And this is what it looks like:



Searching Google for an answer brought a few results, but I thought I'd list it here for my other readers, as it seems that the configuration steps that are needed in order to get remote disk management going are a bit vague. In order to remotely manage disks on a Windows Server 2008 R2 machine, you need to perform the following tasks:

Target Server On the target server (the one you want to connect to) you need to set the Virtual Disk Service (VDS) to Automatic, and start it.

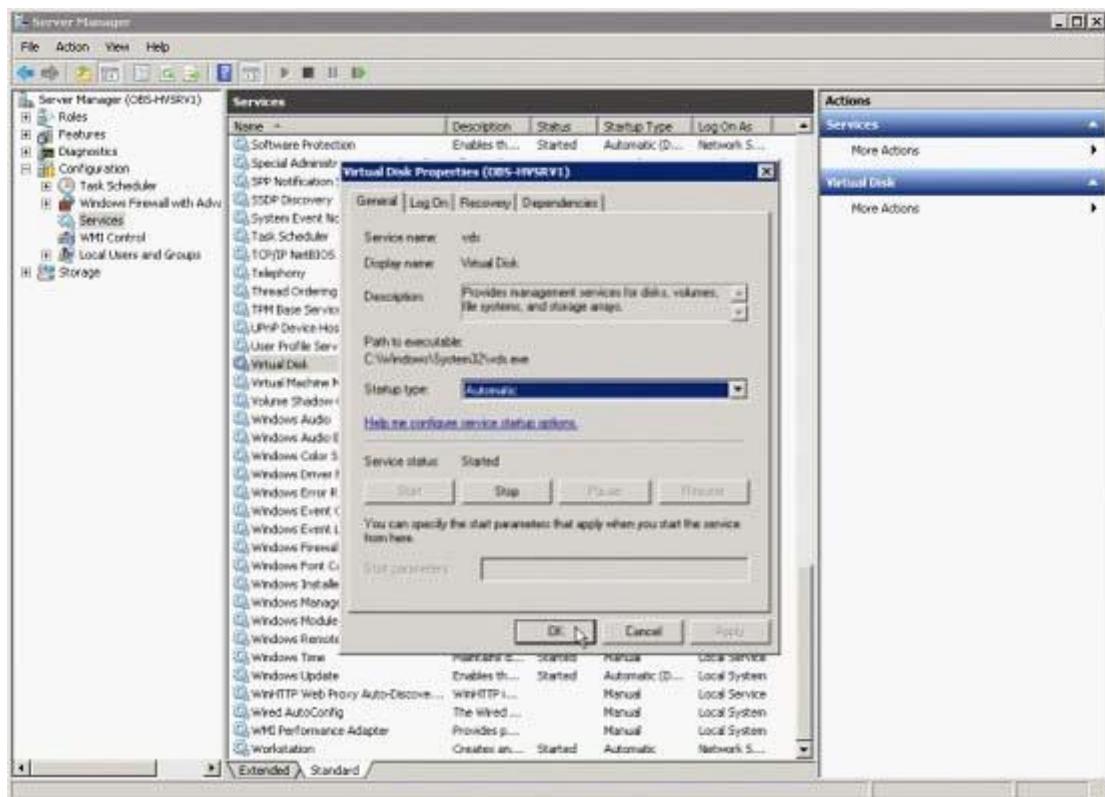
Open a Command Prompt window and type the following command:

```
sc config vds start= auto
```

Next, type:

```
net start vds
```

BTW, this can also be done through the Services snap-in if you're more comfortable with it.



Next, type the following command to enable the remote-volume-management firewall exceptions:

```
netsh advfirewall firewall set rule group="Remote Volume Management" new enable=yes
```

The screenshot shows an 'Administrator: Command Prompt' window. The command entered is:

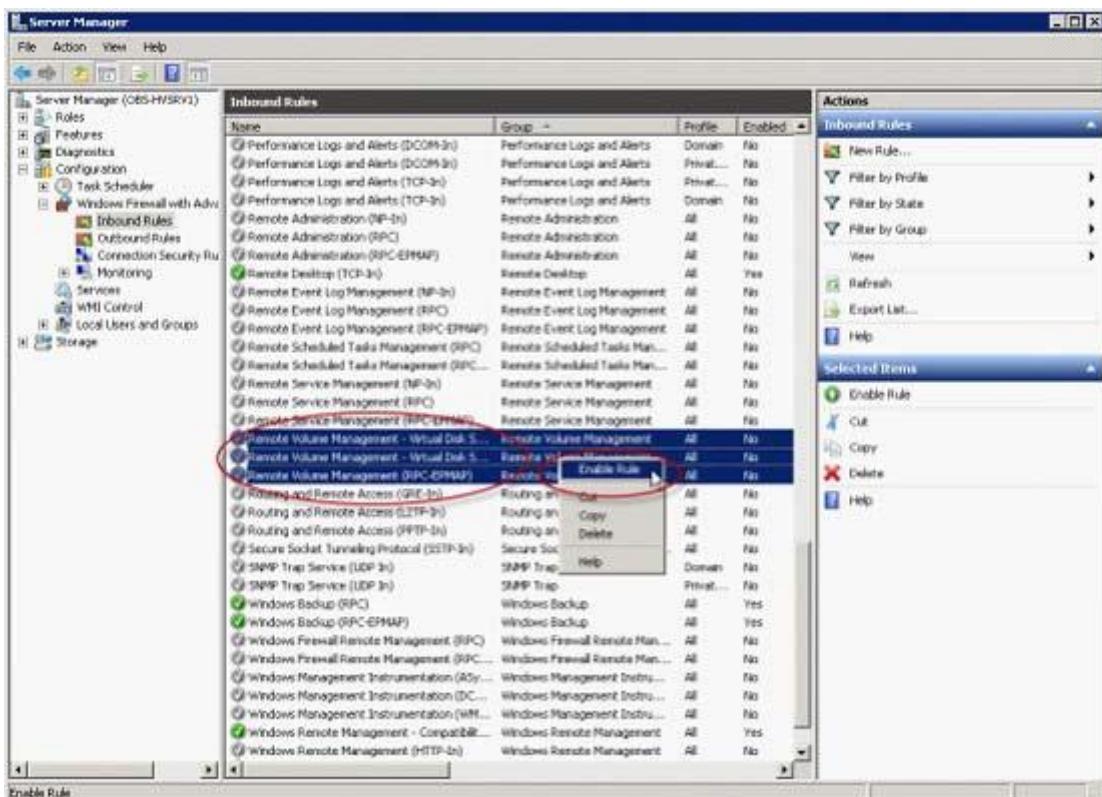
```
C:\>netsh advfirewall firewall set rule group="Remote Volume Management" new enable=yes
```

The output shows:

```
Updated 3 rule(s).
Ok.

C:\>
```

Again, this can also be done through the Windows Firewall with Advance Security snap-in if you're more comfortable with it.



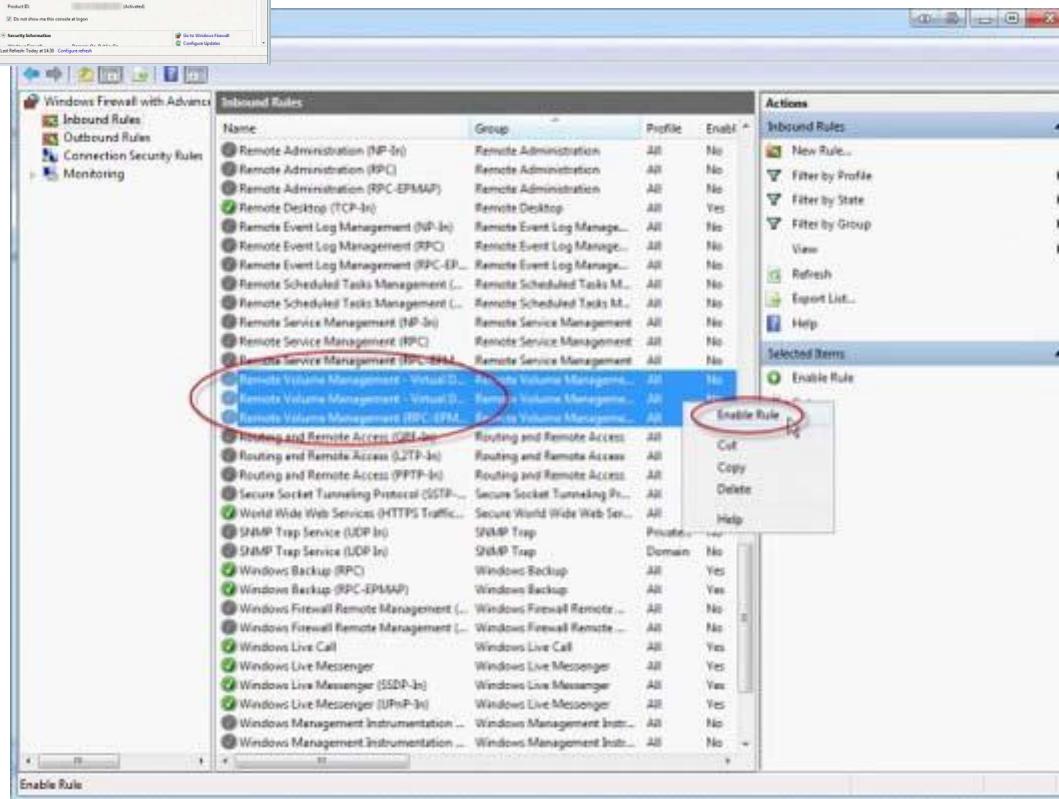
Now, proceed to the next step.

Client Machine

You need to enable the following Firewall rules on BOTH source and target servers. Most documents and manuals fail to specify that, and unless you enable the rules on both machines, you will not be able to connect.

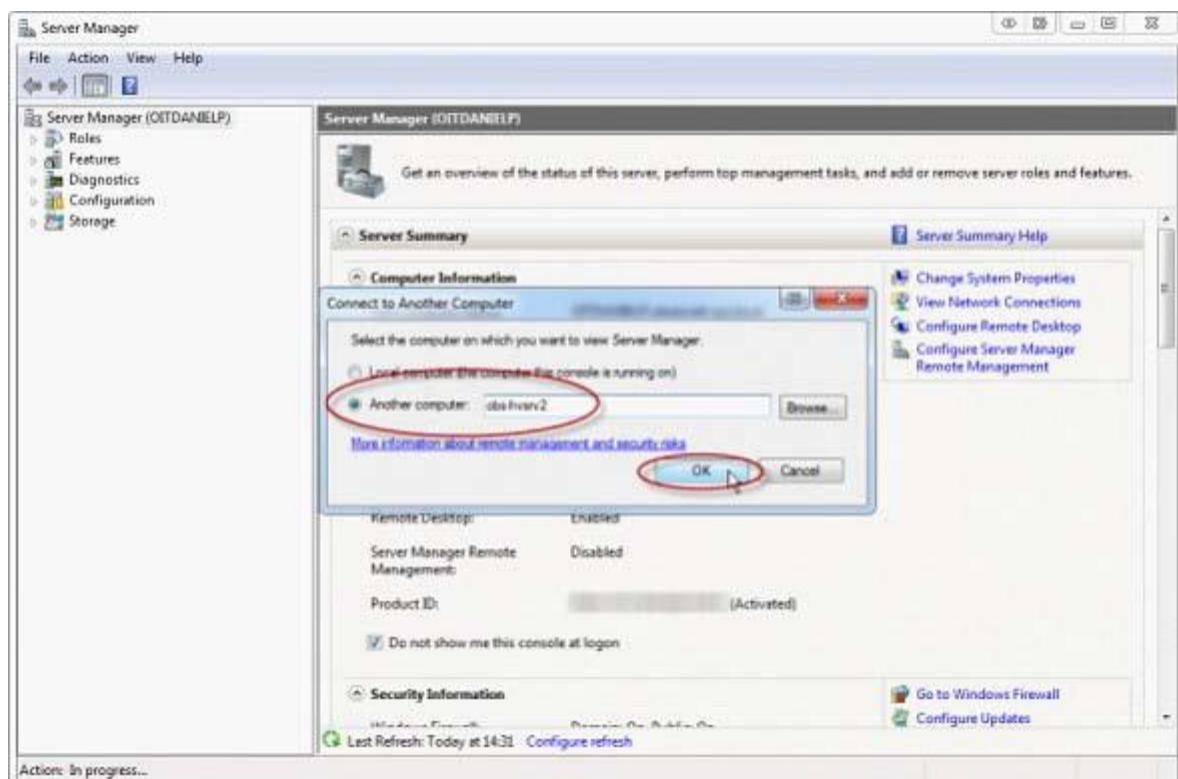
So, open a Command Prompt window and type the following command to enable the remote- volume management firewall exceptions:

netsh advfirewall firewall set rule group="Remote Volume Management" new enable=yes Again, this can also be done through the Windows Firewall with Advance Security snap-in.

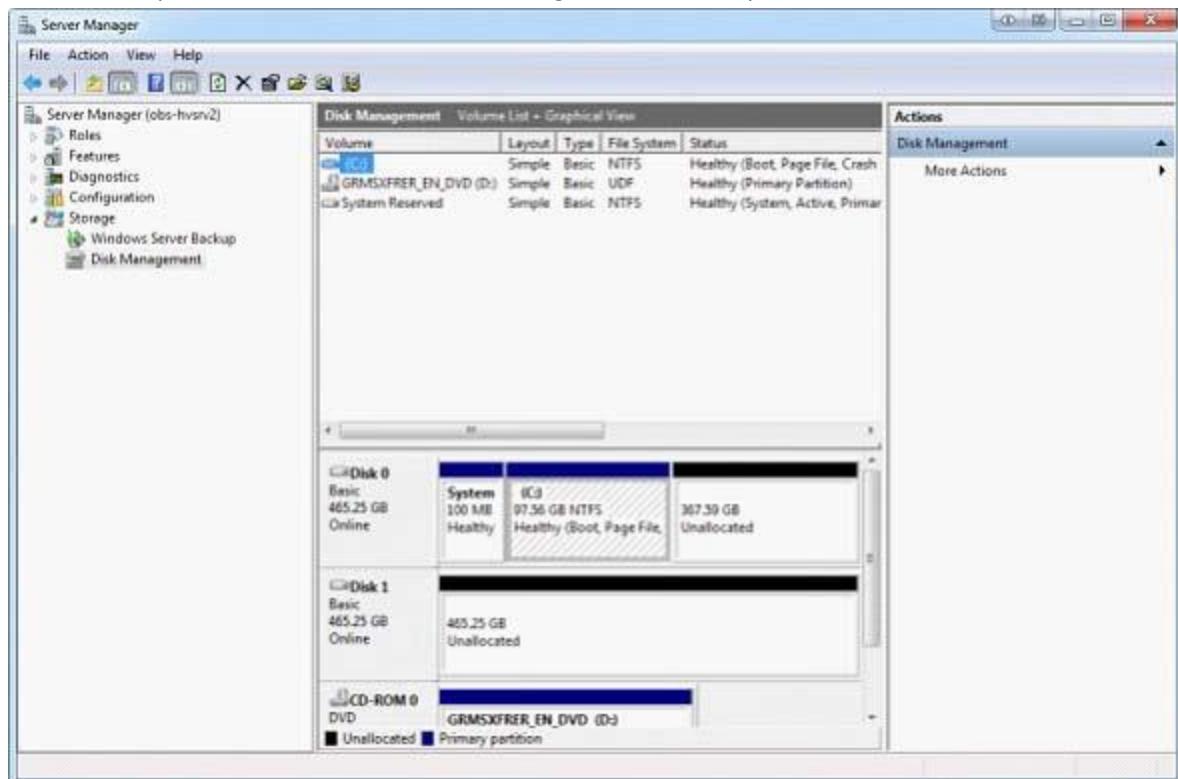


Once you enable these Firewall rules on both the source and target servers, you will be able to connect to the remote server. Open Server Manager, right-click Server Manager and select "Connect to Another Computer".

Enter the name of the remote (target) server and click "Ok".



If all is well, you will be able to use Disk Management remotely.



Question: 83

HOTSPOT

A company has two servers that run Windows Server 2008 R2 Datacenter Edition with Hyper-V. A logical unit number (LUN) is presented to both servers. You need to install Multipath I/O (MPIO) on the servers to configure the disks.

Which Server Manager option should you select? To answer, select the appropriate setting in the answer area.



Answer:



Question: 84

A company uses an iSCSI storage area network (SAN). A 4-terabyte logical unit number (LUN) is presented to a Windows Server 2008 R2 Datacenter host server. You open Disk Management on the host server and find that the LUN contains only a fully allocated 2 –terabyte partition. You need to configure the environment to ensure that the partition can be extended to 4 terabytes. What should you do?

- A. Convert the disk to a GUID Partitioning Table (GPT) disk.
- B. Add a mirror.
- C. Convert the disk to a Master Boot Record (MBR) disk.
- D. Convert the disk to a dynamic disk.

Answer: A

Explanation:

MBR max out at 2Tb GPT disk starts at 2Tb to 9.4 zettabytes

GUID Partition Table In computer hardware, GUID Partition Table (GPT) is a standard for the layout of the partition table on a physical hard disk. It forms a part of the Extensible Firmware Interface (EFI) standard, which is Intel's proposed replacement for the PC BIOS. It is also used on some BIOS systems because of the limitations of MBR partition tables. GPT allows for a maximum disk and partition size of 9.4 zettabytes (9.4×1024 bytes[1]). As of 2010, most current operating systems support GPT, although some operating systems (including Mac OS X and Windows) require systems with EFI hardware to support booting from GPT partitions.

GUID Partition Table Scheme

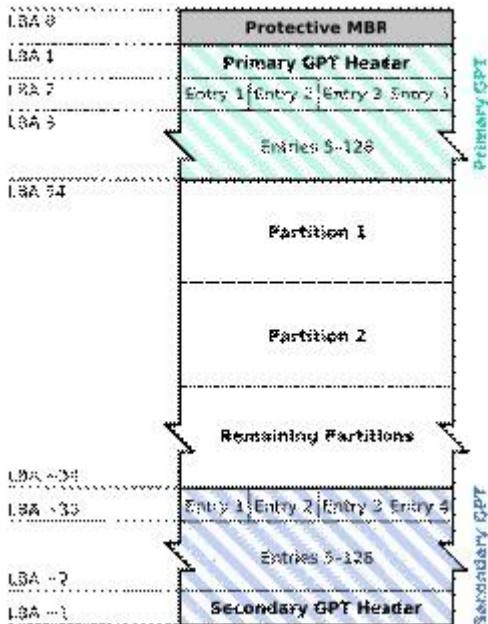


Diagram illustrating the layout of the GUID Partition Table scheme. In this example, each logical block (LBA) is 512 bytes in size, and each partition entry is 128 bytes. LBA addresses that are negative indicate position from the end of the volume, with 1 as the last addressable block. http://en.wikipedia.org/wiki/GUID_Partition_Table

Question: 85

A company has a Windows Server 2008 R2 Hyper-V server environment, the environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You need to add a new fixed virtual hard disk (VHD) to an existing virtual machine (VM). What should you do?

- Install the server application on a physical server with four CPUs.
- Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- Set the network adapter to use an iSCSI network tag.
- Add a disk drive to the VM using the New-VirtualDiskDrive Powershell cmdlet.
- Install the server application in a VM with the latest supported integration components.
- Assign 1 GB of startup RAM and 16GB of Maximum RAM to the VM.
- Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- Add a disk drive to the VM using the iscsicli.exe command line tool.
- Assign 4 GB of static memory to the VM.
- Add a disk drive to the VM using the Add-SharedVirtualDiskDrive Powershell cmdlet.
- Assign 1 GB of startup RAM and 8GB of Maximum RAM to the VM.

Answer: E

Explanation:

How to Add a Virtual Hard Disk to a Virtual Machine

Applies To: Virtual Machine Manager 2008, Virtual Machine Manager 2008 R2, Virtual Machine Manager 2008 R2 SP1
You can add a virtual hard disk to an IDE device or a SCSI adapter with the following procedure.

By default, any hardware profile includes a built-in IDE drive. You can add and configure up to four virtual SCSI adapters to a virtual machine.

Use this procedure when modifying a hardware profile or configuring hardware profile settings from the New Template Wizard or the New Virtual Machine Wizard.

Note In VMM 2008 R2, if a virtual machine is deployed on a host that is using the Hyper-V implementation of the SCSI controller, you can add or remove a virtual hard disk or pass-through disk from the SCSI controller while the virtual machine is running. On all other storage configurations, you must stop the virtual machine before adding or removing a disk.

To add a virtual hard disk

To add a virtual hard disk, take one of the following actions:

To add a virtual hard disk to an IDE bus, in the left pane, under Bus Configuration, click IDE Devices, and then click VHD on the top toolbar.

To add a virtual hard disk to a SCSI bus, click SCSI Adapter on the top toolbar and then click VHD on the toolbar.

Under Channel, select a channel to attach to this virtual hard disk.

Under Virtual Hard Disk, select one of the following options:

Use an existing virtual hard disk. Select this option if you want to add an existing virtual hard disk to the virtual machine. Click Browse to display the Select a virtual hard disk dialog box, and then select the virtual hard disk that you want to use from the list that displays on this screen.

Create a new virtual hard disk (available on the hardware profile for a virtual machine). Select this option if you want to create a new virtual hard disk. Modify the values for the following options:

Type. Select Dynamic (default) or Fixed.

Size. Specify, in gigabytes (GB), the size of a fixed virtual hard disk or the maximum size of a dynamically expanding virtual hard disk.

Destination file name. Specify the name of a new virtual hard disk.

Question: 86

HOTSPOT

A company has servers that run Microsoft System Center Virtual Machine Manager (VMM) 2008 R2, System Center Data Protection manager (DPM) 2010, and Windows Server 2008 R2 with Hyper-V. DPM is used to back up the virtual machines (VMs).

DPM is unable to perform an online backup of a VM.

You need to ensure the VM can be backed up in online mode by using DPM.

Which setting should you select? To answer, select the most appropriate setting or settings in the answer area.



Answer:



Explanation:

Conditions When DPM Fails to Back up Hyper-V Virtual Machines in an Online State

- Backup (Volume Snapshot) Integration Service is disabled or not installed.

- VM has one or more dynamic disks.
- VM has one or more non-NTFS based volumes.
- The VM Cluster Resource Group in a cluster setup is offline.
- VM is not in a running state.
- A ShadowStorage assignment of a volume inside the VM is explicitly set to a different volume other than itself.

Question: 87

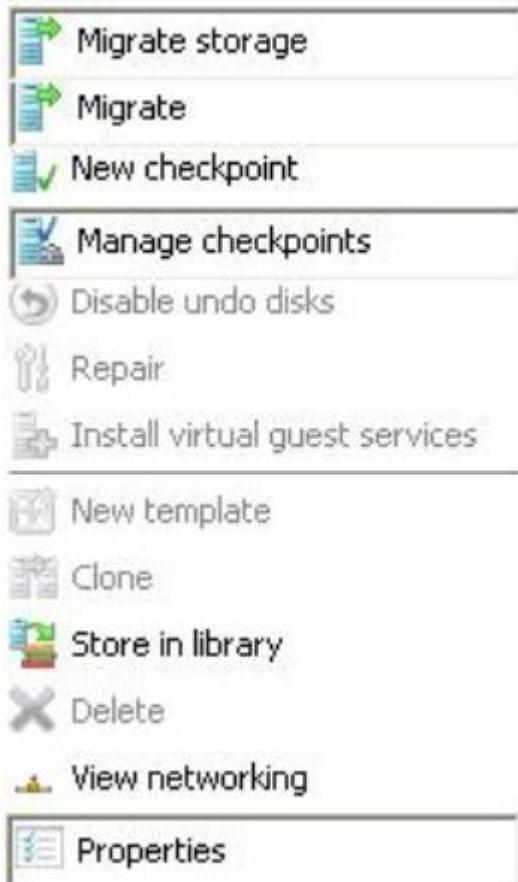
HOTSPOT

A company uses a server that runs Windows Server 2008 R2 with the Hyper-V role to host virtual machines (VMs). Microsoft System Center Machine Manager (VMM) 2008 R2 is used to manage the Hyper-V environment. Failover clustering is not installed.

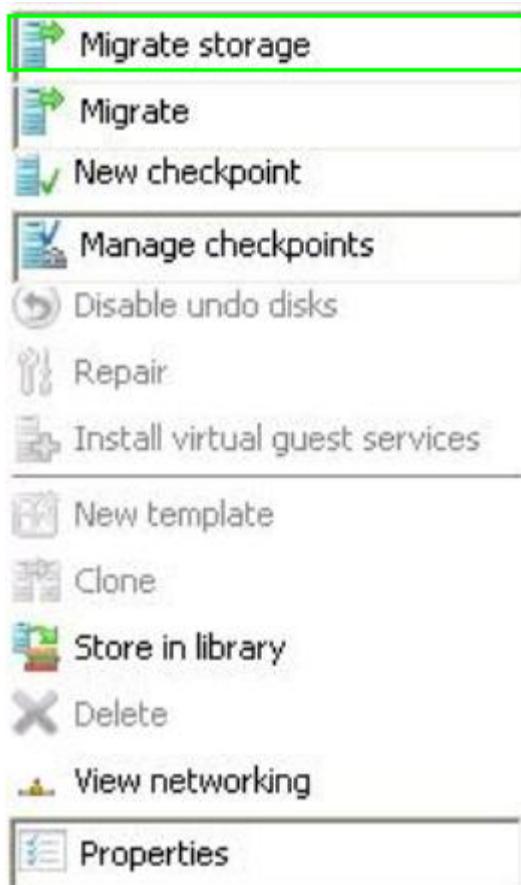
VMs are stored on a logical unit number (LUN) that is running out of free space.

You need to move a VM to a different LUN on the same host.

Which action should you use in the VMM management console action pane? (To answer, select the appropriate section in the answer area.)



Answer:



Question: 88

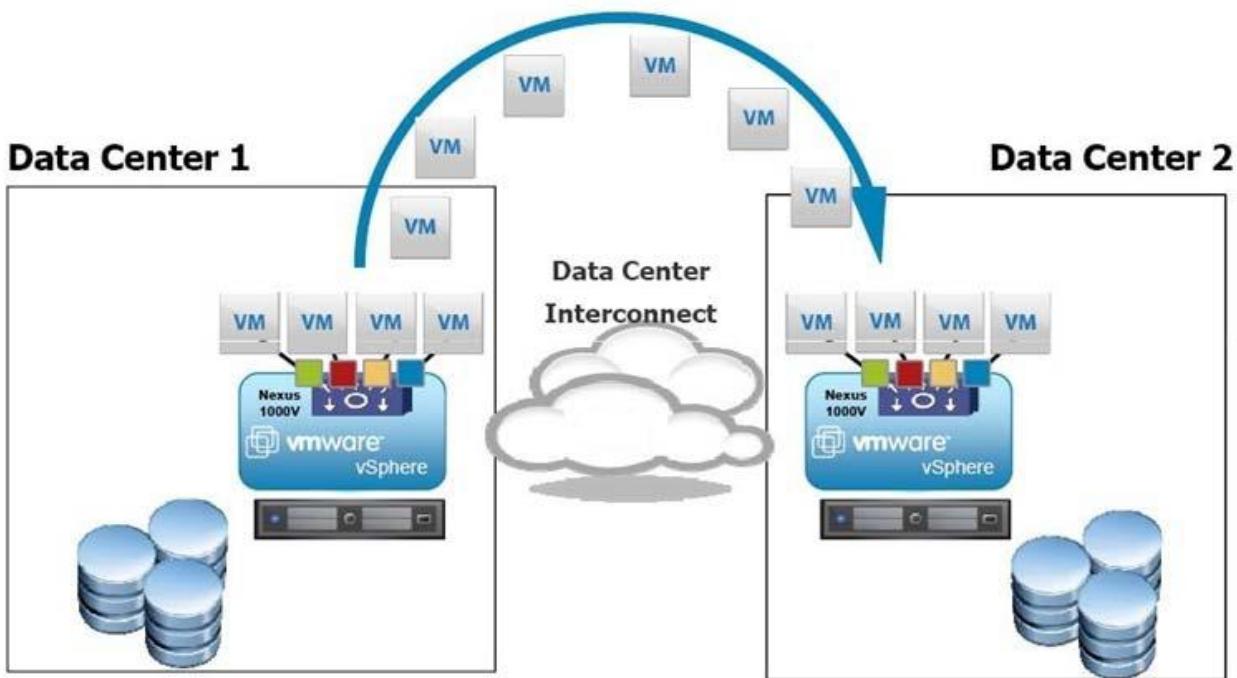
You host 16 virtual machines that are distributed evenly across an 8-node Windows Server 2008 R2 Hyper-V failover cluster. You plan to perform live migrations of the VMs to prepare for the installation of software updates on the cluster. You need to perform the maximum number of simultaneous live migrations. How many live migrations should you perform simultaneously?

- A. one
- B. two
- C. eight
- D. four

Answer: D

Explanation:

One live migration can be active between any two cluster nodes at any time. This means that a cluster will support $\text{number_of_nodes}/2$ simultaneous live migrations. For example, a 16-node cluster will support 8 simultaneous live migrations with no more than one live migration session active from every node of the cluster.



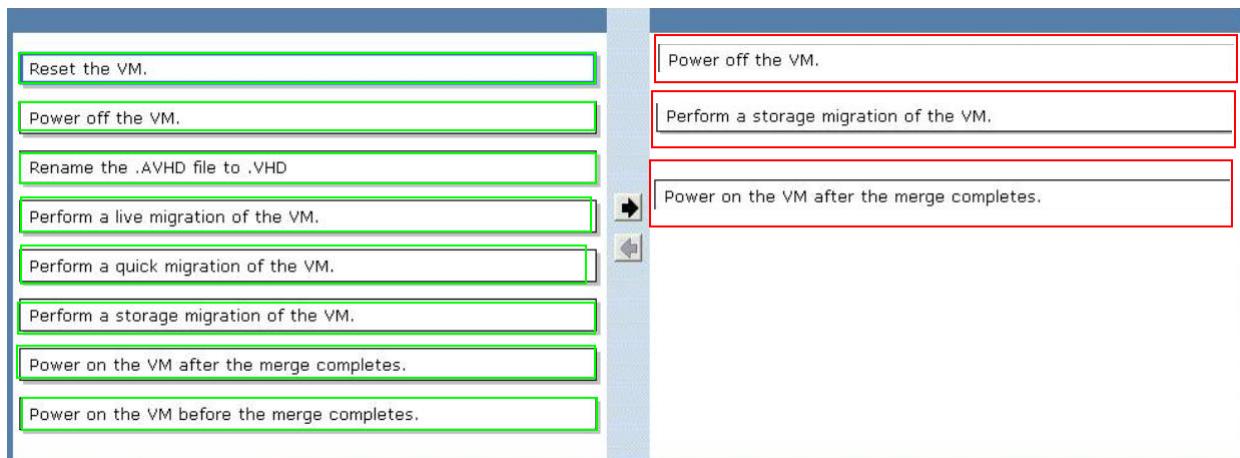
Question: 89

DRAG DROP

A company has a two-node Microsoft Hyper-V failover cluster that runs Windows Server 2008 R2. The failover cluster has two logical unit numbers (LUNs). One of the LUNs contains virtual machines (VMs) and is using 90% of the LUN capacity. The other LUN is not using any capacity. You create a snapshot of a running VM before you upgrade an application. You delete the snapshot in Hyper-V after you establish that there are no issues with the application upgrade. You reboot the VM. After a period of time, the VM stops responding. You need to ensure that the VM is fully operational. Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of answer choices to the answer area and arrange them in the correct order.)

Reset the VM.	
Power off the VM.	
Rename the .AVHD file to .VHD	
Perform a live migration of the VM.	
Perform a quick migration of the VM.	
Perform a storage migration of the VM.	
Power on the VM after the merge completes.	
Power on the VM before the merge completes.	

Answer:



Explanation:

Answer changed 13/06/2012 FROM

- Off
- Migrate the VM to the free storage (LUN)
- Power On after merger completes

TO

- Power off
- Power On after merge completes
- Live migration to the free storage (LUN)

Question: 90

A company has a server that runs Windows Server 2008 R2 with Hyper-V. The Hyper-V server hosts several virtual machines (VMs). The disk configuration for the VMs is shown in the following table.

Volume	Type	File System
C	Basic	NTFS
D	Dynamic	NTFS
E	Basic	FAT

You are unable to perform an online backup of the VMs.

You need to ensure that you can perform online backups of the VMs.

Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Convert Volume C to a Dynamic disk.
- B. Reformat Volume E and use the NTFS file system.
- C. Convert Volume D to a Basic disk.
- D. Reformat Volume C and use the FAT file system.
- E. Reformat Volume D and use the FAT file system.
- F. Convert Volume E to a Dynamic disk.

Answer: B,C

Question: 91

You manage your virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You monitor the environment using Microsoft System Center Operations Manager 2007 R2. You have three Windows Server 2008 R2 Hyper-V servers in a failover cluster. You need to ensure that all virtual machines (VMs) are distributed automatically across the host servers, and that the VMs will automatically fail over to the most appropriate host

server. What should you do?

- A. Configure Performance and Resource Optimization (PRO) Tips for the Vms.
- B. In VMM, create a host group. Move the three host servers into the host group.
- C. Configure network load balancing on the VMs.
- D. Configure a Fibre Channel logical unit number (LUN) on a SAN device. Configure your VMs to store the configuration files on the Fibre Channel LUN.

Answer: A

Explanation:

Performance and Resource Optimization (PRO) is available for hosts and virtual machines in host clusters that are managed by VMM2008 or VMM2008R2. PRO supports workload- and application-aware resource optimization within a virtualized environment based on performance and health data provided by PRO-enabled management packs in System Center Operations Manager2007SP1 or System Center Operations Manager2007R2. PRO can recommend or automatically implement remedial actions, through PRO tips, to minimize downtime and accelerate time to resolution. PRO-initiated remediation actions can include migrating virtual machines within a host cluster to load balance CPU and memory usage on the clustered hosts. If you have a mission-critical application that is not suitable for migration, you can exclude the virtual machine on which the workload is running from host-level actions in PRO. If the host exceeds its CPU or memory threshold, the virtual machine will not be migrated even if it is using the largest amount of that resource. Even if you exclude an HAVM from host level PRO actions, you will receive PRO tips for right-sizing the virtual machine's configuration.

Question: 92

A company has servers that run Microsoft System Center Virtual Machine Manager (VMM) 2008 R2, System Center Data Protection Manager (DPM) 2010, and Windows Server 2008 R2 with Hyper-V. A Hyper-V host has a virtual machine (VM) that uses a dynamic disk. You need to perform a backup of the VM configuration and its virtual hard disk. What should you do?

- A. Perform an online backup by using DPM.
- B. Perform a VMM database backup by using VMM.
- C. Perform an offline backup by using DPM.
- D. Perform a system state backup by using Windows Server Backup.

Answer: C

Explanation:

Conditions When DPM Fails to Back up Hyper-V Virtual Machines in an Online State By default, DPM 2010 performs a backup of a Hyper-V Virtual Machine (VM) in an online state. However, DPM cannot back up a Hyper-V VM in an online state, if one or more of the following conditions are true:

Backup (Volume Snapshot) Integration Service is disabled or not installed.

VM has one or more dynamic disks.

VM has one or more non-NTFS based volumes.

The VM Cluster Resource Group in a cluster setup is offline.

VM is not in a running state.

A ShadowStorage assignment of a volume inside the VM is explicitly set to a different volume other than itself.

These conditions are set by the Hyper-V writer. In such a case, the VM is put in a saved state before a snapshot of host volumes are taken (except when the VM is turned off) for a backup. The Hyper-V writer adds the VM in the following format:

For offline backups: Backup Using Saved State\<VMName>

For online backups: Backup Using Child Partition Snapshot\<VMName>

Note During offline/online backups, the name of the data source remains unchanged even if the VM configuration changes to support online backups or for any further backups.

<http://technet.microsoft.com/en-us/library/ff399205.aspx>

Question: 93

You host several virtual machines on a Windows Server 2008 R2 Hyper-V failover cluster. You are deploying a highly available virtual machine (HAVM) that supports live migration. You need to install the operating system in the appropriate location. What are two possible locations that will allow you to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. a pass-through disk on a Fibre Channel logical unit number (LUN)
- B. a pass-through disk on a direct-attached storage (DAS)
- C. a VHD on an iSCSI logical unit number (LUN)
- D. a VHD on network-attached storage (NAS)

Answer: A,C

Explanation:

Microsoft does not support network-attached storage (NAS) for Hyper-V. We can not present a DAS type of storage disk to the remote server, only locally it is supported.

[http://technet.microsoft.com/en-us/library/ee405267\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/ee405267(v=ws.10).aspx)

Scenario	Local IDE virtual hard disk	Local directly attached IDE	Remote IDE virtual hard disk	Remote directly attached IDE
Storage type	Direct-attached storage	Direct-attached storage	SAN, Fibre Channel/iSCSI	SAN, Fibre Channel/iSCSI
Type of disk that is exposed to the management operating system	Virtual hard disk on NTFS	Physical disk directly attached to a virtual machine	Virtual hard disk on NTFS	Physical disk directly attached to a virtual machine
Maximum supported disk size on virtual machine	2040 gigabytes	No size limit other than what is supported by the guest operating system	2040 gigabytes	No size limit other than what is supported by the guest operating system
Virtual hard disk snapshots are supported	Yes	No	Yes	No
Dynamically expanding virtual hard disk	Yes	No	Yes	No
Differencing virtual hard disk	Yes	No	Yes	No
Add or remove storage while the virtual machine is running	No	No	No	No

Question: 94

You add the Hyper-V role to your Windows Server 2008 R2 Datacenter server. After you restart the server, you see the following error in the Windows system event log: "Hyper-V launch failed; Either VMX not present or not enabled in BIOS."

- A. Enable the Intel Virtualization Technology (Intel VT) or AMD Virtualization (AMD-V).
- B. Remove and re-add the Hyper-V role.
- C. Restart the Hyper-V Virtual Machine Management service.
- D. Enable the Intel XD bit (exclude disable bit) or AMD NX bit (no execute bit).

Answer: A**Explanation:**

Event log will show "virtualization not supported or enabled on processor" if Virtualization is not enabled Hyper-V Installation Prerequisites Hyper-V requires specific hardware. You will need the following:

An x64-based processor. Hyper-V is available only in the x64-based versions of Windows Server 2008—specifically, the

x64-based versions of Windows Server 2008 Standard, Windows Server 2008 Enterprise, and Windows Server 2008 Datacenter.

Hardware-assisted virtualization must be available and be enabled in the BIOS. This is available in processors that include a virtualization option; specifically, Intel VT or AMD Virtualization.

Hardware Data Execution Protection (DEP) must be available and be enabled in the BIOS. You must enable Intel XD bit (execute disable bit) or AMD NX bit (no execute bit).

Hyper-V does NOT support Itanium (IA-64) processors.

BIOS Settings

You must enter the BIOS setup of the server and make sure that “Virtualization Technology” and “Execute Disable” are both set to Enabled. Otherwise, even after installing the Hyper-V role, you will not be able to start using it and might get one of the following errors:

Hyper-V launch failed; Either VMX not present or not enabled in BIOS.

Or Hyper-V launch failed; at least one of the processors in the system does not appear to provide a virtualization platform supported by Hyper-V.

In most cases, the required BIOS settings can be found in these BIOS sections (actual names may differ, based upon your server's BIOS settings):

Security > Execute Disable (set to On)

Performance > Virtualization (set to On)

Performance > VT for Direct I/O Access (set to On)

Performance > Trusted Execution (set to Off)

<http://www.petri.co.il/installing-hyper-v-on-windows-server-2008.htm>

<http://social.technet.microsoft.com/Forums/en-US/winserverhyperv/thread/d84213a2-9821-4df0-bd71-da808ee15342>

Question: 95

A company has an environment that includes servers that run Windows Server 2008 R2 with Hyper-V. The company requires that all server operating systems be provisioned as virtual machines (VMs). A server operating system should be provisioned as a physical server only if it does not function properly as a VM. A new application that runs a Hyper-V supported version of Linux requires two CPUs and access to 3 terabytes of storage. You need to install the application to meet the company requirements. What should you do?

- A. Install the server application on a physical server with four CPUs.
- B. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- C. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- D. Set the network adapter to use an iSCSI network tag.
- E. Add a disk drive to the VM using the New-VirtualDiskDrive Powershell cmdlet.
- F. Install the server application in a VM with the latest supported integration components.
- G. Assign 1 GB of startup RAM and 16GB of Maximum RAM to the VM.
- H. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- I. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- J. Add a disk drive to the VM using the iscsicli.exe command line tool.
- K. Assign 4 GB of static memory to the VM.
- L. Add a disk drive to the VM using the Add-SharedVirtualDiskDrive Powershell cmdlet.
- M. Assign 1 GB of startup RAM and 8GB of Maximum RAM to the VM.

Answer: F

Question: 96

DRAG DROP

You create a snapshot of a running virtual machine (VM) before applying a new service pack for the operating system. You receive an alert that the host is running low on disk space on the volume where you took a snapshot of the VM. You need to free up disk space on the volume while ensuring that future restarts of the VM are successful. Which three actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area, and arrange them in the correct order.)

Start the VM after the merge completes.
Pause the VM before the merge completes.
Reset the VM before the merge completes.
Resume the VM after the merge completes.
Power off the VM.
Delete the associated .AVHD file.
Delete the snapshot to immediately start the merge.
Right-click the host in the Hyper-V management console and select the Stop Service option.

Answer:

Start the VM after the merge completes.
Pause the VM before the merge completes.
Reset the VM before the merge completes.
Resume the VM after the merge completes.
Power off the VM.
Delete the associated .AVHD file.
Delete the snapshot to immediately start the merge.
Right-click the host in the Hyper-V management console and select the Stop Service option.

Explanation:

1. Delete Snapshot to immediately start the merge.
2. Power Off the VM.
3. Start the VM after the merge completes.

Create a snapshot and get a message you are running out of space.

<http://social.technet.microsoft.com/forums/en-US/winserverhyperv/thread/878f038a-efbe-4a0c-8164-ded772a2e972/>

The original VHD is the base of all snapshots, you have to merge the snapshots into the original VHD. If you have enough space left on the disk, you can just delete all the snapshots and then power off the VM, the snapshots will be merged into its original VHD.

For more information, you can refer to:

How to manually merge Hyper-V snapshots into a single VHD

<http://itproctology.blogspot.com/2008/06/how-to-manually-merge-hyper-v-snapshots.html>

Recovering Your Virtual Machine. How to Manually Merge Hyper-V Snapshots Back into one VHD

<http://networkfoo.org/server-infrastructure/recovering-your-virtual-machine-how-manually-mergehyper-vsnapshots-back-one-> HELP, out of diskspace when merging

<http://social.technet.microsoft.com/Forums/en-US/winserverhyperv/thread/0564d5f5-42ad-4e79-a4b0-24596eabf6f1>

Question: 97

Your network includes several virtual machines (VMs) that are distributed across a Windows Server 2008 R2 Hyper-V failover cluster. You need to be able to configure the VMs in a Network Load Balancing (NLB) cluster. What should you do on each VMs network adapter?

- A. Enable MAC address spoofing.
- B. Disable MAC address spoofing.
- C. Enable TCP Offload Engine (TOE).
- D. Disable TCP Offload Engine (TOE).

Answer: A

Explanation:

In Windows Server 2008 R2 Hyper-V and Hyper-V Server 2008 R2, there is a new option (Enable Spoofing Of MAC Addresses) in the virtual network adapter settings to enable, as you can probably guess, spoofing of MAC addresses. If you do not select this option and disallow MAC address spoofing, the following rules are enforced:

The virtual switch port that connects the virtual network adapter sends and receives packets that contain any valid MAC address.

The virtual network adapter MAC address cannot be moved or associated with another virtual switch port.

The virtual switch port does not forward unicast flooded packets (packets that are forwarded to all switch ports if the destination MAC address is not found in the switch forwarding table) to the virtual network adapter.

You cannot override the virtual network adapter MAC address configuration using the Network Address key in the virtual machine registry.

If you select the option to enable MAC address spoofing, the MAC address can be learned on other ports, and the following actions will be allowed:

The virtual switch port that connects the virtual network adapter can send and receive packets that contain any MAC address.

The virtual switch port dynamically learns of new MAC addresses and the virtual switch can add them in its forwarding table.

The virtual switch port will receive and forward unicast flooded packets to the virtual network adapter. You can override the virtual network adapter MAC address configuration using the NetworkAddress key in the virtual machine registry.

If you place the virtual network adapter in promiscuous mode and enable MAC address spoofing, the virtual network adapter will be allowed to receive Unicast flooded packets Ping Dropped in Hyper-V in Server 2008 R2 of NLB When you Configure your NLB host in unicast mode you wont be able to access dedicated IPs of your Guest VMs. However here a by Spoofing your VMs MAC IDs you can access your NLB host. By default your this will be turn off.



Remember: Enabling this option will give ability to VMs to Override their MAC and send and receive traffic using any MAC ids. Virtual switch in Hyper is Layer-2 switches. hence if Malicious VMs start sending packet with MAC owned by

other machine then it may cause security flaws (DOS attacks). NLB - Hyper-V Virtual Machines Assumptions:

Guest Operating System is Windows 2008 R2

HyperV Host is running Windows 2008 R2

Each VM guest has two network adapters presented to it.

NLB Cluster will be in (UNICAST) Mode

Configuration Steps:

Configure Network Adapters

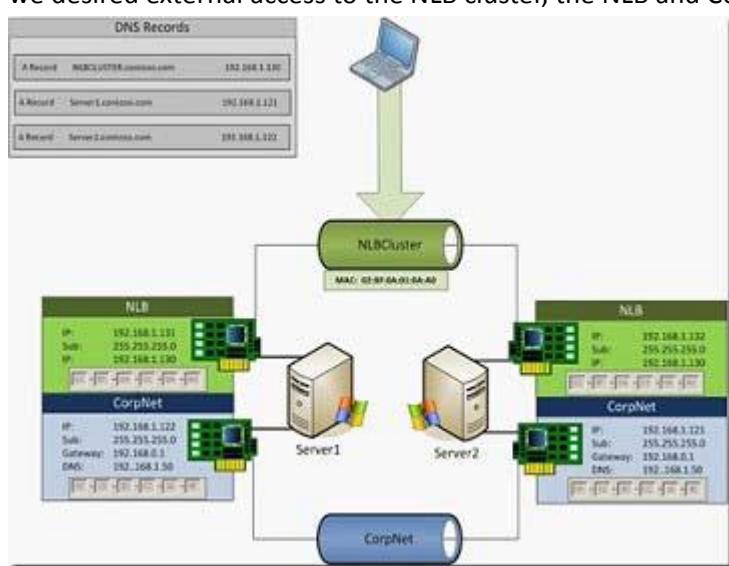
Configure Network Load Balancing

Validate Configuration

Scenario: Desired NLB Configuration

The image below illustrates the desired NLB topology/configuration for this article.

Note: This particular scenario is used for an Intranet, so the NLB and CorpNet networks are on the same network. If we desired external access to the NLB cluster, the NLB and CorpNet would most likely be on separate networks.



Configure Network Adapters

Note: When runningUnicast, the NIC that has NLB enabled will have its' MAC Address overwritten (Each Node will share the MAC address assigned to the NLB Cluster). Because of this there will be additional configuration required within HyperV for the assigned NLB network interfaces.

1. Install on the Guest VM Windows 2008, and install the latest patches and drivers.
2. Create DNS A-Record for the Cluster Name. My cluster name isNLBCluster.contoso.com

A Record	NLBCLUSTER.contoso.com	192.168.1.130
----------	------------------------	---------------

3. On each Guest, in Windows Rename the network connections accordingly. I have mine as such:



4. On each Guest VM, in Windows, Configure each Network Adapter based on your network address scheme.

The required configuration information for each Network adapter is as follows:

NLBNIC: IP Address and Subnet Only Configured

Metric: 20

WINS: Disable Netbios

IMPORTANT: DO NOT MANUALLY select the "network load balancing (NLB) connection"!! This will happen automatically during the NLB Cluster creation process. If its manually selected the NLB Cluster creation will not pick up this network interface as an option. This image is merely to serve as a reference to remove all connections accept NLB and TCP.



Corp NetworkNIC: Corporate network configuration (IP, GW, DNS).

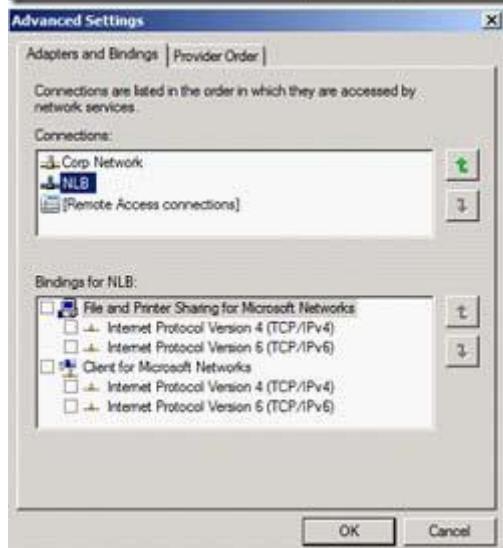
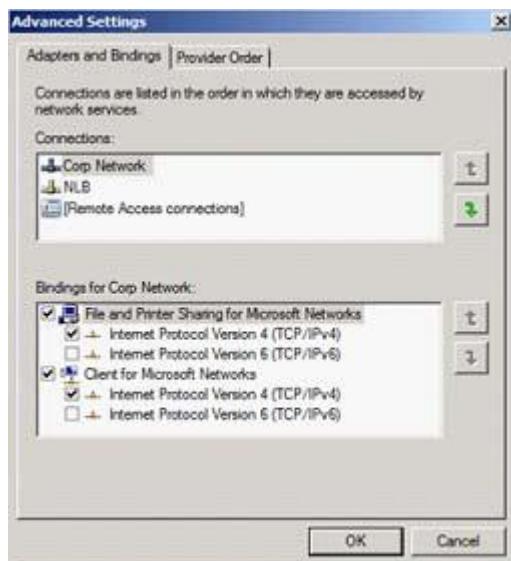
Metric: 1

Binding Order

Corp Network

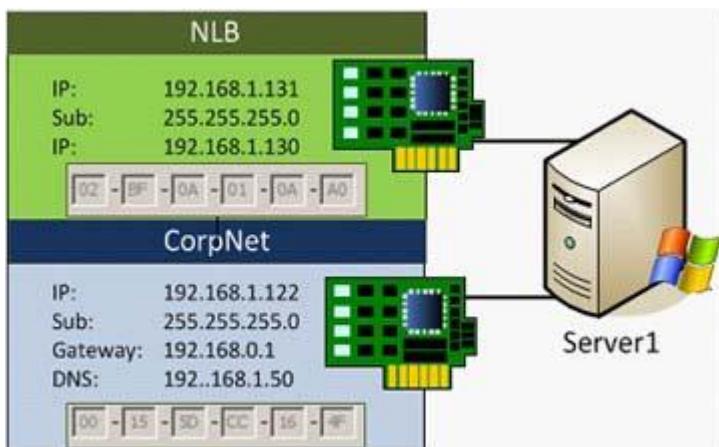
NLB

Remote Access Connections

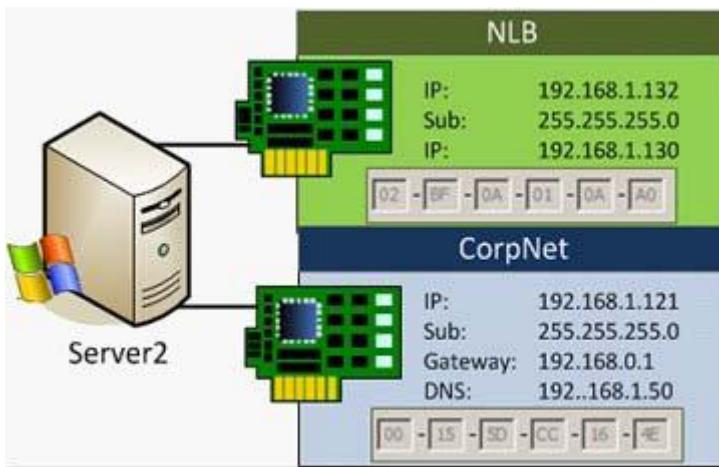


My Server NIC configuration:

Server1



Server2



5. Once the NICs are configured... Run an IPCONFIG /all and note the IP and MAC Address assignment for both Network Interfaces.

Note: Once the cluster is created, the designated cluster Network Interface will receive a new MAC Address, and NLB Property will be Enabled on the Network Interface (NLB)

6. IMPORTANT!!! By default Windows 2008 has IP Forwarding disabled. In order for this configuration with TWO NLB NICs to work and Not Define a Gateway to adhere to best practices, you have to enable IP forwarding on the NLB NICs so that requests sent to it are forwarded to the other; otherwise backend communication will not function. Below is the simple command line to run on each NLB Node.

Note: Be sure to open the command prompt as "Run as Administrator", also if you are running IPV6 make sure to substitute the ipv4 with ipv6.

My Scenario: netsh interface ipv4 set int "NLB" forwarding=enabled

7. Next proceed with creating and configuring the new NLB Cluster.

Create and Configure Network Load Balancing Cluster

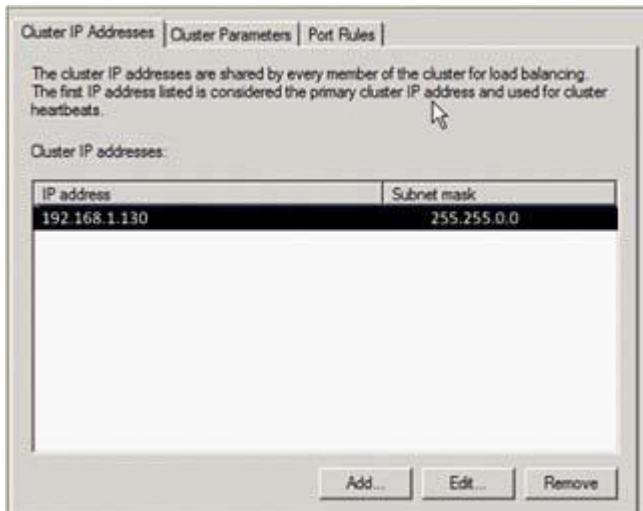
This process will detail the process for creating and configuring the NLB Cluster.

1. Log into one of the Guest Virtual Machines (NLB Nodes). In my case Server1 (First node in the cluster)
2. Right Click Network Load Balancing Manager, and select "RUN AS ADMINISTRATOR".
3. In the console tree, right-click Network Load Balancing Clusters, and then click New Cluster.
4. In the Hostbox, type the computer name (Server1.contoso.com) of the guest virtual machine that will be the first host of the cluster, and then click Connect. (Host Name, not cluster name)
5. In the Interfaces available for configuring a new cluster list, select a network adapter for the NLB cluster, and then click Next.
6. Under interfaces select NLB Network Interface.

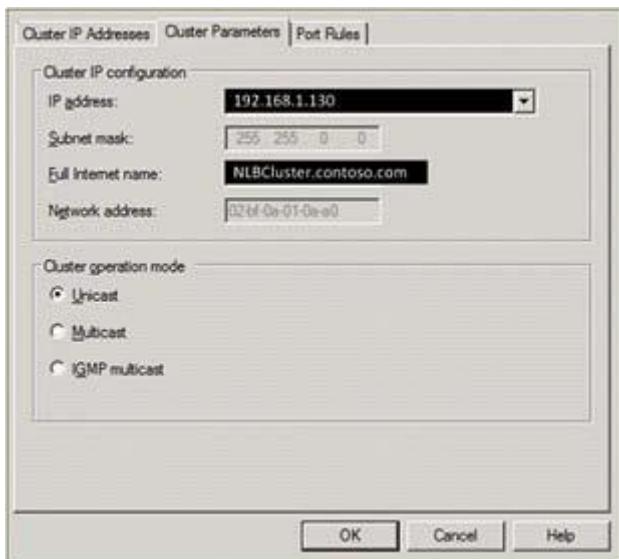
Note: If your NLB Network interface does not show up in the list, verify that the "Network Load Balancing" property is

un checked within the network interface properties. NLB will not pick up the network interface if that checkbox is already enabled.

7. On the New Cluster:Cluster IP Addresses screen, define the virtual IP address. In my case its the IP Address assigned to



NLBCluster.contoso.com A-Record (192.168.1.130)for the NLB cluster.



Important:Note the MAC addressin the Network Address property, and then clickNext. You will use this MAC address later.

8. UnderCluster operation mode, clickUnicast, and then clickNext.

9. Complete the rest of the NLB configuration, and then shut down the virtual machine.

10. At this point you have a single node within the NLB Cluster, and the MAC Address has been changed. To verify, run anIPCONFIG /ALL, and check to see if the NLB Network Connection changed from what was previously noted, to a new MAC Address. In my case, mine changed from (Previous MAC:00:15:5D:CC:16:5E to02:BF:0A:01:0A:A0).

11. If you didn't do it in step 7, be sure to note the new MAC Address, and shutdownthe Node (Server1).

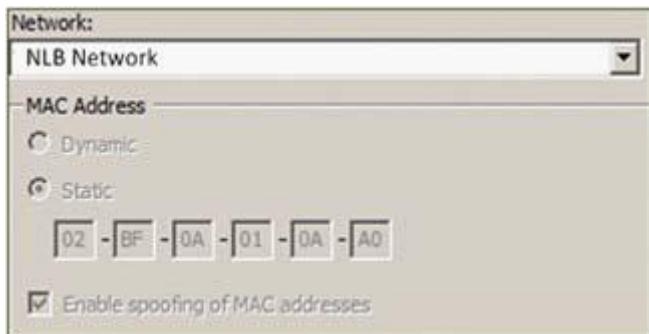
12. Once the Guest (Server1) is shutdown, open HyperV Manager and Select theServer1 >

Settings >

Network Adapter(The one assigned to NLB).

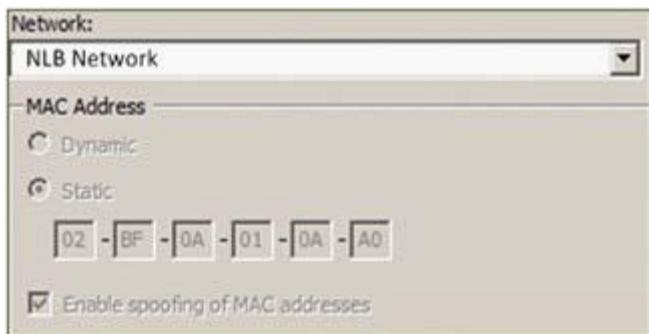
13. Under MAC Address, set the MAC Address toSTATIC, and enter the MAC Address assigned to the NLB Network Interface (Note earlier).

15. Next select "Enable spoofing of MAC addresses", and select apply.



Add the second VM to the NLB Cluster

1. Continuing from step 15, startup the VM (Server1) and log into Windows.
2. Open Network Load Balancing Manager (RUN AS ADMINISTRATOR).
3. Right click the NLB cluster, and then click Add Host To Cluster.
4. Specify the name of the new host (Server2), and then click Connect. The network adapters that are available for the host are listed at the bottom of the dialog box.
5. Click the network adapter that you want to use for Network Load Balancing (In my case NLB), and then click Next.
6. The IP address that is configured on this network adapter is the dedicated IP address (192.168.1.132) for this host.
7. Complete the rest of the NLB configuration, and then shut down the virtual machine (Server2).
8. Once the Guest (Server2) is shutdown, open HyperV Manager and Select the Server1 > Settings > Network Adapter (The one assigned to NLB).
9. Under MAC Address, set the MAC Address to STATIC, and enter the MAC Address assigned to the NLB Network Interface (Note earlier).
10. Next select "Enable spoofing of MAC addresses", and select apply.



11. Next, Start the virtual machine (Server2).
12. Open Network Load Balancing Manager.
13. Verify that the NLB cluster is up as well as both nodes.
14. At this point you now have a two-node NLB Cluster, each node sharing the same MAC address on the NLB network interface.



Question: 98

You create a virtual machine (VM) named Server1.
 You export the VM to the C:\VM folder.
 You need to import the VM from the correct folder.
 Which folder should you choose?

- A. C:\VM
- B. C:\VM\Server1
- C. C:\VM\Server1\Virtual Hard Disks
- D. C:\VM\Server1\Virtual Machines

Answer: B

Explanation:

Top Tips for Importing & Exporting your VM with Hyper-V

As you accumulate virtual machines, then sooner or later you are probably going to run into a situation in which you want to move one or more virtual machines to a new host server. Microsoft makes this possible through the Hyper-V Manager's Import and Export functions. If you look at Figure A, you can see that when you select a virtual machine, Hyper-V displays an Export link in the lower right corner of the console. There is also an Import Virtual Machine link at near the top of the Actions pane.

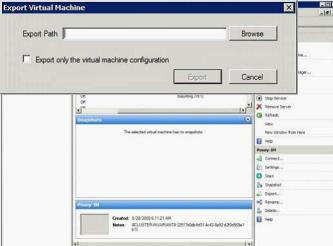


Figure A

The Import and Export functions are accessible through the Hyper-V Manager.

On the surface, it appears that you can simply select a virtual machine, export it, take the exported image to another server that's running Hyper-V, and import it. On some levels this really is the way that the import and export processes work. There are some gotchas that you need to be aware of though, and the only way that you can avoid those gotchas is to understand what's really going on when you export and import a virtual machine.

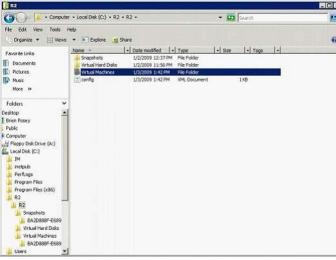
Virtual Machine Identification

The first thing that you need to understand about the import and the export process is that Hyper-V has two different ways of identifying virtual machines. The most obvious way of identifying a virtual machine is by the name that you have assigned to it. For example, if you look back at Figure A, the Actions pane will show you that I have selected a virtual machine named Posey-IM. Virtual machines retain their name throughout the import and export process. Although it is certainly advisable to avoid having multiple virtual machines with the same name, it is not an absolute requirement. The reason why virtual machine names do not absolutely have to be unique is because there is a second factor that identifies a virtual machine. This second identification factor is the virtual machine's Globally Unique Identifier, or GUID, which is automatically assigned to a virtual machine by Windows, and does have to be unique.

The Virtual Machine Export Process

The virtual machine export process itself is actually really simple to perform. Simply select a virtual machine from the Hyper-V Manager, and then click the Export link. After doing so, Windows will display the Export Virtual Machine dialog box that is shown in Figure B. All you have to do now is to enter the path that you want to export the virtual machine to, and then click the Export button.

Figure B



Exporting a virtual machine is really simple.

So, what about the export process? Well, not a lot really, but there are still some things that you need to know about it. For starters, Windows will place the virtual machine within a sub folder that bears the virtual machine's name within the path that you have specified. For example, I decided to export a virtual machine named R2. Not wanting to lose the files among other clutter, I created a folder named C:\R2 and specified that as the export path. What I ended up with was the exported files residing in a folder named C:\R2\R2\. One of the big questions that I had about the export process before I began was whether or not it left the original virtual machine instance intact, and in its original location. I'm happy to report that the files making up the virtual machine are untouched during the export process. This does however, mean that you will have to manually remove those files once you have moved the virtual server to its new location. The other thing that you need to know is that depending on the size of the virtual machine, the export process can take a really long time to complete. Unfortunately, I can't tell you exactly how long, because the amount of time depends on the size of the .VHD files that are being used, and on your machine's hardware capabilities. As you can see, exporting a virtual machine is really simple. Now let's take a look at the anatomy of the exported information, and how the import process works.

The Anatomy of a Virtual Machine

When you export a virtual machine, one of the things that Hyper-V asks you for is the export path. Whatever path you enter, Hyper-V will create a folder in that path that bears the name of the virtual machine that you are exporting. For instance, when I exported my virtual machine, I used C:\R2 as the path, and Hyper-V created a new folder named R2. Now my virtual machine resides in a folder named C:\R2\R2, as shown in Figure C.

Figure C

Hyper-V creates a folder in the destination path that bears the name of the virtual server that you are exporting. If you look at the figure, you will notice that within the folder that Hyper-V creates are three sub folders. There is also an XML file named Config.xml. The Snapshots Folder The Snapshots folder is used as a repository for snapshots of the virtual machine. This folder contains three elements. First, there is a subfolder that bears the virtual machine's GUID. If no snapshots exist, the folder will still be present, but it will be empty. If snapshots do exist, then this folder will contain the diffing data for the virtual hard disks. The snapshots folder may also contain a subfolder for each snapshot. This folder bears the name of the individual snapshot ID. In addition, there will be an export file (a .EXP file) for each individual snapshot.

The Virtual Hard Disks Folder

As the name implies, the Virtual Hard Disks folder stores the .VHD files (virtual hard drive files) used by the virtual

machine. You can see an example of this in Figure D.

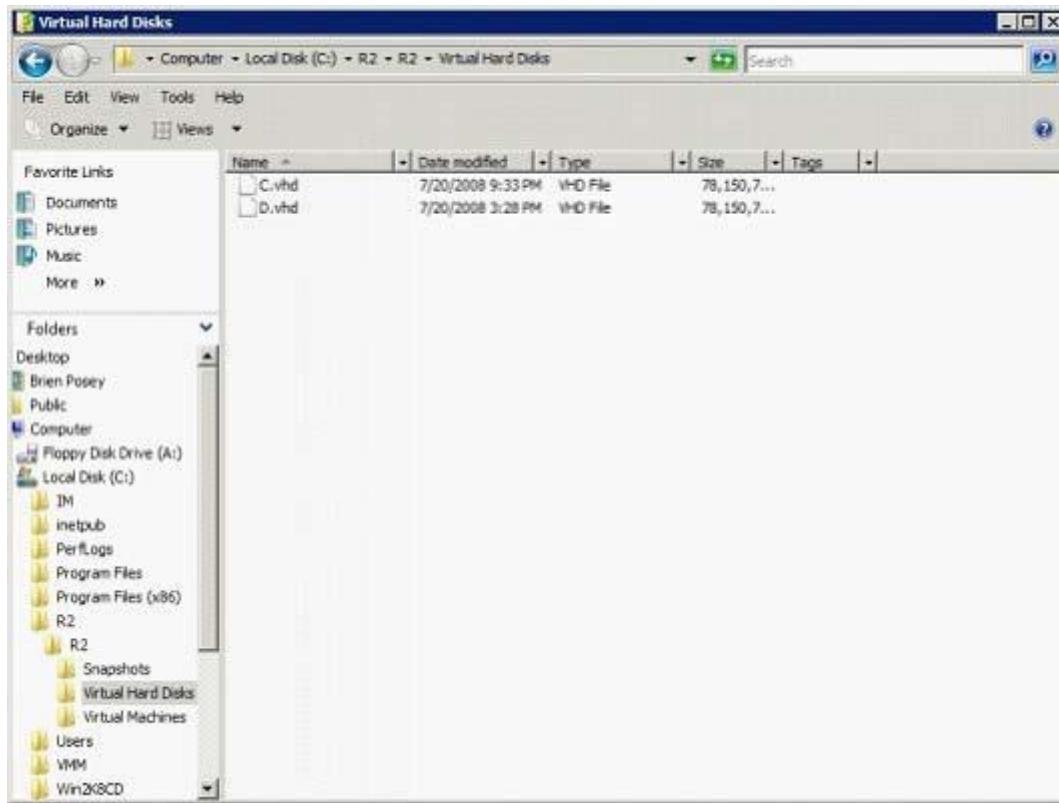


Figure D

The Virtual Hard Disks folder contains the .VHD files for the virtual server.

The Virtual Machines Folder

At a minimum, the Virtual Machines folder will contain a file named after the virtual machine's GUID, but with an .EXP extension. This file is the virtual machine export file. It retains the virtual machine's settings during the export process.

If the virtual machine was in a saved state during the export process, then the Virtual Machines folder will contain a sub folder, which will store two saved state files. If the machine was not in a saved state at the time of the export, then the sub folder may exist, but it will be empty.

Importing a Virtual Machine The import and export process is used primarily as a means for moving virtual machines from one host server to another. Therefore, the first step in the import process is to copy the export folder and all of its sub folders to the desired host server. After doing so, open the Hyper-V Manager and click the Import Virtual Machine link.

You should now be prompted to enter the virtual machine's path.

Although this seems simple enough, there are two very important things that you need to know about the import process. First, it is up to you to copy the virtual machine files to the location from which you want to use them. When you import the virtual machine, its physical location on the host server becomes permanent, and moving the virtual machine is no longer an option. It is therefore important to place the virtual machine files on the desired volume before you import it.

The other thing that you need to know is that when you import the virtual machine, the .EXP file and the CONFIG.XML files will be deleted. These files are replaced with a new CONFIG.XML file.

What this means to you is that because the .EXP file is gone, the virtual machine cannot be imported again (unless you export it again). If you want to use the virtual machine as a template or as an image that you can quickly restore, then it is important to work only from a copy of your exported files so that the original remains untouched.

Conclusion The process of importing and exporting virtual machines isn't all that difficult, but by following these tips, hopefully you'll save yourself from a few of the most common pitfalls related to duplicate virtual machines or the imported machine's location.

Question: 99

You are configuring security for your Windows Server 2008 R2 Hyper-V environment. You need to configure the environment so that virtual machines (VMs) are restricted to a specific VLAN. What should you do?

- A. Enable VLAN identification on the virtual network and specify the VLAN ID.
- B. Enable VLAN identification on the VM network adapter and specify the VLAN ID.
- C. Add a secondary network adapter to the Hyper-V host.
- D. Add a secondary network adapter to the VM.

Answer: B

Explanation:

Configuring virtual local area networks (VLANs)

All released versions of Hyper-V support virtual local area networks (VLANs). A VLAN configuration is software-based, which means that you can easily move a computer and still maintain their network configurations. For each virtual network adapter you connect to a virtual machine, you can configure a VLAN ID for the virtual machine. You will need the following to configure VLANs:

A physical network adapter that supports VLANs.

A physical network adapter that supports network packets with VLAN IDs that are already applied.

On the management operating system, you will need to configure the virtual network to allow network traffic on the physical port. This is for the VLAN IDs that you want to use internally with virtual machines. Next, you configure the virtual machine to specify the virtual LAN that the virtual machine will use for all network communications.

There are two modes in which you can configure a VLAN: access mode and trunk mode. In access mode, the external port of the virtual network is restricted to a single VLAN ID in the UI. You can have multiple VLANs using WMI. Use access mode when the physical network adapter is connected to a port on the physical network switch that also is in access mode. To give a virtual machine external access on the virtual network that is in access mode, you must configure the virtual machine to use the same VLAN ID that is configured in the access mode of the virtual network. Trunk mode allows multiple VLAN IDs to share the connection between the physical network adapter and the physical network. To give virtual machines external access on the virtual network in multiple VLANs, you need to configure the port on the physical network to be in trunk mode. You will also need to know the specific VLANs that are used and all of the VLAN IDs used by the virtual machines that the virtual network supports.

Question: 100

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You plan to install 3 host servers and 15 child partitions in the virtual environment. You will perform child partition placements by using SAN migration. You need to place the appropriate number of child partitions on each logical unit number (LUN) to support SAN migrations. How many child partitions should you place on each LUN?

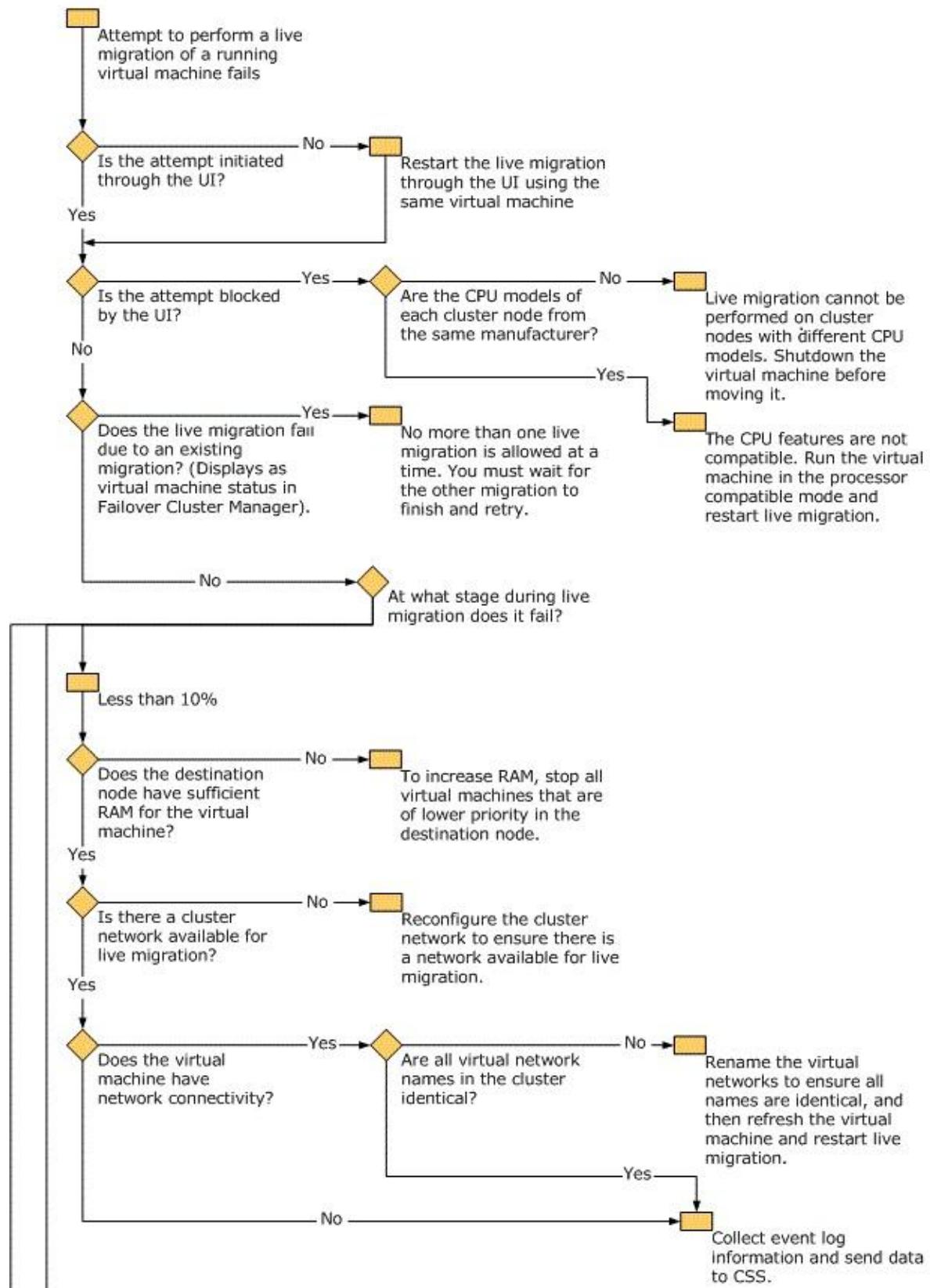
- A. 1
- B. 3
- C. 5
- D. 15

Answer: A

Explanation:

Live migration overview

Live migration is a new Hyper-V feature in Windows Server 2008 R2, which requires the failover clustering feature to be added and configured on the servers running Hyper-V. Hyper-V and failover clustering can be used together to make a virtual machine that is highly available, thereby minimizing disruptions and interruptions to clients. Live migration allows you to transparently move running virtual machines from one node of the failover cluster to another node in the same cluster without a dropped network connection or perceived downtime. In addition, failover clustering requires shared storage for the cluster nodes. This can include an iSCSI or Fiber-Channel Storage Area Network (SAN). All virtual machines are stored in the shared storage area, and the running virtual machine state is managed by one of the nodes. Cluster Shared Volumes are volumes in a failover cluster that multiple nodes can read from and write to at the same time. The nodes coordinate the reading and writing activity so that the disk is not corrupted. In contrast, disks (LUNs) in cluster storage that are not Cluster Shared Volumes are always owned by a single node. Cluster Shared Volumes have the same requirements as non-Cluster Shared Volumes disk resources. The storage location in the Cluster Shared Volumes is under systemDrive/ClusterStorage. When creating the virtual machine, we recommend that you use this storage location. Cluster Shared Volumes can only be enabled once per cluster.

Hyper-V Live Migration Troubleshooting Flowchart**Question: 101**

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You attempt to migrate child partitions through a firewall by using network migration. The migration fails. You need to ensure that you can successfully complete the migration. Which firewall port should you open?

- A. 80
- B. 135
- C. 445
- D. 8554

Answer: A

Explanation:

80 and 135 445 are the possible answers

Port to open when adding host in multisite into VMM Server

TCP/8100

TCP/80 -

TCP/443 - SSL

TCP/5900

TCP/3389 - RDP

TCP/2179

TCP/135

TCP/445

Make sure the firewall port is open bi-directional between VMM and Hyper V Host which behind the firewall. The host should join to domain

Question: 102

You are configuring a virtual machine (VM) that is running on a Windows Server 2008 R2 host server. The primary virtual disk is connected to IDE Controller 0. You need to add a virtual disk to the VM without shutting down the VM. What should you do?

- A. Add the virtual disk to IDE Controller 0.
- B. Add the virtual disk to IDE Controller 1.
- C. Add the virtual disk to an existing SCSI controller.
- D. Add a virtual network adapter to the VM. Attach an iSCSI disk to the VM through the virtual network adapter.

Answer: C

Explanation:

A similar scenario can occur when a virtual machine is running out of disk space and you want to add another virtual hard disk without shutting down the virtual machine. You can attach a virtual hard disk to a virtual machine without shutting down that virtual machine only if you attach it to the SCSI controller of the virtual machine. To attach a virtual hard disk to an IDE controller, you must first shut down the virtual machine. Scenario prerequisites

To test this scenario, you will need the following:

Complete all steps in the main section of this guide. After you complete all the steps, you will have a virtualization server and two virtual machines:Base Virtual Machine(used for creating new virtual machines) and Imported Virtual Machine.

Imported Virtual Machine is running, Windows Server2008R2 is configured, and the computer name for the virtual machine is VirtualMachine1.

Scenario steps

The following procedure explains how to create and attach a virtual hard disk to the virtualization server, copy files to the virtual hard disk, and then attach the disk to a virtual machine without shutting it down.

To create and connect a virtual hard disk without shutting down the virtual machine On the virtualization server, create and attach a new virtual hard disk as follows:

Open Server Manager. ClickStart, point toAdministrative Tools, and then clickServer Manager.

In Server Manager, in the console tree, underStorage, clickDisk Management.

After the disks on the virtualization server are listed in Disk Management, in the console tree, rightclickDisk Management, and then clickCreate VHD. TheCreate and Attach Virtual Hard Disk dialog box appears.

Type or browse to the location on the virtualization server where you want to create the virtual hard disk, and type a name for it.

Type a size for the virtual hard disk. SelectMBfor megabytes,GBfor gigabytes, orTBfor terabytes.

Select the format of the virtual hard disk: dynamically expanding or fixed size.

To create the virtual hard disk and attach it to the virtualization server, clickOK. After a few moments, the new virtual hard disk is listed in Disk Management with the other disks that are available on the virtualization server, and its state is listed asNot Initialized.

To initialize the virtual hard disk, right-click the virtual hard disk, and then clickInitialize Disk. TheInitialize Disk dialog box appears.

On theInitialize Diskdialog box, clickOK. After a few moments, the new virtual hard disk is initialized and listed asOnline.

To create a simple volume on the virtual hard disk, right-click the virtual hard disk, and then clickNew Simple Volume. TheNew Simple Volume Wizardopens.

Follow the steps in theNew Simple Volume Wizardto create the simple volume, assign it a drive letter, and perform a quick format. After a few moments, the volume in the virtual hard disk is listed asHealthy, and a drive letter is assigned to it. The virtual hard disk is now available on the virtualization server, and can be accessed to read and write information. Optionally, copy files to the virtual hard disk so that they can be made available to the virtual machine. Detach the virtual hard disk from the virtualization server, as follows:

In Disk Management, right-click the virtual hard disk, and then clickDetach VHD. TheDetach Virtual Hard Disk dialog box appears.

To detach the virtual hard disk, ensure that theDelete the virtual hard disk file after removing the diskcheckbox is not selected, and then clickOK. After a few moments, the virtual hard disk is no longer listed in Disk Management.

Attach the virtual hard disk to the SCSI controller of theImported Virtual Machinevirtual machine, as follows:

On the virtualization server, open Hyper-V Manager. ClickStart, point toAdministrative Tools, and then click Hyper-V Manager.

In Hyper-V Manager, underVirtual Machines, right-clickImported Virtual Machine, and then clickSettings.

TheSettings for Imported Virtual Machinedialog box appears.

In the left navigation pane, clickSCSI Controller.

InSCSI Controller, clickHard Drive, and then clickAdd. A hard drive is added to the SCSI controller and is automatically selected in the left navigation pane.

In theHard Driveproperties, clickVirtual hard disk (.vhd) file, and then clickBrowse.

Browse to the location on the virtualization server where you created the virtual hard disk, and then clickOpen.

To attach the virtual hard disk to the virtual machine, clickOK. The virtual hard disk is now available on the virtual machine, and can be accessed to read and write information.

Optionally, you can detach a virtual hard disk from the virtual machine and attach it again to the virtualization server, without turning off the virtual machine, as follows:

In Hyper-V Manager, underVirtual Machines, right-clickImported Virtual Machine, and then clickSettings. TheSettings for Imported Virtual Machinedialog box appears.

In the left navigation pane, underSCSI Controller, click the virtual hard disk that you want to detach from the virtual machine.

In theHard Driveproperties, clickRemove.

To detach the virtual hard disk from the virtual machine, clickOK. The virtual disk is no longer attached to the virtual

machine and can now be attached to the virtualization server.

On the virtualization server, open Server Manager. Click Start, point to Administrative Tools, and then click Server Manager.

In Server Manager, in the console tree, under Storage, click Disk Management.

After the disks on the virtualization server are listed in Disk Management, in the console tree, right-click Disk Management, and then click Attach VHD. The Attach Virtual Hard Disk dialog box appears.

Type or browse to the location on the virtualization server where you created the virtual hard disk, and then click OK.

After a few moments, the virtual hard disk is listed in Disk Management with the other disks that are available on the virtualization server, and its state is listed as Online. The virtual hard disk is now available on the virtualization server, and can be accessed to read and write information.

Question: 103

You create a virtual machine (VM) on a Windows Server 2008 R2 Hyper-V server. The VM has a single VHD file that is connected to an IDE controller. You need to add five new virtual disks to the VM. You must minimize the amount of virtual hardware. What should you do?

- A. Add the virtual disks to IDE Controller 0.
- B. Add the virtual disks to an existing SCSI controller.
- C. Remove the virtual DVD drive, and add the virtual disks to IDE Controller1.
- D. Add five SCSI controllers to the VM, and add one virtual disk to each SCSI controller.

Answer: B

Explanation:

Use of virtual SCSI devices requires integration services to be installed in the guest operating system. SCSI devices. Each virtual machine supports up to 256 SCSI disks (four SCSI controllers with each controller supporting up to 64 disks). SCSI controllers use a type of device developed specifically for use with virtual machines and use the virtual machine bus to communicate. The virtual machine bus must be available when the guest operating system is started. Therefore, virtual hard disks attached to SCSI controllers cannot be used as startup disks. By default, SCSI commands are filtered in Hyper-V in Windows Server 2008 R2. Although it is possible to disable filtering of SCSI commands, we do not recommend that you arbitrarily disable filtering because it represents a possible security risk (when filtering of SCSI commands is turned off, SCSI commands pass directly from the virtual machine to the storage stack on the management operating system). Programmatically disabling SCSI filtering is supported in Hyper-V in Windows Server 2008 R2 and may be required for certain storage management applications. You should only disable SCSI filtering after consulting with your storage vendor and determining that it is necessary for application compatibility. Although the I/O performance of physical SCSI and IDE devices can differ significantly, this is not true for the virtualized SCSI and IDE devices in Hyper-V. Hyper-V. IDE and SCSI devices both offer equally fast I/O performance when integration services are installed in the guest operating system

Question: 104

You are preparing to install an operating system on virtual machines (VMs) in a Hyper-V environment. You need to configure each VM so that you can perform a network-based operating system installation. What should you do for each VM?

- A. Add a Network Adapter.
- B. Add a Legacy Network Adapter.
- C. Configure a static MAC address.
- D. Configure a dynamic MAC address.

Answer: B

Explanation:

On the Installation Options page, choose the method you want to use to install the operating system:
Install an operating system from a boot CD/DVD-ROM. You can use either physical media or an image file (.iso file).
Install an operating system from a boot floppy disk.
Install an operating system from a network-based installation server. To use this option, you must configure the virtual machine with a legacy network adapter connected to an external virtual network. The external virtual network must have access to the same network as the image server.
[http://technet.microsoft.com/en-us/library/cc732470\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc732470(v=ws.10).aspx)

Question: 105

Your company has an Active Directory Domain Services (AD DS) domain that includes an AD security group named Monitoring. You are configuring a Windows Server 2008 R2 Hyper-V server that hosts several virtual machines (VMs). You need to ensure that members of the Monitoring group can only stop and start VMs on the host server. What should you do?

- A. Add the Monitoring group to the Server Operators AD security group.
- B. In Authorization Manager, add the Monitoring group to the Administrator role in the default scope.
- C. In Authorization Manager, create a task that includes the Stop Virtual Machine and Start Virtual Machine operations. Add the task to the Administrator role.
- D. In Authorization Manager, create a role in the default scope. Add the Stop Virtual Machine and Start Virtual Machine operations to the role. Assign the Monitoring group to the role.

Answer: D

Explanation:

Adding administrator role to Montoring group will gain access to create a VM.

Server Operators is a local group that allows a user to perform general administrator tasks. These tasks include sharing server resources, performing file backup and recovery, and more. As with other operator accounts, Server Operators can also log on to a server locally and shut it down. Server Operators can perform most common server administration tasks. On domain controllers, members of this group can log on interactively, create and delete shared resources, start and stop some services, back up and restore files, format the hard disk, and shut down the computer. This group has no default members. Because this group has significant power on domain controllers, add users with caution. Back up files and directories; Change the system time; Force shutdown from a remote system; Allow log on locally; Restore files and directories; Shut down the system.

[http://technet.microsoft.com/en-us/library/cc756898\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc756898(v=ws.10).aspx)

Question: 106

You manage Hyper-V host servers and virtual machines (VMs) by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. Developers are members of an AD security group named Development. You need to ensure that on a specific host server, members of the Development group can perform only the Create, Modify, and Remove VM management tasks. What should you do?

- A. Create a Self-Service user role and add the Development group to this role.
- B. Create a Delegated Administrator user role and add the Development group to this role.
- C. In Authorization Manager, create a role on the client computer of each member of the Development group, and

add the Development group to this role.

D. Install Hyper-V Manager on the client computer of each member of the Development group, and grant the Development group administrative privileges on the specific server.

Answer: A

Explanation:

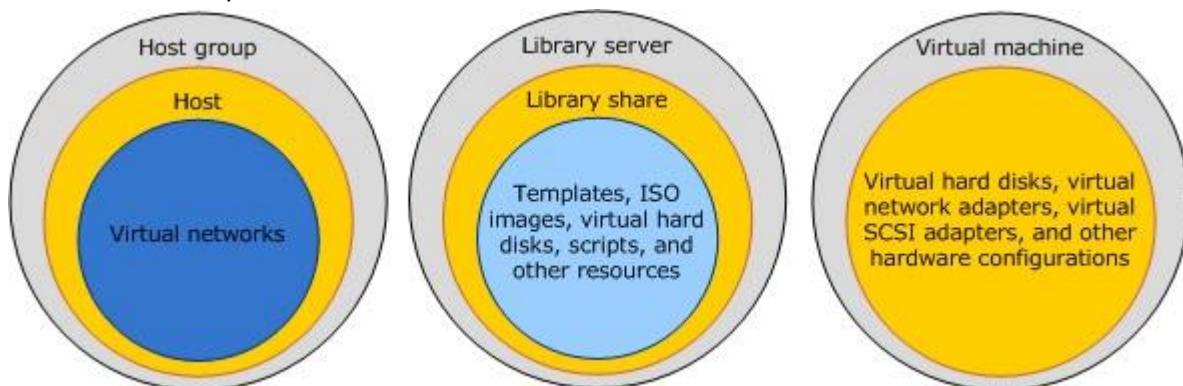
The self-service user role grants users permissions to create, operate, manage, store, create checkpoints for, and connect to their own virtual machines through the Virtual Machine Manager Self-Service Portal.

In role-based security, dynamic collections of instances of objects (such as hosts or virtual machines), known as groups, determine the available targets for a particular operation that a user performs. For example, when a user attempts to start a virtual machine, VMM first checks whether the user has permission to perform the Start action on virtual machines and then verifies that the user has the right to start the selected virtual machine.

These groups are hierarchical: providing access to a particular instance provides access to all instances contained in that instance. For example, providing access to a host group provides access to all hosts within the host group and to all virtual networks on the hosts.

The following illustration shows the hierarchy of instances within the groups that apply to VMM user roles.

When a user role provides access to an instance in the outer ring, it automatically provides access to all instances in the inner rings. Virtual machines are pictured separately because the flow of access works somewhat differently for them. For all administrator roles, host group rights flow to all virtual machines that are deployed on the hosts. However, that is not true for members of selfservice user roles. The rights of self service users are limited to virtual machines that they own.



Group hierarchies for role-based security

Role Types in VMM

The following user role types, based on profiles of the same name, are defined for VMM:

Administrator role—Members of the Administrator role can perform all VMM actions on all objects that are managed by the VMM server. Only one role can be associated with this profile. At least one administrator should be a member of the role.

Delegated Administrator role—Members of a role based on the Delegated Administrator profile have full VMM administrator rights, with a few exceptions, on all objects in the scope defined by the host groups and library that are assigned to the role. A delegated administrator cannot modify VMM settings or add or remove members of the Administrator role.

Self-Service User role—Members of a role based on the Self-Service User profile can manage their own virtual machines within a restricted environment. Self-service users use the VMM Self- Service Web Portal to manage their virtual machines. The portal provides a simplified view of only the virtual machines that the user owns and the operations that the user is allowed to perform on them. A self-service user role specifies the operations that members can perform on their own virtual machines (these can include creating virtual machines) and the templates and ISO image files that they can use to create virtual machines. The user role also can place a quota on the virtual machines that a user can deploy at any one time. Self-service users' virtual machines are deployed transparently on the most suitable host in the host group that is assigned to the user role.

Question: 107

Your virtual environment includes Hyper-V host servers and VMware ESX Server hosts. You manage the environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You need to enable non-administrative users to manage snapshots or checkpoints for virtual machines (VMs) that are hosted on either host system. What should you do?

- A. Create checkpoints in VMM.
- B. Create snapshots by using Hyper-V Manager.
- C. Create checkpoints by using the VMM Self-Service Portal.
- D. Create snapshots from within the Virtual Machine Connection console.

Answer: C

Explanation:

You can grant self-service users permission to create and manage checkpoints for their virtual machines. By creating checkpoints for a virtual machine, you can restore the virtual machine to a previous state. A typical use of checkpoints is to create a temporary backup before you apply update the operating system. The checkpoint enables you to revert the virtual machine to its previous state if the update fails or adversely affects the virtual machine. **What Is a Checkpoint?**

Each checkpoint saves the state of each virtual hard disk that is attached to a virtual machine and all of the hard disk's contents, including application data files. Use the Recover action to restore a virtual machine to its state when a checkpoint was created.

For more information, see [How to Restore a Virtual Machine to a Checkpoint](#). When you no longer need to recover a virtual machine to a checkpoint, you should merge the checkpoint to delete the associated files and recover disk space.

You can create as many as 64 checkpoints for any one virtual machine. However, checkpoints use disk space and, when allowed to proliferate over long periods, can affect performance during operations such as migrating a virtual machine. For this reason, it is a good practice to routinely merge unneeded checkpoints.

Checkpoints are portable. When you migrate, store, or deploy a virtual machine, any existing checkpoints move with the virtual machine.

You can create checkpoints only when a virtual machine is deployed on a host. You cannot create checkpoints when a virtual machine is stored in the library.

It is advisable to shut down the virtual machine before creating a checkpoint. However, you can create a checkpoint while a virtual machine is in a Stopped or Turned Off state. Doing so stops the virtual machine momentarily while the checkpoint is created. If Virtual Machine Additions is not installed on the virtual machine, the virtual machine is not shut down. Instead, it is simply stopped;

this is similar to switching off the power on a physical machine while it is still running. To avoid losing any data, ensure that the virtual machine is not in use and that no processes are running on the virtual machine.

Several entry points are provided for creating checkpoints. You can use the New checkpoint action for a selected virtual machine, or you can create and manage checkpoints while updating the properties of a virtual machine. VMM uses the same Single Port Listener technology to provide the administrator with live thumbnails in the VMM Administrator Console. The VMM Self-Service Portal and VirtualMachineViewer.exe also use the Single Port Listener technology of RDP.

Do not use checkpoints for disaster recovery. Checkpoints do not create full duplicates of the hard disk contents nor do they copy data to a separate volume. A checkpoint can serve as temporary backup before updating an operating system on a virtual machine so that you can roll back if the update has any adverse effects. You should use a backup application to back up and recover your data in case of catastrophic data loss. Checkpoints provide a temporary backup when you need to restore a virtual machine to a previous state after a change such as a system or application update. However, you should not use checkpoints for the permanent backup of the operating system, applications, or

files.

Checkpoints are stored with the virtual machine on the host. Therefore, if the host fails while the virtual machine is deployed, the checkpoints are lost. To provide data protection for your virtual machines, you should instead use the Volume Shadow Copy Service (VSS) writer for Virtual Server or a backup application such as System Center Data Protection Manager (DPM) to back up your virtual machines to external storage

Question: 108

You add a Windows Server 2008 R2 server with the Hyper-V role installed to an existing Hyper-V failover cluster. After you move a virtual machine (VM) to the new cluster node, Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 reports the status of the VM as Unsupported Cluster Configuration. You need to be able to manage the VM by using VMM. What should you do?

- A. Disable TCP Chimney Offload on the new cluster nodes network adapters
- B. Disable the TCP/IP Offload Engine (TOE) on the new cluster nodes network adapters.
- C. Move the VM configuration file to a local storage device, and update the pointer to the file.
- D. Update the virtual networking configuration of the new cluster node to match the virtual networking configuration of the original cluster nodes.

Answer: D

Explanation:

One or more virtual network adapters on the virtual machine are not connected to a highly available virtual network. If the virtual networks on all hosts in the host cluster do not have the same name and the same case (virtual network names are case-sensitive), a highly available virtual machine might lose connectivity when it is migrated or fails over to another cluster node. To find out the common virtual networks for the cluster, in the VMM Administrator Console, view the Networks tab in the host cluster properties. To configure virtual networks on the hosts, use the Networking tab in host properties. For a VN to be marked as HA, The location and tag of the VN in all nodes must be the same. For each VN in the cluster:

The NICs to which the VN is attached in each node have the same location

The Tag in the VN in each node is the same

The VN Name is the same

After you commit changes, refresh the cluster so ensure that the VN is detected as HA.

To check that the VNs are properly detected as HA:

In the admin console, select the cluster, right click and select properties

Go to the Virtual Networks and check that the VNs are displayed.

If a VN is not displayed, it means that location, tag or name is not consistent across the cluster nodes Lastly, if the VM has a DVD image attached, ensure that the .iso file resides in the shared storage and not in a local volume of the Host.

Go to the VM properties and in the hardware tab select the DVD driver.

Check the path to the .iso file points to a share resource.

On Windows Server 2008 R2 the difference between Balanced and High Performance is minimal:

Balanced Settings (default):

- Hard disk --> Turn off hard disk after --> 0 minutes
- Sleep --> Allow wake timers --> Enable
- USB settings --> USB selective suspend setting --> Enabled
- Power buttons and lid --> Power button action --> Shut down
- PCI Express --> Link State Power Management --> Moderate power savings
- Processor power management - System cooling policy --> Active
- Display --> Turn off display after --> 10 Minutes

High Performance:

- Hard disk --> Turn off hard disk after --> 0 minutes

- Sleep --> Allow wake timers --> Enable
- USB settings --> USB selective suspend setting --> Enabled
- Power buttons and lid --> Power button action --> Shut down
- PCI Express --> Link State Power Management --> --> Off
- Processor power management - System cooling policy --> Active
- Display --> Turn off display after --> 15 Minutes

Note: Differences indicated in bold.

If Hyper-V switch driver installation has gone corrupt.

You could either:

1. Remove/re-add the Hyper-V role
2. Uninstall and re-install the switch driver (instructions below)

For 2:

1. Close Hyper-V manager
2. close ncpa.cpl
3. "net stop nvspwmi" (from an elevated prompt)
4. "netcfg.exe -u VMS_PP" (from an elevated prompt)
5. "netcfg.exe -c p -i VMS_PP" (from an elevated prompt)
6. Reboot

In case Switch driver installation issue is still suspected then check the setupapi logs.

1. Change HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Setup\LogLevel to 0x2000ffff
2. Reboot
3. Try it again
4. check \windows\inf\setupapi.app.log and \windows\inf\setupapi.dev.log

Question: 109

All servers on your company's network run Windows Server 2008 R2. You deploy Remote Desktop Services (RDS). The company has a load-balanced Remote Desktop Connection Broker (RD Connection Broker) cluster. You are adding a Remote Desktop Session Host (RD Session Host) server to the cluster. You need to ensure that the RD Session Host server will receive only half of the RDS sessions. What should you do?

- A. Enable IP redirection on the RD Session Host server.
- B. Enable token redirection on the RD Session Host server.
- C. Configure the server weight for the RD Session Host server.
- D. Configure the DNS weight priority for the RD Session Host server.

Answer: C

Explanation:

TS Session Broker Load Balancing sets a limit of 16 for the maximum number of pending logon requests to a particular terminal server. This helps to prevent the scenario where a single server is overwhelmed by new logon requests; for example, if you add a new server to the farm, or if you enable user logons on a server where they were previously denied. The TS Session Broker Load Balancing feature also enables you to assign a relative weight value to each server. By assigning a relative weight value, you can help to distribute the load between more powerful and less powerful servers in the farm. Additionally, a new "server draining" mechanism is provided that enables you to prevent new users from logging on to a terminal server that is scheduled to be taken down for maintenance. This mechanism provides for the ability to take a server offline without disrupting the user experience. If new logons are denied on a terminal server in the farm, TS Session Broker will allow users with existing sessions to reconnect, but will redirect new users to terminal servers that are configured to allow new logons

Question: 110

Your network includes the servers shown in the following table.

Server Name	Operating System	Role Services
Server 1	Windows Server 2008 R2 Standard	RDS Licencing
Server 2	Windows Server 2008 R2 Enterprise	Remote Desktop
Server 3	Windows Server 2008 R2 Enterprise	Remote Desktop

Per-Device Remote Desktop Services client access licenses (RDS CALs) are installed on Server1. After you refresh a group of client computers with Windows 7, users on those computers can no longer connect to Server2. You need to ensure that the users can connect to remote applications. What should you do?

- A. From the affected client computers, initiate a Remote Desktop connection to Server1.
- B. From the affected client computers, initiate a Remote Desktop connection to Server3.
- C. On the affected client computers, open port 3389 on the Windows Firewall.
- D. On Server1, revoke the RDS device CALs of the affected client computers.

Answer: D

Explanation:

We have enabled RDS CALs per device then the computers can connect to server3 but not to server2 and vice versa. Because, RDS CALs are enabled. Revoke the device CALs of the affected group. Port has already been open - Not a firewall issue. We need to fix the issue on server2 not on server1 or server3.

Question: 111

You have a Windows Server 2008 R2 Hyper-V server. You need to ensure that you are prompted to specify a custom snapshot name when you create a snapshot. What should you use to create the snapshot?

- A. Hyper-V Manager
- B. Windows Server Backup
- C. the Virtual Machine Connection window
- D. the Backup command-line tool (also known as wbadmin.exe)

Answer: C

Explanation:

Virtual Machine Connection is a tool that you use to connect to a virtual machine so that you can install or interact with the guest operating system in a virtual machine. Some of the tasks that you can perform by using Virtual Machine Connection include the following:

- Connect to the video output of a virtual machine
 - Control the state of a virtual machine
 - Take snapshots of a virtual machine
 - Modify the settings of a virtual machine
- <http://technet.microsoft.com/en-us/library/cc742407.aspx>

Question: 112

Your company's virtual environment includes Windows Server 2008 R2 Hyper-V servers. You manage the environment

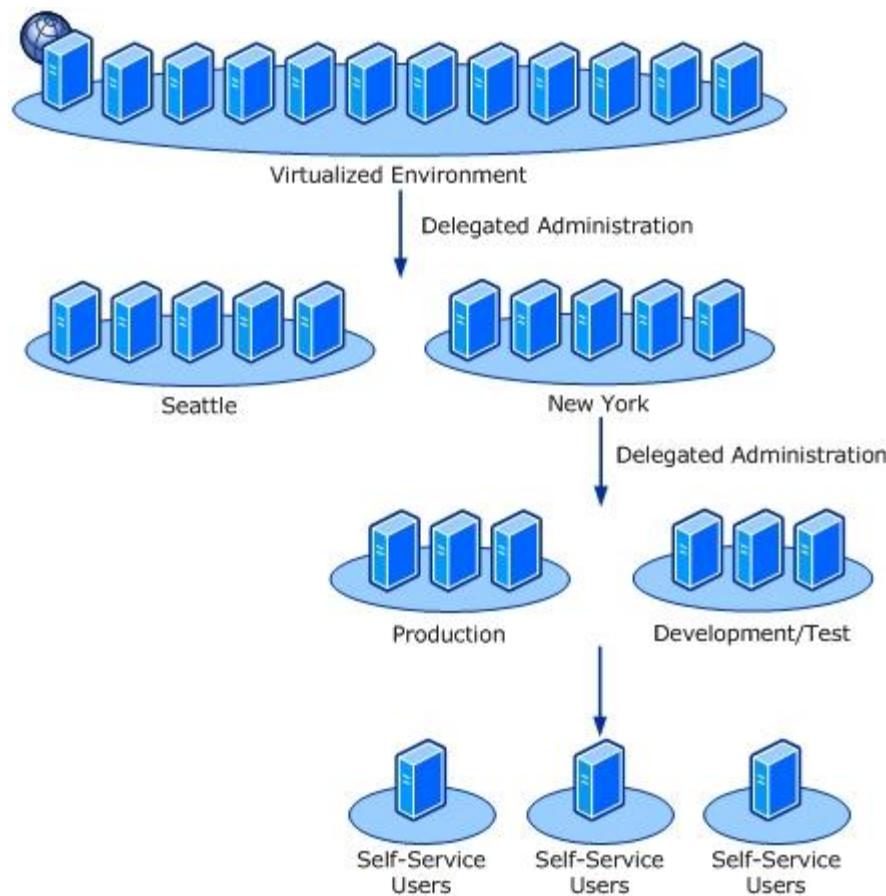
by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You need to provide a user with the ability to perform only the Create, Start, Stop, Pause, Resume, and Shut Down virtual machine (VM) management tasks on your host servers. What should you do?

- A. In VMM, create a Self-Service user role.
- B. In VMM, create a Delegated Administrator user role.
- C. In VMM, assign the Local Administrator permission for the host servers to the user.
- D. In Authorization Manager, create a role on the users client computer and add the user to this role.

Answer: A

Explanation:

Delegated Administrator role—Members of a role based on the Delegated Administrator profile have full VMM administrator rights, with a few exceptions, on all objects in the scope defined by the host groups and library that are assigned to the role. A delegated administrator cannot modify VMM settings or add or remove members of the Administrator role. **Self-Service User role**—Members of a role based on the Self-Service User profile can manage their own virtual machines within a restricted environment. Self-service users use the VMM Self- Service Web Portal to manage their virtual machines. The portal provides a simplified view of only the virtual machines that the user owns and the operations that the user is allowed to perform on them. A self-service user role specifies the operations that members can perform on their own virtual machines (these can include creating virtual machines) and the templates and ISO image files that they can use to create virtual machines. The user role also can place a quota on the virtual machines that a user can deploy at any one time. Self-service users' virtual machines are deployed transparently on the most suitable host in the host group that is assigned to the userrole. **Administrator role** - Members of the Administrator role can perform all VMM actions on all objects that are managed by the VMM server. Only one role can be associated with this profile. At least one administrator should be a member of the role.



The following table describes the features of self-service user roles Ownership of Virtual Machines In virtual machine

self-service, a virtual machine has an owner (by default, the user who created the virtual machine) and a self-service user role (by default, the selfservice user role under which the virtual machine was created). The virtual machine's owner is the only person who can see and perform operations on a virtual machine in the VMM Self-Service Portal. A self-service user can change the owner of his own virtual machine to any other member of the self-service user role. If the owner is a member of more than one self-service user role, the user can change the virtual machine owner to any member of his other roles if the following requirements are met:

The current owner must belong to the self-service user role that is being assigned.

The virtual machine must be within the scope (host or library path) of that user role.

Sharing Virtual Machines To enable users to share virtual machines, use a security group to add the users to a self-service user role, and then specify the group as the owner of the virtual machines you want group members to share. When a group member creates a virtual machine, the default owner is the person's user account. However, the user can reassign ownership to the group. If the virtual machine quota is being applied to individual users, quote points assigned to a group-owned virtual machine apply to the individual quotas of all members of the group.

Question: 113

You are configuring networking for a new Windows Server 2003 SP2 virtual machine (VM) in a Windows Server 2008 R2 Hyper-V environment. You need to configure the VM to achieve optimum network performance. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

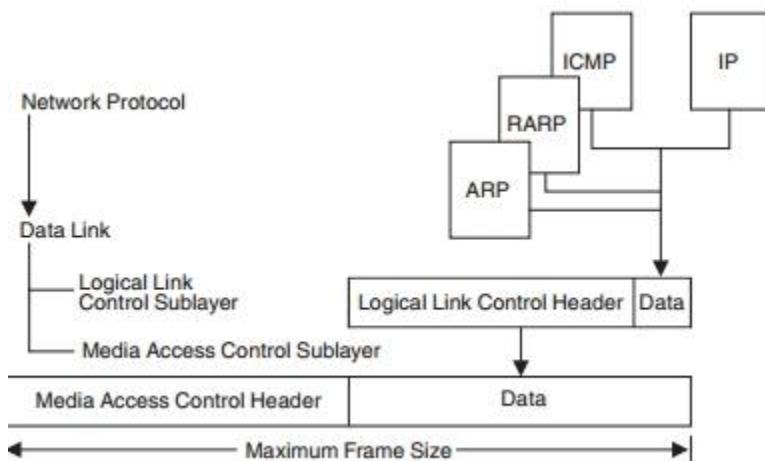
- A. Install Integration Services on the VM.
- B. In the virtual machine settings, add a Network Adapter.
- C. In the virtual machine settings, add a Legacy Network Adapter.
- D. Configure a fixed maximum transmission unit (MTU) size of 1384 on the host server virtual network adapter.

Answer: A,B

Explanation:

Bandwidth throttling may need to be adjusted for specific network configurations. The bandwidth throttling that is outlined in the following table provides control only for the outgoing traffic of a physical network adapter. To ensure end-to-end QoS and optimal network performance, refer to the QoS documentation from your network switch and router provider.\ you install the integration services, which improve performance and integration with the physical computer. Hyper-V includes a software package for supported guest operating systems that improves integration between the physical computer and the virtual machine. This package is referred to as integration services. Newer versions of supported Windows operating systems include the integration services and do not require installation after you install the guest operating system. For more information about which operating systems are supported and which of those require you to install integration services Although the I/O performance of physical SCSI and IDE devices can differ significantly, this is not true for the virtualized SCSI and IDE devices in Hyper-V. Hyper-V. IDE and SCSI devices both offer equally fast I/O performance when integration services are installed in the guest operating A legacy network adapter works without installing a virtual machine driver because the driver is already available on most operating systems. The legacy network adapter emulates a physical network adapter, multiport DEC 21140 10/100TX 100 MB. A legacy network adapter also supports network-based installations because it includes the ability to boot to the Pre-Boot Execution Environment (PXE). The legacy network adapter is not supported in the 64-bit edition of Windows Server2003 or the WindowsXP Professional x64 Edition. To connect a virtual machine to a virtual network, you add a virtual network adapter to the virtual machine and then connect the virtual network adapter to an existing virtual network. There are two types of network adapters available for Hyper-V: a network adapter and a legacy network adapter. The network adapter is designed specifically for Hyper-V and requires a virtual machine driver that is included with the Hyper-V integration services. This type of networking adapter provides better performance than a legacy network adapter and is the recommended choice when it can be used. Because this type of virtual network adapter requires integration services in the guest operating system, it can be used only with guest operating systems for which integration services are available The legacy network adapter emulates an Intel 21140-

based PCI Fast Ethernet Adapter. This type of network adapter provides networking capabilities for two scenarios: when using a guest operating systems for which integration services are not available, and when network boot capabilities are required. The legacy network adapter uses a driver that is available in most operating systems, instead of a Hyper-V specific driver. The legacy network adapter also provides the ability to boot to the Pre-Boot Execution Environment (PXE). Maximum Transmission Unit (MTU) Different physical networks have different maximum frame sizes. Within the different frames, there is a maximum size for the data field. This value is called the maximum transmission unit (MTU), or maximum packet size in TCP/IP terms.



If an IP datagram is to be sent out onto the network and the size of the data grams bigger than the MTU, IP will fragment the datagram, so that it will fit within the data field of the frame. If the MTU is larger than the network can support, then the data is lost. The value of MTU is especially important when bridging is used because of the different network limits. RFC 791 - Internet Protocols states that all IP hosts must be prepared to accept datagrams of up to 576 bytes. Because of this, it is recommended that an MTU of 576 bytes be used if bridging (or routing) problems are suspected. Note: MTU is equivalent to the PACKET SIZE value on the GATEWAY statement, or the MAXMTU value when using BSDROUTINGPARMS in the TCPIP PROFILE file.

Question: 114

You use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to create and manage virtual machines (VMs). You attempt to create the first VM on a Hyper-V host by using Windows PowerShell. You receive an error message stating that the New-VM PowerShell cmdlet is not recognized. You need to be able to create VMs by using PowerShell. What should you do?

- Install the VMM Self-Service Portal.
- Enable the Windows PowerShell Integrated Scripting Environment feature.
- In PowerShell, run the Add-PSSnapin Microsoft.SystemCenter.VirtualMachineManager cmdlet.
- Run the Create-VM -Name "VM01" -VirtualHardDisk \$VHD -VMHost \$VMHost -Path "C:\MyVMs"PowerShell cmdlet.

Answer: C

Explanation:

When the Windows PowerShell command shell opens:

Add the Virtual Machine Manager snap-in so that you can load the Virtual Machine Manager cmdlets by typing the following command at the command prompt:

Add-PSSnapin Microsoft.SystemCenter.VirtualMachineManager

View a list of all Windows PowerShell snap-ins by typing the following command at the command prompt:

Get-PSSnapin

Confirm that the Virtual Machine Manager snap-in has loaded by typing the following command at the command prompt:

`Get-Help New-VM`

If a help topic about the Virtual Machine Manager cmdlet New-VM is displayed, the Virtual Machine Manager snap-in is loaded. (You can substitute any Virtual Machine Manager cmdlet for New-VM.)

Confirm that you can view a list of all Virtual Machine Manager cmdlets by typing the following command (all on one line) at the command prompt:

`Get-Command -PSSnapin Microsoft.SystemCenter.VirtualMachineManager`

Question: 115

You install Windows Server 2008 R2 (Server Core Installation) on a server.

The server will store virtual machines (VMs) on a volume that is attached to the server by means of an iSCSI connection. You need to configure the server so that VMs can be stored on the iSCSI volume. Which two commands should you run? (Each correct answer presents part of the solution. Choose two.)

- A. `iscsicli listTarget`
- B. `iscsicli qaddTarget`
- C. `iscsicli qloginTarget`
- D. `iscsicli AddConnection`

Answer: B,C

Explanation:

You can also use the command line to complete all actions required to configure the iSCSI Initiator. The command line is necessary when using Server Core, since it has no graphical user interface (GUI). Following are example commands that show how to enable and configure the iSCSI Initiator using the command line.

First, you must enable the state of the iSCSI Initiator service and start the service using the SC command:

1. Set the iSCSI Initiator service to start automatically: `sc \\localhost config msiscsi start= auto`
2. Start the iSCSI Initiator service: `sc start msiscsi`

3. Complete the remaining tasks using the iSCSI command-line interface (iscsicli):

• Add the target portal:

`iscsicli QAddTargetPortal <IP address of Portal>`

• Add the target:

`iscsicli QAddTarget <iqn address of target>`

Log in to the target:

`iscsicli QloginTarget <iqn address of target>`

• Make Login Persistent

`iscsicli PersistentLoginTarget <iqn address of target> i`

`T * * * * * * * * * * * * 0`

• Bind all persistent volumes:

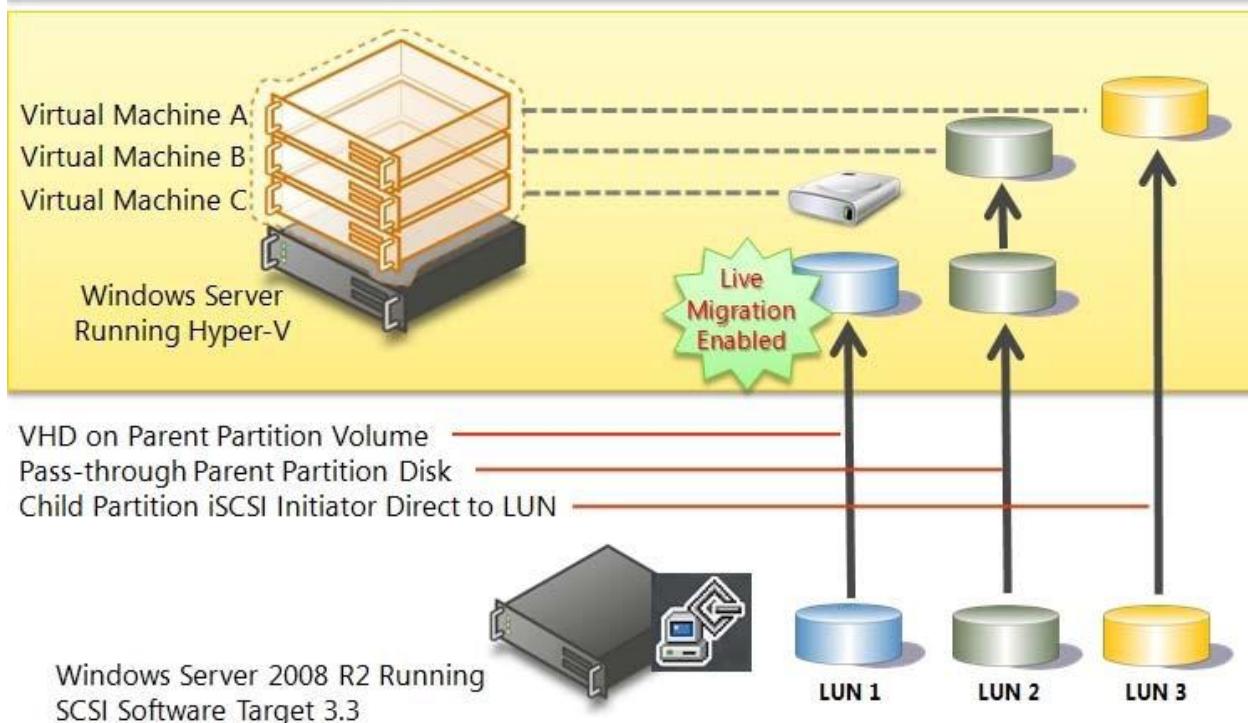
`iscsicli BindPersistentVolumes`

4. Confirm some critical settings by using these two command lines:

`iscsicli ListPersistentTargets`

`iscsicli ReportTargetMappings`

iSCSI Software Target and Hyper-V



Question: 116

Your Hyper-V servers run Windows Server 2008 R2 Standard. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008R2. You need to ensure that you can migrate child partitions between host servers. What are two possible methods that will allow you to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

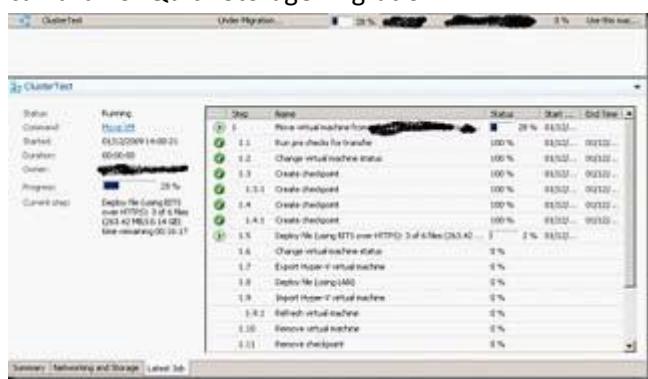
- A. live migration
- B. SAN migration
- C. quick migration
- D. network migration

Answer: B,D

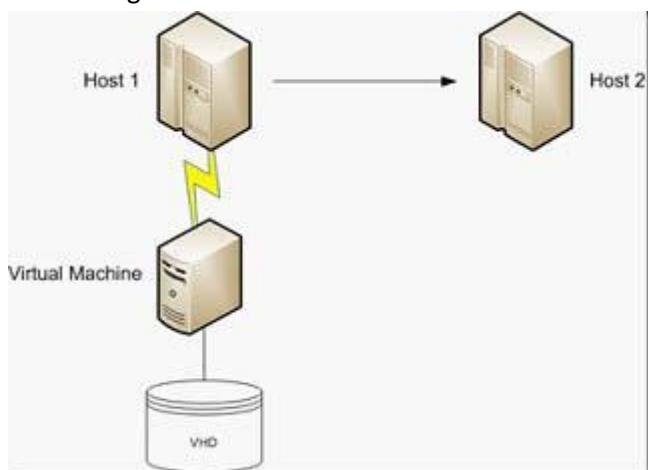
Explanation:

In VMM2008R2, virtual machines with SAN-attached pass-through disks can be migrated to a stand-alone host or stored in the library by using SAN migration if the SAN pass-through disk can be accessed by the destination host or library server. However, you must convert pass-through disks to virtual hard disks (.vhd files) if the pass-through disks are local or they cannot be accessed by the destination host or library server. In VMM2008, you must convert all pass-through disks before you move an HAVM to a library server or to a standalone host. To convert a passthrough disk to a virtual hard disk, update the disk configuration on the Hardware Configuration tab of the virtual machine properties. In VMM2008R2, you can migrate or store a virtual machine that has pass-through disks by using SAN migration if the pass-through disks are SAN-attached and can be accessed by the destination host or library server. If the pass-through disks are local disks, or if SAN-attached disks cannot be accessed by the destination host or library server, the pass-through disks must be converted to virtual hard disks, and the files must be transferred over a LAN. In VMM2008, you

must convert all pass-through disks before you move an HAVM to a library server or to a standalone host. SAN Migration in and out of clustered hosts—VMM2008R2 supports the use of SAN transfers to migrate virtual machines and highly available virtual machines between host clusters, to a host cluster from a non-clustered host, and from a host cluster to a non-clustered host. When you migrate a virtual machine into a cluster from a non-clustered host by using a SAN transfer, VMM checks all nodes in the cluster to ensure that each node can see the LUN and automatically creates a cluster disk resource for the LUN. Even though VMM automatically configures the cluster disk resource, it does not validate it. You must use the Validate a Configuration Wizard in Failover Cluster Management to validate the newly created cluster disk resource. To migrate a virtual machine from a host cluster to a non-clustered host by using a SAN transfer, the virtual machine must be on a dedicated LUN that is not using CSV. Without System Center Virtual Machine Manager 2008 R2 (and pre-Windows Server 2008 R2 Hyper-V) there is only one way to move a virtual machine between un-clustered hosts or between Hyper-V clusters. That is to perform what is referred to as a network migration. Think of this as an offline migration. The VM must be powered down, exported, the files moved, the VM imported again and powered up, maybe with the integration components being manually added. The whole process means a production VM can be offline for a significant amount of time. Moving a 100GB VHD takes time, even over 10GB-E. However, if you have Windows Server 2008 R2 (on both source and destination) and VMM 2008 R2 then you can avail of Quick Storage Migration:

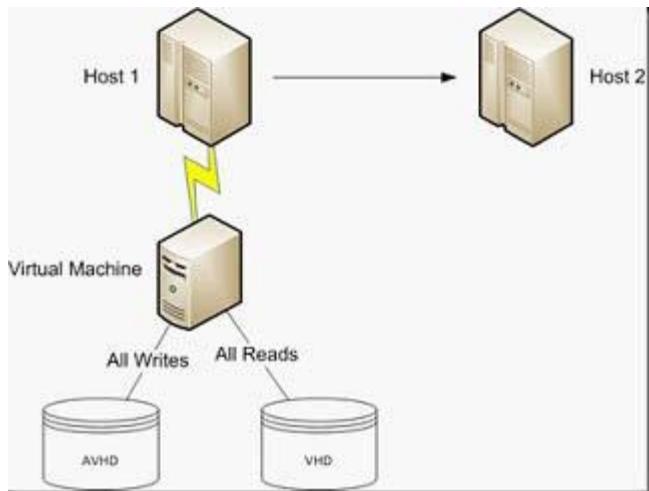


This is a clever process where a VM can remain up and running for the bulk of the file move. Microsoft claims that the VM only needs to be offline for maybe two minutes. That really does depend, as you'll see. We need to discuss something first. Hyper-V has lots of several different types of virtualised storage. One of them is a virtual hard disk (VHD) called a differencing disk. It is specially an AVHD (advanced virtual hard disk). It is used during a snapshot. That's a Hyper-V term. VMM refers to it as a checkpoint. The AVHD is created and the VM switches all write activity from its normal VHD to the AVHD. All new data goes into the AVHD. All reads for old data come from the original VHD. That means the VHD is no longer locked, preventing copies. See where we're going here? Here we have two un-clustered host machines, 1 and 2. Host 1 is running a VM which has a single VHD for all of its storage. We want to move it from Host 1 to Host 2 with the minimum amount of downtime. We have W2008 R2 Hyper-V on both hosts and manage them with VMM 2008 R2.

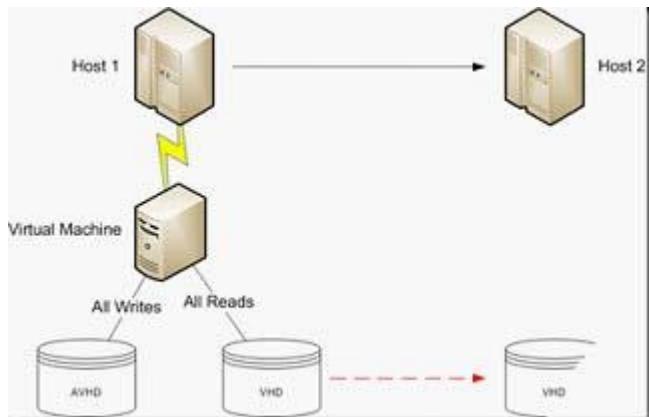


We open up the VMM 2008 R2 console, right-click on the VM and select Migrate. In the wizard we select Host 2 as the destination and select the storage destination and the Virtual Network connection(s). Once we finish the wizard you'll

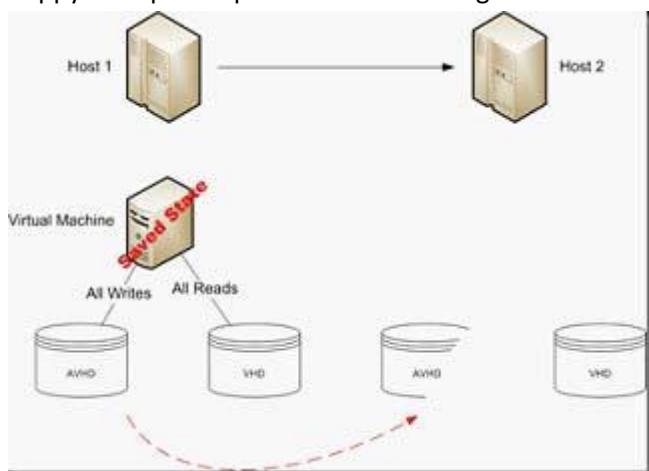
see the original screenshot above.



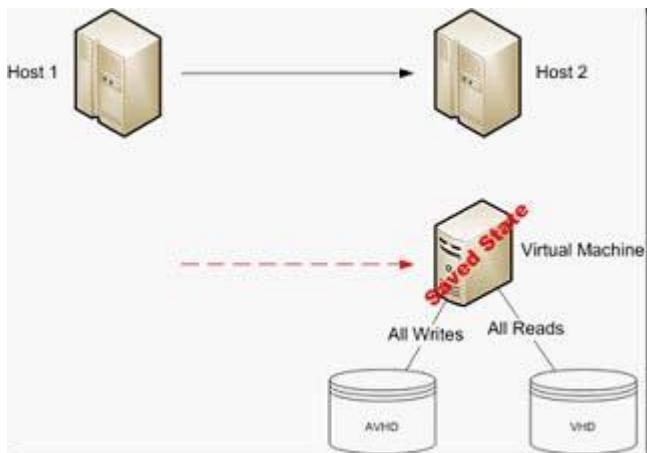
The VMM job creates a checkpoint (AKA snapshot) of the VM to be migrated. This means the VM will put all writes in the AVHD file. All reads of non-changed data will be from the VHD file. Now the VHD file is no-longer prevented from being copied.



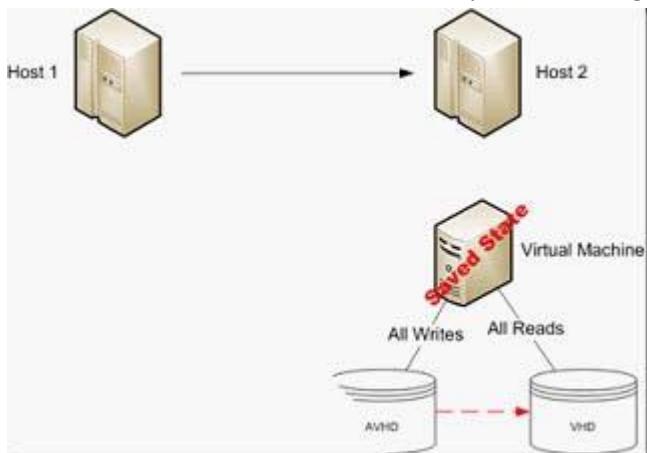
The VMM job uses BITS to copy the no-longer write locked VHD from Host 1 to the destination storage location on Host 2. During this time the VM is still running on Host 1. Here's where you have to watch out. That AVHD file will grow substantially if the VM is writing like crazy. Make sure you have sufficient disk space. Anyone still doing 1-VM-per-LUN cluster deployments will need to be really careful, maybe pick a specific storage location for snapshots that has space. Once the physical disk fills the VM will be paused by Hyper-V to save its continuity. If your VM is write-happy then pick a quiet time for this migration.



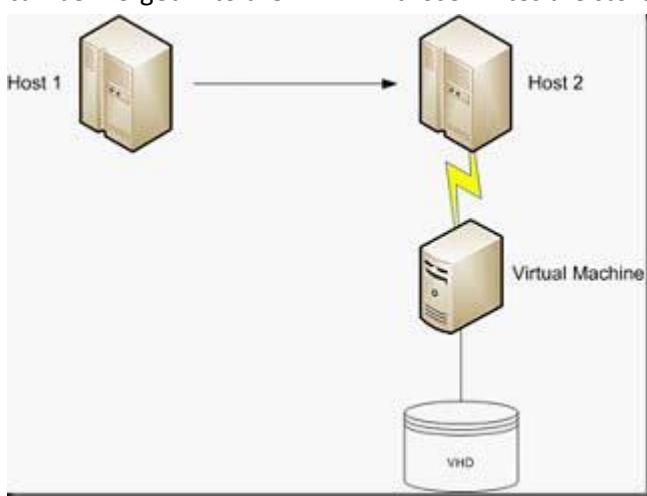
Start your stop watch. Now the VM is put into a saved state (not paused) on Host 1. We have to move that AVHD which is otherwise write locked. If we don't move it then we lose all the written data since the job started. Again, BITS is used by VMM to move the file from Host 1 to Host 2.



When the files are moved VMM will export the configuration of the VM from Host 1 and import it onto Host 2.



The checkpoint (AKA snapshot) is deleted. The VM needs to be offline here. Otherwise the AVHD would not be merged into the VHD. That would eventually kill the performance of the VM. But, the machine is offline and the AVHD can be merged into the VHD. All those writes are stored away safely.



Stop your stop watch. The virtual network connection(s)

are restored and then the very last step is to change the virtual machine's running state, bringing it back to where it was before it went offline.

The entire process is automated from when you finish the wizard and up to when you check on the machine after the job has ended. Its storage is moved and the VM continues running on the new host.

Note that a VM with multiple VHD's will have multiple AVHD's; it's a 1-to-1 relationship.

How long does this take?

The offline time depends on how much data is written to the AVHD, how fast your network can transmit that AVHD from Host 1 to Host 2 and how fast the disk is on Host 2 to merge the AVHD back into the VHD.

The entire process takes as long as it takes to copy the VHD and then complete the AVHD process and do the tidy up work at the end of the job.

In my tests with an idle VM, the offline time (not timed scientifically) felt to be under a minute. I moved a VM from a cluster to an un-clustered lab machine and back again. Both times, the highly available setting was appropriately changed. I was able to modify the virtual network connections appropriately in the migrate wizard.

Question: 117

Your environment includes a server that runs Windows Server 2008 R2 with the Hyper -V role installed. The server hosts several virtual machines (VMs).

When you attempt to start a VM named VM1, you receive the following error message:

The application encountered an error while attempting to change the state of 'VM1'. 'VM1' failed to start. Microsoft Emulated IDE Controller (Instance ID {83F8638B-8DCA-4152-9EDA-2CA8B33039B4}): Failed to Power on with Error 'The chain of virtual hard disks is broken. The system cannot locate the parent virtual hard disk for the differencing disk.'

Failed to open virtual disk 'V:\VM1\VM1.vhd'. A problem was encountered opening a virtual disk in the chain of differencing disks, 'IDE/ATAPI':

'The system cannot find the file specified.' Failed to open virtual disk 'V :\ VM1\VM1.vhd'. A problem was encountered opening a virtual disk in the chain of differencing disks, 'L :\ Base \W2K8R2EERCBASE+.vhf': 'The system cannot find the file specified.' You need to be able to start VM1. What should you do?

- A. Merge the differencing disk.
- B. Compact the differencing disk.
- C. Reconnect the differencing disk.
- D. Convert the parent virtual hard disk.

Answer: C

Explanation:

Using differencing disks

A differencing disk is a virtual hard disk you use to isolate changes to a virtual hard disk or the guest operating system by storing them in a separate file. A differencing disk is similar to the Undo Disks feature because both offer a way to isolate changes in case you want to reverse them.

However, Undo Disks is associated with a virtual machine and all disks assigned to it, while a differencing disk is associated only with one disk.

In addition, Undo Disks is intended to be a shorter-term method of isolating changes.

A differencing disk is associated with another virtual hard disk that you select when you create the differencing disk.

This means that the disk to which you want to associate the differencing disk must exist first. This virtual hard disk is called the "parent" disk and the differencing disk is the "child" disk. The parent disk can be any type of virtual hard disk.

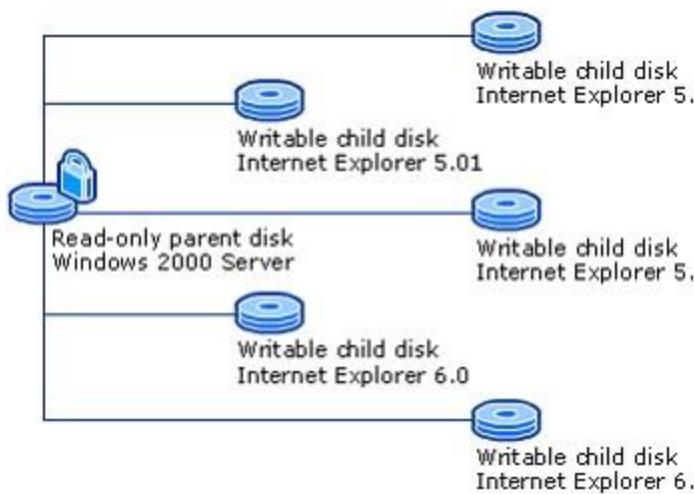
The differencing disk stores all changes that would otherwise be made to the parent disk if the differencing disk was not being used. The differencing disk provides an ongoing way to save changes without altering the parent disk. You can use the differencing disk to store changes indefinitely, as long as there is enough space on the physical disk where the differencing disk is stored. The differencing disk expands dynamically as data is written to it and can grow as large as the maximum size allocated for the parent disk when the parent disk was created.

You can find out which parent disk a differencing disk is related to by inspecting the differencing disk. Inspecting the parent disk does not identify any child disks that may be associated with it. To make it easier to identify relationships between disks, we recommend adopting a naming convention to support easy identification.

Managing the contents of differencing disks You can distribute the contents that are stored in the differencing disk by merging the differencing disk. You can merge the changes to either the parent disk or a new virtual hard disk. Merging to the parent disk modifies the parent disk with all the changes stored in the differencing disk, and then deletes the



ng disk. Merging to a new virtual hard disk retains both the parent disk and the differencing disk in their current state, and creates a new virtual hard disk that is a combination of the parent disk contents and the differencing disk contents. You use the Administration Website to merge the changes. For instructions, see Merge a virtual hard disk. Using multiple differencing disks with one parent disk You can associate more than one differencing disk to one parent, which means that virtual machines can share one parent disk but have their own differencing disk. This way of using differencing disks can be useful in a variety of scenarios. For example, a test engineer or call center technician could have a dozen or more virtual machines with different configurations, such as allocated memory or type of networking, with different software updates, and different installed applications. The virtual machines could share a parent disk that contains the operating system, and each virtual machine could have its own differencing disk to store the configuration that differs from the parent. The following figure shows an example in which each differencing disk stores a different version of Internet Explorer.



You can chain differencing disks, which means that a differencing disk can have another differencing disk as a parent disk. Depending on how you design the chain, you can save considerable disk space. For example, if you want to test upgrade scenarios or version compatibility, you could use a parent disk as the base and a chain of differencing disks for the consecutive versions. This approach would save disk space if each differencing disk contained one update only. The following figure shows a chain of differencing disks being used to store operating system updates.

Question: 118

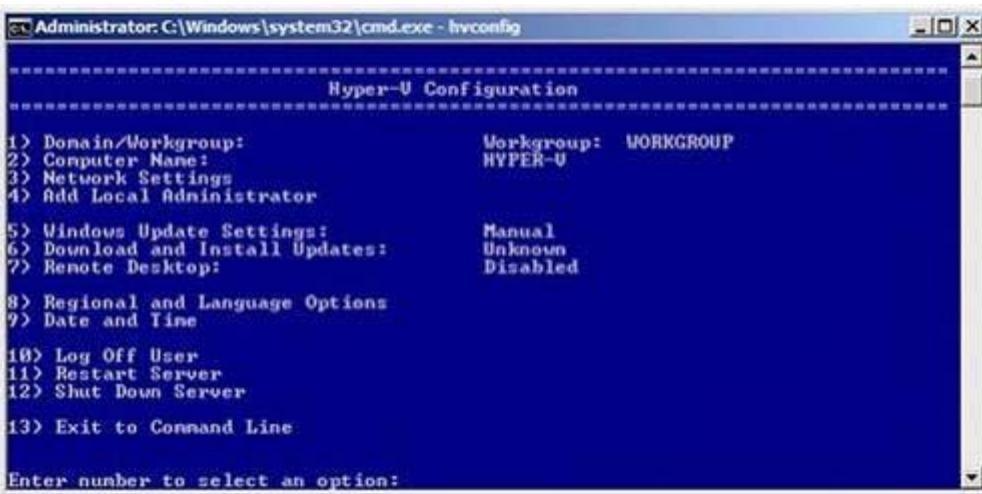
You have a Microsoft Hyper-V Server 2008 R2 server. You need to join the server to an existing Active Directory Domain Services (AD DS) domain. Which should you use?

- A. ocsetup
- B. hvconfig
- C. sc config
- D. net config

Answer: B

Explanation:

Making HVConfig work on a normal Server Core installation Microsoft's Hyper-V Server 2008 product comes with a wizard, that allows easy configuration of the Server Core-based subsystem.



This tool can be used on normal Server Core installations of Windows Server 2008 too. This blogpost describes what files to copy from a US English Hyper-V Server 2008 installation, where to place them and how to install this wizard to auto run. All in five easy steps! Tip! When you're using a different language change the En-US bit for the files accordingly:

Step 1

You will need to following files from a Hyper-V Server 2008 installation:

C:\Windows\System32\hvconfig.cmd
C:\Windows\System32\en-US\hvconfig.vbs
C:\Windows\System32\en-US\WUA_SearchDownloadInstall.vbs

These files are also attached to this blogpost. Check the end of this post for a download link.

Step 2

Copy the files to their respective location on your Server Core installation.

Review the instructionhereto get files onto your Server Core box.

Step 3

Open the Registry Editor, by running regedit.exe and browse to the following location:

HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run

Create a new String value (REG_SZ) named HVConfig. Right click it and select Modify Data from the context menu. Type C:\Windows\system32\hvconfig.cmd as the data and press the OK button to save.

Close the Registry Editor.

Step 4

Log off by typing logoff on the command prompt. Log on using an account with administrative privileges.

Step 5 (Optional)

Optionally change the contents of hvconfig.vbs to display another header.

Since we're no longer running the script on Hyper-V Server it would be appropriate to change the top banner.

Type the following command:

Notepad.exe C:\Windows\system32\en-US\hvconfig.vbs

Now change the L_Msg005_Textconstant to something appropriate.

Tip!

You can also change the color of the screen by changing the second line in HVConfig.cmd.

Default color is 17

(White on Blue), but I prefer 47. (White on Red)

Question: 119

You have a Windows Server 2008 R2 Hyper-V server. One of the virtual machines (VMs) that is hosted on the server has a directly attached physical disk. You need to back up the VM. What should you do?

- A. Perform a full server backup on the VM.
- B. Perform a critical-volume backup on the VM.
- C. Perform a full server backup on the host server.
- D. Perform a critical-volume backup on the host server.

Answer: A

Explanation:

Physical disks that are directly attached to a virtual machine. These disks cannot be backed up by the Hyper-V VSS writer. As a result, this type of disk will not be included in any backup performed by a backup program that uses the Hyper-V VSS writer. In this situation, you would need to use some other process to back up the physical disk, such as running a backup application within the guest operating system.

[http://technet.microsoft.com/en-us/library/dd252619\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/dd252619(v=ws.10).aspx)

Hyper-V backups of Virtual Machines with pass through disks will show the error message "One or more virtual machines have been excluded from the backup as the the virtual machine uses one or more physical disks.

Use the Backup Exec Remote Agent on the virtual machine for backup and restore operations." Error 0xa0009644 - One or more virtual machines have been excluded from the backup as the the virtual machine uses one or more physical disks. Use the Backup Exec Remote Agent on the virtual machine for backup and restore operations.

Cause Pass Through Disk in Hyper-V : Hyper-V allows virtual machines to access storage mapped directly to the Hyper-V server without requiring the volume be configured. The storage can either be a physical disk internal to the Hyper-V server or it can be a Storage Area Network (SAN) Logical Unit (LUN) mapped to the Hyper-V server. To ensure the Guest has exclusive access to the storage, it must be placed in an Offline state from the Hyper-V server perspective. Additionally, this raw piece of storage is not limited in size so, hypothetically, it can be a multi-terabyte LUN.

Solution

As per the SCL (Software Compatibility List) the Pass Through is not supported if:

Physical(Pass Through) DAS or SAN on the Host directly attached to the Guest

Physical (Pass Through) RDAS on the Host directly attached to Guest

Guest Disk attached via SAN(iSCSI initiator)

Question: 120

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You are creating a virtual test environment by installing two child partitions. The test environment must be completely isolated from all production servers. You need to ensure that the child partitions can communicate with each other. Which connection type should you configure?

- A. Private
- B. Internal
- C. External
- D. Dedicated host

Answer: A

Explanation:

Types of virtual networks

While Hyper-V allows you to configure complex virtual network environments, the basic concept of virtual networking is straightforward. A virtual network works like a physical network switch except that the switch is implemented in software (which is why it is sometimes referred to as a virtual network switch). Ports are added or removed as they are needed when virtual machines are connected to or disconnected from a virtual network. Virtual Network Manager (available from the Hyper-V Manager snap-in) offers three types of virtual networks that you can use to define various networking topologies for virtual machines and the virtualization server. You can create the following types of virtual networks: Private virtual networks. Use this type when you want to allow communication only between virtual machines on the same virtualization server. A private virtual network is not bound to a physical network adapter. A private virtual network is isolated from all external network traffic on the virtualization server, as well any network traffic between the management operating system and the external network. This type of network is useful when you need to create an isolated networking environment, such as an isolated test domain. A closer look at external virtual networks For a simple virtual network configuration that establishes connectivity to an external network, we recommend that you have at least two network adapters on the server running Hyper-V: one network adapter dedicated to the management operating system so you can access it remotely, and one or more network adapters dedicated to the virtual machines. If you are running an Internet SCSI (iSCSI) initiator for virtual hard disk storage, we recommend that you use additional network adapters in the management operating system. When you add the Hyper-V role during a full installation of Windows Server 2008 or Windows Server 2008 R2, you have the option to configure one or more external virtual networks. However, this option is not available when you install Hyper-V on a Server Core installation. When you create an external virtual network, this action affects how networking is configured in the management operating system. Hyper-V creates a virtual network adapter in the management operating system. Hyper-V then binds the standard services and protocols to the virtual network adapter instead of the physical network adapter, and binds only the Virtual Network Service Protocol to the physical network adapter. After an external virtual network is configured, all networking traffic is routed through the virtual network switch. The virtual network switch functions as a physical switch would and routes networking traffic through the virtual network to its destination. For this reason, we recommend using at least one additional physical network adapter for managing network traffic. External virtual networks. Use this type when you want to provide virtual machines with access to a physical network to communicate with externally located servers and clients. This type of virtual network also allows virtual machines on the same virtualization server to communicate with each other. This type of network may also be available for use by the management operating system, depending on how you configure the networking. (The management operating system runs the Hyper-V role.) For more information, see “A closer look at external virtual networks” later in this topic.

Internal virtual networks

Use this type when you want to allow communication between virtual machines on the same virtualization server and between virtual machines and the management operating system. This type of virtual network is commonly used to build a test environment in which you need to connect to the virtual machines from the management operating system. An internal virtual network is not bound to a physical network adapter. As a result, an internal virtual network is isolated from all external network traffic.

Question: 121

You are configuring a Windows Server 2008R2 Hyper-V failover cluster. You configure five iSCSI logical unit numbers

(LUNs) on shared storage, and you present them to the first server. Each LUN appears twice in the Disk Management console. You need to ensure that each LUN appears only once in the Disk Management console. What should you do?

- A. Reset the iSCSI initiator name to the default name.
- B. Install and configure Microsoft Multipath I/O (MPIO).
- C. In the Disk Management console, rescan the disks.
- D. In the Disk Management console, configure shadow copies.

Answer: B

Explanation:

Consider using multipath I/O software: In a highly available storage fabric, you can deploy failover clusters with multiple host bus adapters by using multipath I/O software. This provides the highest level of redundancy and availability. For Windows Server 2008 R2, your multipath solution must be based on Microsoft Multipath I/O (MPIO). Your hardware vendor will usually supply an MPIO device-specific module (DSM) for your hardware, although Windows Server 2008 R2 includes one or more DSMs as part of the operating system.

Multipath I/O Overview

Applies To: Windows Server 2008 R2

Multipathing Support for High Availability

WindowsServer®2008 includes many enhancements for the connectivity of a computer running a Windows server-class operating system to storage area networking (SAN) devices. Among the enhancements enabling high availability for connecting Windows-based servers to SANs is integrated Multipath I/O (MPIO) support. Microsoft MPIO architecture supports iSCSI, Fibre Channel and serial attached storage (SAS) SAN connectivity by establishing multiple sessions or connections to the storage array.

Multipathing solutions use redundant physical path components — adapters, cables, and switches — to create logical paths between the server and the storage device. In the event that one or more of these components fails, causing the path to fail, multipathing logic uses an alternate path for I/O so that applications can still access their data. Each network interface card (in the iSCSI case) or HBA should be connected by using redundant switch infrastructures to provide continued access to storage in the event of a failure in a storage fabric component. Failover times vary by storage vendor, and can be configured by using timers in the Microsoft iSCSI Software Initiator driver, or modifying the Fibre Channel host bus adapter driver parameter settings. New MPIO features in Windows Server2008 include a Device Specific Module (DSM) designed to work with storage arrays that support the asymmetric logical unit access (ALUA) controller model (as defined in SPC-3), as well as storage arrays that follow the Active/Active controller model. Features of the included DSM The Microsoft DSM provides the following load balancing policies. Note that load balance policies are generally dependent on the controller model (ALUA or true Active/Active) of the storage array attached to Windows based computers. Failover No load balancing is performed. The application specifies a primary path and a set of standby paths. The primary path is used for processing device requests. If the primary path fails, one of the standby paths is used. Standby paths must be listed in decreasing order of preference (the most preferred path first). Failback Failback is the ability to dedicate I/O to a preferred path whenever it is functioning. If the preferred path fails, I/O is directed to an alternate path until function is restored to the preferred path, but I/O automatically switches back to the preferred path when function is restored. Round-robin The DSM uses all available paths for I/O in a balanced, round-robin fashion. Round-robin with a subset of paths The application specifies a set of paths to be used in a roundrobin fashion, and a set of standby paths. The DSM uses paths from primary pool of paths for processing requests, as long as at least one of the paths is available. The DSM uses a standby path only when all primary paths fail. Standby paths must be listed in decreasing order of preference (most preferred path first). If one or more of the primary paths become available, DSM uses the standby paths in their order of preference. For example, given 4 paths — A, B, C, and D — A, B, and C are listed as primary paths, and D is standby path. The DSM chooses a path from A, B, and C in round-robin fashion as long as at least one of them is available. If all three fail, the DSM uses D, the standby path. If A, B, or C become available, DSM stops using D and switches to available paths among A, B, and C. Dynamic Least Queue DepthThe DSM routes I/O to the path with the least number of outstanding requests. Weighted PathThe application assigns weights to each path; the weight indicates the relative priority of a given path. The larger the

number, the lower the priority. The DSM chooses the path that has the least weight from among the available paths. The Microsoft DSM preserves load balance settings even after the computer is restarted. When no policy has been set by a management application, the default policy that is used by the DSM is either Round Robin, when the storage controller follows the true Active/Active model, or simple failover in the case of storage controllers that support the SPC-3 ALUA model. With simple Failover, any one of the available paths can be used as the primary path, and remaining paths are used as standby paths.

Question: 122

You have a Windows Server 2008 R2 Hyper-V server. You take periodic snapshots of your virtual machines (VMs) when the VMs are not running.

You delete several snapshots from the snapshot tree of a VM. The .avhd files that are associated with the deleted snapshots are not deleted from the volume where the VHD files are stored. You need to ensure that the .avhd files are deleted.

What should you do?

- A. Reset the VM.
- B. Pause the VM.
- C. Export the VM.
- D. Shutdown the VM.

Answer: D

Explanation:

If you have deleted a snapshot while the VM is running then the snapshots will not be deleted until the VM is shutdown.

Question: 123

You are using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to perform a physical-to virtual (P2V) conversion of a Windows Server 2008 R2 server.

You need to prepare the server for the P2V conversion.

Which two actions should you perform on the server?

(Each correct answer presents part of the solution. Choose two.)

- A. Run the Chkdsk utility.
- B. Perform a disk defragmentation.
- C. Stop the Volume Shadow Copy service.
- D. Convert the system partition to a dynamic disk.

Answer: A,B

Explanation:

How To Perform a P2V Conversion

During a P2V conversion, disk images of the hard disks on the source computer are copied and formatted as virtual hard disks (.vhdx files) for use in the new virtual machine.

Before You Begin The following list includes tasks that you should perform before starting the P2V conversion:

The first phase of a P2V conversion is to survey the hardware configuration of the source computer and make sure the patch cache contains all necessary drivers and system files to support the configuration. If any drivers are missing, you will get specific error messages indicating where to get the necessary drivers.

Bad sectors on disk cannot be transferred during a P2V conversion. To avoid data loss, run a disk maintenance tool such as Chkdsk on the source computer to detect and correct any file system errors.

To help minimize the time required for the imaging phase, perform a disk defragmentation on the source computer's hard drives. Also, ensure that you have a fast network connection between the source computer and the host. Use dynamic Virtual Hard Disks to conserve disk space. For example, if you convert 5 GB of data on a 40 GB hard drive, VMM will create a dynamically expanding VHD of 5 GB that can grow up to 40 GB.

For offline P2V only:

Install the Windows Automated Installation Kit (WAIK) on the VMM Server. To download WAIK, go to <http://go.microsoft.com/fwlink/?LinkId=86477>.

Supply the most recent drivers. In the Convert Physical Server Wizard, supply storage and network drivers compatible with the hardware of the source machine to be converted. Use one of the following drivers, listed in order of priority:

Windows Vista 32-Bit

Windows XP 32-Bit

Windows Server2003 32-Bit

Windows2000 Server 32-Bit

Question: 124

You install Windows Server 2008 R2 (Server Core Installation) on a server.

You install the Hyper-V role and Windows PowerShell 2.0 on the server.

When you attempt to run an iscsicli command, the command fails.

You need to be able to immediately run the iscsicli command successfully.

What should you do?

- A. Run the ocsetup MultiPathI0 command.
- B. Run the sc config msiscsi start= auto command.
- C. Run the start-service msiscsi PowerShell cmdlet.
- D. Run the set-service msiscsi CstartupType auto PowerShell cmdlet.

Answer: C

Explanation:

You can also use the command line to complete all actions required to configure the iSCSI Initiator. The command line is necessary when using Server Core, since it has no graphical user interface (GUI). Following are example commands that show how to enable and configure the iSCSI Initiator using the command line.

First, you must enable the state of the iSCSI Initiator service and start the service using the SC command:

1. Set the iSCSI Initiator service to start automatically:

sc \\localhost config msiscsi start= auto

2. Start the iSCSI Initiator service:

sc start msiscsi

3. Complete the remaining tasks using the iSCSI command-line interface (iscsicli):

•u Add the target portal:

iscsicli QAddTargetPortal <IP address of Portal>

•u Add the target:

iscsicli QAddTarget <iqn address of target>

•u Log in to the target:

iscsicli QloginTarget <iqn address of target>

•u Make Login Persistent

iscsicli PersistentLoginTarget <iqn address of target> i

T **** * 0

•u Bind all persistent volumes:

iscsicli BindPersistentVolumes

4. Confirm some critical settings by using these two command lines:

iscsicli ListPersistentTargets

iscsicli ReportTargetMappings

Start-Service

Applies To: Windows PowerShell 2.0

Starts one or more stopped services.

Syntax

```
Start-Service [-Name] <string[]> [-Exclude <string[]>] [-Include <string[]>] [-PassThru] [-Confirm] [-WhatIf] [<CommonParameters>]
Start-Service -DisplayName <string[]> [-Exclude <string[]>] [-Include <string[]>] [-PassThru] [-Confirm] [-WhatIf] [<CommonParameters>]
Start-Service [-InputObject <ServiceController[]>] [-Exclude <string[]>] [-Include <string[]>] [-PassThru] [-Confirm] [-WhatIf] [<CommonParameters>]
```

Description

The Start-Service cmdlet sends a start message to the Windows Service Controller for each of the specified services. If a service is already running, the message is ignored without error. You can specify the services by their service names or display names, or you can use the InputObject parameter to supply a service object representing the services that you want to start. Configuring iSCSI Initiators in Windows 2008 setting up iSCSI initiators from the command line (cli). (It also gave me a reason to toy around in PowerShell (PS).)

Microsoft makes iSCSI initiator software available for Windows 2000,

Windows Server 2003, Windows XP, and is included natively for Windows

Server 2008 and Windows Vista. Our host details for this are:

HOSTs: redmond (initiator node), sunspot (target node)

OSes: Windows Server 2008 Standard SP2 (redmond)

Solaris 10 u8 (10/09 (sunspot))

PROMPTS: PS-redmond C:\> (PS on redmond)

cmd-redmond C:\> (standard cli on redmond) sunspot [0] (sunspot)

IP ADDRs: 10.0.136.25 (redmond), 10.0.136.12 (sunspot)

To start, the iSCSI initiator service (MSiSCSI) must be running, though if this is the first configuration of iSCSI devices, we'll likely receive one of the two messages below indicating that it is not:

PS-redmond C:\> iscsicli listtargets

Microsoft iSCSI Initiator Version 6.0 Build 6000

The Microsoft iSCSI initiator service has not been started.

PS-redmond C:\> iscsicli

Microsoft iSCSI Initiator Version 6.0 Build 6000

Error getting node name: The interface is unknown. Use the following to configure MSiSCSI to auto-start at boot, start it, and verify that it is running in PS:

PS-redmond C:\> set-service msiscsi -startuptype automatic

PS-redmond C:\> start-service msiscsi

PS-redmond C:\> get-service msiscsi

Status Name DisplayName

Running msiscsi Microsoft iSCSI Initiator Service

To do the same via the standard cli, use the following:

cmd-redmond C:\>sc config msiscsi start= auto

[SC] ChangeServiceConfig SUCCESS

cmd-redmond C:\>sc start msiscsi

SERVICE_NAME: msiscsi

TYPE : 20 WIN32_SHARE_PROCESS

STATE : 2 START_PENDING

(NOT_STOPPABLE, NOT_PAUSABLE, IGNORES_SHUTDOWN)

WIN32_EXIT_CODE : 0 (0x0)

```
SERVICE_EXIT_CODE : 0 (0x0)
CHECKPOINT : 0x0
WAIT_HINT : 0x7d0
PID: 1028
FLAGS:
cmd-redmond C:\>sc query msiscsi
SERVICE_NAME: msiscsi
TYPE: 20 WIN32_SHARE_PROCESS
STATE: 4 RUNNING
(STOPPABLE, NOT_PAUSABLE, ACCEPTS_SHUTDOWN)
WIN32_EXIT_CODE : 0 (0x0)
SERVICE_EXIT_CODE : 0 (0x0)
CHECKPOINT: 0x0
WAIT_HINT : 0x0
```

c:\Users\Administrator>
If you have Windows Firewall enabled, update it to enable the preconfigured iSCSI service rule:

```
PS-redmond C:\> netsh advfirewall firewall set rule "iSCSI Service (TCP-Out)" new enable=yes
Updated 1 rule(s).
```

Ok.

Now we have MSISCSI running and our firewall allows the initiator to establish connections to our target host. Since don't have any target hosts configured, 'iscsicli listtargetportals' below returns nothing:

```
PS-redmond C:\> iscsicli listtargetportals
Microsoft iSCSI Initiator Version 6.0 Build 6000
```

The operation completed successfully.

Because I previously configured the target host to only allow known initiators to connect, we need to retrieve the iSCSI Node Name (INN) from 'iscsicli':

```
PS-redmond C:\> iscsicli
Microsoft iSCSI Initiator Version 6.0 Build 6000 [iqn.1991-05.com.microsoft:redmond] Enter command or ^C to exit
PS-redmond C:\>
```

Question: 125

You are configuring a virtual machine (VM) that is hosted on a Windows Server 2008 R2 Hyper-V server. The VM is currently in the Running state.

You need to export the VM without loss of data.

What are two possible first steps that you could perform to achieve this goal?
(Each correct answer presents a complete solution. Choose two.)

- A. Save the VM.
- B. Pause the VM.
- C. Turn off the VM.
- D. Shut down the VM.

Answer: A,D

Question: 126

Your company has Hyper-V host servers located in datacenters named DataCenter1 and DataCenter2. You manage host servers and virtual machines (VMs) by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2.

DataCenter1 has a library server named Library1. You cannot provision VMs in DataCenter2 by using Library1. You install a new library server named Library2 in DataCenter2. You need to provision new VMs in DataCenter2 by using Library2. You copy a VHD file from Library1 to Library2, and you refresh Library2. What should you do next?

- A. Refresh Library1.
- B. Index the VHD file on Library2.
- C. Clone DataCenter1's VMM template.
- D. Edit DataCenter1's VMM template to point to the VHD file in DataCenter2.

Answer: C

Question: 127

You manage Hyper-V host servers and virtual machines (VMs) by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. Testers are members of an AD security group named Test. You need to ensure that members of the Test group can create VMs on a specific host server by using the VMM Self-Service Portal. What should you do?

- A. In VMM, specify a template for new VMs created by members of the Test group.
- B. In VMM, create a Delegated Administrator user role and add the Test group to this role.
- C. In VMM, assign the Test group the Local Administrator permission for the specific host server.
- D. Install Hyper-V Manager on the client computer of each member of the Test group, and grant the Test group administrative privileges on the specific host server.

Answer: A

Question: 128

Your network includes the servers shown in the following table.

Server name	Operating system	Role services
Server 1	Windows Server 2008 Standard	TS Licensing
Server 2	Windows Server 2008 Enterprise	Terminal Server

You install an additional server named Server3 that runs Windows Server 2008 R2 Enterprise. You add the Remote Desktop Services (RDS) role, and you configure the Remote Desktop Session Host (RD Session Host) role service. You need to ensure that RDS client access licenses (RDS CALs) can be assigned to each Remote Desktop user. What should you do?

- A. Add RDS CALs to Server1.
- B. Specify the Remote Desktop Licensing (RD Licensing) mode on Server3.
- C. Add the Remote Desktop Licensing (RD Licensing) role service to Server3.
- D. Upgrade Server1 from Windows Server 2008 Standard to Windows Server 2008 R2 Enterprise.

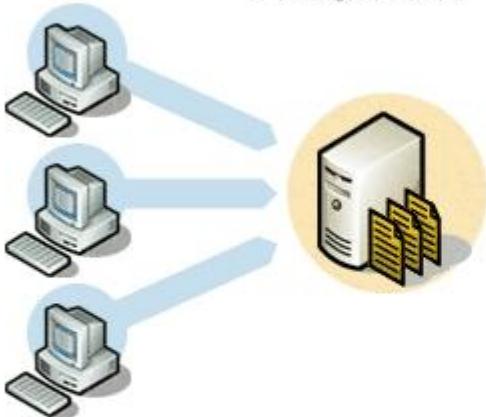
Answer: B

Explanation:

Server1 has only standard TS licensing and we have additional server (aka server3) then there is no need to upgrade or Add any additional service. (Eliminating A and D) Already RDS role is enabled (Eliminated C option as well)

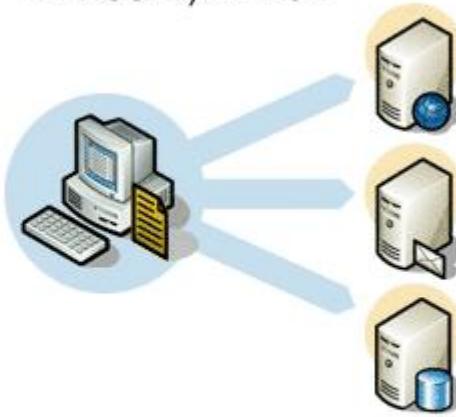
CAL Licensing Modes

PER SERVER



CALs are traditionally licensed in Per Server mode when there are few servers that require limited access. The number of CALs needed is determined by the number of concurrent connections required.

PER USER/DEVICE



CALs are traditionally licensed in Per User/Device mode when there are many servers that require frequent and widespread access. This mode is usually more economical in such an environment as the number of CALs needed is determined by the number of users and/or devices requiring access to the servers.

The Windows Server 2008 R2 licensing model requires a server license for each running instance of the server software. (Remote Desktop Services is included). In addition a Windows Server Client Access License (CAL) is required to access the Windows Server. If you wish to utilize the RDS functionality of the Windows Server software, an incremental Remote Desktop Services Client Access License (RDS CAL) is required as well. They can be licensing on a Device or User CAL model.

Question: 129

You configure a new virtual machine (VM) on a Windows Server 2008 R2 Hyper-V failover cluster. You install the operating system on the VM from a media image. You install Microsoft System Center Operations Manager 2007 R2 in the environment. Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 reports the VM status as Unsupported Cluster Configuration. You need to ensure that you can manage the VM by using VMM. What should you do?

- A. Detach the media image from the VM configuration.
- B. Place the VMs VHD on a Cluster Shared Volume (CSV)
- C. Implement Performance and Resource Optimization (PRO).
- D. Copy the media image to the same disk as the VM, and mount the ISO file.

Answer: A

Explanation:

Any HAVMs that share a non-CSV LUN are imported into VMM with Unsupported Cluster Configuration status. To resolve this issue, use Failover Cluster Manager to reconfigure the virtual machines to have their own LUNs. Then, in the VMM Administrator Console, use the Repair action with the Ignore option to refresh each virtual machine's status in VMM. In VMM2008R2, when you migrate a virtual machine into a cluster from a stand-alone host by using a SAN

transfer, VMM checks all nodes in the cluster to ensure that each node can see the LUN and automatically creates a cluster disk resource for the LUN. Even though VMM automatically configures the cluster disk resource, it does not validate it. You must use the Validate a Configuration Wizard in Failover Cluster Management to validate the newly created cluster disk resource. To migrate a virtual machine out of a cluster to a stand-alone host, the virtual machine must be on a dedicated LUN that is not using CSV.

Troubleshoot “Unsupported Cluster Configuration” Status for a Highly Available Virtual Machine To view the reason that a HAVM is in an Unsupported Cluster Configuration state, display the Hardware Configuration tab of the Virtual Machine Properties dialog box. Then, in the Advanced settings, click Availability. If the virtual machine is in an Unsupported Cluster Configuration state, the Details area displays the error that placed the virtual machine in that state. The following situations can cause Unsupported Cluster Configuration status:

The virtual machine is on a non-CSV LUN that contains more than one virtual machine.

If you have configured highly available virtual machines in Hyper-V to share the same LUN, and the LUN is not on a clustered file system (CSV) volume, you must update the virtual machine configurations in Failover Cluster Management and Hyper-V so that each resides on its own unshared LUN.

The virtual machine is using non-clustered storage.

If the HAVM is stored on system drive C: or any disk that is not clustered, the virtual machine is placed in Unsupported Cluster Configuration state. To resolve this issue, ensure that all files and pass-through disks belonging to the virtual machine reside on clustered disks.

A VMware HAVM is connected to a port group that does not exist on all nodes of the host cluster.

On host clusters that VMM is managing, each port group must be configured on all ESXServer hosts in the cluster. If a virtual machine is configured with a port group that is not common to all hosts, the virtual machine has Unsupported Cluster Configuration status.

You have detached the media image to be fully supported by VMM. If media is attached then migration may fail.

Question: 130

Your company's network includes an Active Directory Domain Services (AD DS) domain. You manage Hyper-V servers by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You install Windows Server 2008 R2 Datacenter (Server Core Installation) on 100 new servers, and you add the servers to the domain. You need to add the Hyper-V role to the 100 new servers. You must accomplish this goal by using the least amount of administrative effort. What should you do?

- A. Run the Add-WindowsFeature RSAT-Hyper-V PowerShell cmdlet.
- B. In Server Manager, use the Add Roles Wizard to add the Hyper-V role.
- C. In the VMM Administrator Console, use the Add Hosts Wizard to individually add each new server to VMM.
- D. In the VMM Administrator Console, use the Add Hosts Wizard to simultaneously add all 100 new servers to VMM.

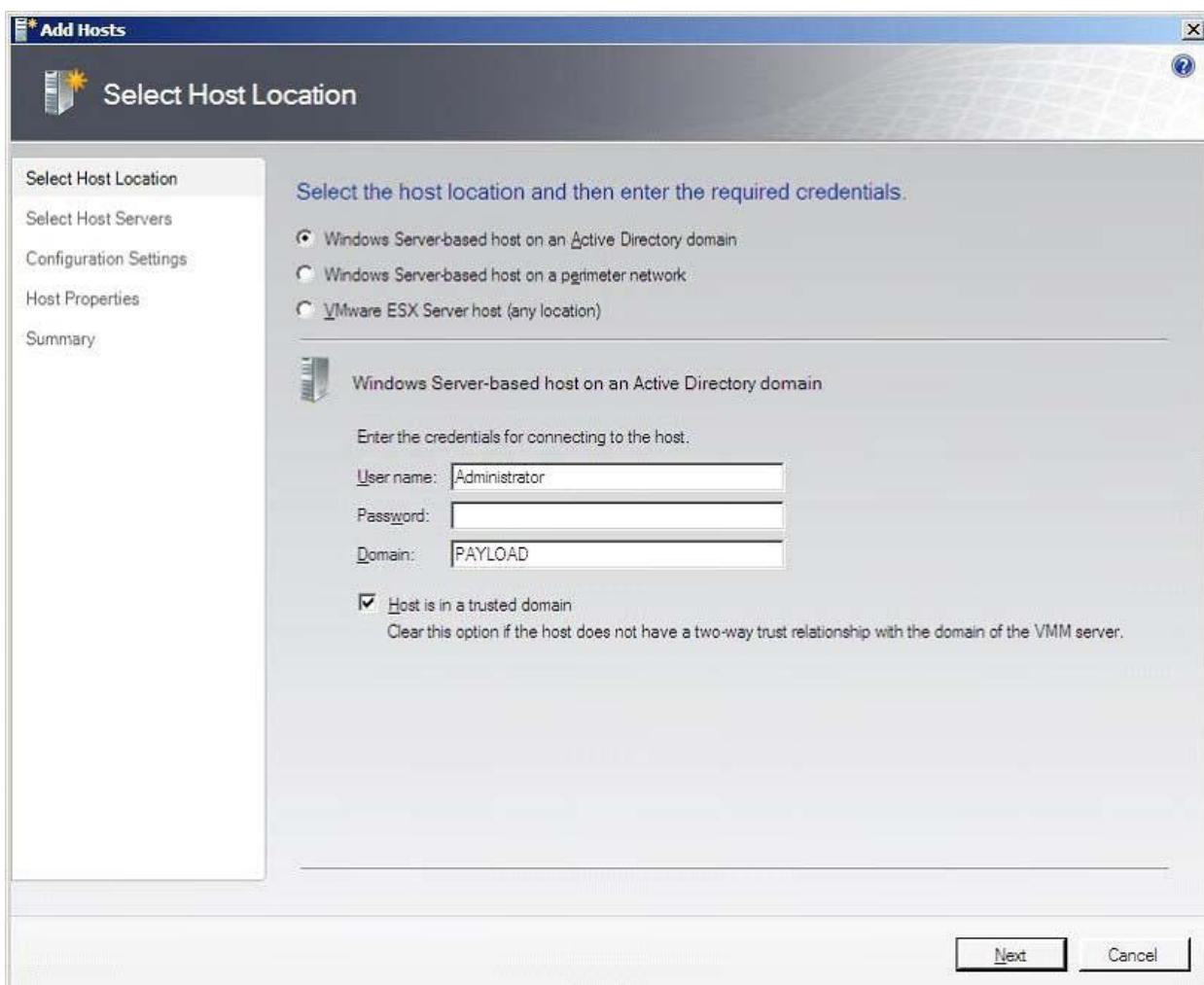
Answer: D

Explanation:

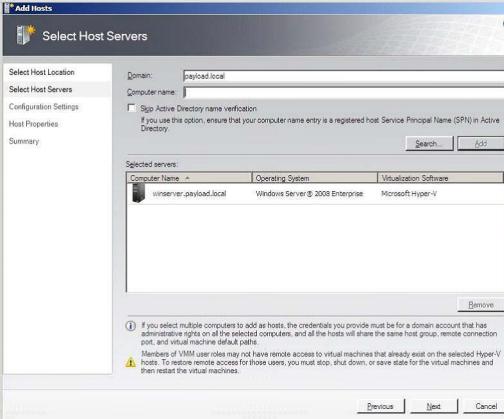
Adding Hosts to the VMM Administrator Console

When the VMM Administrator Console is run for the first time after installation, it does not, by default, have any hosts assigned to it. In this context, the term host is used to refer to servers running virtual machines using Hyper-V, Virtual Server or VMware ESX Server virtualization technology. Since very little can be achieved using the console until some hosts are added, this is one of the first tasks to be performed.

Hosts are added to the console using the Hosts view, which is selected by clicking on the Hosts option in the list of views located in the pane in the bottom left hand corner of the console window. Once the Hosts view is displayed, hosts may be added by clicking on the Add Host link in the Actions pane, or selecting the Actions->Virtual Machine Manager->Add Host menu option. Once selected, the Add Host wizard will appear displaying the Select Host Locations screen as illustrated in the following figure:



The purpose of this screen is to specify where the host is located in terms of the logical network infrastructure. A variety of different host types may be added to the console, these being a Windows Server host running Hyper-V which is a member of an Active Directory domain, a Windows Server host running Hyper-V which is not a member of an Active Directory domain (also referred to as a perimeter network host), or a host running VMware ESX Server (regardless of whether or not it is an Active Directory domain member). If a host on a perimeter network is specified, the host must have had the VMM Agent component installed on it before it can be added to the VMM Server. This installation process also involves the creation of an encryption key which will also need to be provided during the host addition process. For details on installing the VMM Agent on a perimeter host refer to the chapter entitled [Installing VMM 2008 Components](#). After selecting the host location and type, enter the user name and password credentials of an account on the host which may be used to gain access and click **Next** to proceed to the [Select Host Servers](#) screen. Having defined the location of the hosts to be added, the purpose of the [Select Host Servers](#) screen is to allow selection of the specific hosts to be added to the VMM Server. To add hosts, enter the name of Active Directory domain of which the host is a member followed by the computer name. If in doubt as to the name of the computer to be added, the **Search** button may be used to search the specified domain for systems running either Virtual Server or Hyper-V technology. Once a list of servers has been generated, one or more hosts may be selected and added to the console. Alternatively, if you know the name of the host to be added, simply enter the name and click the **Add** button:



Once the required hosts have been added, click on the **Next** button to proceed to the Configuration Settings screen. This screen is used to define which group of hosts the machine is to be assigned to. By default, only the **All Hosts** group is pre-configured within the VMM Administrator Console. In addition, if the host is currently managed by a different VMM Server than the one to which the VMM Administrator Console is currently connected, select the option to Reassociate host with this Virtual Machine Manager Server to associate the host with the currently connected VMM Server. Clicking **Next** displays the Host Settings screen where a number of paths suitable for storing virtual machine files on the host may be defined. If no paths are specified, the default location will be used for all virtual machines created on the host using the console. Note that the console will not create any paths if they do not already exist on the host. These paths must be manually created before they can be used to store virtual machines. In addition, a remote connection port may be specified to allow remote connections to the host using the Virtual Machine Connection tool. Once the host settings are defined, click **Next** and review the information on the Summary screen. In previous chapters we have mentioned that VMM 2008 sits on top of Windows PowerShell and that any operations performed are converted into a Windows PowerShell script and executed. To prove this, click on the **View script** button to display the PowerShell script which will be executed to add the host to the VMM Server. Assuming all is correct in the summary, click **Add hosts** to add the hosts to the VMM Server. Once the addition is complete, the new host will appear in the list of hosts in the main console window.

Configuring Host Groups In the previous section a host was added to the **All Hosts** group of the VMM Server. In addition to the **All Hosts** group, other groups may be created and existing groups removed to aid in the administration of large and complex virtualization deployments. Host groups are configured hierarchically, with the **All Hosts** group at the top of the tree and other sub-groups nested beneath it. Each sub-group may, in turn, have its own sub-groups allowing multiple layers of group nesting. For example, **All Hosts** may have a sub-group for all hosts located in California. The California subgroup may then be configured to have sub-groups of its own for each city in which hosts are located (San Jose, Palo Alto, San Francisco etc). To add a new host group, ensure that the VMM Administrator Console is displaying the Hosts view, right click on the **All Hosts** item in the Hosts pane in the top

left hand corner of the window and select New host group from the menu. A new host group entry will appear with the default name New host group highlighted. Enter a new name and press enter to complete the creation process. To remove an existing group, right click on the group name in the Hosts pane and select Remove from the popup menu. To move a host from one group to another, select the host from the list of hosts and click on the Move to host group link in the Actions pane. Navigate through the tree of host groups to find the target group and click OK to initiate the move. Similarly, to add an existing host to a group, select the host group from the list, click on Add host from the Actions pane and use the wizard as described above to complete the process.

Setting Host Reserves

Host Reserves define how much of a host's resources are to be reserved for the host operating system. Once these reserves are configured, a virtual machine cannot be deployed on that host if doing so would require the use of those reserved resources. The host resources that may be reserved are as follows:

CPU Percentage

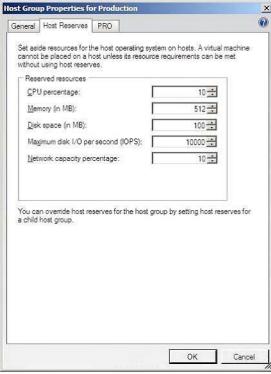
Memory

Disk Space

Maximum Disk I/O Per Second (IOPS)

Network Capacity Percentage

Host reserves are specified on a host group basis. In addition, the group reserve settings may also be overridden on a per host basis. To specify the host group reserve settings, right click on the host group name in the Hosts pane, select Properties from the menu and click the Host Reserve Tab in the Host Group Properties dialog as illustrated in the following figure:



In order to override the group host reserve settings, right click on the host in the list, selectPropertiesand click onReservesin the resulting dialog.

Question: 131

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You need to manually back up a child partition while it is turned off. Which two elements should you back up? (Each correct answer presents part of the solution. Choose two.)

- A. the system state
- B. the InitialStore.xml file
- C. the child .vhd files
- D. the child .xml configuration file

Answer: C,D

Explanation:

One of the big questions that I had about the export process before I began was whether or not it left the original

virtual machine instance intact, and in its original location. I'm happy to report that the files making up the virtual machine are untouched during the export process. This does however, mean that you will have to manually remove those files once you have moved the virtual server to its new location.

The other thing that you need to know is that depending on the size of the virtual machine, the export process can take a really long time to complete. Unfortunately, I can't tell you exactly how long, because the amount of time depends on the size of the .VHD files that are being used, and on your machine's hardware capabilities.

As you can see, exporting a virtual machine is really simple. Now let's take a look at the anatomy of the exported information, and how the import process works.

The Anatomy of a Virtual Machine When you export a virtual machine, one of the things that Hyper-V asks you for is the export path. Whatever path you enter, Hyper-V will create a folder in that path that bears the name of the virtual machine that you are exporting. For instance, when I exported my virtual machine, I used C:\R2 as the path, and Hyper-V created a new folder named R2. Now my virtual machine resides in a folder named C:\R2\R2, as shown in Figure C.

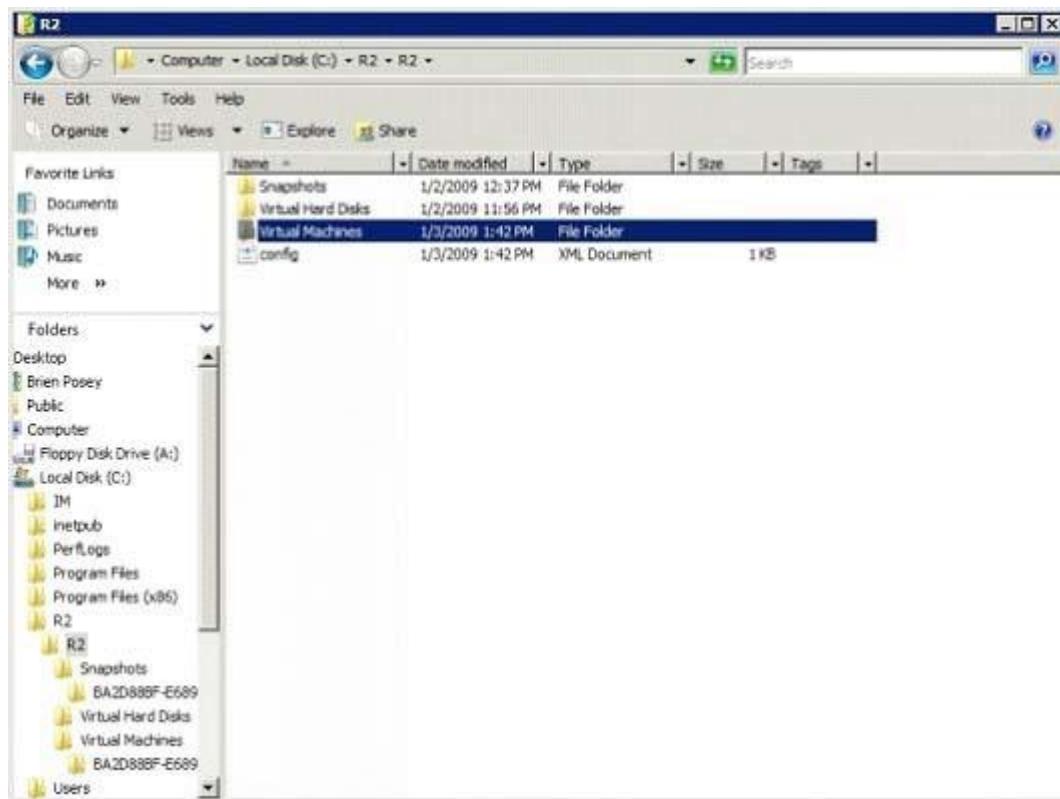


Figure C

Hyper-V creates a folder in the destination path that bears the name of the virtual server that you are exporting. If you look at the figure, you will notice that within the folder that Hyper-V creates are three sub folders. There is also an XML file named Config.xml.

The Snapshots Folder

The Snapshots folder is used as a repository for snapshots of the virtual machine. This folder contains three elements. First, there is a subfolder that bears the virtual machine's GUID. If no snapshots exist, the folder will still be present, but it will be empty. If snapshots do exist, then this folder will contain the diffing data for the virtual hard disks. The snapshots folder may also contain a subfolder for each snapshot. This folder bears the name of the individual snapshot ID. In addition, there will be an export file (a .EXP file) for each individual snapshot.

The Virtual Hard Disks Folder

As the name implies, the Virtual Hard Disks folder stores the .VHD files (virtual hard drive files) used by the virtual machine. You can see an example of this in Figure D.

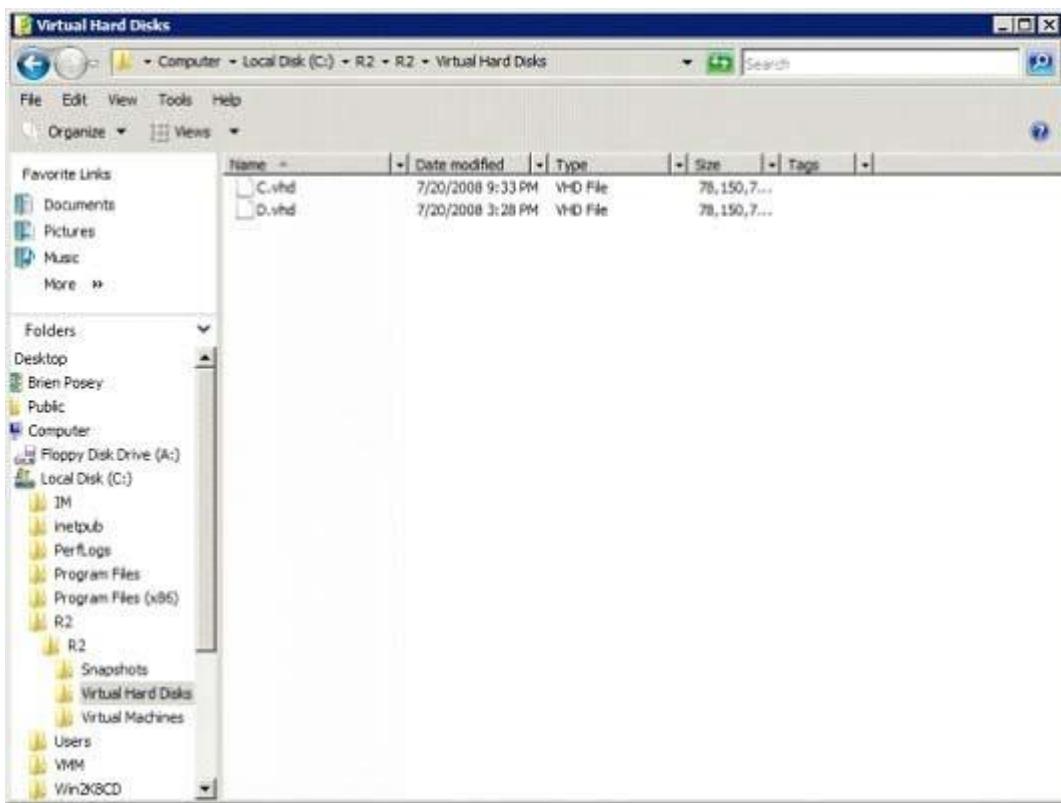


Figure D

The Virtual Hard Disks folder contains the .VHD files for the virtual server. The Virtual Machines Folder At a minimum, the Virtual Machines folder will contain a file named after the virtual machine's GUID, but with an .EXP extension. This file is the virtual machine export file. It retains the virtual machine's settings during the export process.

If the virtual machine was in a saved state during the export process, then the Virtual Machines folder will contain a sub folder, which will store two saved state files. If the machine was not in a saved state at the time of the export, then the sub folder may exist, but it will be empty. Importing a Virtual Machine The import and export process is used primarily as a means for moving virtual machines from one host server to another. Therefore, the first step in the import process is to copy the export folder and all of its sub folders to the desired host server. After doing so, open the Hyper-V Manager and click the Import Virtual Machine link.

You should now be prompted to enter the virtual machine's path.

Although this seems simple enough, there are two very important

There are two important things that you need to know about the import process. First, it is up to you to copy the virtual machine files to the location from which you want to use them. When you import the virtual machine, its physical location on the host server becomes permanent, and moving the virtual machine is no longer an option. It is therefore important to place the virtual machine files on the desired volume before you import it.

The other thing that you need to know is that when you import the virtual machine, the .EXP file and the CONFIG.XML files will be deleted. These files are replaced with a new CONFIG.XML file.

What this means to you is that because the .EXP file is gone, the virtual machine cannot be imported again (unless you export it again). If you want to use the virtual machine as a template or as an image that you can quickly restore, then it is important to work only from a copy of your exported files so that the original remains untouched.

Conclusion

The process of importing and exporting virtual machines isn't all that difficult, but by following these tips, hopefully you'll save yourself from a few of the most common pitfalls related to duplicate virtual machines or the imported machine's location.

Question: 132

You have a Windows Server 2008 R2 Hyper-V server with two network adapters named Adapter1 and Adapter2. You

need to configure the server to host virtual machines (VMs) on different networks. Which two actions should you perform on the host server? (Each correct answer presents part of the solution. Choose two.)

- A. Set Adapter1 as a management interface.
- B. Configure Adapter1 to support jumbo frames.
- C. Set Adapter2 in Trunk mode, and configure VM VLAN tags.
- D. Disable TCP Chimney support on Adapter2, and configure VM VLAN tags.

Answer: A,C

Explanation:

Configuring virtual local area networks (VLANs)

All released versions of Hyper-V support virtual local area networks (VLANs). A VLAN configuration is software-based, which means that you can easily move a computer and still maintain their network configurations. For each virtual network adapter you connect to a virtual machine, you can configure a VLAN ID for the virtual machine. You will need the following to configure VLANs:

A physical network adapter that supports VLANs.

A physical network adapter that supports network packets with VLAN IDs that are already applied.

On the management operating system, you will need to configure the virtual network to allow network traffic on the physical port. This is for the VLAN IDs that you want to use internally with virtual machines. Next, you configure the virtual machine to specify the virtual LAN that the virtual machine will use for all network communications.

There are two modes in which you can configure a VLAN: access mode and trunk mode. In access mode, the external port of the virtual network is restricted to a single VLAN ID in the UI.

You can have multiple VLANs using WMI. Use access mode when the physical network adapter is connected to a port on the physical network switch that also is in access mode. To give a virtual machine external access on the virtual network that is in access mode, you must configure the virtual machine to use the same VLAN ID that is configured in the access mode of the virtual network.

Trunk mode allows multiple VLAN IDs to share the connection between the physical network adapter and the physical network. To give virtual machines external access on the virtual network in multiple VLANs, you need to configure the port on the physical network to be in trunk mode.

You will also need to know the specific VLANs that are used and all of the VLAN IDs used by the virtual machines that the virtual network supports.

Whether you choose "access" mode or "trunk" mode is determined by the port on the physical switch (for example your Cisco 6500 switch) that the physical NIC on the host is plugged into. If the port on the physical switch is configured to be in "trunk" mode, then your physical NIC supporting the virtual network should be as well. However, if the port on the switch is configured to be in "access" mode, then your physical NIC supporting the virtual network should be in "access" mode.

Trunking allows multiple VLAN IDs to share the connection between the physical NIC and the physical switch. So if your virtual network needs to support external host access for VMs in a number of VLANs, you will need to push your network admin to configure the port on the physical switch to be in "trunk" mode and you need to tell him/her which VLANs he/she needs to configure on the trunk for all the VLAN IDs of the VMs that your virtual network supports. Hyper-V's UI always will do trunk mode if you specify a VLANID.

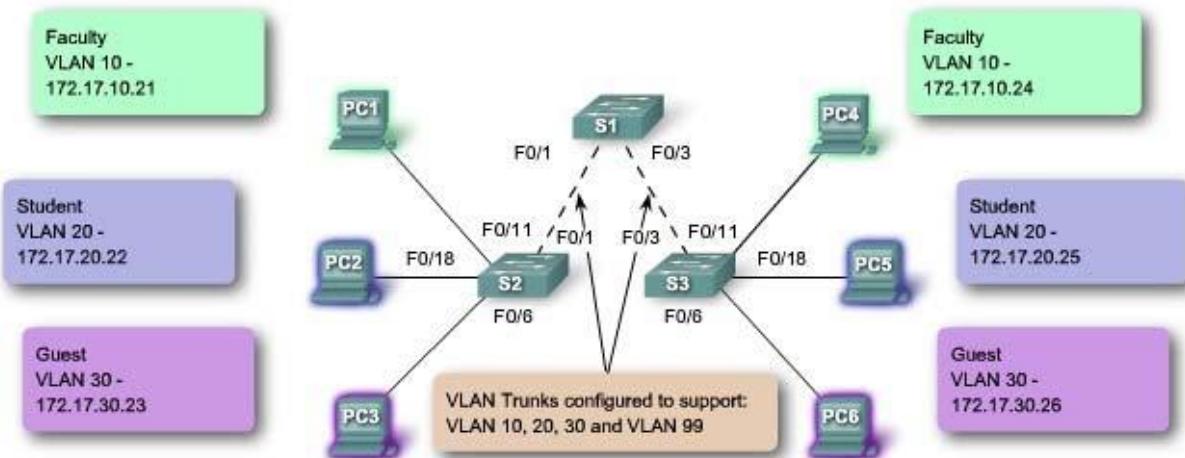
Access mode is often the default on the physical switch. In access mode the VLAN ID is stripped off the packets arriving at the physical switch, but they are still significant to the virtual network on the host.

Essentially the VLAN ID on the VMs and the virtual network need to match (for example: 22=22, none=none, 142=142) for the VMs to have external host access. Virtual networks in access mode can only use one VLAN ID. You cannot set up access mode in Hyper-V's UI. While Hyper-V allows you to configure this via WMI, if you want to do this

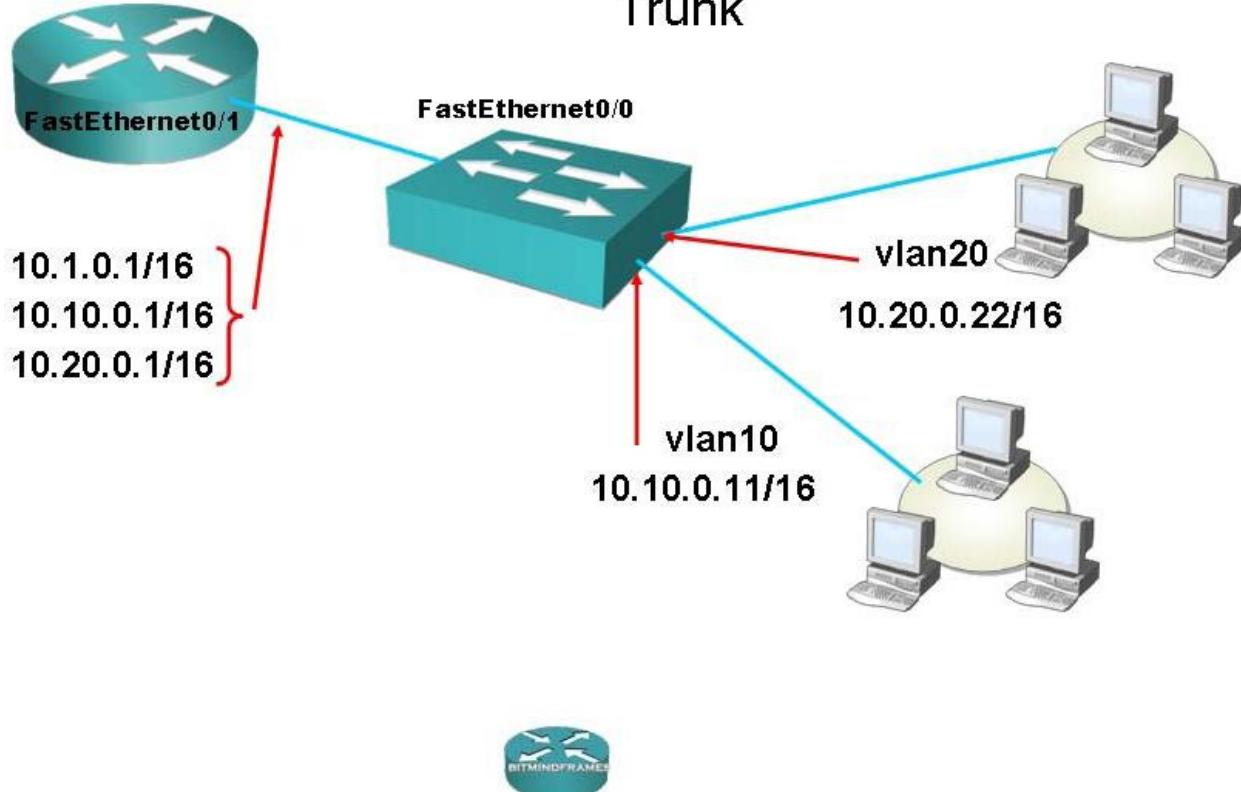
through a UI you will have to use VMM

VLAN 10 Faculty/Staff - 172.17.10.0/24
 VLAN 20 Students - 172.17.20.0/24
 VLAN 30 Guest - 172.17.30.0/24
 VLAN 99 Management and Native - 172.17.99.0/24

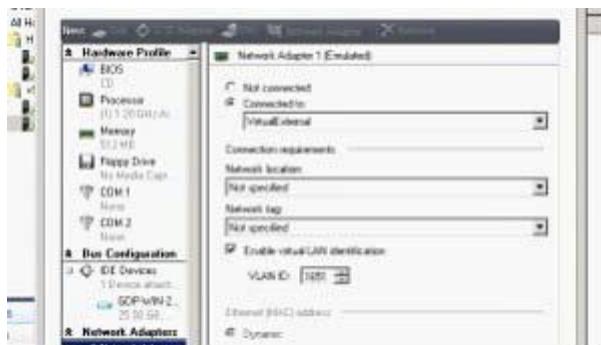
Ports
 F0/1-5 are 802.1Q trunk interfaces with native VLAN 99.
 F0/11-17 are in VLAN 10
 F0/18-24 are in VLAN 20
 F0/6-10 are in VLAN 30.



Inter-vlan Routing Over 802.1q Trunk

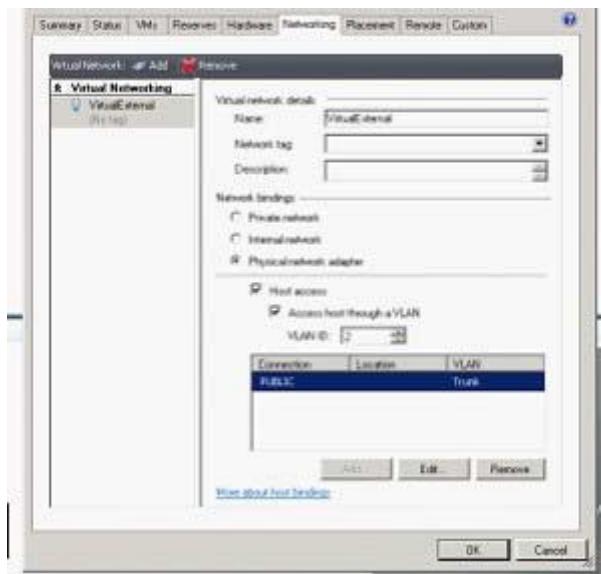


SCVMM added the VLAN automatically to the VM Hosts VLAN Trunk , if you added the VLAN to a Virtual Machine.

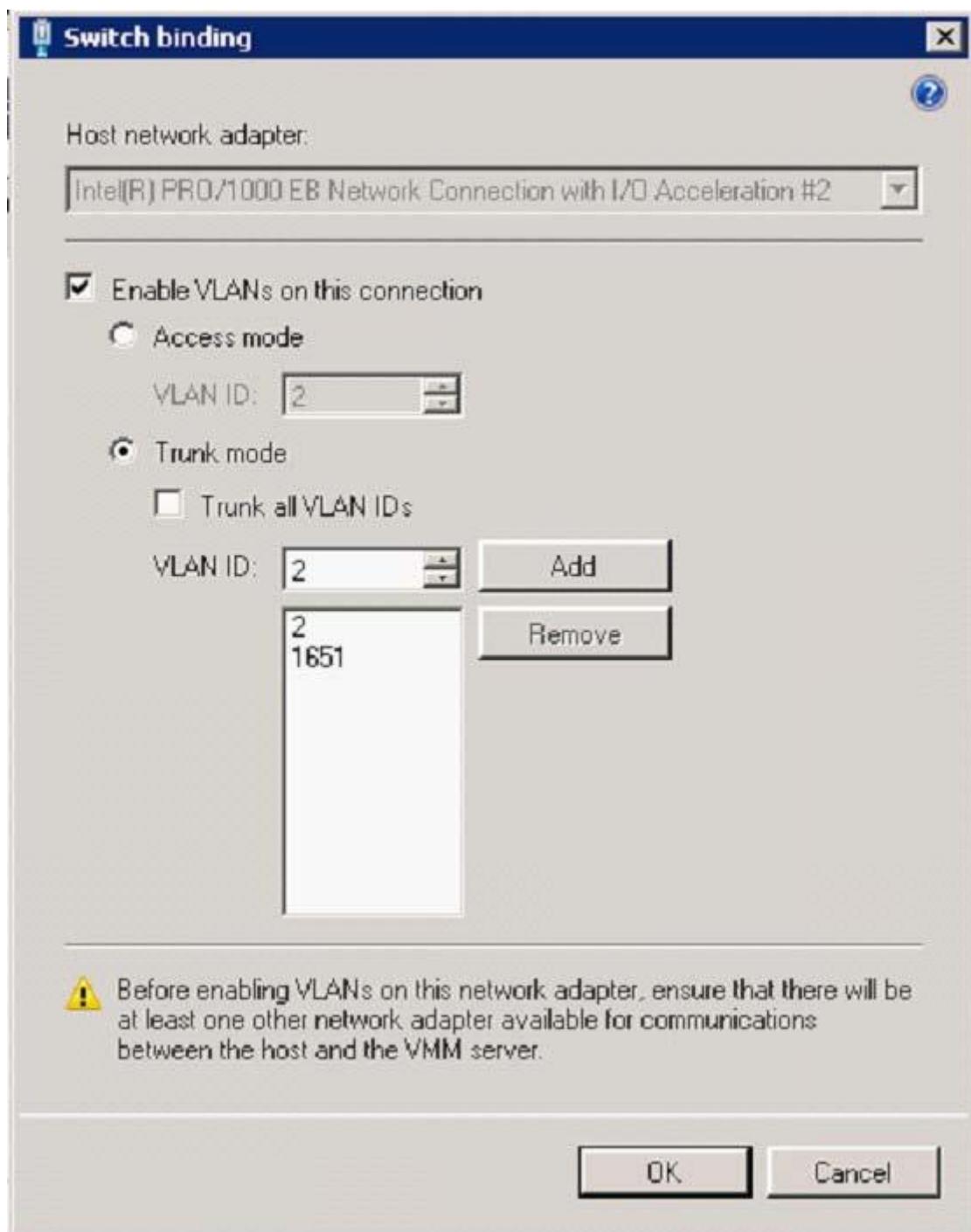


In Microsoft System Center Virtual Machine Manager 2008 R2 (SCVMM 2008 R2), this does not happen automatically. After or before you added the VLAN to the Virtual Machine you have to add the specific VLAN to the Host network adapter.

In the properties of the Virtual Machine Host under networking you have to edit the VLN Trunk.



Now you can add VLAN IDs to the VLAN Trunk:



Question: 133

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. Virtual machines (VMs) will use Microsoft iSCSI Software Initiator to connect to the shared storage volumes within the guest operating system. You need to configure the VMM host server to optimize the network environment for iSCSI traffic. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Set the network adapters to 1454 MTU.
- B. Set the network adapters and the supporting infrastructure to support jumbo frames.
- C. Enable RX and TX TCP checksum offload support on the network adapters.

D. Disable RX and TX TCP checksum offload support on the network adapters.

Answer: B,C

Explanation:

IPv4 Checksum Offload enables the adapter to verify the TCP/IP checksum on received packets (Rx) and compute checksum on transmitted packets (Tx). IPv4 Checksum Offload is configured under TCP/IP Offloading Options properties when Intel® PROSet for Windows Device Manager is installed. Enabling this feature can improve TCP/IP performance and reduce CPU utilization. With Offloading disabled, the operating system calculates and verifies the TCP/IP checksum. TCP Checksum Offload(IPv4) and TCP Checksum Offload(IPv6)enable the adapter to compute (Tx) or verify (Rx) the TCP checksum of packets. TCP Checksum Offload is configured underTCP/IP Offloading Options properties when Intel® PROSet for Windows Device Manager is installed. This feature can improve performance and reduce CPU utilization. With Offloading enabled, the adapter computes or verifies the checksum for the operating system.

Jumbo Packetenables Jumbo Packet capability for TCP/IP packets. When large packets make up the majority of traffic and more latency can be tolerated, Jumbo Packets can reduce CPU utilization and improve wire efficiency. The standard Ethernet frame size is 1514 bytes, while Jumbo frames can contain 4088 or 9014 bytes. Available settings vary depending on the specific adapter.

Enable Jumbo Packets only if devices across the network support them and are configured to use the same frame size. When setting up Jumbo Frames on other network devices, be aware that network devices calculate Jumbo Frame sizes differently. Some devices include the header information in the frame size while others do not. back to top Large Receive Offload (IPv4) sets the adapter to offload the task of segmenting TCP messages into valid Ethernet frames. Large Receive Offload is configured underTCP/IP Offloading Optionsproperties when Intel® PROSet for Windows Device Manager is installed.

Because the adapter hardware can complete data segmentation much faster than operating system software, this feature cam improve transmission performance. The adapter also uses fewer CPU resources.

Question: 134

You are using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to perform a virtual-to-virtual (V2V) conversion. You need to place the virtual machine (VM) on the host server that has the most available disk I/O. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Set the placement goal to Load balancing.
- B. Set the placement goal to Resource maximization.
- C. Set the resource importance of the disk I/O to Very Important.
- D. Set the maximum disk I/O per second for the host reserves to 10000.

Answer: A,C

Explanation:

Using Host Ratings to Select Hosts

You can establish customized default criteria for VMM to use when rating hosts during placement. This helps you to place virtual machines on the most suitable host. You can specify the placement goal that VMM should use to calculate hosts ratings. The placement goals are described in the following table:

You can also specify the relative importance of each of the following resources that VMM should use when rating hosts:

CPU utilization

Memory utilization

Disk I/O

Network utilization

For example, if you create a Windows Server 2008-based virtual machine for developers and you know that the virtual machine requires significant CPU, however the host has relatively little hard disk or network resources, you might customize the default ratings to increase the priority of free CPU while lowering the priority of the hard disk and network.

Setting Host Reserves Host Reserves define how much of a host's resources are to be reserved for the host operating system. Once these reserves are configured, a virtual machine cannot be deployed on that host if doing so would require the use of those reserved resources. The host resources that may be reserved are as follows:

CPU Percentage

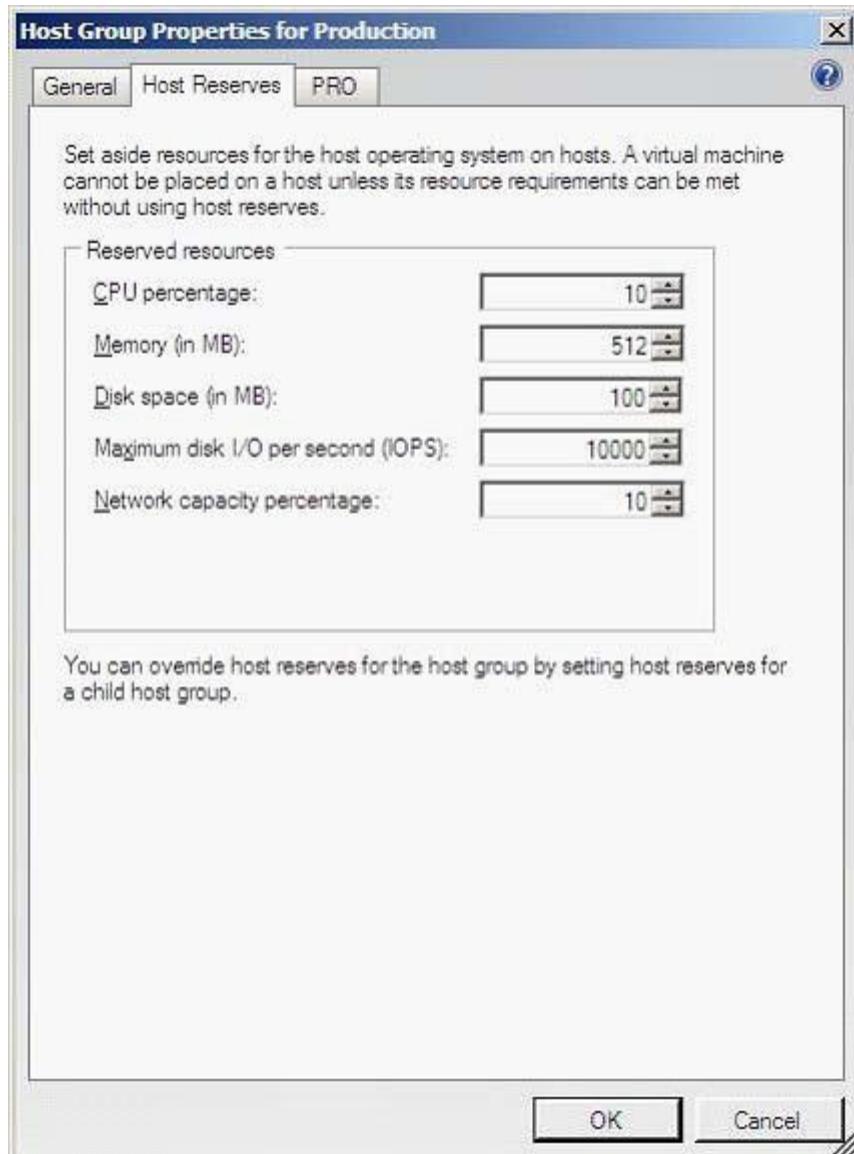
Memory

Disk Space

Maximum Disk I/O Per Second (IOPS)

Network Capacity Percentage

Host reserves are specified on a host group basis. In addition, the group reserve settings may also be overridden on a per host basis. To specify the host group reserve settings, right click on the host group name in the Hosts pane, select Properties from the menu and click the Host Reserve tab in the Host Group Properties dialog as illustrated in the following figure:



In order to override the group host reserve settings, right click on the host in the list, select Properties and click on Reserves in the resulting dialog.

Question: 135

You deploy a Windows Server 2008 R2 Hyper-V server with one virtual machine (VM). The host servers CPU resources are fully utilized by the VM. You need to ensure that the VM does not fully utilize the host servers CPU resources. What should you do?

- A. Set the relative weight to 80.
- B. Set the virtual machine limit to 80.
- C. Set the virtual machine reserve to 80.
- D. Set the number of logical processors to 2.

Answer: B

Explanation:

Setting up limit will ensure the VM to utilize the maximum allocation. 70%- 85 % is acceptable range to restrict the VM.

Question: 136

You use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to manage virtual machines (VMs). You need to deploy a cloned VM and automatically assign it a different name. Where should you deploy the cloned VM?

- A. to the same host as the source VM
- B. to a different host from the source VM
- C. to the same library as the source VM
- D. to a different library from the source VM

Answer: A

Explanation:

If the cloned VM is placed in the same host then it will create a VM name called "Copy of VMname" in VMware. I am not sure about the Hyper-V.

Question: 137

You use Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 to perform physical - to- virtual (P2V) conversions. Your company's network includes computers that each run one of the following operating systems:

Windows NT 4.0 Server with SP6a Windows 2000 Server with SP4 Windows Server 2003 with SP2 Windows Web Server 2008 R2

You need to choose the operating systems that can be converted by using the online P2V method.

Which two operating systems should you choose? (Each correct answer presents part of the solution. Choose two.)

- A. Windows NT 4.0 Server with SP6a
- B. Windows 2000 Server with SP4
- C. Windows Server 2003 with SP2
- D. Windows Web Server 2008 R2

Answer: C,D

Explanation:

Supported Operating Systems for P2V Conversions in VMM2008 and VMM2008R2

The following restrictions apply to P2V operation system support:

VMM does not support P2V conversion for computers with Itanium architecture-based operating systems.

VMM does not support P2V on source computers running WindowsNT Server4.0. However, you can use the Microsoft Virtual Server2005 Migration Toolkit (VSMT) or third-party solutions for converting computers running WindowsNT Server4.0.

VMM 2008R2 does not support converting a physical computer running Windows Server2003SP1 to a virtual machine that is managed by Hyper-V. Hyper-V does not support Integration Components on computers running Windows Server2003SP1. As a result, there is no mouse control when you use Remote Desktop Protocol (RDP) to connect to the virtual machine. To avoid this issue, update the operating system to Windows Server2003SP2 before you convert the physical computer. As an alternative, you can convert the computer by using VMM2008 and then deploy the virtual machine in VMM2008R2.

Question: 138

Your network includes a Windows Server 2008 R2 Hyper-V host with a Windows Server 2008 R2 virtual machine (VM). The VM is configured with a dynamically expanding VHD. The VM's system partition runs out of space. You need to add more space to the VM's system partition. What should you do?

- A. Using Hyper-V Manager, select the VM, run the Edit Virtual Hard Disk Wizard, and convert the VHD to a fixed-size disk that meets the disk space requirement.
- B. Using Hyper-V Manager, select the VM, run the Edit Virtual Hard Disk Wizard, and expand the disk to meet the disk space requirement. Using the Disk Management snap-in in the VM, rescan the disk.
- C. Using Hyper-V Manager, run the New Virtual Hard Disk Wizard, and create a blank VHD that meets the disk space requirement. Using Hyper-V Manager, disconnect the old VHD and connect the new VHD.
- D. Using Hyper-V Manager, select the VM, run the Edit Virtual Hard Disk Wizard, and expand the disk to meet the disk space requirement. Using the Disk Management snap-in in the VM, select the system partition, and extend it to fill the disk.

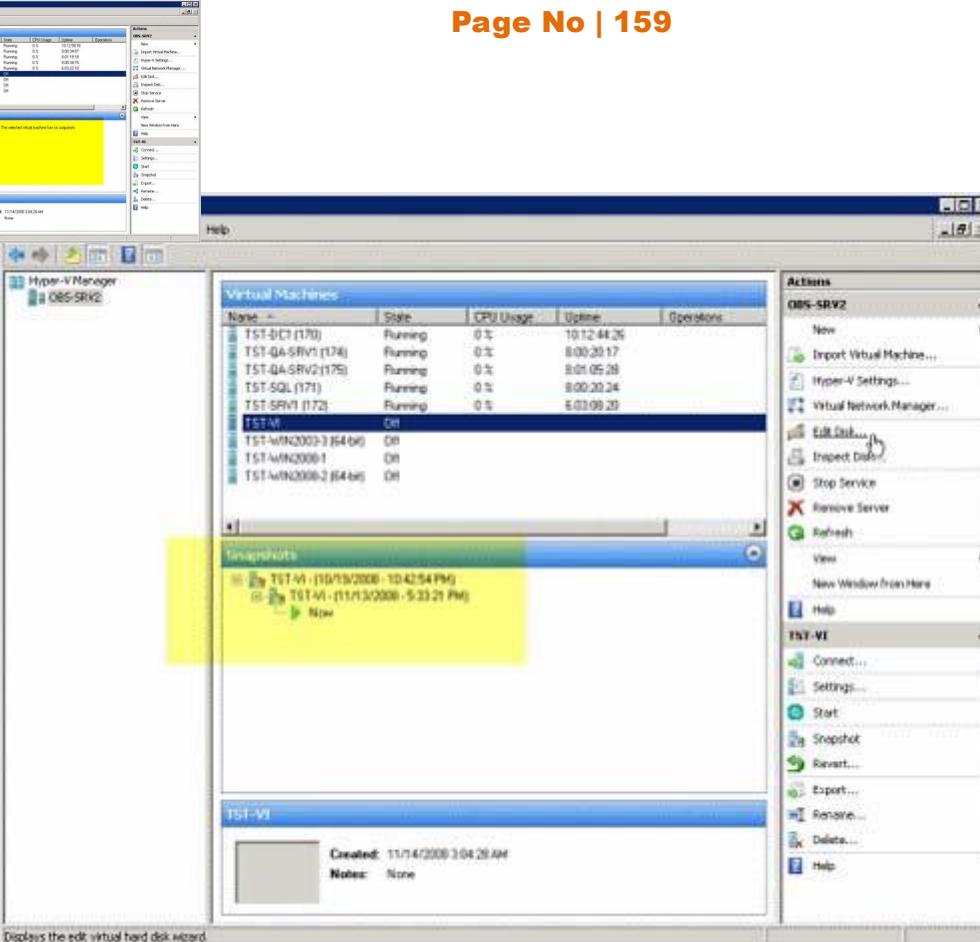
Answer: D

Explanation:

Dynamically expanding. A dynamically expanding virtual hard disk is a disk in which the size of the .vhd file grows as data is written to the disk. This type provides the most efficient use of disk space. You will need to monitor the available disk space to avoid running out of disk space on the management operating system. Before using the ability to expand the VHD hard disk you must take the following issues into consideration:

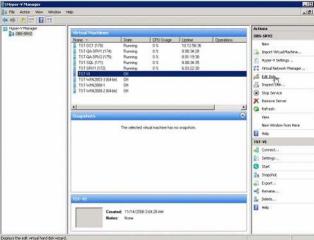
You must first completely shut down the virtual machine. You cannot expand a virtual hard disk that is associated with a running or saved state virtual machine.

If you expand a virtual hard disk that is associated with a virtual machine that has snapshots, these snapshots will be invalidated. If you need the snapshots, you'd better make sure you plan ahead of time, and/or create new snapshots after performing the expansion of the hard disk.



Make sure no snapshots are associated with this VM.

After expanding the virtual hard disk there will be an empty space at the end of the virtual hard disk, just like not using the entire disk when you've originally created partitions in it. You will either need to create a new partition to use the new space, or expand an existing partition into the new space.

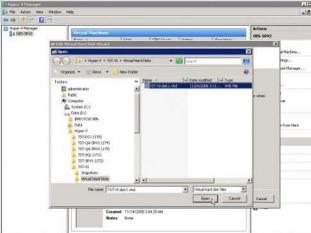


Note: Expanding or extending partitions on Windows Vista and Windows Server 2008 is easier than on Windows Server 2003 or Windows XP, and is performed by using either the Disk Management snap-in from the Computer Management tool, or by using the DISKPART command. Please read myHow to Extend a Disk Partition in Windows Vista and Server 2008article for more information.

Follow these steps to expand VHD hard disks: Open the Hyper-V management tool from the Administrative Tools folder (or by typing virtmgmt.msc in the Run command).

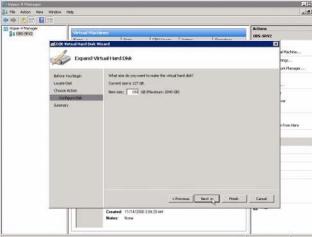
Start the Edit Virtual Hard Disk wizard by selecting Edit Disk...

If the Before you begin window appears, click Next.



Select the virtual hard disk you want to expand. Click Open and then Next.

Select Expand on the Choose Action page and then press Next.



Enter the new size of the virtual hard disk that you want and then press Next.

In the final screen, press Finish.



Wait till the operation finishes, which should be quite fast. Next, after booting the VM, use Disk Management snap-in from the Computer Management tool, or by using the DISKPART command to expand the partition within Windows. While possible in Windows Server 2008 and Windows Vista, unfortunately, in Windows 2000/XP/2003, you cannot use the built-in tools to expand the System Partition (the one the Windows operating system is installed on). For these versions you will need to use of these free partition utilities.

Question: 139

You manage your Hyper-V environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. You plan to perform a virtual-to-virtual (V2V) conversion of existing VMware virtual machines (VMs). You need to choose a type of virtual disk that is supported by VMM. Which type should you choose?

- A. vmfs
- B. vmfsraw
- C. vmfsRawDeviceMap
- D. vmfsPassthroughRawDeviceMap

Answer: A

Explanation:

A .vmx file, which is a VMware virtual machine configuration file. A .vmx file is the text file that describes the properties and structure of a virtual machine, including name, memory, disk assignments, and network parameters. One or more .vmdk (virtual hard disk) files, which are not passed directly as input to the wizard but are listed in the .vmx file. A .vmdk file is a VMware virtual hard disk that contains the virtual machine's guest operating system, applications, and data. Supported VMware virtual hard disk formats include the following:

monolithicSparse
monolithicFlat
vmfs
twoGbMaxExtentSparse
twoGbMaxExtentFlat

Note.

VMM does not support VMware virtual machines with virtual hard disks that are connected to an integrated drive electronics (IDE) bus. Therefore, you cannot perform a V2V conversion of a VMware virtual machine that is on an IDE bus.

Question: 140

You install Windows Server 2008 R2 Enterprise (Server Core Installation). You need to add the Hyper-V role to the server. Which command should you run?

- A. start /w hvconfig
- B. start /w ocsetup Microsoft-Hyper-V
- C. start /w ServerManagerCMD Cinstall Hyper-V
- D. net start " hyper-v virtual machine management "

Answer: B

Explanation:

The following command-line options are available for OCSetup.

ocsetup.exe [/?] [/h] [/help] component [/log:file] [/norestart] [/passive] [/quiet] [/unattendfile:file] [/uninstall] [/x: parameter]

Server Role

Dynamic Host Configuration Protocol (DHCP) Server

Domain Name System (DNS) Server

Windows Deployment Services (Windows DS)

Deployment-Services

Command

start /w ocsetup DHCPServer

start /w ocsetup DNS-Server-Full-Role

start /w ocsetup Microsoft-Windows-

The following table gives examples of using OCSetup to enable Windows features available in server editions.

Windows Feature

Desktop Experience

Failover Clustering

Windows Server Backup

Command

start /w ocsetup DesktopExperience

start /w ocsetup FailoverCluster-FullServer

start /w ocsetup WindowsServerBackup

Troubleshooting

To verify that a component is installed, do one of the following:

Verify in the Event Viewer that OCSetup raised the event

OCSETUP_EVENT_INSTALLSUCCESS.

If you are enabling a Windows feature, in Control Panel, click Programs, under Programs and Features, click

Turn Windows features on or off, and then confirm that the check box for the Windows feature is selected.

To verify that a component was removed, do one of the following:

Verify in the Event Viewer that OCSetup raised the event

OCSETUP_EVENT_UNINSTALLSUCCESS.

If you are disabling a Windows feature, in Control Panel, click Programs, and then, under Programs and Features, click Turn Windows features on or off. Make sure the check box for the Windows feature is cleared.

Additional troubleshooting information can be found in the following log files:

Windows Update log (%WINDIR%\WindowsUpdate.log)

Component-Based Servicing Log (%WINDIR%\logs\cbs\cbs.log)

[http://technet.microsoft.com/en-us/library/cc766272\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc766272(v=ws.10).aspx)

Question: 141

Your virtual environment includes Windows Server 2008 R2 Hyper-V servers. You are deploying a Remote Desktop

Pool. You need to choose an operating system for the virtual machines (VMs) in the pool. Which two operating systems will achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. Windows Vista Enterprise
- B. Windows 7 Enterprise
- C. Windows Server 2008
- D. Windows Server 2008 R2

Answer: A,B

Explanation:

Because Microsoft in the guide of Deploying Virtual Desktop Pools by Using Remote Desktop Web Access Step-by-Step Guide (<http://www.microsoft.com/download/en/details.aspx?id=9647>) explain in page 5 of this document on Technology Review that Virtual desktops can only use Windows® client operating systems. You cannot install Windows Server® 2008 R2 on a virtual machine and add it to a virtual desktop pool.

Question: 142

You work as a Network Administrator at ABC.com. The network consists of a single Active Directory Domain Services (AD DS) domain named ABC.com.

The company network consists of an internal LAN and a perimeter network. To comply with company security policy, servers located in the perimeter network are not members of the ABC.com domain.

A Microsoft Hyper-V Server 2008 R2 server named ABC-VMHost1 is located in the perimeter network. You relocate ABC-VMHost1 into the internal network. You now need to join ABCVMHost1 to the ABC.com AD DS domain.

How should you join ABC-VMHost1 to the ABC.com domain?

- A. You should use the System Properties control panel applet.
- B. You should use the Netsh command line utility.
- C. You should use the Hyper-V configuration utility (hvconfig).
- D. You should use the dcpromo utility.

Answer: C

Explanation:

<http://www.virtualizationadmin.com/articles-tutorials/microsoft-hyper-v-articles/installation-and-deployment/installing-windows-hyper-v-server-2008.html>

Question: 143

You have a Windows Server 2008 R2 Hyper-V server. Hyper-V Manager shows a state of Paused and a status of Disk(s) running out of space for one of the virtual machines (VMs). You delete several unneeded snapshots from the VM snapshot tree, and you resume the VM. After less than one minute, the state of the VM reverts to Paused. You need to enable the VM to return to a state of Running. What should you do first?

- A. Turn off the VM.
- B. Export the VM.
- C. Reset the VM.
- D. Save the VM.

Answer: D



Explanation:

CORRECT - you will recognize that when you delete a snapshot when a VM is running, it goes very fast and no further actions are taken (merge, delete...). Cause the merge can "only" be done when the VM is powered off. after this process is completed all *.AVHD files should be gone (when no more snapshot are available)!

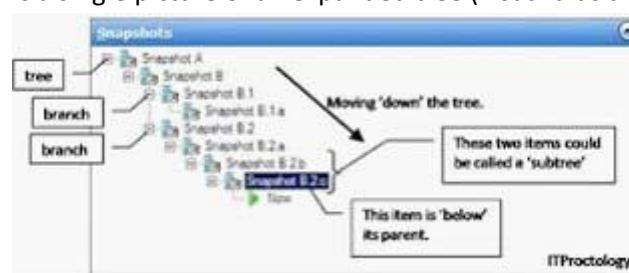
"....To make it simple the current status ("NOW") will be kept and all other snapshot will be gone? Is it right?...."

CORRECT - When you delete a snapshot (tree) and power off the VM, your latest "NOW" status will then be merged. First of all, you can create a snapshot (wow, amazing stuff). This creates a differencing disk that reverences your base VHD, thus you always have that base VHD to return to, and saves your current memory status (if your VM was running).

Second, you can Apply a snapshot. This takes me back to the point in time that is represented by the snapshot I selected. It does this by the same process as above, it creates a differencing disk and attaches it to the VHD that is referenced by the snapshot.

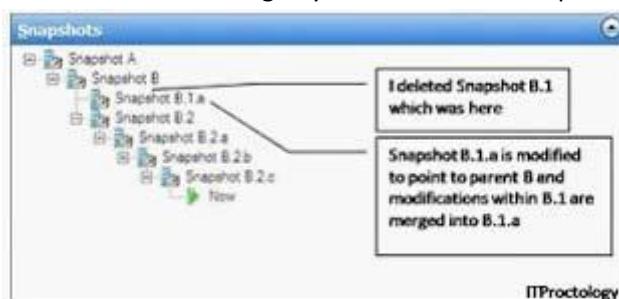
Okay, if I am losing you – you need to back up and read the posts I referenced above.

For the next couple you need to think about trees and the branching of a tree structure. The simplest way to show this is a single picture of an expanded tree (visual aids are always good).



Third, I can delete a single snapshot. This deletes the moment in time that a snapshot represents, its differencing disk and any saved memory state. If a snapshot is 'below' this one on the sub tree, then its reference pointers are modified to reference the proper snapshot 'above' it.

In this example I deleted Snapshot B.1. There are other things happening here as well. To maintain integrity of the snapshot timeline the differencing disks need to be merged. This happens in the background when a VM is powered off and I will save the gritty details for another post.



Fourth, I can delete a snapshot sub tree. This deletes the moment in time that a snapshot represents and any other snapshots that are 'below' it in the tree. Thus it does what a delete does, but without selecting individual snapshots, it takes an entire branch. Yes, we get a merge, not a revert as I mistakenly put in my graphic.

Now, to get started on the really complicated post..what happens under the hood.

I have alluded to this before with the instructions about how to manually merge VHDs. Maybe I need to back up even

more and talk about differencing disks...hmm..

Question: 144

You work as a Network Administrator at ABC.com.

The network consists of a single Active Directory Domain Services (AD DS) domain named ABC.com.

The network is spread over multiple sites in New York.

The network includes many Windows Server 2008 R2 Hyper-V host servers in a datacenter named NY-DC1.

A server named ABC-VMM1 runs Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 and is used to manage the entire virtual environment.

A server named DC1-LibSrv is configured as a dedicated library server in NY-DC1.

The company has recently opened a new datacenter. The new datacenter is named NY-DC2.

You have installed a dedicated library server named DC2-LibSrv in the new datacenter.

You have a VHD file named DC1-2K8Base.vhd on DC1-LibSrv which is used to provision virtual machines (VMs) in NY-DC1.

You copy DC1-2K8Base.vhd to DC2-LibSrv and rename it DC2- 2K8Base.vhd.

You want to provision VMs in NY-DC2 using DC2-2K8Base.vhd on DC2-LibSrv.

Which two of the following steps should you perform? (Each correct answer presents a complete solution. Choose two.)

- A. You should copy the VMM template from DC1-LibSrv to DC2-LibSrv.
- B. You should delete DC1-2K8Base.vhd from DC1-LibSrv.
- C. You should modify the VMM template on DC1-LibSrv.
- D. You should refresh DC1-LibSrv.
- E. You should refresh DC2-LibSrv.

Answer: A,E

Question: 145

You are configuring a new Microsoft System Center Virtual Machine Manager (VMM) 2008 R2 environment to manage your existing virtual infrastructure. The existing infrastructure includes Windows Server 2008 R2 host servers and VMware ESX host servers. You need to add a VMware ESX host server named Host1 to your VMM environment. What should you do?

- A. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of the VMware VirtualCenter server that manages Host1.
- B. In the Add Hostswizard, select the VMware ESX Server host (any location) option. In the Computer name field, type the fully qualified domain name (FQDN) of Host1.
- C. In the Computer name field of the Add VMware VirtualCenterserver dialog box, type the fully qualified domain name (FQDN) of the VMware VirtualCenter server that manages Host1.
- D. In the Computer name field of the Add VMware VirtualCenterserver dialog box, type the fully qualified domain name (FQDN) of Host1.

Answer: C

Explanation:

To add a vCenter Server

Open theFabricworkspace.

In theFabricpane, expandServers, and then click vCenter Servers.

On the Home tab, in the Add group, click Add Resources, and then click VMware vCenterServer. The Add VMware vCenterServer dialog box opens.

In the Add VMware vCenter Server dialog box, do the following:

In the Computer name box, enter the fully qualified domain name (FQDN), NetBIOS name, or IP address of the vCenter Server.

In the TCP/IP portbox, enter the port to use to connect to the vCenterServer. By default, VMM uses TCP/IP port 443 to connect to the server through Secure Socket Layer (SSL).

Question: 146

A company has a Windows Server 2008 R2 Hyper-V server environment, the environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. A virtual machine (VM) is a node in a Windows failover cluster. When possible, all VM disk drives should be configured as dynamic disk drives. You need to add a new disk drive to the VM. The disk drive will be shared with all other nodes in the failover cluster. What should you do?

- A. Install the server application on a physical server with four CPUs.
- B. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- C. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- D. Set the network adapter to use an iSCSI network tag.
- E. Add a disk drive to the VM using the New-VirtualDiskDrive Powershell cmdlet.
- F. Install the server application in a VM with the latest supported integration components.
- G. Assign 1 GB of startup RAM and 16GB of Maximum RAM to the VM.
- H. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- I. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.
- J. Add a disk drive to the VM using the iscsicli.exe command line tool.
- K. Assign 4 GB of static memory to the VM.
- L. Add a disk drive to the VM using the Add-SharedVirtualDiskDrive Powershell cmdlet.
- M. Assign 1 GB of startup RAM and 8GB of Maximum RAM to the VM.

Answer: J

Explanation:

Add new disk shared with cluster iscsicli.exe

You can add storage to a failover cluster after exposing that storage to all cluster nodes (by changing LUN masking or zoning). You do not need to add the storage to the cluster if the storage is already listed for that cluster under Storage in the Failover Cluster Manager snap-in. If you are only adding storage to a particular clustered service or application (not adding entirely new storage to the failover cluster as a whole), see Add Storage for a Clustered Service or Application.

Question: 147

Your company has a Microsoft Hyper-V Server 2008 R2 environment. You manage the virtual environment by using Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. A virtual switch is connected to an external network. You need to ensure that network adapters that are connected to the virtual switch can pass network traffic on only VLAN 100. What should you do?

- A. Set the network tag on the host to VLAN ID 100.
- B. Set the parent partition VLAN ID to 100.
- C. Set the network location on the host to VLAN ID 100.
- D. Set the host network adapter to Trunk mode and add VLAN ID 100.

Answer: D

Question: 148

You are using Microsoft System Center virtual Machine Manager (VMM) 2008 R2 to perform physical-to-virtual (P2V) conversions.

Your company's network includes computers that each run one of the following operating systems:

Windows NT 4.0 Server with NTFS volumes

Windows Server 2003 Standard Edition with FAT volumes

Windows Server 2003 Enterprise Edition x64 with NTFS volumes

Windows Server 2003 Enterprise Edition for Itanium-based Systems with FAT volumes

You need to choose the operating system that can be reliably converted only by using the offline P2V method.

Which operating system should you choose?

- A. Windows NT 4.0 Server with NTFS volumes
- B. Windows Server 2003 Enterprise x64 with NTFS volumes
- C. Windows Server 2003 Enterprise for Itanium-based Systems with FAT volumes
- D. Windows Server 2003 Standard with FAT volumes

Answer: D

Question: 149

DRAG DROP

A company has two Windows Hyper-V Server 2008 R2 failover clusters. One is for the quality assurance (QA) group and one is for the development group.

A user from the development group recently moved to Q

A. The user's VM is currently running and

two programs are open.

You need to migrate the VM while meeting the following requirements:

The VM must reside on the QA failover cluster.

The current state of the VM must remain the same after the migration.

Which four actions should you perform in sequence? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

Import the VM on the QA failover cluster.
Right-click the VM and click the **Start** option.
Stop the Virtual Machine Management service on the development group failover cluster.
Right-click the VM and click the **Pause** option.
Right-click the VM and click the **Export** option.
Right-click the VM and click the **Reset** option.
Import the VM on the development group failover cluster.
Right-click the VM and click the **Save** option.

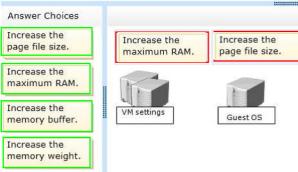
Answer:

Import the VM on the QA failover cluster.	Right-click the VM and click the Save option.
Right-click the VM and click the Start option.	Right-click the VM and click the Export option.
Stop the Virtual Machine Management service on the development group failover cluster.	Import the VM on the QA failover cluster.
Right-click the VM and click the Pause option.	Right-click the VM and click the Start option.
Right-click the VM and click the Export option.	
Right-click the VM and click the Reset option.	
Import the VM on the development group failover cluster.	
Right-click the VM and click the Save option.	

Explanation: Box 1:

Box 2:

Box 3:



Box 4:

Note:

- * First, make sure the VM is shut down, or save its state. You cannot export a VM unless it's shut down or in a saved state.
- * When you want to manually move a virtual machine from one Hyper-V host to another, you must use the "Export" option on the source VM, and then the "Import Virtual Machine" option on the target machine.

Question: 150

DRAG DROP

A company uses Microsoft Hyper-V Server 2008 R2 with SP1 for hosting virtual machines (VMs). All of the VMs are running Microsoft Windows Server 2008 R2 with SP1 and the integration services are upgraded to SP1. Some of the VMs are used for development and testing and some of the VMs are used for business critical applications. Dynamic Memory is enabled on all of the VMs. However, memory performance is unsatisfactory on a business critical application VM. You ascertain that the host server does not have enough memory to allocate the amount of memory being requested by each VM. You need to ensure that Hyper-V prioritizes memory distribution to VM01. What should you do? (To answer, drag the appropriate setting from the list of choices to the correct locations in the answer area.)

Answer:

Explanation:

VM Settings: Increase the maximum RAM.

Guest OS: Increase the page file.

Note:

* increase the memory available to the Virtual Machine by Increase the maximum RAM available to it.

* Increase the virtual memory in the guest OS by increasing the page file.

Question: 151

A company has three servers that run Windows Server 2008 R2 with Hyper-V. The servers are configured as a three-node failover cluster and host 28 virtual machines (VMs). The nodes are named NODE01, NODE02, and NODE03. NODE01 and NODE02 use the same processor version but NODE03 uses a different processor version. Hyper-V Live Migration and Quick Migration are not working between NODE03 and the other two nodes. However, Live Migration and Quick Migration are working between NODE01 and NODE02. You need to ensure that Live Migration and Quick Migration function between NODE03 and the other two nodes.

What should you do?

- A. On the VMs, reduce the number of processors to one.
- B. On the VMs, enable processor compatibility mode.
- C. On the VMs, enable the Run an older operating system, such as Windows NT processor compatibility option.
- D. On NODE03, enable processor compatibility mode.

Answer: C

Question: 152

A company has the following servers that run Windows Server 2008 R2 in their Remote Desktop Services (RDS) environment:

Remote Desktop Gateway (RD Gateway)

Remote Desktop Session Host (RD Session Host)

Remote Desktop Web Access (RD Web Access)

Remote Desktop Virtualization Host (RD Virtualization Host)

You enable Remote Desktop Web Connection.

You need to modify the default device and resource redirection options for Remote Desktop Web Connection. What should you do?

- A. Use Internet Information Services (IIS) Manager to modify the Application Settings options on the RD Web Access server.
- B. Use Internet Information Services (IIS) Manager to modify the Application Settings options on the RD Session Host server.
- C. Modify the %windir%\Web\RDWeb\Pages\Web.config file on the RD Session Host server.
- D. Modify the %windir%\Web\RDWeb\Pages\Web.config file on the RD Gateway server.

Answer: B

Question: 153

A company has a server that runs Windows Server 2008 R2 Enterprise with Hyper-V. This server is in the perimeter network. The company has a server in the corporate network that runs Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. The corporate network and the perimeter network are separated by a firewall.

The company has the following requirements:

The Hyper-V host must be added to the VMM server.

The IT department must be able to connect to and manage the virtual machines (VMs) running on the Hyper-V host. You need to configure the firewall to meet the requirements. Which ports should you open on the firewall?

- A. 80, 443, and 2179
- B. 80, 443, and 8100
- C. 80, 2179, 3389, and 8100
- D. 443, 2179, and 3389

Answer: A

Question: 154

A company has a Windows Server 2008 R2 Hyper-V server environment. The environment is managed with Microsoft System Center Virtual Machine Manager (VMM) 2008 R2. There is an existing Remote Desktop (RD) server farm that uses Windows Network Load Balancing (NLB). You need to add a virtual machine (VM) to the RD server farm while meeting the following requirements:

The operating system must be deployed to the VM by using PXE and System Center Configuration Manager (ConfigMgr) 2007 R2.

After deployment, the VM must converge with the existing NLB cluster.

CPU utilization must be minimized.

What should you do?

- A. Set the network adapter to use an iSCSI network tag.
- B. Install the server application on a physical server with four CPUs.
- C. Install the server application in a VM with the latest supported integration components.
- D. Assign 4 GB of static memory to the VM.
- E. Assign 1 GB of startup RAM and 8 GB of maximum RAM to the VM.
- F. Assign 1 GB of startup RAM and 16 GB of maximum RAM to the VM.
- G. Add a disk drive to the VM by using the iscsicli.exe command line tool.
- H. Add a disk drive to the VM by using the New-VirtualDiskDrive PowerShell cmdlet.
- I. Add a disk drive to the VM by using the Add-SharedVirtualDiskDrive PowerShell cmdlet.
- J. Add a synthetic network adapter to the VM and select the Enable spoofing of MAC addresses option.
- K. Add a synthetic network adapter to the VM and select the Enable virtual network optimizations option.
- L. Add an emulated network adapter to the VM and select the Enable spoofing of MAC addresses option.
- M. Add an emulated network adapter to the VM and select the Enable virtual network optimizations option.

Answer: L

Question: 155

A company has a two-node Hyper-V failover cluster that runs Windows Server 2008 R2 Enterprise. The two nodes have different process versions.

When you try to perform a Hyper-V Live Migration of a virtual machine (VM) from one node to the other, you receive the following error message: "There was an error checking for virtual machine compatibility on the target node."

The VM is configured to use dynamic memory.

You need to ensure that the Live Migration completes without any errors.

What should you do?

- A. Enable the Run an older operating system, such as Windows NT processor compatibility option on the VM.

- B. Enable the Migrate to a physical computer with a different processor version processor compatibility option on the VM.
- C. Configure the VM to use static memory.
- D. Increase the startup RAM to 2048 MB.

Answer: B
