Installing and Upgrading InfoSphere VDP - Global Manager on a Hyper-V Server

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Contents

Introduction

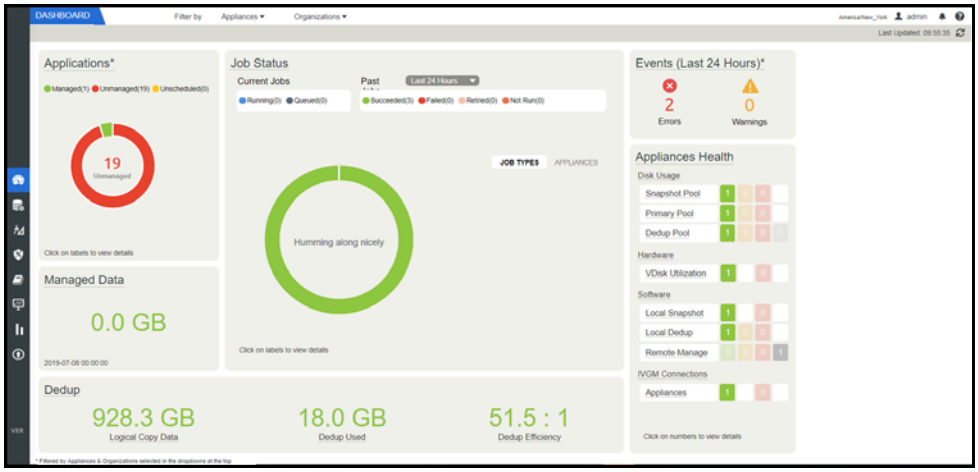
IBM InfoSphere VDP - Global Manager (IVGM) is a virtual appliance that provides centralized management capabilities that can be deployed on standard Microsoft Hyper-V servers. From one centralized IVGM management system, you use the IVGM web-based UI to manage multiple VDP appliances and perform various day-to-day copy data operations. VDP appliances are the highly scalable copy data platforms that virtualize application data to improve the resiliency, agility, and cloud mobility of your business.

With IVGM you can manage many IBM InfoSphere appliances. IVGM communicates with each VDP appliance by IP address or fully qualified domain name (FQDN) of the appliance. When you add a VDP appliance to IVGM, all SLA templates, organizations, users, and roles are imported into the IVGM database and become IVGM-level objects. You can then use these objects across all managed VDP appliances.For more information on Catalog, see the IVGM Online Help.For more information on Catalog, see the IVGM Online Help. As of IVGM 8.0.4, you can install IVGM with or without the Catalog feature. For more information on Catalog, see the IVGM Online Help.

IBM InfoSphere Report Manager (RM) Integration with IVGM

As of IVGM 9.0.2, Report Manager (RM) can now be installed as part of IVGM and run in the same virtual machine (additional memory and CPU are required). This integration simplifies deployment and streamlines ongoing management. When deployed in this integrated configuration:

- User authentication to RM is done via IVGM, instead of one of the appliances. This means that any IVGM user
- can log in to RM.
- Organization membership information is pulled from IVGM.
- All appliances managed by IVGM are automatically added to RM. Additional appliances can be manually added to RM.
- All upgrades are done through the IVGM UI and include upgrades to both IVGM and RM components.
- The IVGM version is always listed, even from the RM Help > About dialog.



1 Requirements

This chapter details the system requirements for IVGM with or without Catalog and also the requirements for IVGM and RM installation.These requirements include:

Software Requirements

IVGM and RM support appliances running 8.x and 9.0.x.RM Requirements

IVGM VM Requirements

During deployment, IVGM will optionally come up with additional services of catalog and Report Manager according to the resources allocated to the VM.

IVGM Only (Without Catalog or RM)

- Reserved 4 virtual CPUs*
- Reserved 8 GB of memory*
- 50 GB free datastore space
- One(1) virtual network interface card (vNIC)
- A static (and unique) IPv4 address**

*Both the virtual CPU as well as virtual RAM allocation should be reserved.

IVGM With Catalog

- Reserved 8 virtual CPUs*
- Reserved 20 GB of memory*
- Three (3) separate virtual disks for storage:
  - One 50 GB disk for the operating system and IVGM repository
  - One 250 GB disk for the catalog index
  - One 400 GB disk to store backups of the catalog data

*Both the virtual CPU as well as virtual RAM allocation should be reserved.

IVGM With RM

- Reserved 6 virtual CPUs*

- Reserved 16 GB of memory*
- 50 GB free datastore space
- 250 GB free datastore space for Report Manager data
- One (1) virtual network interface card (vNIC)
- A static (and unique) IPv4 address

*Both the virtual CPU as well as virtual RAM allocation should be reserved.

IVGM With Catalog and RM

- Reserved 10 virtual CPUs*
- Reserved 28 GB of memory*
- Four (4) separate virtual disks for storage:
  - One 50 GB disk for the operating system and IVGM repository
  - One 250 GB disk for the catalog index
  - One 400 GB disk to store backups of the catalog data
  - One 250 GB disk for Report Manager.
- One(1) virtual network interface card (vNIC)
- A static (and unique) IPv4 address***

*Both the virtual CPU as well as virtual RAM allocation should be reserved.

Supported IVGM-RM Configurations

The following table lists the supported IVGM-RM configurations.

Configuration	Cores (Virtual CPUs)	RAM (GB)	Base Partition Size (GB)	Additional Partitions (Minimum Size)
IVGM (without Catalog or RM)	4	8	50	-
IVGM with Catalog (no RM)	8	20	50	One 250 GB partition + One 400 GB partition
IVGM with RM (no Catalog)	6	16	50	One 250 GB partition
IVGM with Catalog and RM	10	28	50	Two 250 GB partitions + One 400 GB partition

Port Requirements

The following table details the required IVGM port settings:*

Description	Port	Initial Connection Request*
Management of IBM InfoSphere VDP appliances by IVGM	TCP-5103 and TCP-443 if there is a firewall in the network	Outbound
Web browser access to IVGM	TCP-443	Inbound
Remote CLI access to IVGM	TCP-26 and, optionally, port TCP-22	Inbound
LDAP server authentication/ authorization	Plain text LDAP: TCP-389 LDAP over SSL: TCP-636	Outbound

Once the connection is established data flow is bidirectional.

Web Browser Requirements

The IVGM UI supports the following minimum web browsers:

- Google Chrome version 74.0 and higher
- Microsoft Internet Explorer version 11.0 and higher
- Mozilla Firefox version 68 and higher

The recommended minimum display screen resolution is 1280 x 1024 for running the IVGM UI in a web browser.

2 Best Practices for IVGM High Availability

VMware HA provides high availability for virtual machines by pooling them and the hosts they reside on into a cluster. Hosts in the cluster are monitored and in the event of a failure, the virtual machines on a failed host are restarted on alternate hosts.

There are two primary failover use cases with an IBM InfoSphere VDP - Global Manager VM that require VMware's HA capabilities:

- Planned Failover: This includes DRS, DPM, and vMotion migrations of the IVGM VM to other clusters due to operational requirements, maintenance windows, and so on. These operations should be expected to succeed and running jobs will continue and complete during the IVGM VM migration. IVGM will continue to operate normally during this operation. During failover you may encounter some performance issues.
- Host Failure: For any scenario where the host was not cleanly shut down, including host failure. VMware HA can perform a restart of the IVGM VM on another host in the HA cluster.

This chapter details

Distributed Resource Scheduler (DRS) and Distributed Power Management (DPM)

Using VMware HA with DRS combines automatic failover with load balancing. This combination can result in faster rebalancing of virtual machines after VMware HA has moved virtual machines to different hosts.

In some scenarios, VMware HA might not be able to fail over virtual machines because of resource constraints. This can occur if HA admission control is disabled and DPM is enabled. This can result in DPM consolidating virtual machines onto fewer hosts and placing the empty hosts in standby mode leaving insufficient powered-on capacity to perform a failover.

In such cases, VMware HA will use DRS to try to adjust the cluster (for example, by bringing hosts out of standby mode or migrating virtual machines to defragment the cluster resources) so that HA can perform the failovers.

If DPM is in manual mode, you might need to confirm host power-on recommendations. Similarly, if DRS is in manual mode, you might need to confirm migration recommendations.

Affinity Rules

An affinity rule is a setting that establishes a relationship between two or more VMware virtual machines (VMs) and hosts. Affinity rules and anti-affinity rules tell the vSphere hypervisor platform to keep virtual entities together or separated.

If you are using VM-Host affinity rules, VMware HA will not perform a failover if doing so violates one of those rules.

Resource Pools

One of the benefits of resource pools is that they allow you to separate memory and CPU allocations from hardware. For example, if you are using clusters enabled for DRS, the resources of all hosts are always assigned to the cluster. That means administrators can perform resource management independently of the actual hosts that contribute to the resources. If a VM uses resource pools, the resources in its pools follow the VM, regardless of where in the cluster the VM is moved.

For more information on VMware and HA, consult your VMware documentation.

Configuring VMware for IVGM HA Failover

IVGM supports VMware HA and DRS/DPM. To use these features to use VMware HA to failover IVGM you must consider the following:

Note: *As to be expected, there will be some performance degradation after the VM has failed over and restarted. Once an IVGM VM has failed over and is running on a new ESX host in the cluster, performance will return to normal levels.*

- Storage Accessibility: Movement of an IVGM VM from one ESX host or storage system to another using vMotion and/or DRS/DPM is supported. For this reason, IBM InfoSphere recommends that the IVGM VM disk devices reside on storage that is accessible to all hosts in the ESX cluster.
- Host vMotion: Host vMotion is supported provided you meet all of VMware's requirements for host vMotion. There is no need to shut down the IVGM VM for a host vMotion operation. Host vMotion has minimal impact on performance.
- Storage vMotion: Storage vMotion is supported provided you meet all of VMware's requirements for Storage vMotion. Keep in mind that CPU utilization can trigger CPU alarms when running multiple Storage vMotion jobs in parallel. IBM InfoSphere recommends not performing a Storage vMotion while the IVGM VM is powered on.

  Note: *The IVGM user interface does not allow you to shut down IVGM. To shut down IVGM you must power down the IVGM VM from the vSphere interface.*

- VMware Fault Tolerance Configurations: IVGM does not support the VMware Fault Tolerance feature.
- Use of Resource Pools with IVGM VMs: Manage IVGM VM's resources with reserved resource pools. This ensures that the allocated (reserved) memory and CPUs for the IVGM VM follow the IVGM VM regardless of where VMware moves the VM. See IVGM VM Requirements on page 5 for memory and CPU requirements.
- Networking Considerations: Network implementation and capacity for the HA cluster must allow for seamless failover of the IVGM VMs and the entire IBM InfoSphere appliance-managed network infrastructure must be accessible to the IVGM VMs during failover (for example, DNS and NTP).
- Resource Pools: When adding an IVGM VM to a Resource Pool, do not over-commit the pool resources. Configure a dedicated resource pool for the IVGM VM. Ensure that the VMware HA cluster nodes have sufficient resources to handle all moved or recovered IVGM VMs.
- VMware Slot Calculations: Ensure VMware HA slot calculations for the IVGM's HA cluster is running.
- Frequency of Planned Failovers: Keep the frequency of planned failovers to a minimum. Only move IVGM VMs between cluster hosts when necessary for maintenance operations or long term migrations. Ensure DRS and DPM only move the IVGM VM when it is absolutely necessary and performed during periods the IVGM VM is least busy.

Protecting the IVGM VM

The IVGM VM can be protected like any other VM. As a best practice, always protect your IVGM VM before upgrading its software.

The IVGM Online Help provides step-by-step instructions that walk you through:

- Adding the server on which the VM resides.
- Discovering VMs. In this case the IVGM VM.
- Protecting VMs. You will need to select one of the IBM InfoSphere appliances that the IVGM VM manages to perform the actual protection.
- Restoring VMs.

When protecting the IVGM VM you have several options for where the protected image(s) will reside:

- Local to the data center in which the IVGM VM resides.
- Local to the data center in which the IVGM VM resides and another data center where the IVGM VM manages a VDP appliance.
- Local to the data center in which the IVGM VM resides and in a cloud object store (OnVault).
- In a cloud object store only (Direct to OnVault).

Where captured images reside depends on your business needs and the risks you are willing to assume. For example:

- IVGM VM images that reside in your local data center ensure that your IVGM VM is recoverable as quickly as possible if you encounter issues with your VMware environment.
- IVGM VM images kept at a remote site or in the cloud ensure that your IVGM VM is recoverable if your data center experiences a catastrophic event.

3 Deploying the IVGM VHDX Using Hyper-V Manager

Before you begin:

- Review Requirements on page 5.
- Get a copy of the IVGM VHDX file (`IVGM<version>.vhdx.zip`) from IBM InfoSphere Support. Unzip the file and store it in a location that is accessible by the Hyper-V hypervisor that will host the IVGM VM.

Note: *Because the IVGM VM is deployed like any other VHDX, only the sections that are specific to IVGM deployment are called out in this section.*

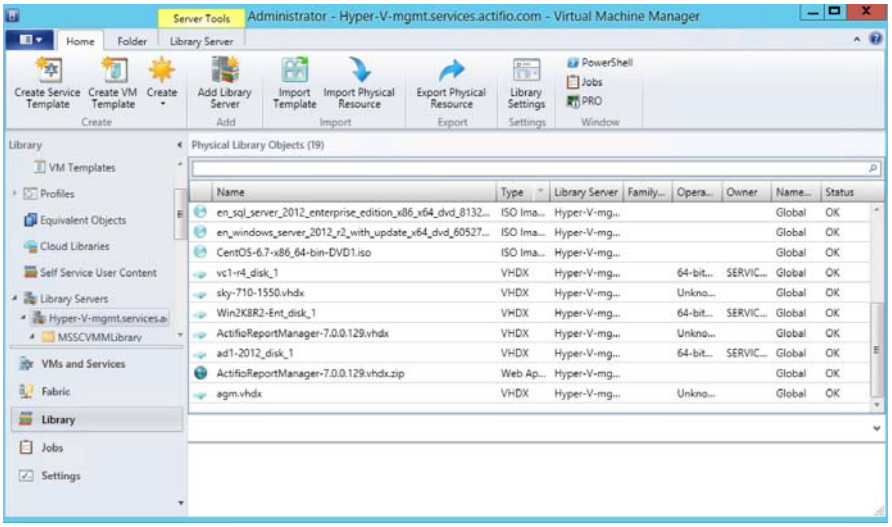
This section includes instructions on:

- Deploying the IBM InfoSphere VHDX in SCVMM on page 13
- Deploying the IBM InfoSphere VHDX using Hyper-V Manager on page 21

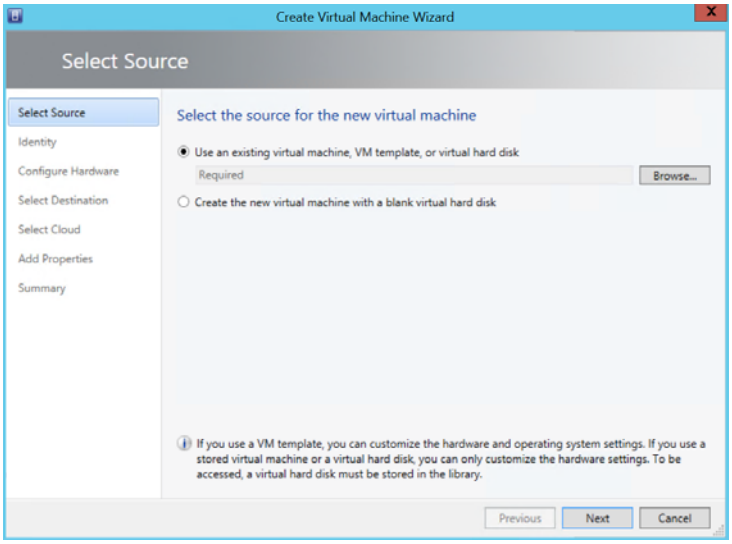
Deploying the IBM InfoSphere VHDX in SCVMM

You deploy the IVGM VHDX in SCVMM like any other Hyper-V VM. The following procedure show SCVMM running on Windows 2012 R2.

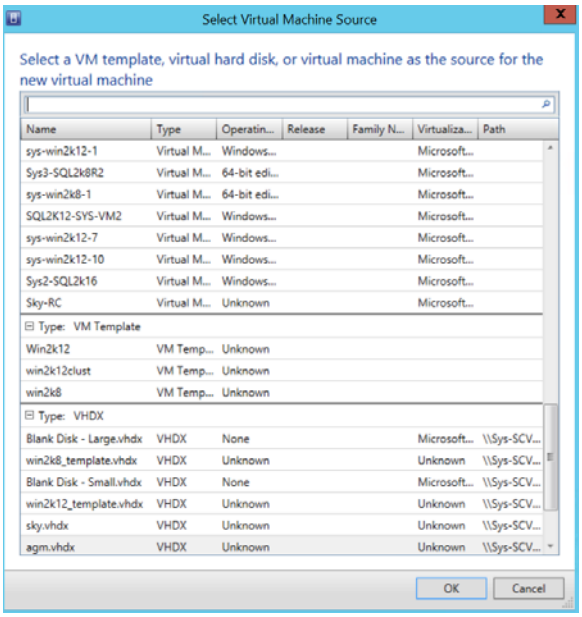
1. Copy the unzipped IVGM VHDX file you received from IBM InfoSphere Support into the VMM Library location.
2. Launch SCVMM.
3. Select **Library** in bottom left pane, then select **Library Servers**.
4. Right-click the server, click **Refresh** and verify the ivgm.vhdx file is listed in the library server.



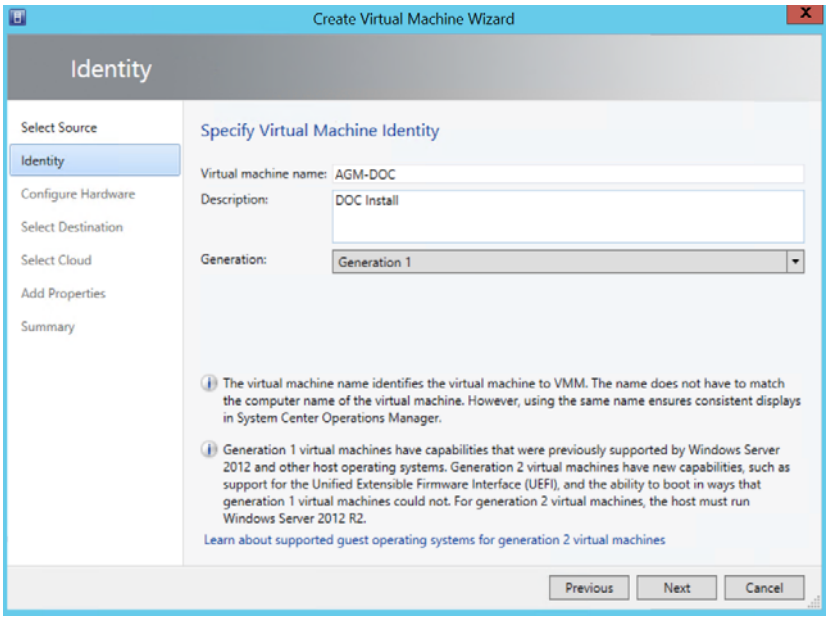
5. Click **VMs and Services** in the bottom left pane. Then go to the top menu bar of the interface.
6. Click **Create Virtual Machine** drop-down and then select **Create Virtual Machine** from the list. The Create Virtual Machine Wizard opens and shows the Select Source page.



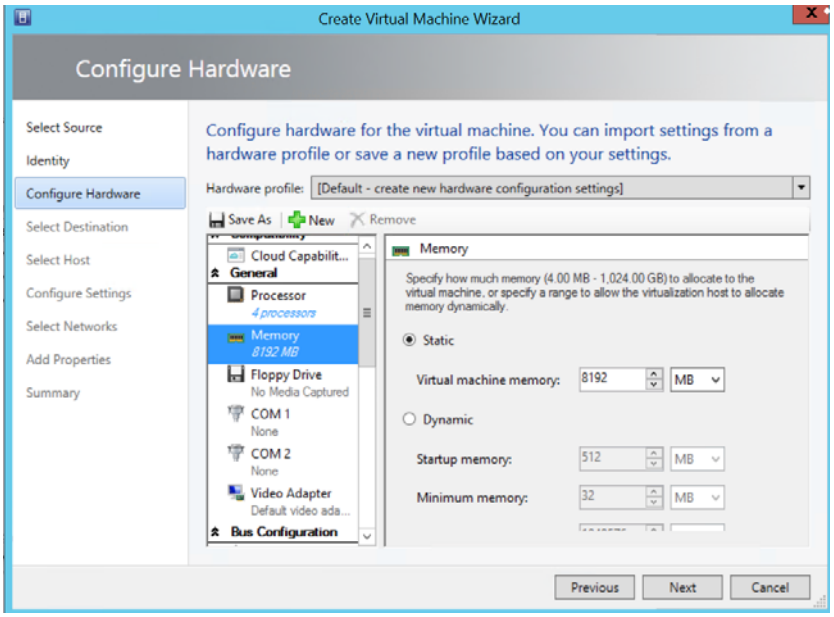
7. Keep the default selection of use an existing virtual machine, and click **Browse**.
8. From the select virtual machines list that opens, select the IVGM vhdx file.



9. Click **OK** to close the list and go back to the Select Source page.
10. Click **Next**. The Identity page opens.
11. In the Virtual machine name, add a unique name. This is the name Hyper-V will use. Optionally, add a description, and keep the default Generation 1.



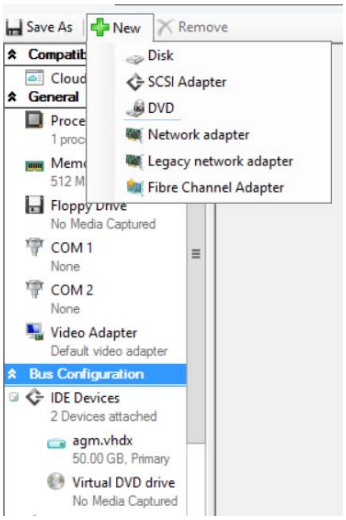
12. Click **Next**. The Configure Hardware page opens.
13. Configure hardware specifications for the VM (optional). For example, in Startup Memory, enter 8192MB to deploy IVGM without Catalog.



For IVGM with Catalog deployments, you can optionally create additional disks. If you want to create disks at a later time, or to deploy IVGM without Catalog, go to step 14.

To create additional hard disk:

a. In the **Bus Configuration** section, select **IDE Devices**.
b. Click **New** and select **Disk** from the drop-down options.

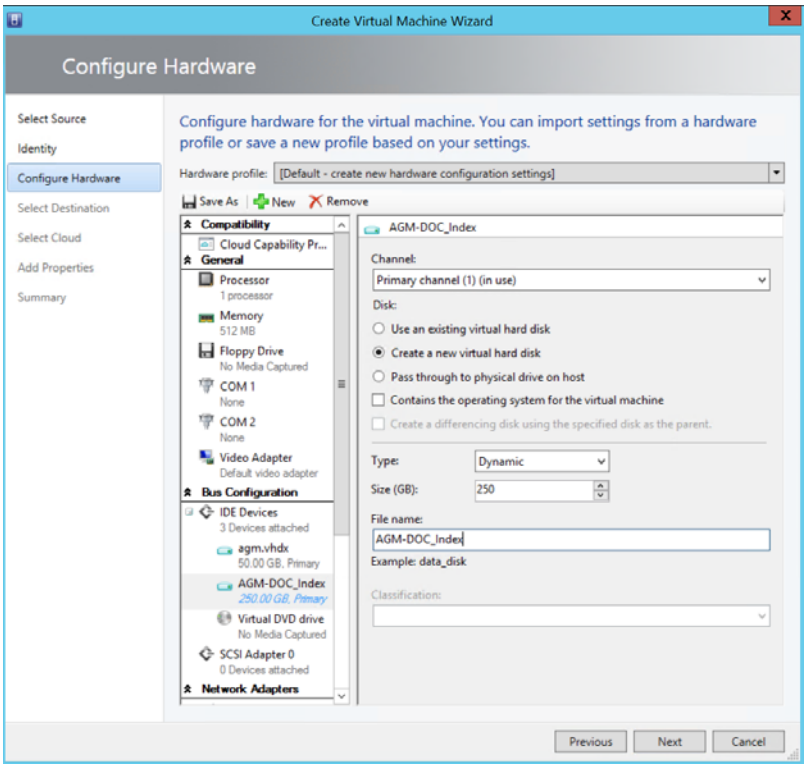


c. Optionally, click the **Channel** drop-down and select the channel to use.

d. Keep the default disk selection of Create a new virtual hard disk and Type Dynamic.

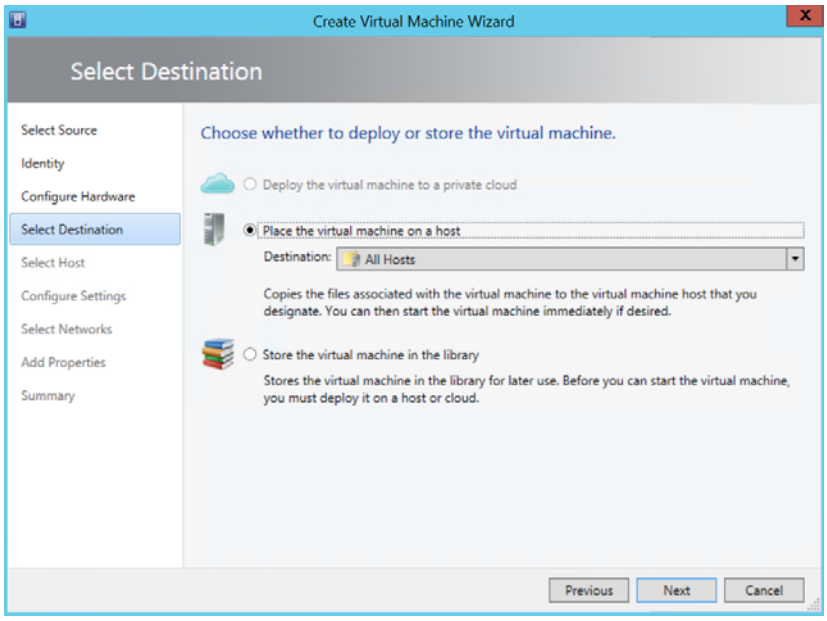
e. In **Size**, enter 250 GB for the Index hard disk or 400 GB for the Catalog disk.

f. In **File name** give a unique name, for example, for the index hard disk, you can enter IVGM Index.

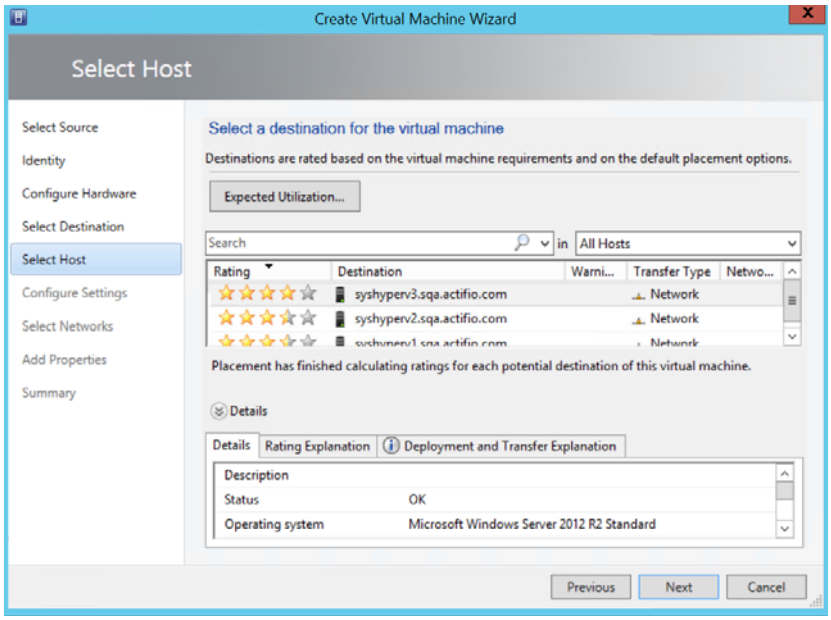


14. Click **Next**. The Destination page opens.

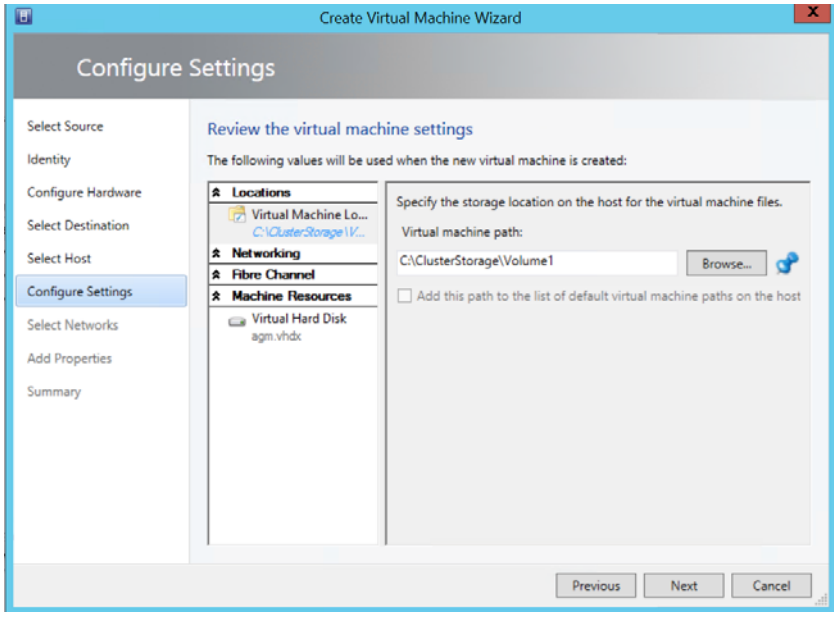
15. Keep the default selection of placing the virtual machine on a host (optional).



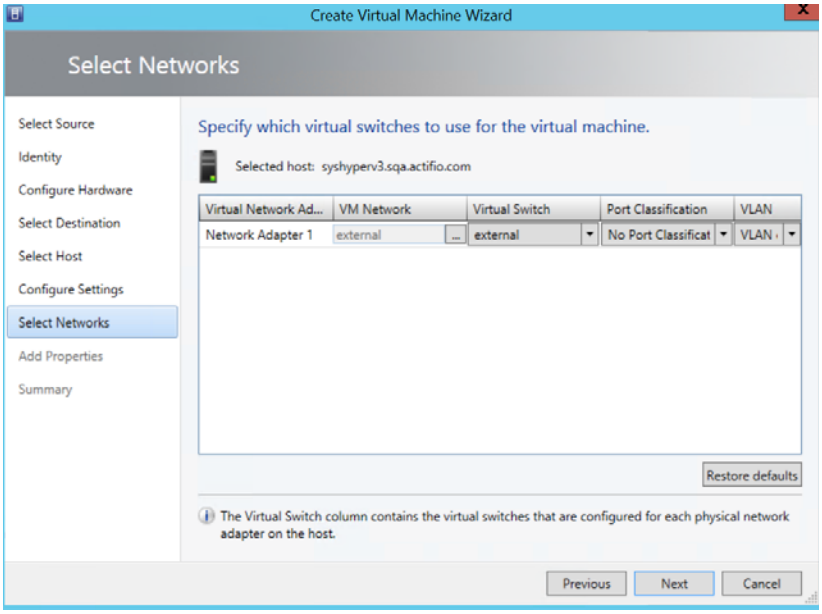
16. Click **Next**. The Select Host page opens.
17. Select a host from the drop-down options (optional).



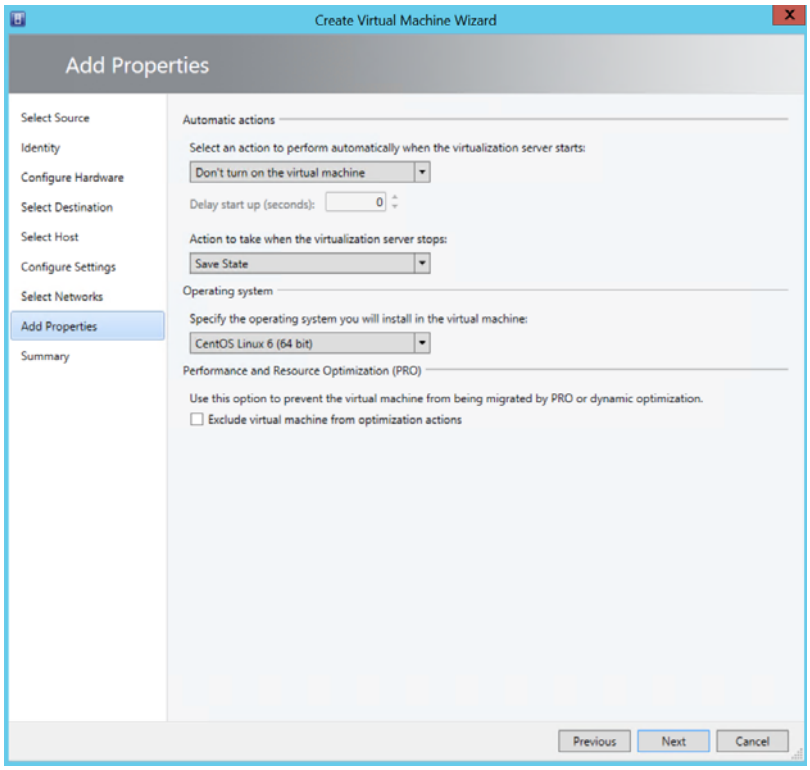
18. Click **Next**. The Configure Settings page opens.
19. Specify the virtual location for the VM (optional).



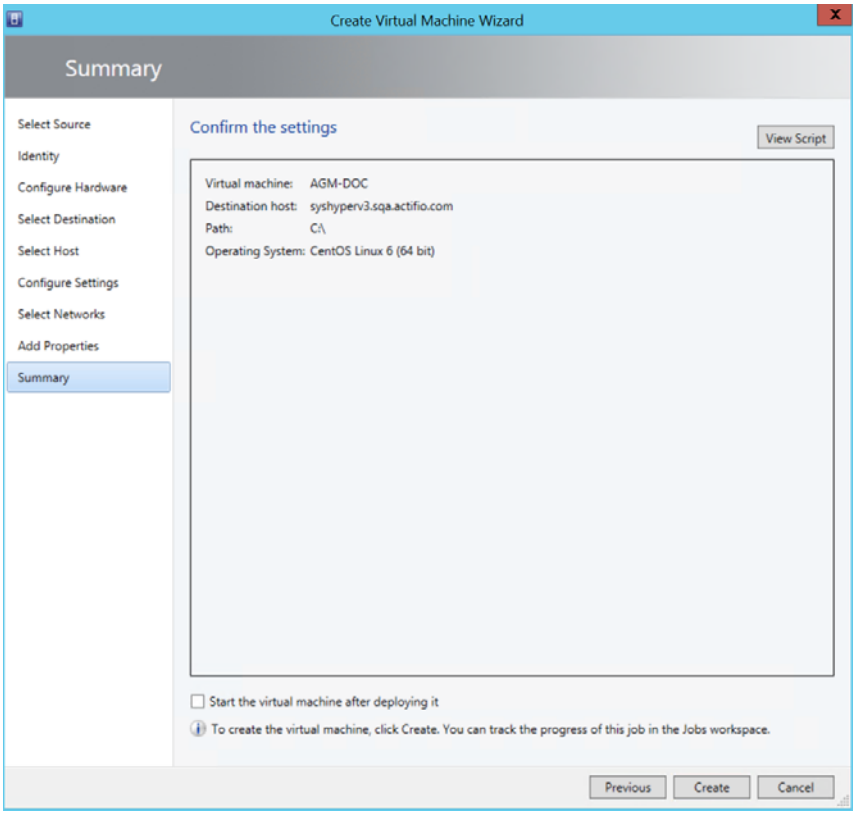
20. Click **Next**. The Select Networks page opens.
21. Select the network connection for the IVGM to use (optional).



22. Click **Next**. The Add Properties page opens.



23. Configure the VM properties needed and click **Next**. The Summary page open.

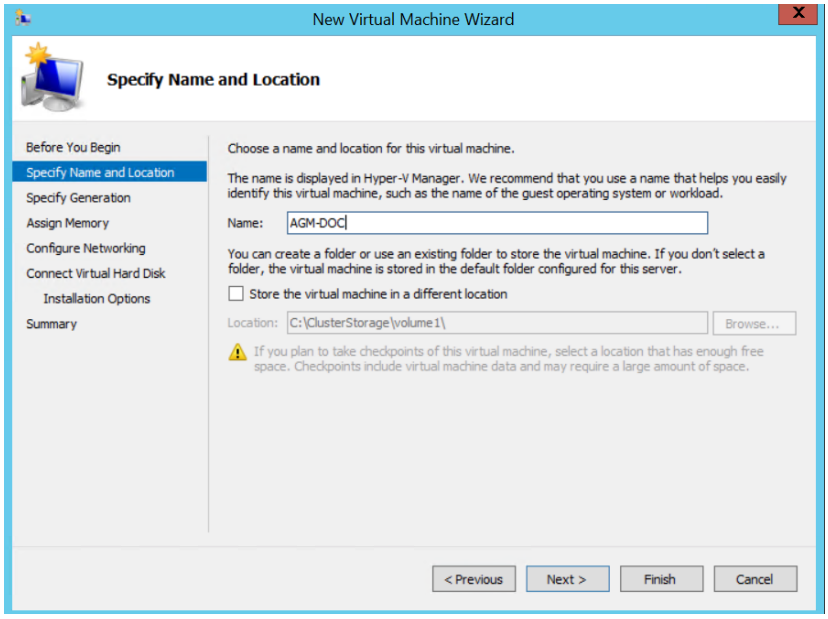


24. Review the summary. Check the Start the virtual machine after deploying it, if you want the VM to power on as soon as deployment is complete.
25. Click **Create**. You can view the progress of the VM creation in the Jobs workspace.
26. Continue to Adding or Removing Resources for Catalog on page 25.

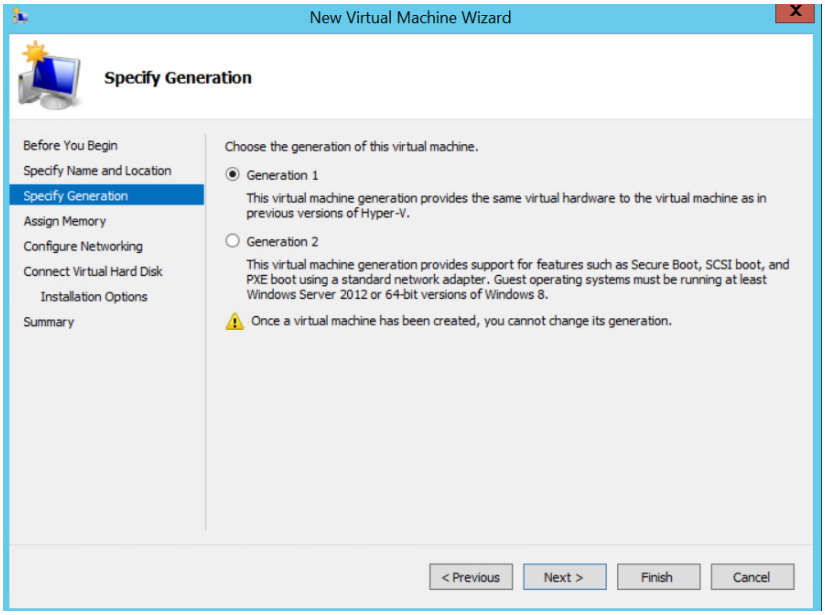
Deploying the IBM InfoSphere VHDX using Hyper-V Manager

To deploy the IVGM VHDX:

1. Open the Hyper-V Manager.
2. Click **Action>New>Virtual Machine**. The New Virtual Machine Wizard opens the before you begin page. Read the instructions and click **Next** to open the Name and Location page.
3. In **Name**, enter a unique name for the IVGM virtual machine. This is the name Hyper-V will use.

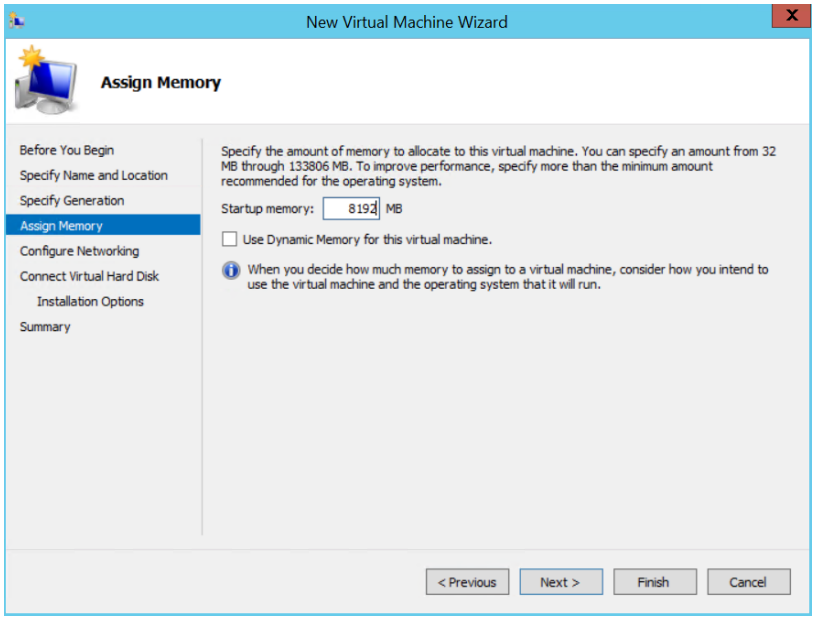


4. Click **Next**. The Specify Generation page opens.

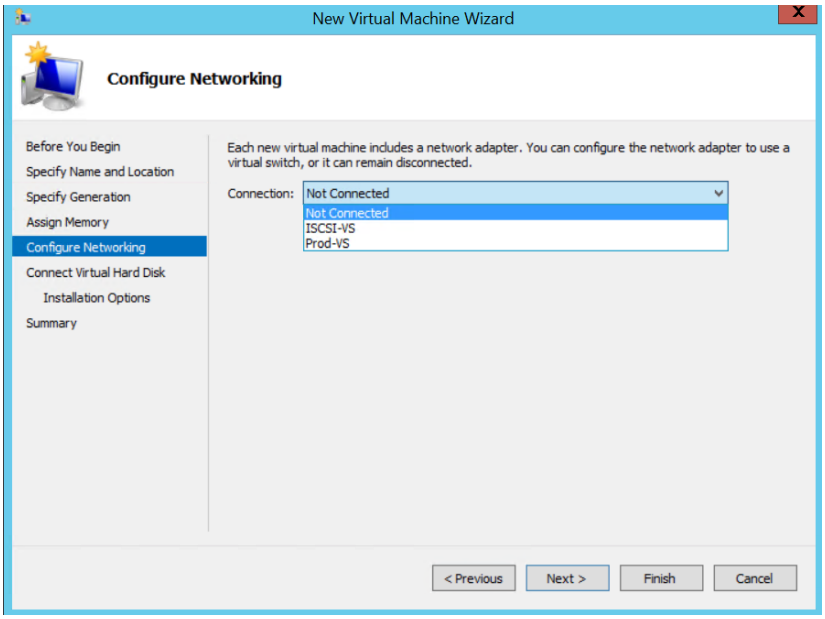


5. Keep the default selection of Generation 1 and click **Next**. The Assign Memory page opens.

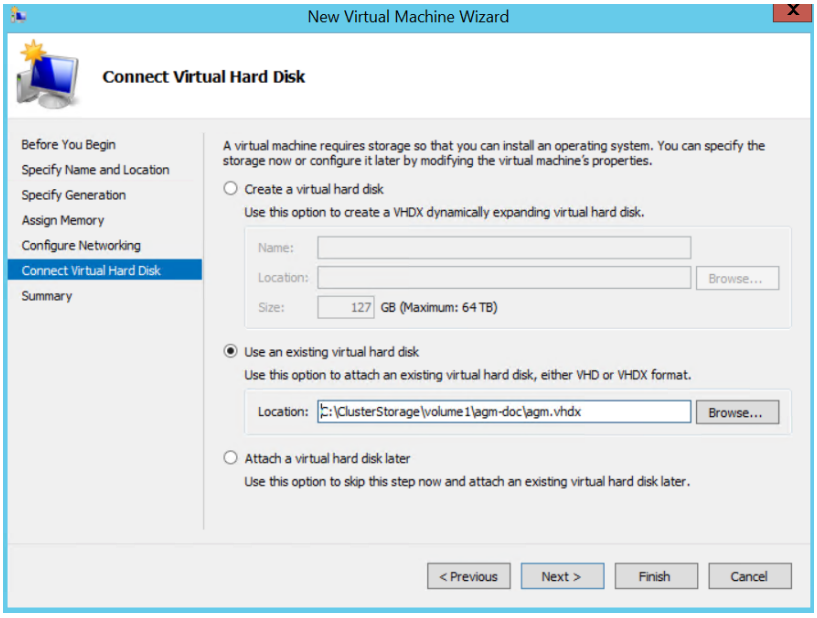
6. In Startup Memory, enter 8192MB to deploy IVGM without Catalog. If you plan to use IVGM with Catalog, enter 20480 (1024x20).



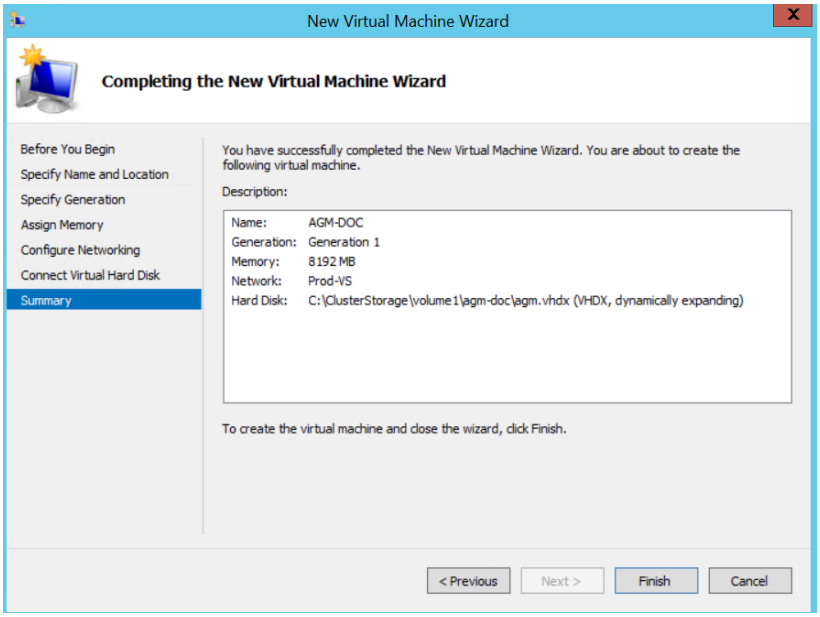
7. Click **Next**. The Configure Networking page opens.
8. Click the **Connection** drop-down and select the network connection for the IVGM to use.



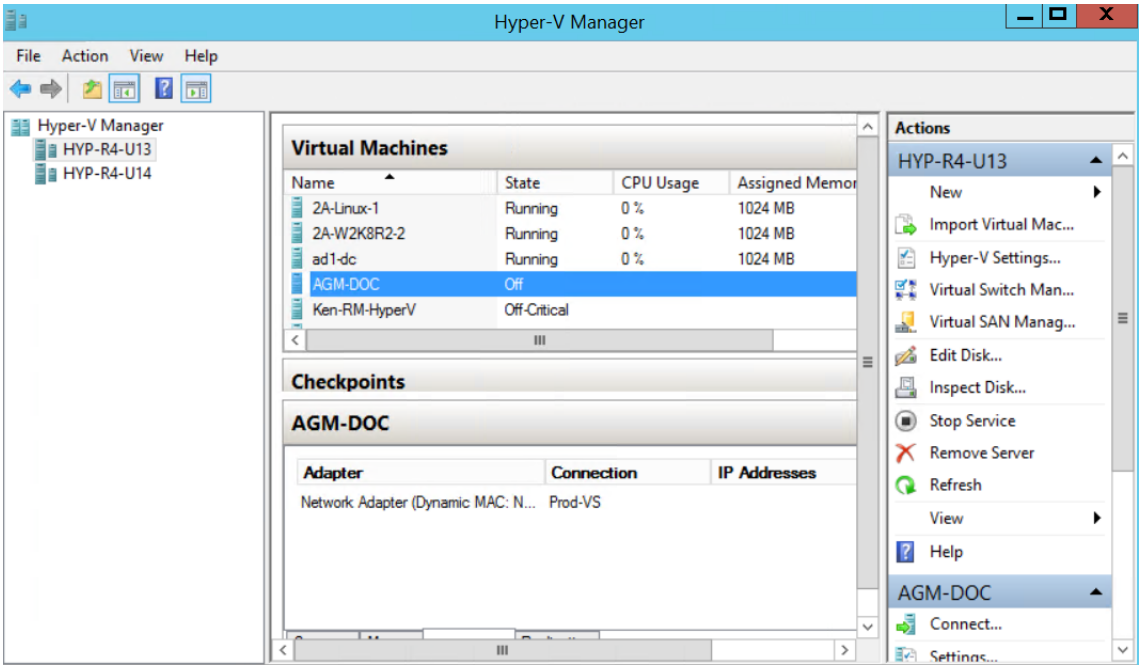
9. Click **Next**. The Connect Virtual Hard Disk page opens.
10. Select **Use an existing virtual hard disk** (second option). For Location, click **Browse** and go to the where you stored the unzipped vhdx file on your Hyper-V server.



11. Click **Next**. The summary page opens. (See next page).



12. Review your selections and click **Finish** to complete VM deployment. The newly deployed VM is listed in the Virtual Machines list. Continue to Adding or Removing Resources for Catalog on page 25.


Hyper-V Manager
File
Action
View
Help
Hyper-V Manager
HYP-R4-U13
HYP-R4-U14
Virtual Machines
Name
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CPU Usage
Assigned Memor
2A-Linux-1
Running
0 %
1024 MB
2A-W2K8R2-2
Running
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1024 MB
ad1-dc
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AGM-DOC
Off
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Off-Critical
Checkpoints
AGM-DOC
Adapter
Connection
IP Addresses
Network Adapter (Dynamic MAC: N...
Prod-VS
Actions
HYP-R4-U13
New
Import Virtual Mac...
Hyper-V Settings...
Virtual Switch Man...
Virtual SAN Manag...
Edit Disk...
Inspect Disk...
Stop Service
Remove Server
Refresh
View
Help
AGM-DOC
Connect...
Settings...

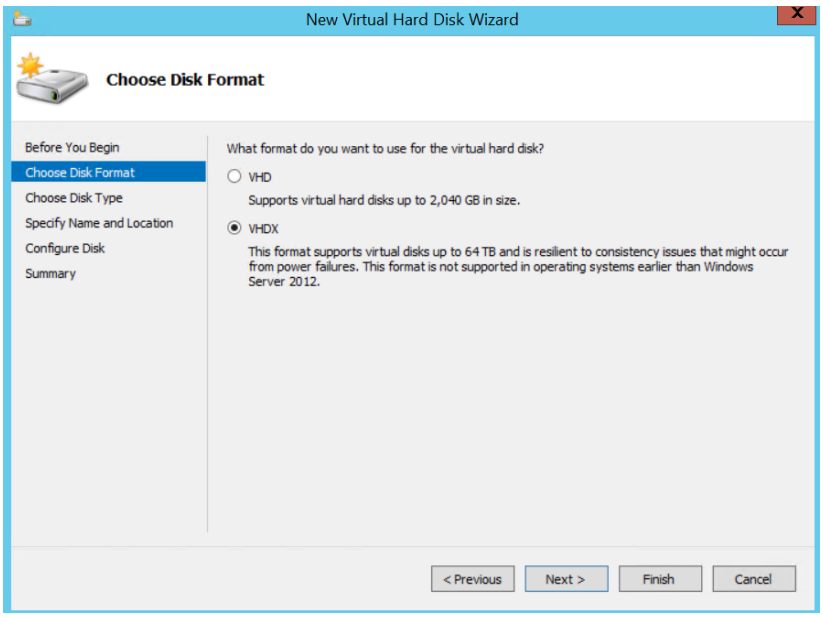
4 Configuring IVGM-RM

Once the IVGM VM has been deployed, configure CPUs, change memory and add or remove the disks for the IVGM VM using the instructions in this chapter.

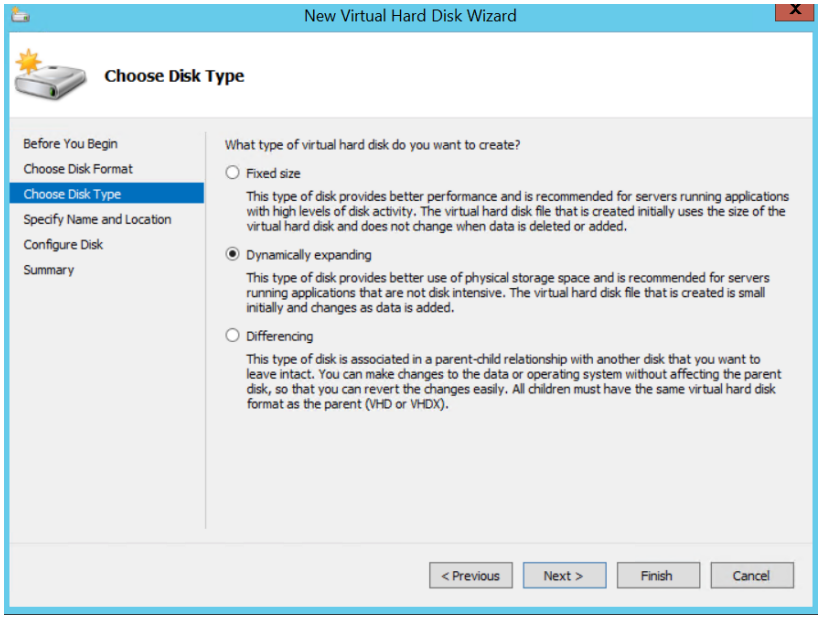
Adding or Removing Resources for Catalog

For IVGM without Catalog, the virtual size of the boot disk is 50 GB. For IVGM with catalog capability, you will need to create two additional disks: for index store (disk-1) and for backup catalog data (disk-2). The virtual size of the index store is 250 GB and the virtual size of the backup disk is 400 GB. IBM InfoSphere recommends using a server or a shared drive with adequate space for the boot, index and backup disks.

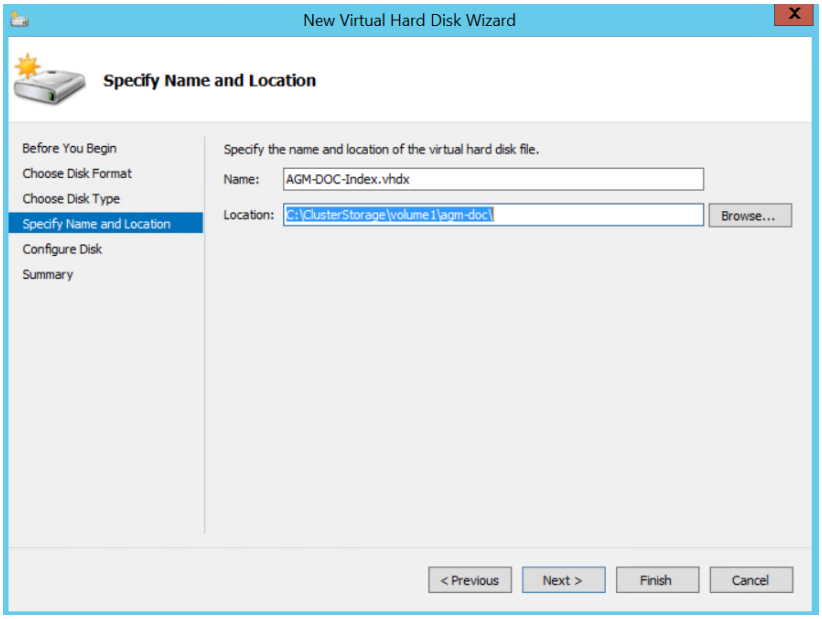
1. Verify the VM is powered off. (Select the VM, right click and select Shut Down to power off).
2. Select the IVGM VM, right click and select **Settings** from the drop-down options.
3. Click **Memory**, and in **Startup RAM**, enter 8192 MB (for IVGM without Catalog) or 20480 (for IVGM with Catalog) as required.
4. Click **Processors**, then increase or decrease the number of virtual processors to 4 (for IVGM without Catalog) or to 8 (for IVGMwith Catalog) as required.
5. If you are configuring IVGM without Catalog, go to step 12. If you are configuring IVGM with Catalog, create two new disks. To create a disk:
    a. Go to **IDE Controller 0,** select **Hard Drive** and click **Add**.
    b. Select the second option, **Virtual hard disk**. Click **New** and the New Virtual Hard Disk wizard opens.
    c. Read the before you begin page and click **Next**. The Choose Disk format page opens.



    d. Select **VHDX** and click **Next**. The Choose Disk Type page opens.

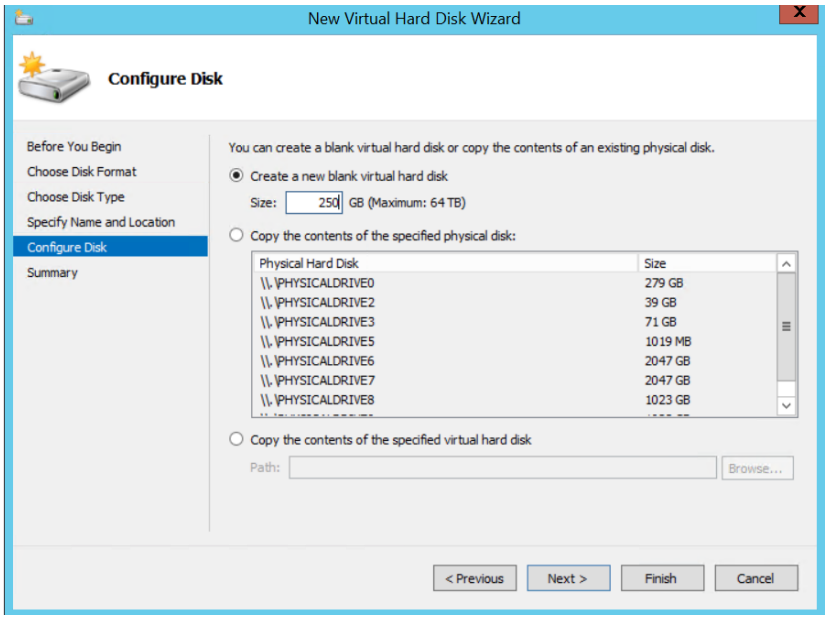


e. Select the **Dynamically expanding** option and click **Next**. The Specify Name and Location page opens.

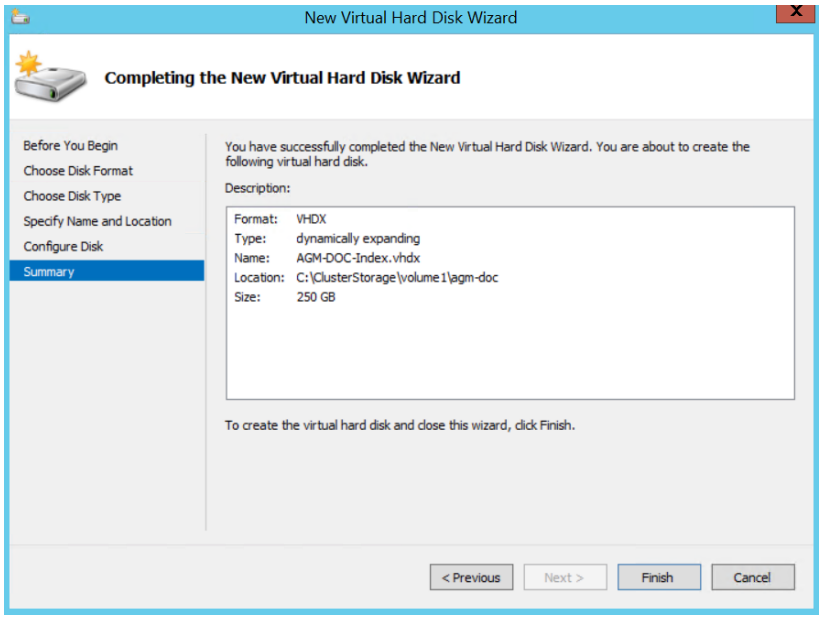


f. Give a unique name and browse to select a location either on your Hyper-V server or on the network that has sufficient storage space of more than 250 GB.

g. Click **Next**. The Configure Disk page opens. (See next page).



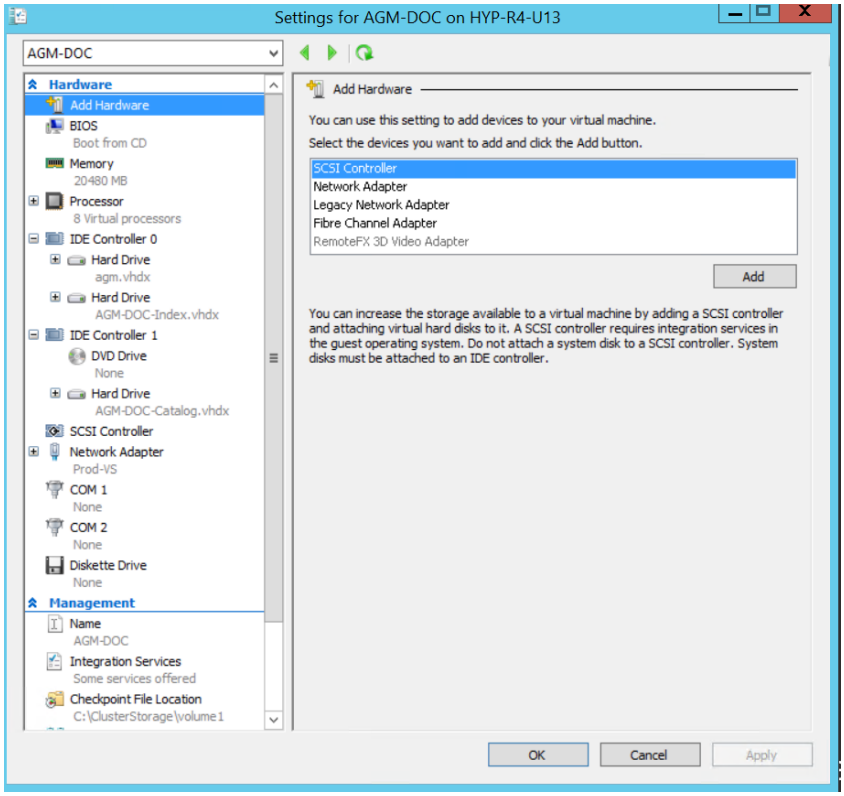
h. In **Size**, enter 250 GB for the Index hard disk and click **Next**.



i. Review the summary page and click **Finish** to create the Index hard disk.

j. Click **Apply** to save the configuration change.

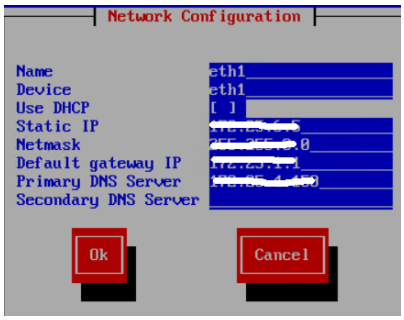
k. Repeat the steps above to create Catalog disk (you can, for example, name it `IVGM-DOC-Catalog.vhdx`) with more than 400 GB for storing catalog backup data. (See next page).



6. Click **Network Adapter**, and verify the network connection for IVGM VM deployment. If needed, select a different network connection.
7. Click **Apply** and then **OK** to save all configuration changes.
8. Go back to the Hyper-V Manager. Right click the IVGM VM and select **Start**.
9. Once the console access is active, enter "`alt+f2`" to show the device panel.

10. Go to **Configure Network > Device configuration** and choose the available ethernet device (eth0).
11. Enter the following information:
    - Static IP address of the VM
    - Subnet mask or prefix for this VM
    - Default gateway for this VM
    - Primary and secondary DNS server

Note: *IVGM deployment supports DHCP in addition to static IP support.*



12. Select **OK**, then **Save**, and then **Save & Quit** to save your changes and close the console. The VM reboots and powers on.
13. Verify you can ping the IVGM server.
14. Continue to Accessing InfoSphere VDP - Global Manager on page 31.

Adding Resources for RM

For IVGM without RM, the virtual size of the boot disk is 50 GB. For IVGM with RM, you will need to create an additional disk of 250 GB free datastore space for Report Manager data. IBM InfoSphere recommends using a server or a shared drive with adequate space for the boot, index and backup disks.

You will additionally need to:

- increase virtual CPUs
- increase memory

Refer to IVGM VM Requirements on page 5 for more information, then use the guidelines in Adding or Removing Resources for Catalog on page 25 to add CPU, Memory and additional disk.

Note: *Do not remove the disk you will be adding for RM under any circumstances. This will corrupt your IVGM database. .*

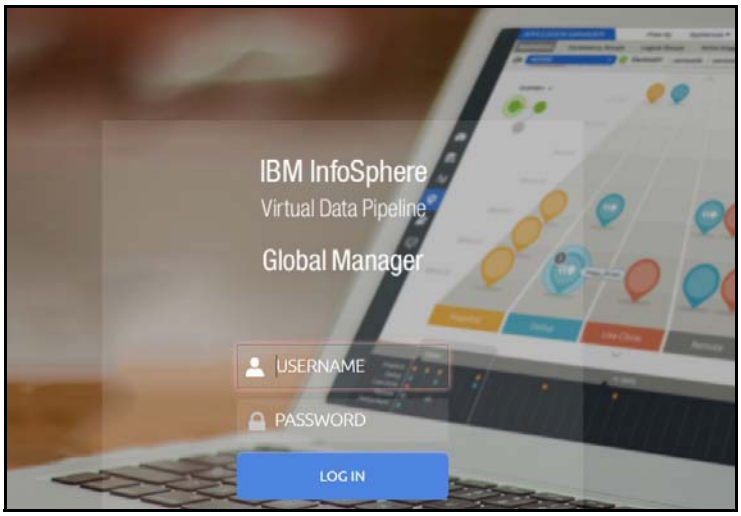
5 Accessing InfoSphere VDP - Global Manager

After the IVGM is configured and powered up, you can launch IVGM in a web browser:

Note: *You can find the IP address of the IVGM on the IVGM VM's Summary tab.*

1. Open a browser and in the address space, enter the IP address of the IVGM VM:

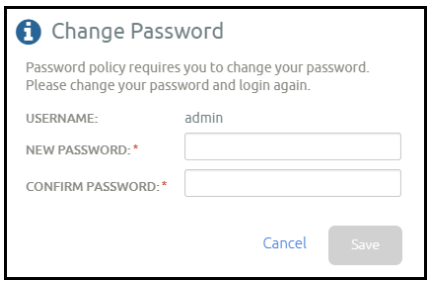
   `https://<IVGM IP address>/`



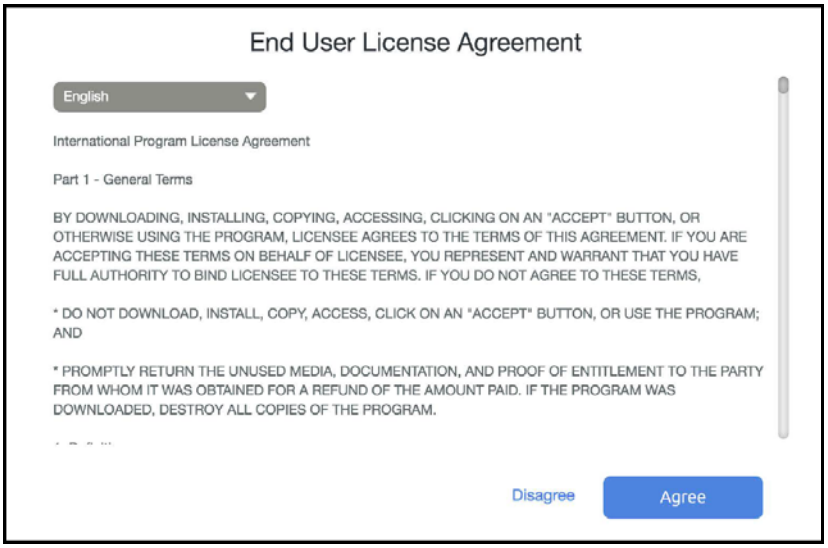
2. In the IVGM Login window, enter the login credentials you specified during deployment. If you did not specify anything, enter the default login credentials: USERNAME `admin` and PASSWORD `password`
3. Click Login.

Note: *If you are using a Microsoft Internet Explorer browser to log in to IVGM and the Username and Password fields are disabled in the Login window, access the Compatibility View Settings dialog box (select* ***Tools > Compatibility View settings****) and ensure that the* ***Display intranet site in Compatibility View*** *check box is checked.*

The IVGM application opens and prompts you to change your password as part of security enhancement.



4. Enter a new password of at least six (6) characters (it can be the same as your old password).
5. Click Save to save the new password. You are taken back to the login screen.
6. Enter your user name and new password.
7. Click Login. The IVGM application opens and shows the EULA.



8. Read the license agreement in its entirety, and click Agree.

   You are prompted to add an appliance.

9. Click OK to open the Add Appliance page. Add the first appliance and subsequently add more appliances following guidelines Adding Appliances to an IVGM Deployment on page 35.
10. Click the ? in the upper right corner of the IVGM browser to launch the IVGM Online Help system. You can read up about the Dashboard, Domain Manager, SLA Architect, Application Manager, Catalog, System Monitor, and Upgrade services in the Help.
11. To logout of IVGM or to change users, click the active user listed at the top of IVGM and select Logout.

6 Accessing Report Manager

After you have launched IVGM in a web browser, launch RM.

Note: *RM uses the same IP address as IVGM.*

To access RM:

1. Open a browser and in the address space enter the IP address of the RM.
   `https://<`*`IVGM IP address`*`>/rm` or **`https://<`*`IVGM IP address`*`>/report`**
2. Enter your IVGM user name and password.

Note: *IVGM users with Administrator role can perform administrative tasks in RM.*

3. Click Login.

7 Adding Appliances to an IVGM Deployment

Before you add appliances to IVGM, perform a business requirements analysis of the SLA templates (and policies), roles, organizations, and users created on each of the IBM InfoSphere appliances to be imported into IVGM. Consistency is critical to ensuring a centralized and consolidated set of imported policy and security objects from your IBM InfoSphere appliances into IVGM. This is especially important for SLA templates and policies, as well as for user roles, that have been defined in your individual appliances.

Ideally, the SLA templates and policies used by the appliances in your operating environment follow a consistent governance for SLA template and policy naming conventions along with the definition of policy attributes across each appliance. However, SLA templates in multiple IBM InfoSphere appliances may use the same name, but are configured differently. For example:

Two or more appliances can each have an SLA template named Tier 1. Upon closer inspection, there can be differences in the policies in each template. These inconsistencies will result in conflicts when you attempt to add those templates to the appliances into IVGM. You must resolve those differences before importing the IBM InfoSphere appliances.

Object conflicts during the import process typically occur under the following conditions:

- SLA templates of the same name have a different number of policies and/or defined attributes between the appliance and IVGM.
- Roles of the same name have differences in services and/or Access Control Level (ACL) rights between the appliance and IVGM.

Note: *During IBM InfoSphere appliance importing, the mapping of LDAP groups will not be brought into IVGM. For example, if there is an LDAP group named "DNSUpdateProxy" on Appliance 1, after importing Appliance 1 to IVGM "DNSUpdateProxy" will not appear in IVGM.*

After you import your IBM InfoSphere appliance(s) into IVGM, configure the LDAP server on IVGM and then recreate the missing mapped LDAP groups in IVGM. Be sure to assign the proper organizations and roles to them. For more information, go to the ***IVGM Online Help System***, and read the *"Configuring LDAP Settings" and "Mapping LDAP Groups to Roles and Organizations" topics.*

Review the following planning topics to help you pro-actively address potential conflicts and ensure a smooth import of your IBM InfoSphere appliances and its associated policy and security objects:

- Selecting the First IBM InfoSphere Appliance to Import on page 36
- Managing SLA Templates Prior to Importing on page 36
- Managing Roles on page 37
- Resource Conflict Resolution Tool on page 38
- Managing Organizations on page 37

Selecting the First IBM InfoSphere Appliance to Import

Choose an appliance that is used in a production environment as the first appliance to add into IVGM. This will help establish a baseline for the templates, organizations, roles, and users imported into the IVGM database for addressing potential conflicts with subsequent appliances you add into IVGM.

The first IBM InfoSphere appliance that you plan to import into IVGM should contain policy and security objects (Templates, Organizations, Roles, and Users) with names and configurations that are most representative of the typical operating environment of your organization. The first appliance that you add into IVGM serves as the baseline appliance used by IVGM as the standard for comparison with all subsequent imported appliances for object consolidation.

For example, if you import an appliance that is used in a Test/Dev environment, the templates, organizations, roles, and users that are imported in IVGM may contain actual object names but may contain atypical configuration settings. When you attempt to import additional appliances that contain Templates, Organizations, Roles, or Users with the same names, this can result in object conflicts between IVGM and that appliance at the point of import.

Sharing Mode Options

When two IBM InfoSphere appliances are joined with Sharing Mode enabled and you are adding them to IVGM, you can:

Add Just the Primary Appliance

In this case, IVGM pushes templates only to the Primary appliance. The Primary appliance will then push templates to the Secondary appliance. IVGM will be able to manage applications on the Primary appliance, but not on the Secondary appliance. You must log on to the Secondary appliance to manage its applications. Sharing Mode maintains the Organizations and users defined between the Primary and Secondary appliances.

Add Both the Primary and Secondary Appliances

In this case, you MUST add the Primary appliance first.

After both appliances are added, updated templates can be pushed to both appliances. When the Primary receives an updated template it will push the updated template to the Secondary.

IVGM will be able to manage applications on both the Primary and Secondary appliances. Sharing Mode maintains the Organizations and users defined between the Primary and Secondary appliances.

Disable Sharing Mode Then Add Both Appliances

In this case, un-join the appliances, then join them again in non-sharing mode. Add the primary appliance first and then the secondary appliance of the pair.

After both appliances are added, templates can be pushed to both appliances. IVGM will be able to manage applications on both appliances. You may have to log in to what was the Secondary appliance and configure/reconfigure Organizations and users. Organizations and users on what was the Primary will remain intact.

Managing SLA Templates Prior to Importing

Check the SLA template naming conventions used on two or more appliances that you plan to import into IVGM. If multiple appliances contain SLA templates of the same name, but those templates contain either a different number of policies or different policy attributes, this will result in a conflict when you go to import those appliances.

Excluding the first appliance that you plan to import as the baseline appliance, you can attempt an initial clean-up of the other appliances in the following areas:

- Rename conflicting SLA templates.
- Modify a conflicting SLA template to either add the missing policies or remove the extra policies.
- Modify the attributes in the differing policy (or policies) in the conflicting SLA template to make them the same.

The Dry Run tool in IVGM identifies conflicts between the incoming appliance and what currently exists in IVGM during the import process (see Resource Conflict Resolution Tool on page 38).

Managing Roles

Check the roles (names and attributes) used on the appliances that you plan to import into IVGM. If you have multiple roles of the same name but those roles have differences in services and/or Access Control Level (ACL) rights, this will result in a conflict when you go to import those appliances.

Excluding the first IBM InfoSphere appliance that you plan to import as the baseline appliance, on the other appliances you can attempt a clean-up of the services and/or rights associated with the conflicting role(s) to make them the same.

You may encounter an instance when IVGM detects a conflict because of a missing role-right assignment on the appliance to be added yet the role-right assignments appear to be identical. In this case, if differences are detected in role-right assignments between the appliance and IVGM, delete the problematic role from IVGM and then retry adding the appliance to IVGM.

The Dry Run tool in IVGM identifies security conflicts between the in-coming appliance and what currently exists in IVGM during the import process (see Resource Conflict Resolution Tool on page 38).

Managing Organizations

When you add an IBM InfoSphere appliance to IVGM, the organizations from each appliance are imported to IVGM. Keep in mind that:

- An appliance's organizations are imported to IVGM when the appliance is added to IVGM.
- Existing organizations, new organizations, or changes to organizations in IVGM are not exported to appliances.
- When two or more appliances use the same name for an organization, then upon import to IVGM, a single organization is created that has all of the resources specified in the imported organizations.

For example, before appliances are added to IVGM:

Appliance1 has three organizations. Only the Public organization contains resources:

Organization: Private1

Organization: Private2

Organization: Public

User Ken

Host 172.10.111.11

Appliance2 has three organizations. Only the Public organization contains resources:

Organization: Administrators

Organization: Public

User Bob

Host 172.10.131.98

Organization: Test

IVGM has two organizations:

Organization: Finance

Organization: Marketing

After the two appliances are added to IVGM, both appliances keep their respective organizations. IVGM will import copies of each appliance's organizations as follows:

Organization: Administrators (From Appliance2)

Organization: Finance (Original to IVGM)

Organization: Marketing (Original to IVGM)

Organization: Private1 (From Appliance1)

Organization: Private2 (From Appliance1)

Organization: Public (From Appliance1 and Appliance2)

User Ken (From Appliance1)

User Bob (From Appliance2)

Host 172.10.111.11 (From Appliance1)

Host 172.10.131.98 (From Appliance2)

Organization: Test (From Appliance2)

The organization Public from both appliances is imported in to a single organization named Public. IVGM's Public organization contains the resources from the Public organizations from both appliances

Resource Conflict Resolution Tool

When you add a new VDP appliance, IVGM automatically runs the Dry Run Tool and performs a conflict analysis. This tool identifies conflicts between appliances currently managed by IVGM and an IBM InfoSphere appliance being imported.

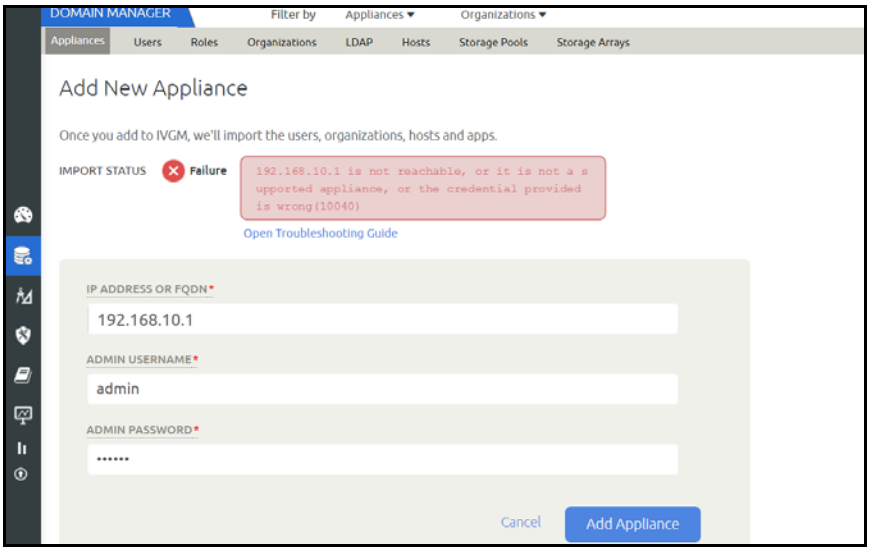
The Dry Run tool resolves resource conflicts as follows:

- SLA Templates—Templates go through a conflict-resolution process by IVGM.
- Organizations—Imported appliance-level organizations with the same name are merged with the IVGM-level organizations, and their IVGM-level objects (users and SLA templates) are associated with their respective IVGM objects.
- Users—Users that already exist in IVGM are ignored and are not imported from the appliance.
- Roles—Roles go through a conflict-resolution process by IVGM.

During the dry-run phase of the appliance import process a log is displayed that details all import actions and decisions. For example, in the following screen capture of a log:

- Policies are missing from the Standard and Enterprise templates found in the incoming appliance and IVGM.
- Specific rights are missing from the Basic role found in the incoming appliance and IVGM.

If you encounter a conflict during Dry Run, resolve each conflict on the appliance that is experiencing the issue.



For example, based on the identified conflict flagged during Dry Run for the appliance you wish to import into IVGM, you can:

- Rename conflicting SLA templates on the appliance.
- Modify a conflicting SLA template on the appliance to add the missing policies or remove the extra policies.
- Modify the attributes in the differing policy (or policies) in the conflicting SLA template on the appliance to make the attributes the same.
- Modify the services and/or rights associated with the conflicting role identified on the appliance to make the services and/or rights the same.

For details on the appliance import process, including import guidelines, recommendations, the step-by-step import process, and conflict troubleshooting, see the IVGM Online Help System, the “Importing Overview,” “Adding an Appliance to IVGM,” and “Troubleshooting Conflicts” topics.

8 Upgrading InfoSphere VDP - Global Manager

This chapter details the upgrade instructions for the InfoSphere VDP - Global Manager. It includes tIBM InfoSpherehe following topics:

Note: *During an upgrade there will be a period of time when IVGM synchronizes new data with the appliances. This may lead to incorrect values being shown on the IVGM Dashboard. We recommend that you wait for a period of one to two hours for the inconsistencies to resolve. If they persist even after that time, contact Support for help.*

Before You Begin

Before you begin you must:

Take a Snapshot of the current IVGM VM

In the unlikely event that you encounter an issue while upgrading, a snap shot will allow you to revert back to the previous state of your IVGM VM.

Obtain the IVGM.gpg upgrade file

Your IBM InfoSphere representative will provide you with the latest IVGM upgrade file. Place a copy of that file in a location that is easily accessible from the IVGM browser-based UI.

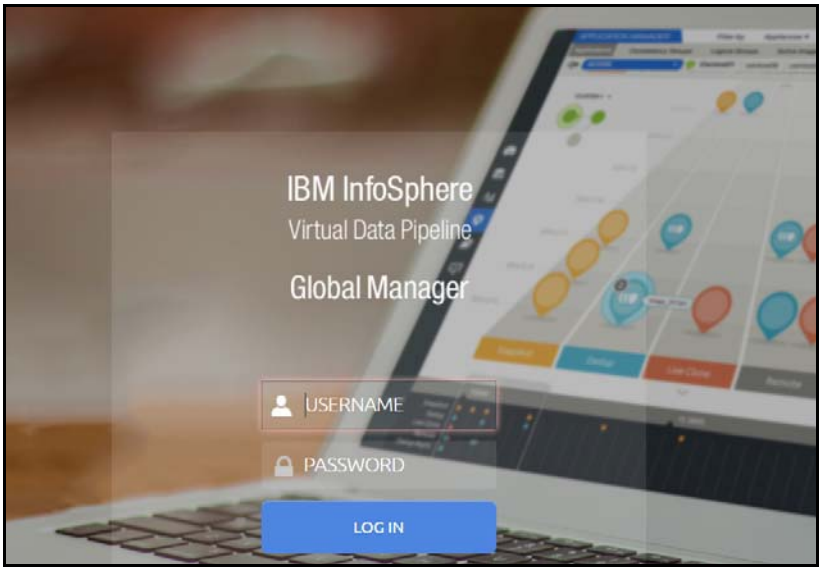
Upgrading IVGM

After reviewing the information outlined in Before You Begin on page 41, perform the IVGM software upgrade as follows:

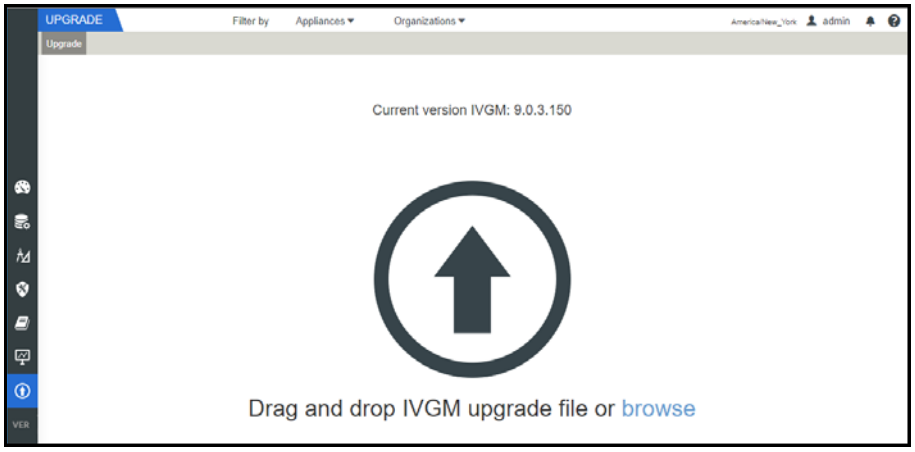
1. Open a browser, and in the address space enter the IP address of the IVGM VM:

   `https://<VM IP address>/`

2. In the IVGM Login page, enter the username and password, then click Log In.

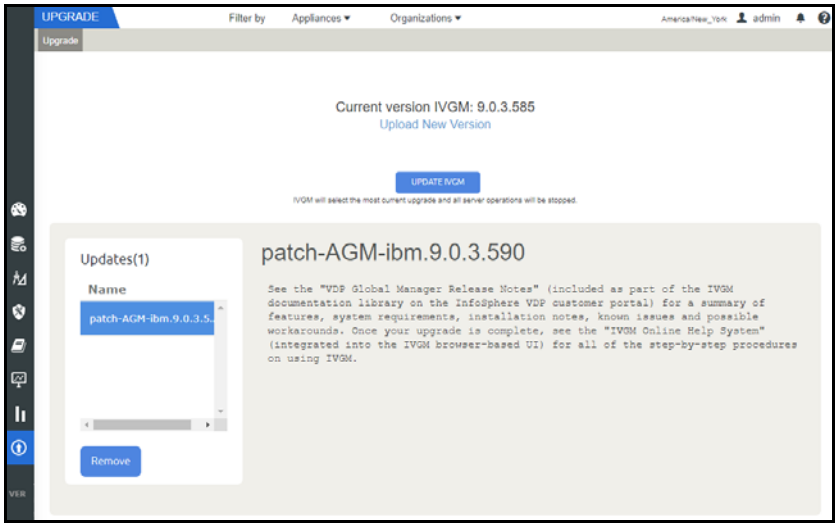


3. In the left-hand navigation, click the Upgrade icon. The Upgrade page opens.



4. From the Upgrade page, you can either:
   - Browse to the location of the IVGM.gpg upgrade file and upload it into this window.
   - Drag and drop the IVGM.gpg upgrade file into this window.
5. IVGM begins the upload process. A Progress bar shows the status of the upload. The file upload sequence undergoes three phases: file upload, file unpack, and file extraction.

6. When the file upload is complete and the upgrade image has been extracted, a Success dialog opens.
7. Click Okay and the Upgrade page opens.



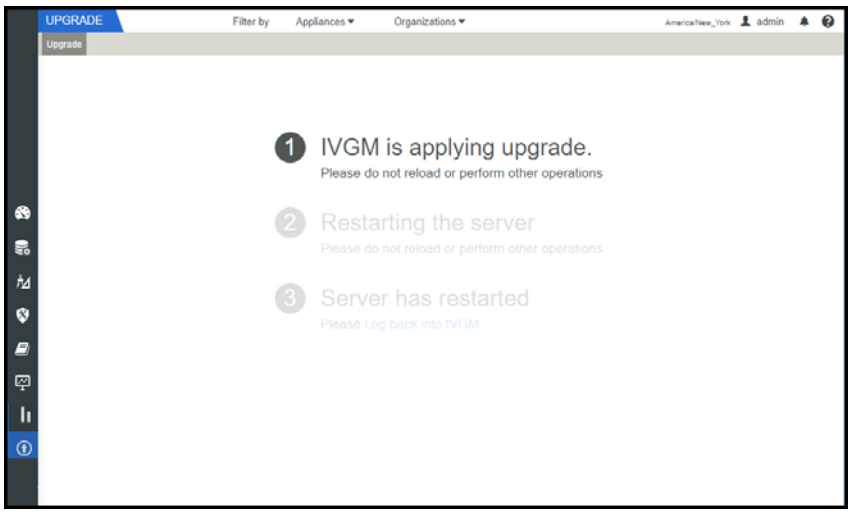
8. From the Upgrade page, click Update IVGM to initiate the software upgrade sequence. IVGM will always select and install the latest upgrade software even if there are multiple upgrade versions listed in the Upgrade window.

Note: *If required, you can remove an older software upgrade version from IVGM. IVGM will automatically select the first item in the Updates listing on the left side of the window. Select the version you want to delete and then click* ***Remove****. You cannot select multiple upgrades for deletion.*

The Update confirmation dialog opens.

9. Click Update IVGM again to confirm that you want to upgrade the IVGM software.
10. The software upgrade process begins and the IVGM Upgrade page displays its progress.

Note: *If you encounter issues during the upgrade, contact your Support representative for assistance.*



11. After the software upgrade is completed, log back into the IVGM UI and confirm that the upgrade was successful. Click Okay to resume operation of all IVGM activities.

Note: *If you encounter issues when attempting to log in, contact your Support representative.*