

## Deploy a Barracuda Backup Virtual Appliance

<https://campus.barracuda.com/doc/78155552/>

To create a successful data protection and disaster recovery plan, Barracuda Networks strongly recommends following the 3-2-1 backup rule:

- 3 – You must have at least 3 copies of your data; the original production data and 2 backup copies.
- 2 – You must use at least 2 different types of media to store the copies of your data, for example, your production storage and the local Barracuda Backup virtual appliance data storage.
- 1 – You must keep at least 1 backup offsite, for example, in the cloud or in a remote site.

For deployment of the Barracuda Backup virtual appliance (Vx), Barracuda Networks recommends a completely separate virtual infrastructure from that of the data in which the Vx will be protecting. This means running in a separate virtual cluster, dedicated virtual host, and/or separate storage from the production environment. This will help avoid situations where the production virtual infrastructure or storage fails or is impacted by ransomware and impacts both the production virtual machines and the Barracuda Backup virtual appliance.

The following sections walk you through the process of deploying a Barracuda Backup Virtual (Vx) appliance.

### System Platform Requirements

Barracuda Networks provides the following types of virtual images for the Barracuda Backup Vx deployment.

**Table 1. System Platform Requirements**

Image Type	Platform	Version
OVF	VMware	See <a href="#">Virtual Infrastructure</a> for supported versions.
VHD	Microsoft Hyper-V	See <a href="#">Virtual Infrastructure</a> for supported versions.

### System Resource Requirements

The most common mistake when designing an environment for Barracuda Backup Vx is to size only for capacity as opposed to sizing for capacity and performance. Tasks such as backup, offsite replication, data restoration, and purging can use a significant amount of system resources. When considering a Barracuda Backup virtual deployment, it is best to consider the use cases of the Backup Vx in addition to needed storage.

**Table 2. vCPU Recommendations**

Backup Volume	Minimum Recommended vCPUs	High Performance Recommended vCPUs
0-2 TB	1 vCPU	2 vCPUs
2-6 TB	2 vCPUs	4 vCPUs
6-16 TB	4 vCPUs	8 vCPUs
16-32 TB	8 vCPUs	16 vCPUs
32-100 TB	16 vCPUs	32+ vCPUs

**Table 3. RAM Recommendations**

Backup Volume	Minimum Recommended RAM	High Performance Recommended RAM
0-1TB	2 GB	4 GB
1-4 TB	4 GB	8 GB
4-12 TB	8 GB	16 GB
12-16 TB	16 GB	32 GB
16-24 TB	32 GB	64 GB
24-48 TB	64 GB	128 GB
48-100 TB	128 GB	256+GB

**Storage Recommendations**

- Any storage infrastructure consisting of Local/Direct-Attached, SAN, and NAS
- Storage with inadequate throughput, read, and write speeds will suffer
- Servers with software RAID, slow NAS, and low-RPM drives will yield poor performance

**Notes and Considerations**

- Barracuda Backup utilizes memory (RAM) for database queries during backup, restore, and offsite replication. Barracuda Networks highly recommends following the recommended minimum resources for memory in the RAM Recommendations table above.
- Barracuda uses CPU resources for hashing blocks during deduplication, compression for

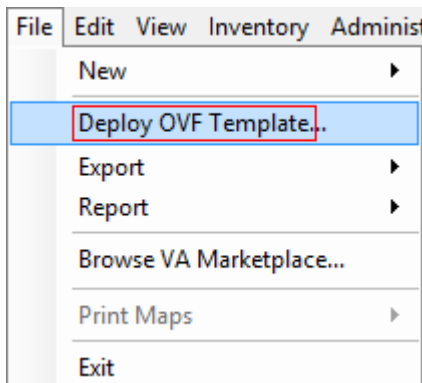
offsite replication, and rehydration of data during restoration. Barracuda Networks highly recommends following the recommended minimum resources for vCPUs in the vCPU Recommendations table above.

- At a minimum, memory resources should be dedicated (reserved). It is also recommended that the CPU be dedicated to Barracuda Backup Vx and not shared with other virtual machines on the host. This aligns with VMware and Microsoft's recommendations for virtualized Microsoft Exchange Server and SQL Server implementations.
- A separate data store is recommended for use with the virtual appliance due to disk I/O constraints or an entirely separate storage server/environment altogether from the production environment.
- Other system components such as network and storage need to be sized accordingly to prevent them from becoming a bottleneck.
- It is important that snapshots are not used on the Barracuda Backup Vx appliance. Even if data is not being replicated to the Barracuda Cloud, configuration data is still sent to Barracuda so that the unit can be managed. Reverting to a previous state using snapshots can potentially cause loss of data and unit corruption. Independent disks are the default selection and highly recommended to avoid snapshots.
- Use only a single attached virtual volume when deploying the Barracuda Backup Vx appliance. When expanding Barracuda Backup Vx capacity, expand only the current volume. Adding and expanding a new volume can potentially cause loss of data and unit corruption.
- All Backup Vx disk, vCPUs, and RAM can be adjusted later by shutting down the system properly and making the necessary changes through the hypervisor.

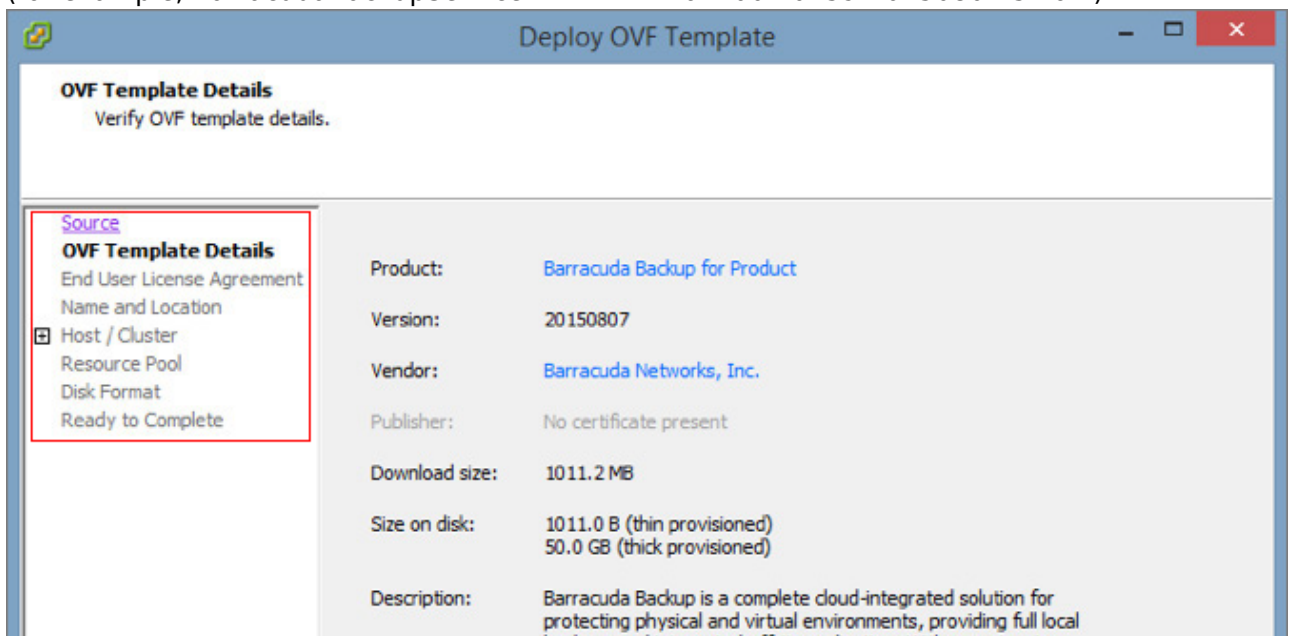
## VMware vSphere Deployment

To deploy Barracuda Backup Vx in VMware vSphere:

1. Go to <https://barracuda.com>, and select **Backup** from the **Products** drop-down menu.
2. Click **Models/Editions**, and select **Virtual** from the **Deployment options** drop-down menu.
3. Click **Free Eval Unit** or **Purchase**, fill out the form, and submit your request.
4. An email is sent to the specified email address.
5. Follow the instructions in the email to download and extract the Barracuda Backup Vx **.zip** archive to a location accessible from a machine running vSphere.  
Make note of your license token for use during configuration and activation.
6. Launch vSphere Client, and from the **File** menu, click **Deploy OVF Template**:



7. The vSphere Client launches the Deploy OVF Template wizard.
8. Click **Browse**, navigate to the extracted folder, and locate the Barracuda Backup Vx **.ovf** file (for example, BarracudaBackupService-vm4.2.4-fw6.2.00.10159-20150807-5x.ovf):



9. Click **Next**. In the wizard, complete the following:
  - Review appliance information and the ESX version
  - Name the appliance and define a location where the virtual machine is to be created
  - Select the datastore where the VMDK file is to be stored; a dedicated disk store is recommended
  - Select the disk format as **Thick Provisioned Lazy Zeroed**

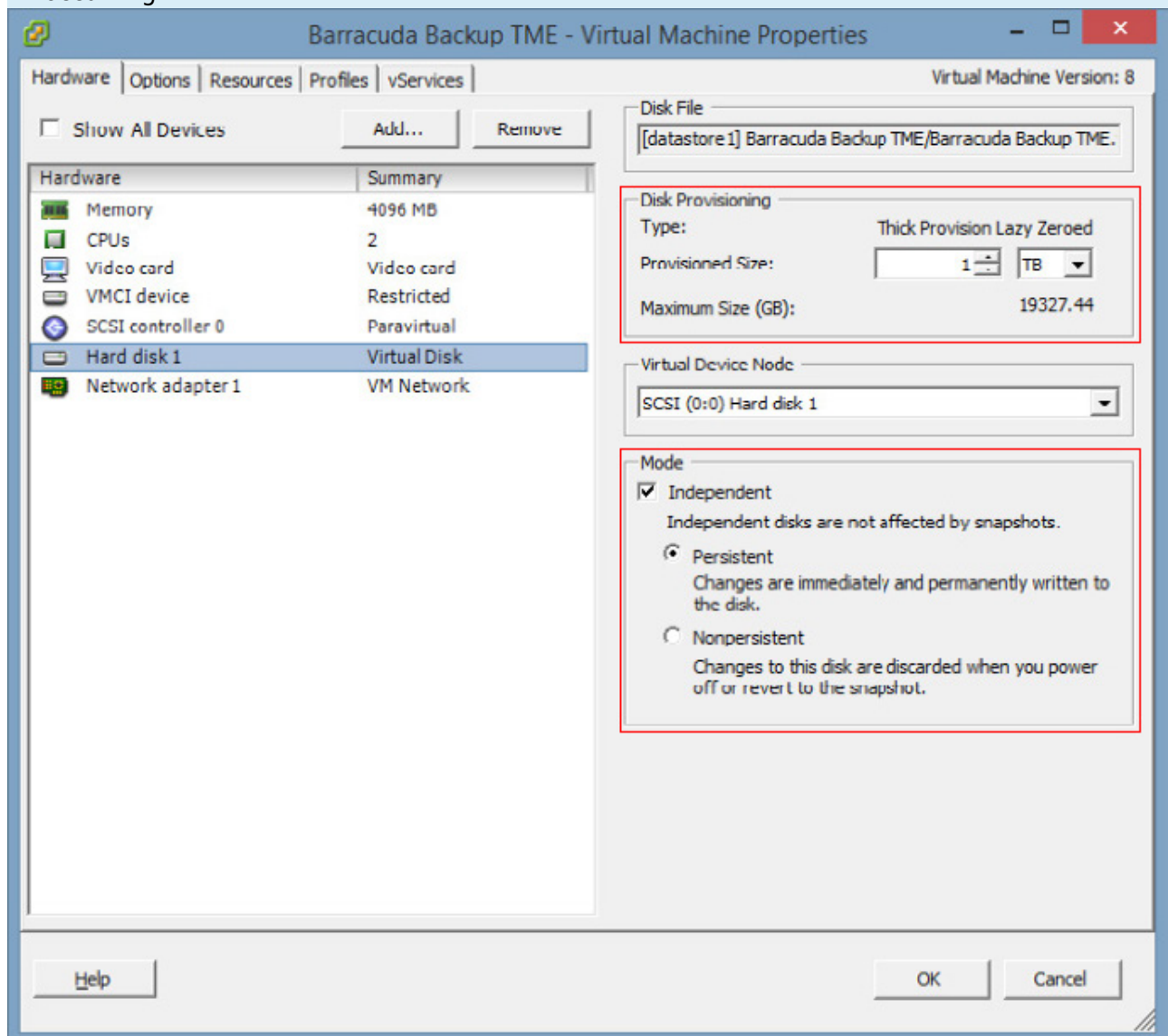
Virtual drives must be thick provisioned; thin provisioned discs will cause unexpected behavior and the virtual device will not operate properly.

10. Review your settings, and click **Finish** to deploy the appliance.
11. After deployment is complete, locate the appliance within the appropriate data center, host, or resource pool.

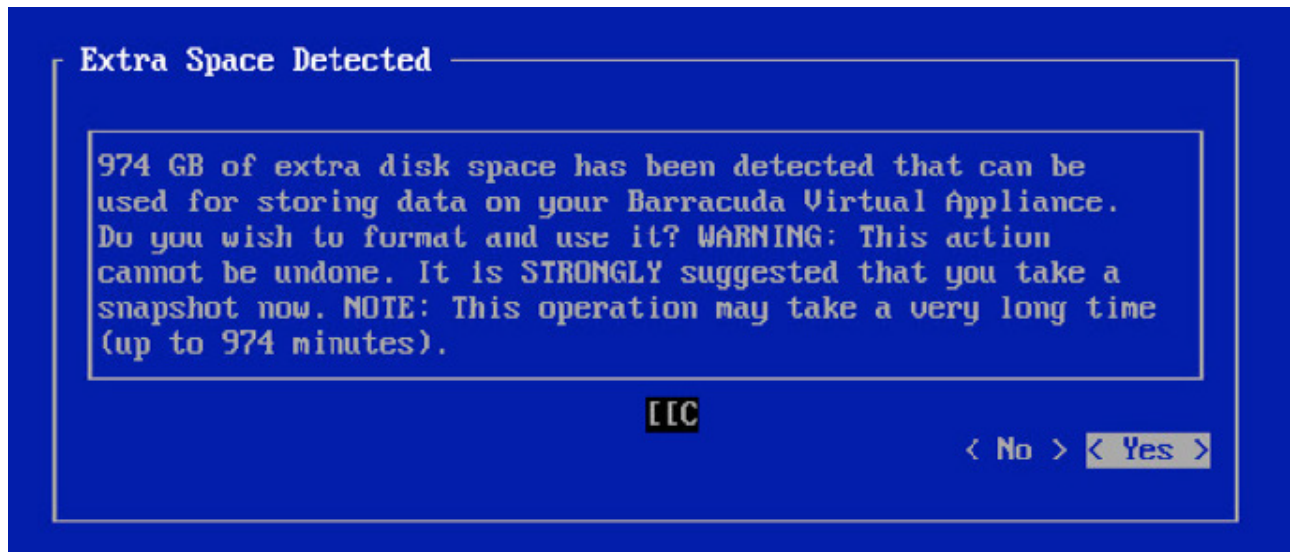
## Allocate Additional Resources

1. With the Barracuda virtual appliance powered off, right-click the appliance, and click **Edit Settings**.
2. Edit the **CPU**, **Memory**, and **Hard disk 1 Provisioned Size** settings based on the recommendations in *Tables 1 and 2* above.

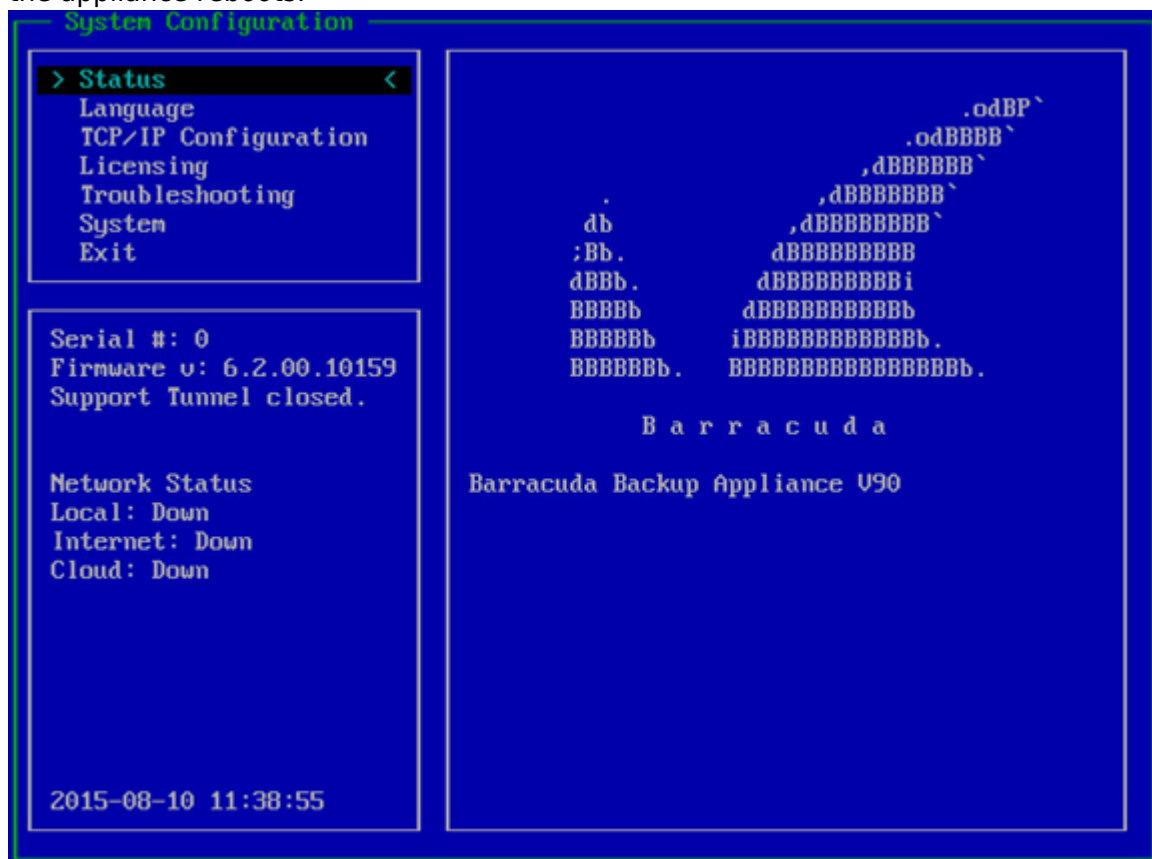
Barracuda Networks recommends using the default options **Thick Provision Lazy Zeroed** for the disk provisioning, and **Independent (Persistent)** as the mode to achieve the best performance from your virtual appliance and to prevent snapshots from occurring.



3. Click **OK**. Once the hardware settings are defined, power on the virtual appliance. The appliance is prepared for use; this may take several minutes.
4. Using your keyboard arrows, select **Yes** to format and partition the additional disk space provisioned above in *Step 2*:



5. The Barracuda Backup Vx expands and formats its partition space. Once formatting is complete, the appliance reboots:



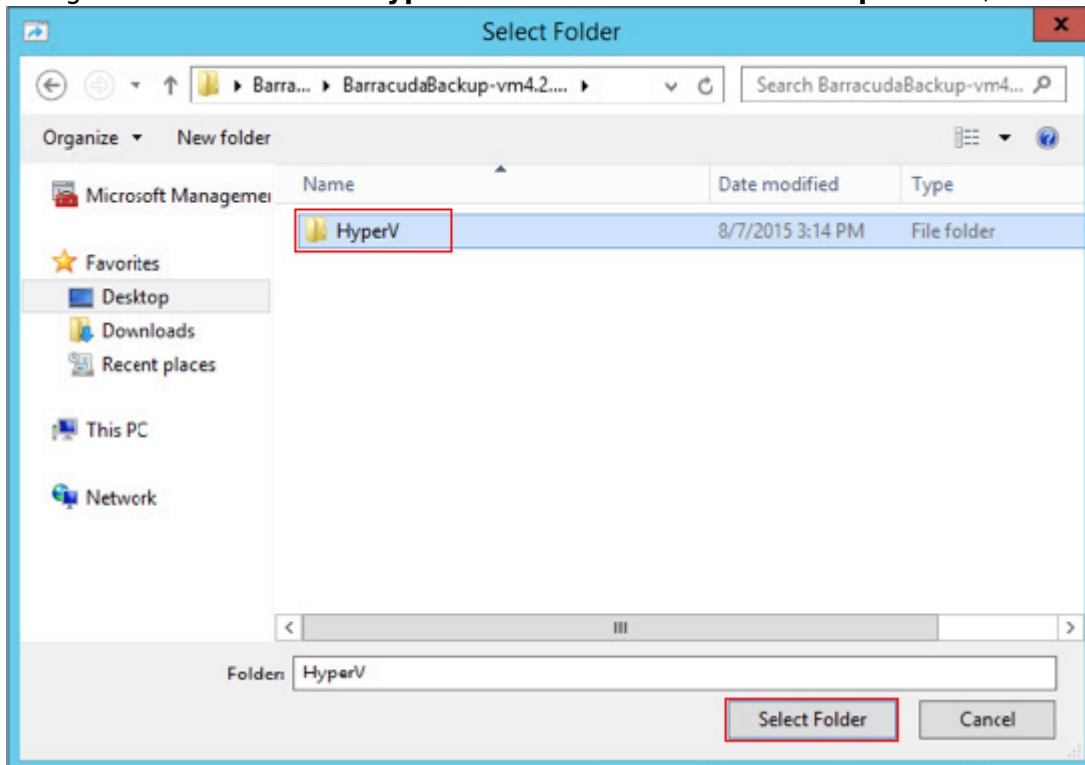
## Microsoft Hyper-V Deployment

To deploy a Barracuda Backup Vx in VMware vSphere:

1. Go to <https://barracuda.com>, and select **Backup** from the **Products** drop-down menu.
2. Click **Models/Editions**, and select **Virtual** from the **Deployment options** drop-down menu.
3. Click **Free Eval Unit** or **Purchase**, fill out the form, and submit your request.
4. An email is sent to the specified email address.
5. Follow the instructions in the email to download and expand the Barracuda Backup Vx **.zip** archive to a location accessible from a machine running Hyper-V.
6. Navigate to and expand the Barracuda Backup Vx **.zip** folder.
7. Launch the **WinServerSetup.bat** file located in the extracted folder. This batch file corrects a compatibility issue and takes less than a minute to run.

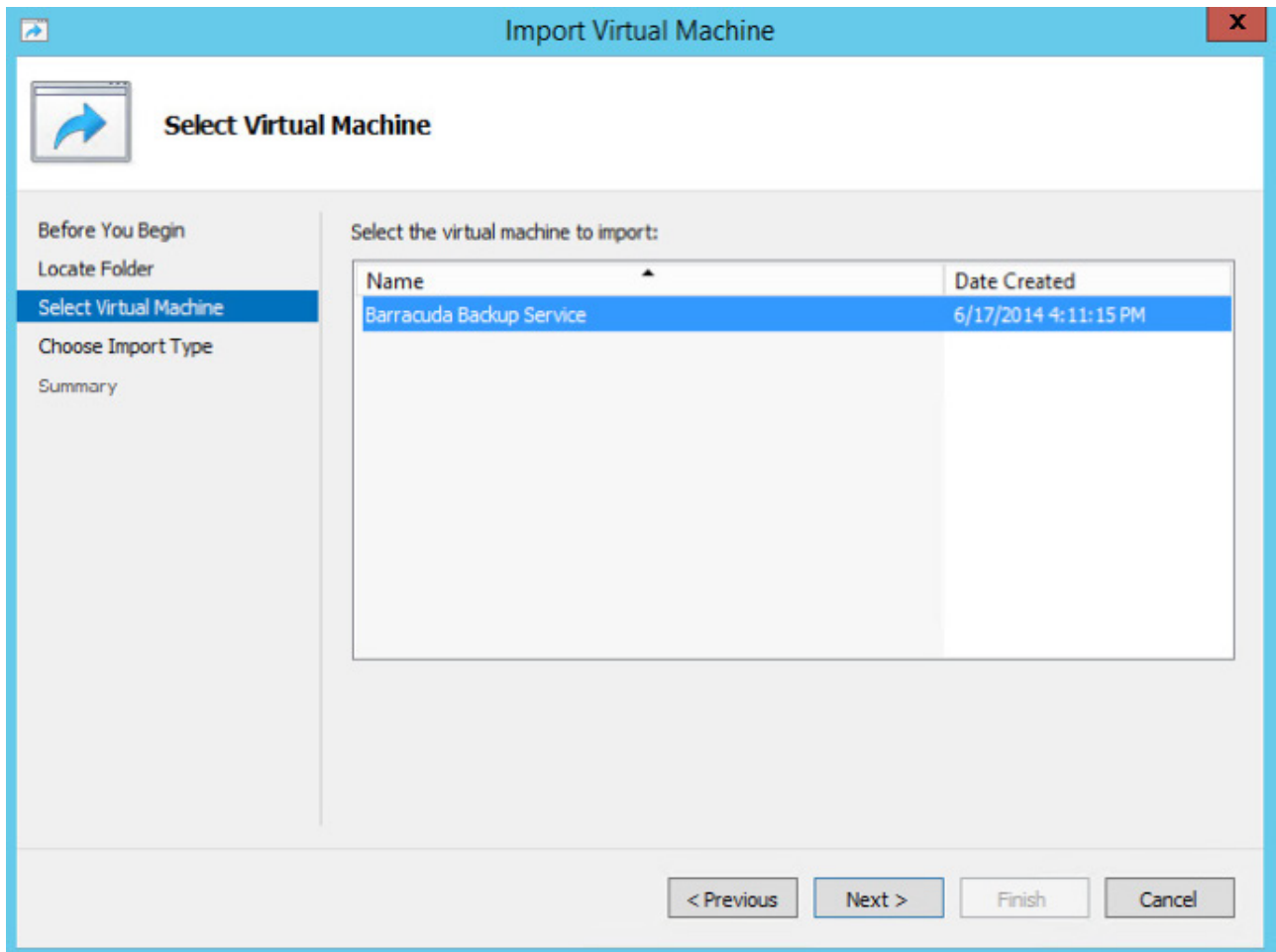
Make note of your license token for use during configuration and activation.

8. In Hyper-V Manager, right-click the VM host, select **Import Virtual Machine**, and click **Next**.
9. Navigate to and select the **HyperV** folder from the extracted **.zip** archive, click **Select Folder**:

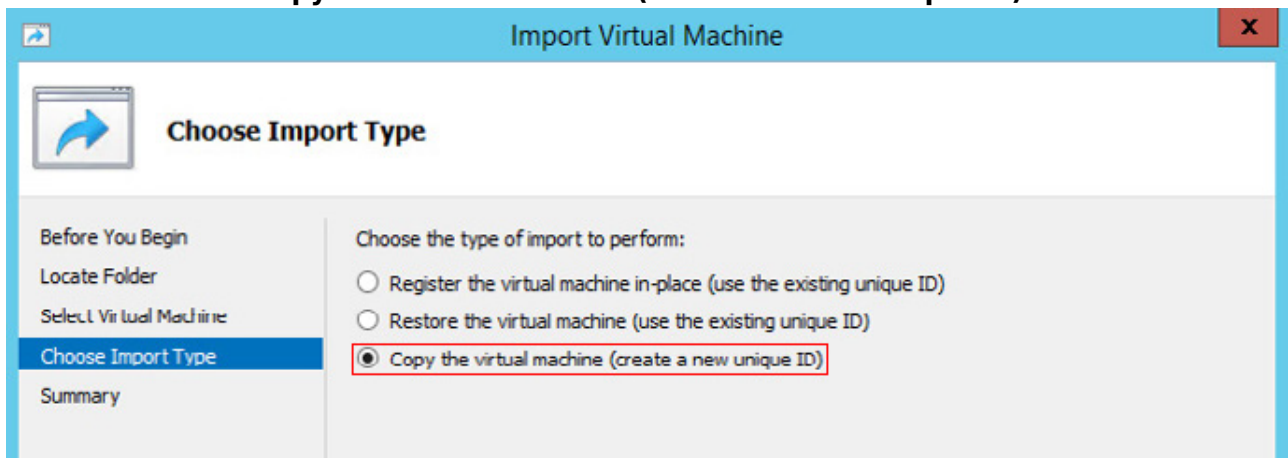


10. Click **Next**. On the **Select Virtual Machine** page, click on the virtual machine to import:



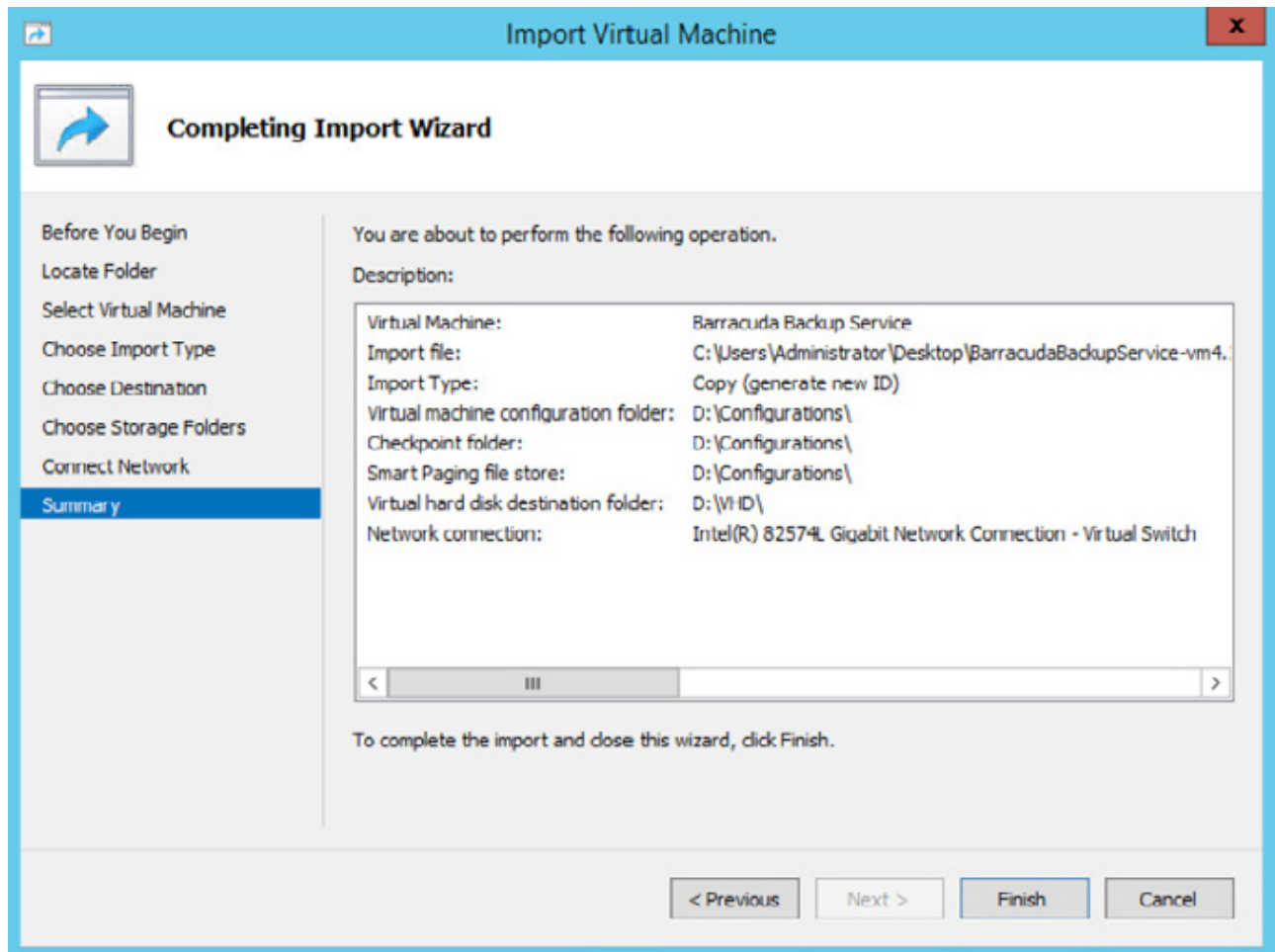


11. Click **Next**. Select **Copy the virtual machine (created a new unique ID)**:

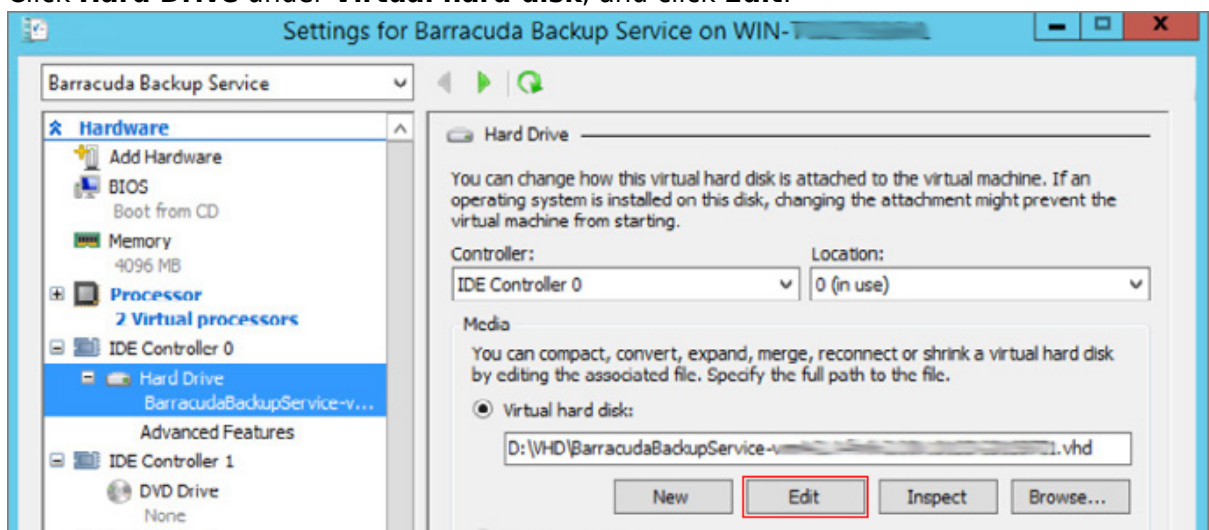


12. Click **Next**. Select whether to use the default location for configuration files, storage, and network settings for the VHD, or define custom settings. Click **Next**.
13. On the **Summary** page, verify that all the settings are correct:

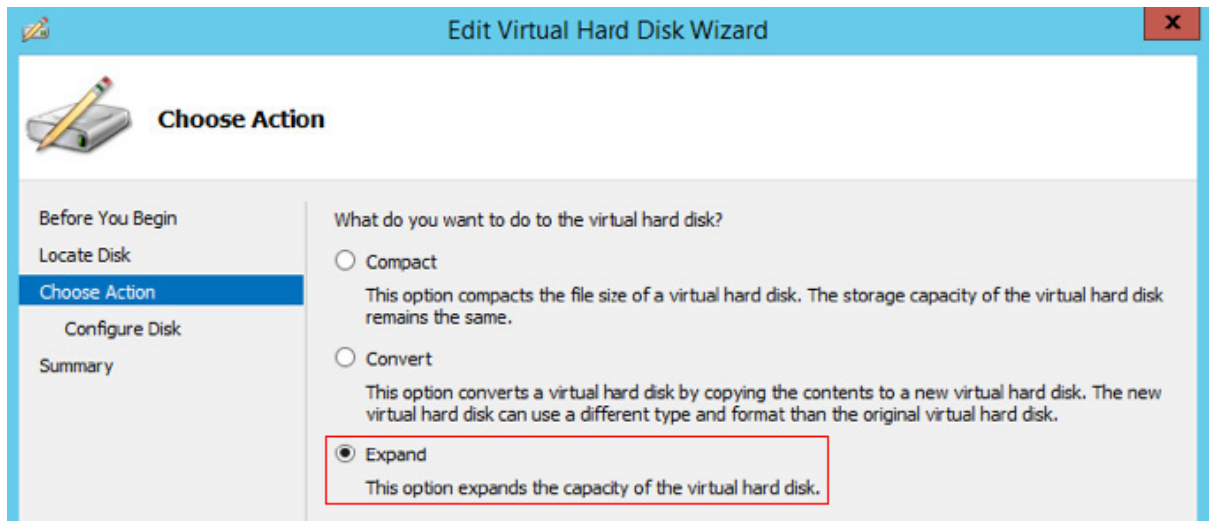




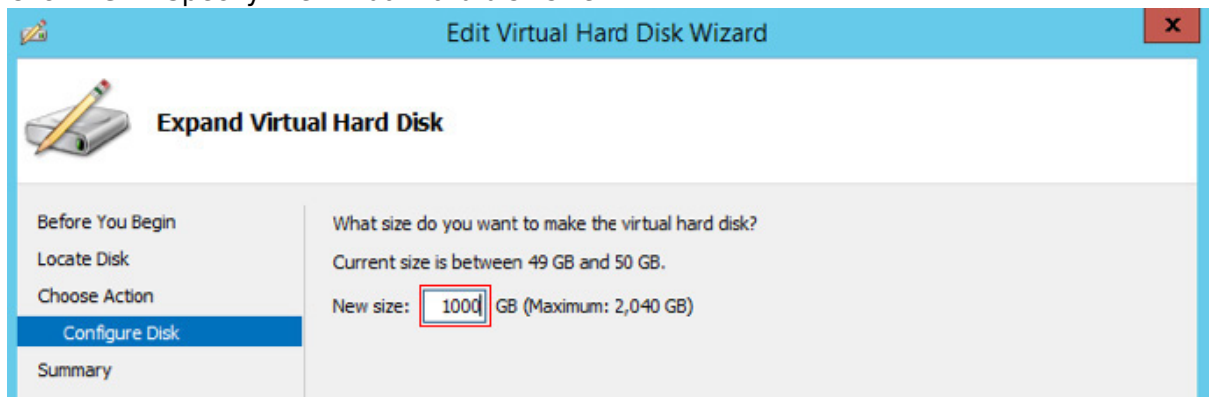
14. Click **Finish**.
15. Right-click the Barracuda Backup Vx, and click **Settings**. Define the **Memory and Processor** settings based on the recommendations in *Tables 1 and 2* above:
  1. Click **Hard Drive** under **Virtual hard disk**, and click **Edit**:



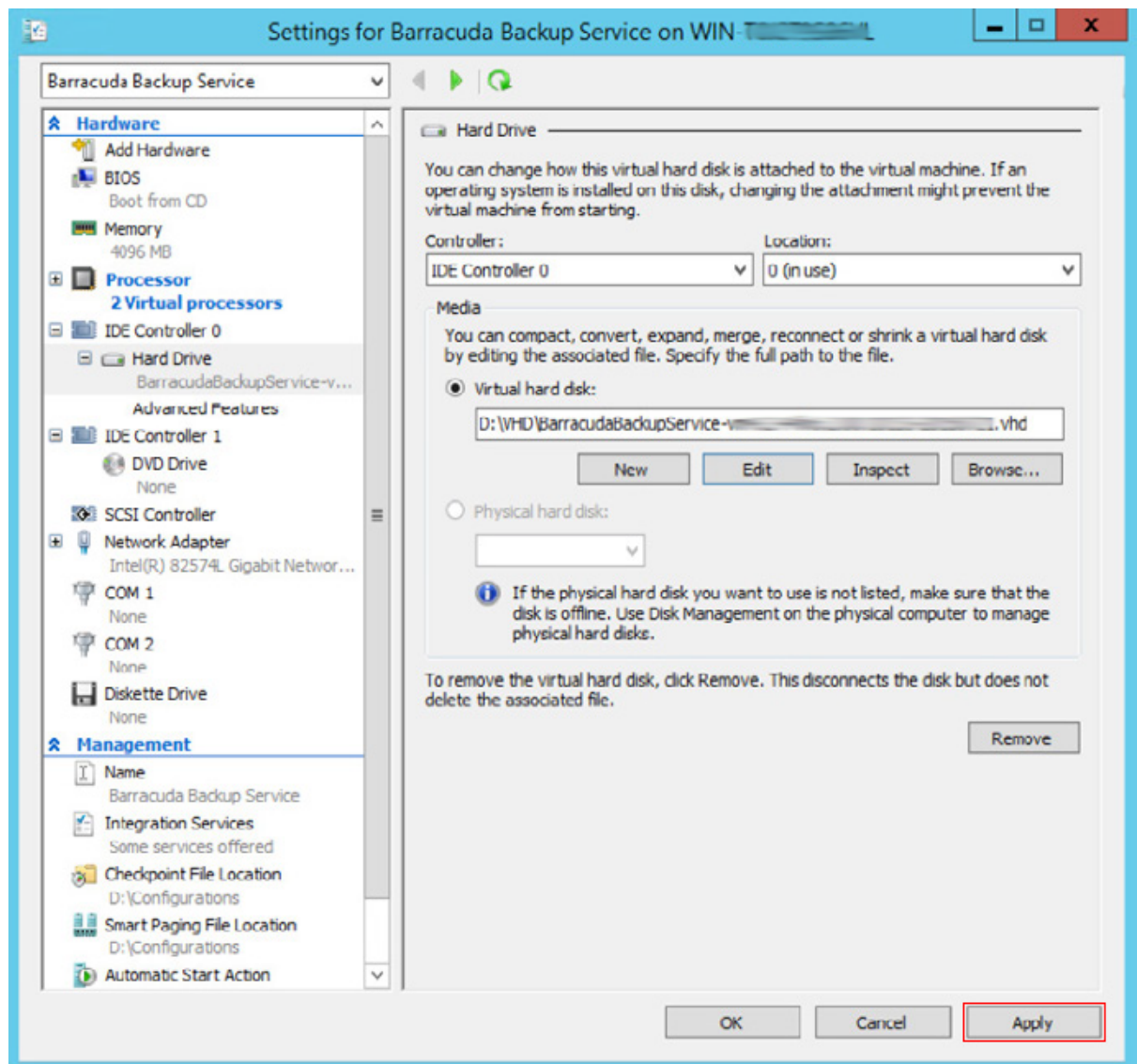
2. Click **Next**. Select the **Expand** action:



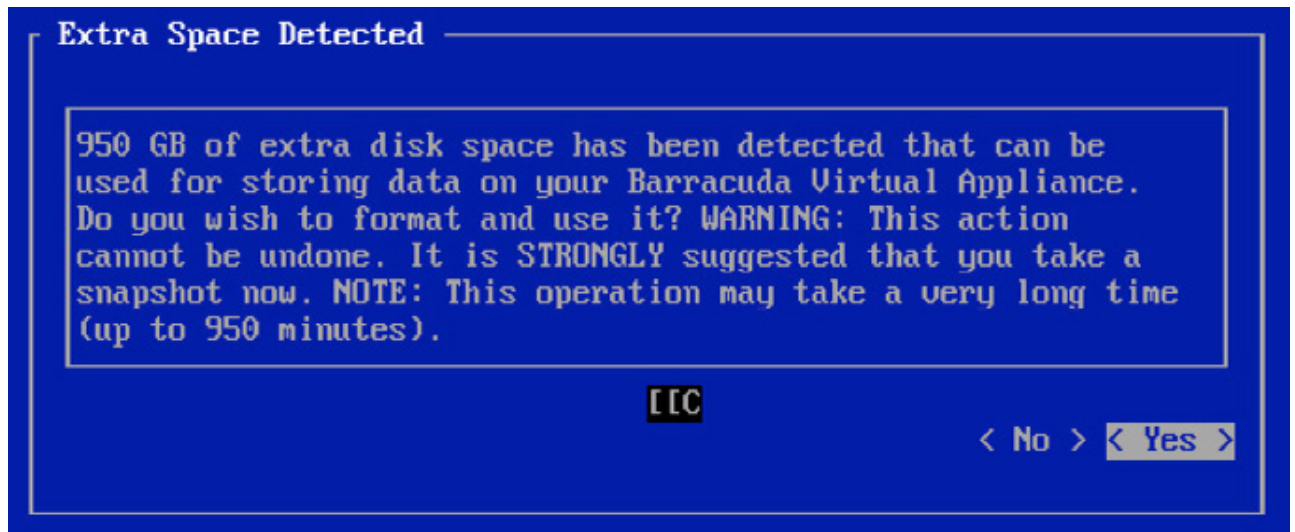
3. Click **Next**. Specify the virtual hard disk size:



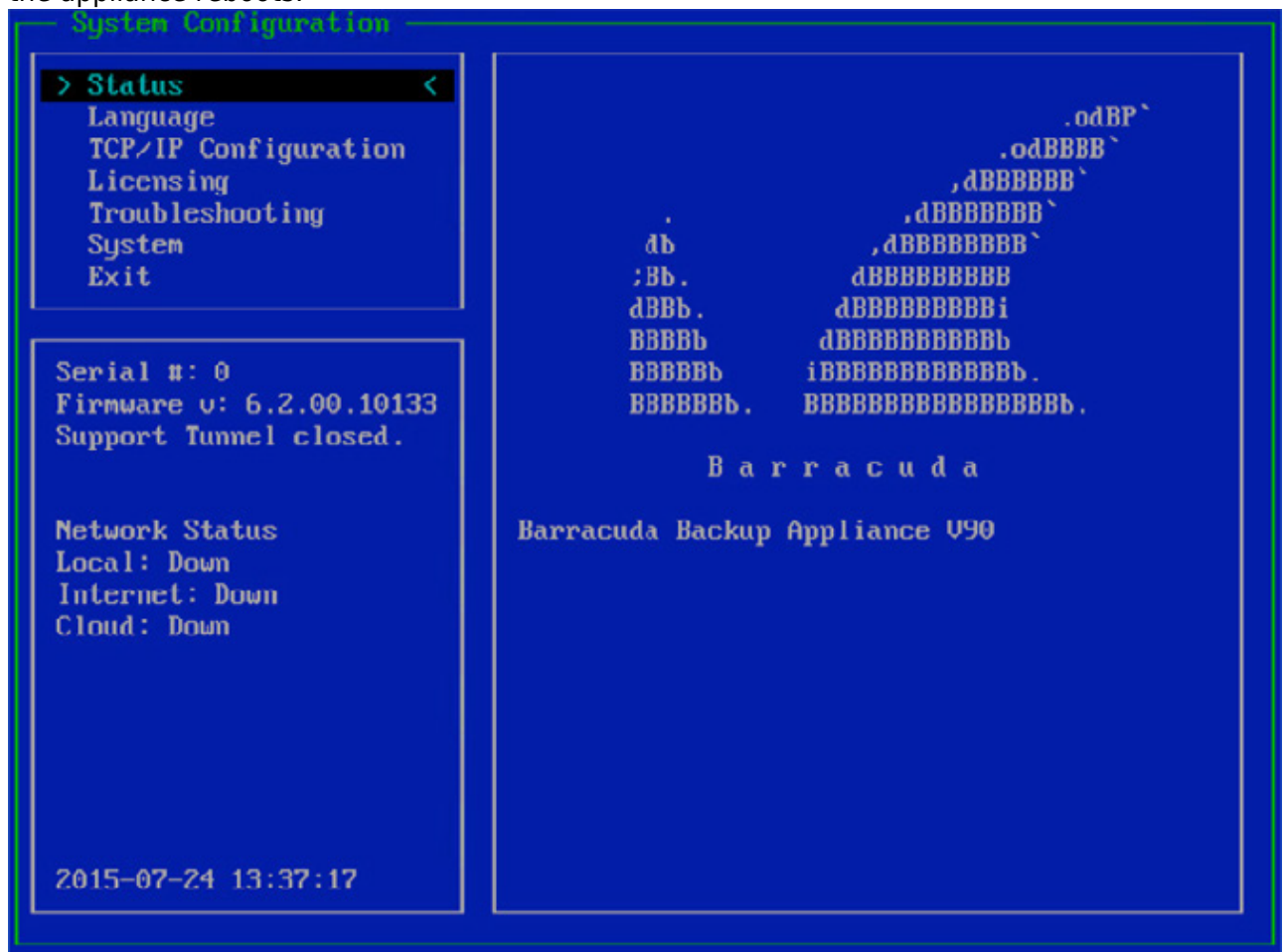
4. Click **Next**, and click **Finish**.
5. In the VM Settings window, click **Apply**:



16. Click **OK** to finish editing the VM.
17. Power on the virtual appliance. The appliance is prepared for use; this may take several minutes.
18. Using your keyboard arrows, select **Yes** to format and partition the additional disk space provisioned above in *Step 9*:



19. The Barracuda Backup Vx expands and formats its partition space. Once formatting is complete, the appliance reboots:



To take advantage of Microsoft's VHDX support on Hyper-V 2012, 2012 R2, and 10, follow the instructions in [How to Convert and Replace a Barracuda Networks Virtual Appliance VHD File with a VHDX Format File](#).



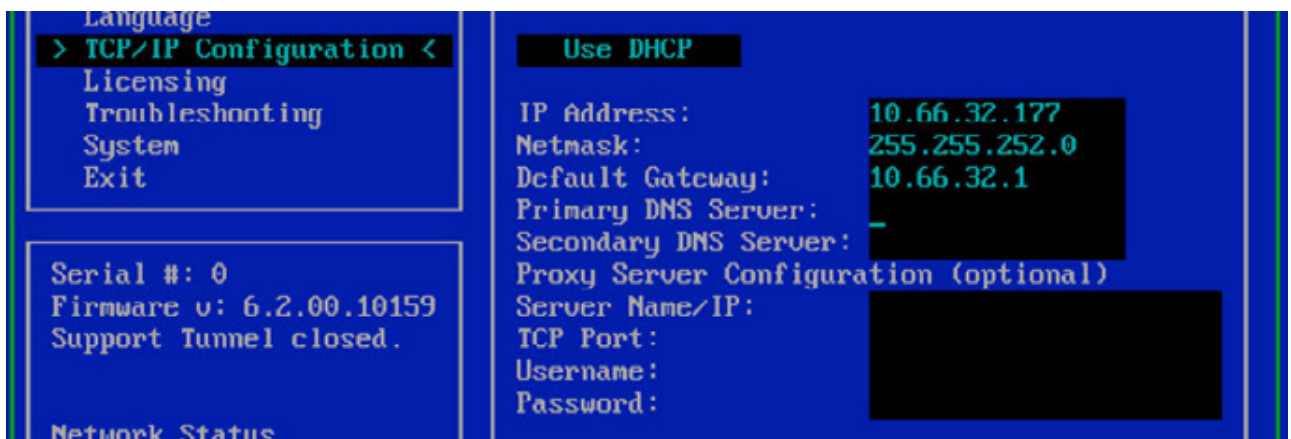
## Configure and Provision the Barracuda Backup Vx

You must configure a valid external DNS to resolve to certain Barracuda infrastructure components requiring DNS entries.

If you did not receive your Barracuda Vx license token via email or from the website when you downloaded the Barracuda Backup Vx package, request an evaluation on the Barracuda website at <https://www.barracuda.com/purchase/evaluation> or purchase one from <https://www.barracuda.com/purchase/index>. The license token looks similar to the following: 01234-56789-ACEFG.

In your hypervisor client, start the virtual appliance and allow it to boot up, then complete the following steps:

1. From the console, log in as **admin** with the password **admin** (if prompted).
2. Use your keyboard arrows to select **TCP/IP Configuration**, enter your network settings, and then select **Save**:



3. Use your keyboard arrows to select **Licensing**, enter your Barracuda license token, and then select **Save**:



4. Type **YES**, and press **Enter** to apply the license and provision the virtual machine (VM):

```

Provisioning...

Fetched the following:

      status  OK
      Model   390Ux
      Serial  667634

Type "YES" (in capitals) and press Enter to apply this license.
(anything else and Enter to cancel.)
  
```

5. Allow the provisioning to complete; this may take several minutes.
6. Once the license is installed, press **Enter** to reboot the VM.
7. After the VM reboots, log in with username **admin** and password, which is either:
  - The *numeric* part of the serial number if your Vx preboot version is 4.6.1 or higher. To find the preboot version, check the name of downloaded Vx image (zip file) which is something like BarracudaEmailSecurityGateway-p2-vm4.6.1-fw8.1.0.003-20200113-esx-vbox.zip. The text between "vm" and "-fw" in the filename is the preboot version. In this example, it is 4.6.1. The serial number of your Vx is in your invoice *and* in your VM Setup email.
  - The word "admin" if your Vx preboot version is below 4.6.1.  
 For help finding the serial number of your virtual appliance, see [Serial Number for Hardware and Virtual Appliances](#).
8. Verify both **Local** and **Internet** values are **Up**; **Cloud** changes to **Up** once the appliance is linked in the next step:



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## Activate the Barracuda Backup Vx

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If you are a Barracuda MSP customer, see [MSP App](#) before proceeding.

To activate your virtual appliance,

1. Log into <https://login.barracudanetworks.com>. If you do not have an account, click **Create a User**, follow the account creation instructions, and log in.
2. Click **Backup** in the left pane. If this is your first time activating a Barracuda Backup appliance, click **Start Backup Setup**; otherwise, go to **Admin > Activate Barracuda Backup**.
3. Enter the **Serial number** and the **Linking code** from the sticker on the back of the Quick Start Guide, and click **Next**.
4. The wizard launches. In the **Your Info** page, enter your contact information, and click **Continue**.
5. In the **Device Info** page, enter a **Device Name** to represent the device in the UI. If you previously defined display groups, select the **Display Group** to which to add the device to from the drop-down menu.
6. Select the **Time Zone** from the drop-down menu.
7. In the **Enter device location** section, enter the geographical location.
8. Select whether to **Automatically update device firmware after activation**, and click **Continue**.

If you select to automatically upgrade the firmware after activation, the device downloads the firmware package, installs it, and automatically reboots. Be advised that this process can take up to 20 minutes to complete and the Barracuda Backup device may be unresponsive. Allow the upgrade to complete before continuing with the configuration. When the unit comes back online, you must log out and then log back in to the user interface to clear any cached pages.
9. The **Terms of Service** page displays. Read the **Terms and Conditions**, and click **I have read and agree** to complete the linking process. Click **Done**.
10. Once your device is linked, click **Go to Dashboard**.

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## How to Expand Barracuda Backup Vx Capacity

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This section describes how to scale capacity.

- Do not use snapshots on the Barracuda Backup Vx appliance. Even if data is not being replicated to the Barracuda Cloud, configuration data is still sent to Barracuda so that the unit can be managed. Reverting to a previous state using snapshots can potentially cause *loss of data and unit corruption*. Independent disks are the default selection and highly



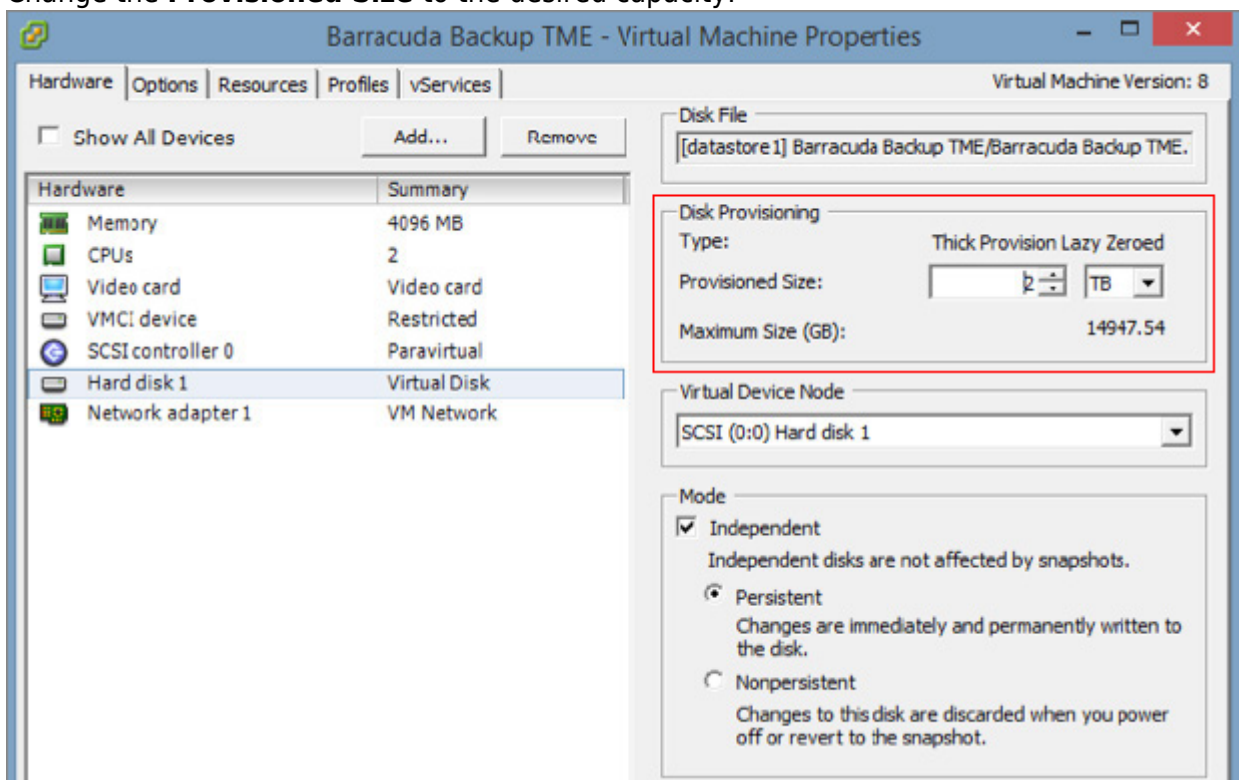
recommended to avoid snapshots.

- When expanding Barracuda Backup Vx capacity, expand only the current volume. Adding and expanding a new volume can potentially cause *loss of data and unit corruption*.

Local Control is not supported for Barracuda Backup Vx.

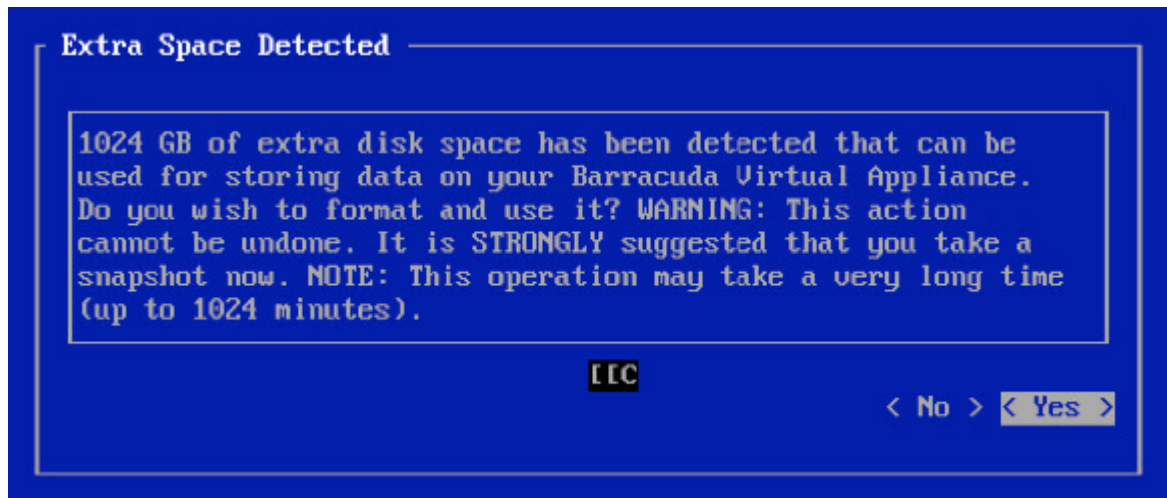
## Expand Barracuda Backup Vx Capacity for VMware

1. With the Barracuda virtual appliance powered off, right-click the appliance, and click **Edit Settings**.
2. In the **Hardware** tab, click **Hard disk 1**.
3. Change the **Provisioned Size** to the desired capacity:

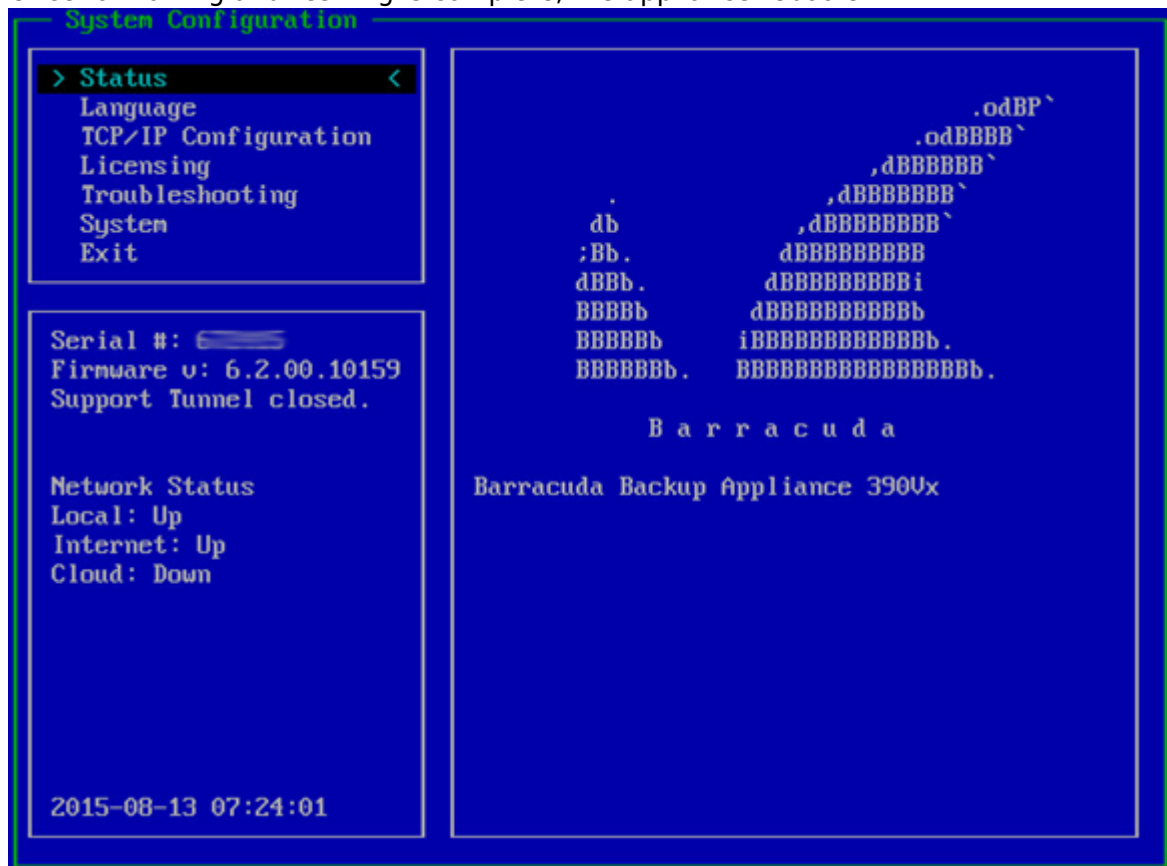


Virtual drives must be thick provisioned; thin provisioned discs will cause unexpected behavior and the virtual device will not operate properly.

4. Increase the amount of **Memory** or the number of **CPUs** to match the new disk capacity; refer to the tables in the *System Resource Requirements* section of this article for minimum recommendations.
5. Click **OK** to configure the VM.
6. Power on the VM. The additional disk space is detected; select **Yes** to format and use it:

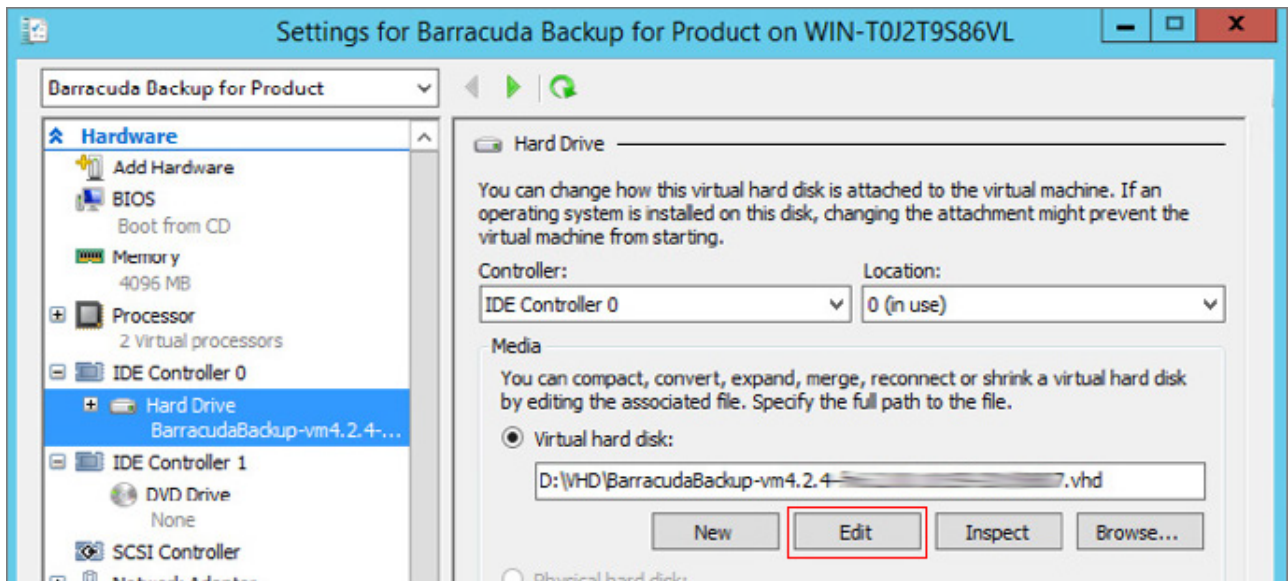


7. The additional disk space is formatted and the disk resized; this may take several minutes.
8. Once formatting and resizing is complete, the appliance reboots:

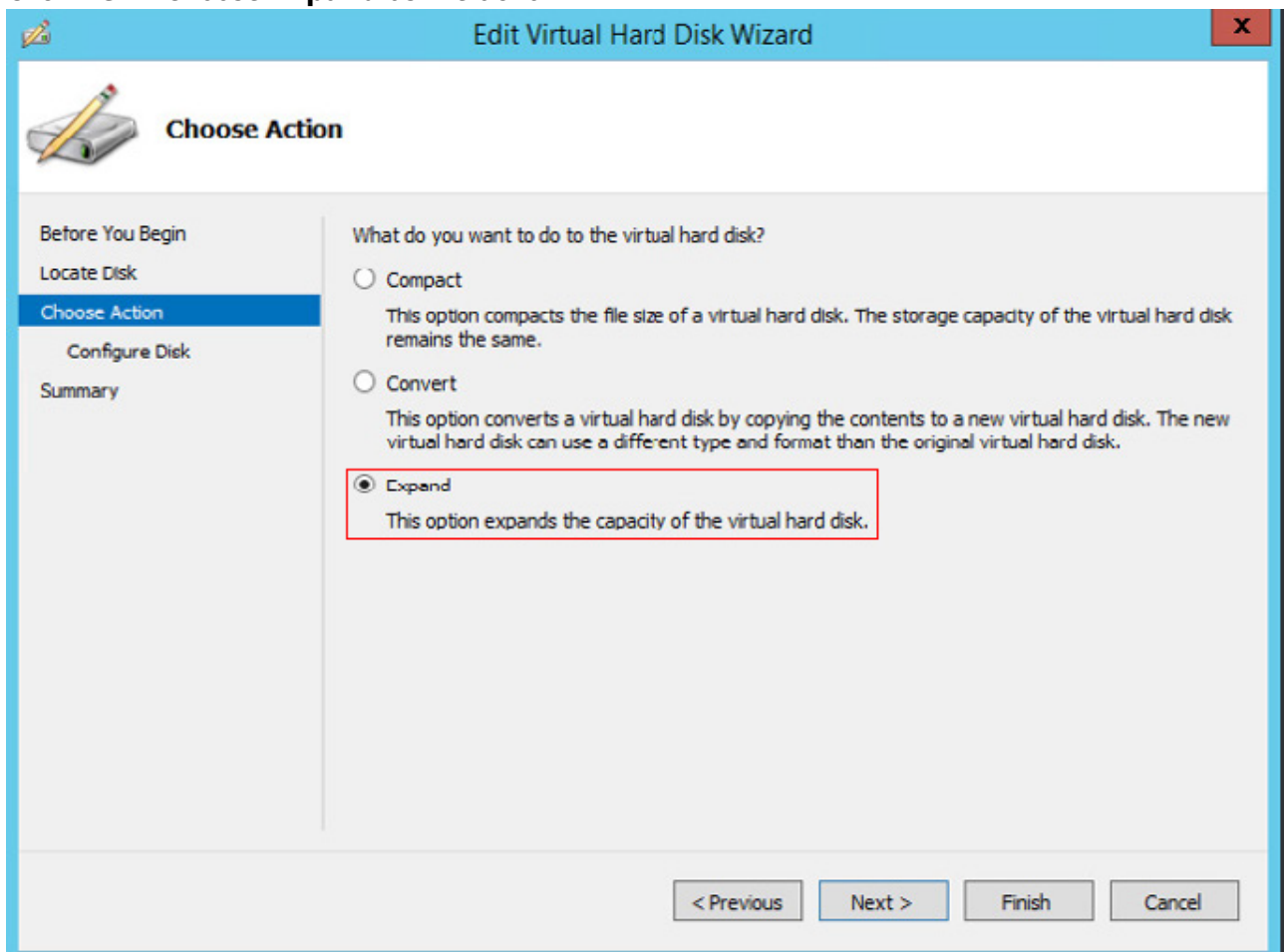


## Expand Barracuda Backup Vx Capacity for Hyper-V

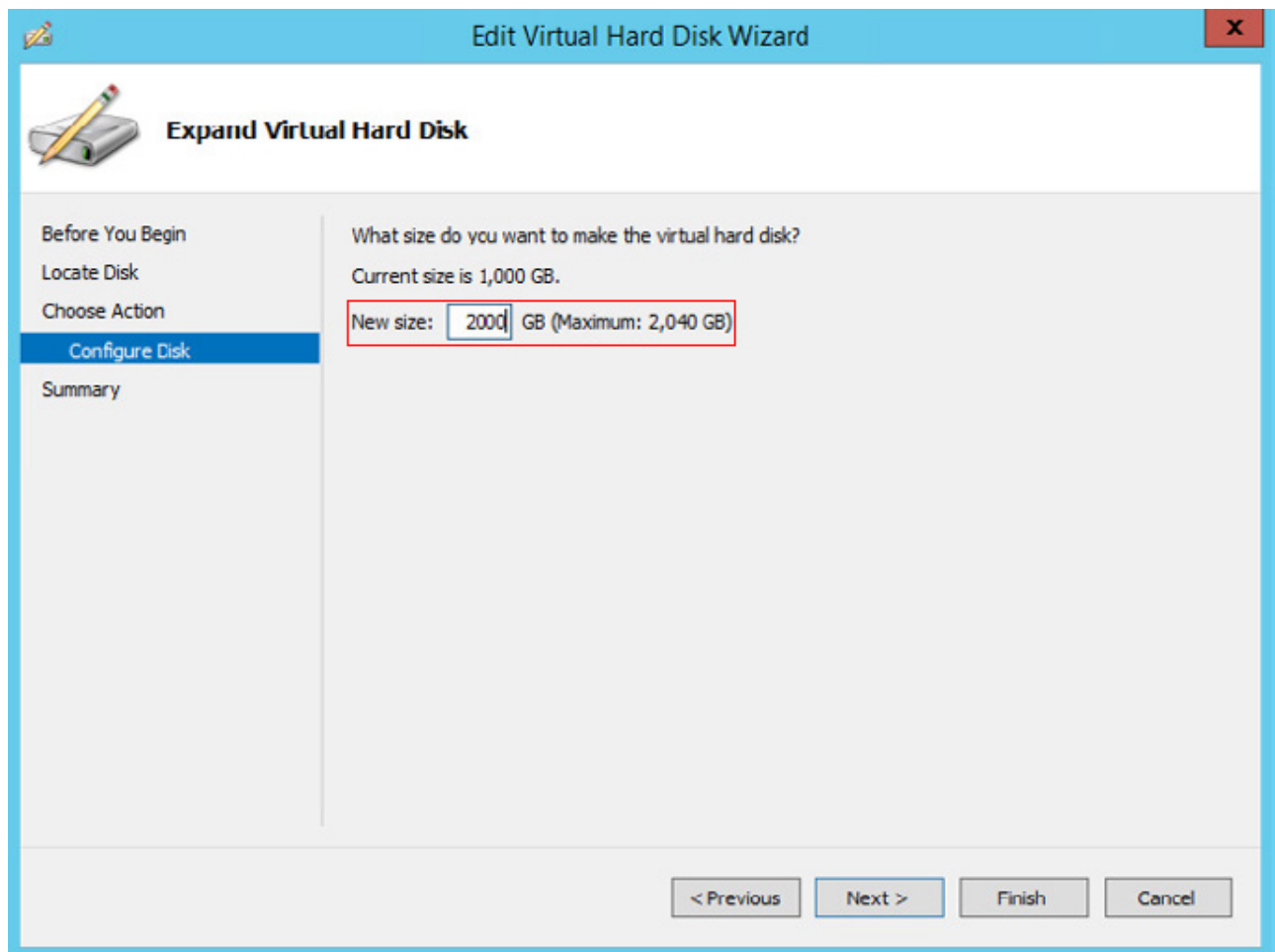
1. With the Barracuda virtual appliance powered off, right-click the appliance, and click **Settings**.
2. In the **Hardware** section, click **Hard Drive**.
3. Under **Virtual hard disk**, click **Edit**:



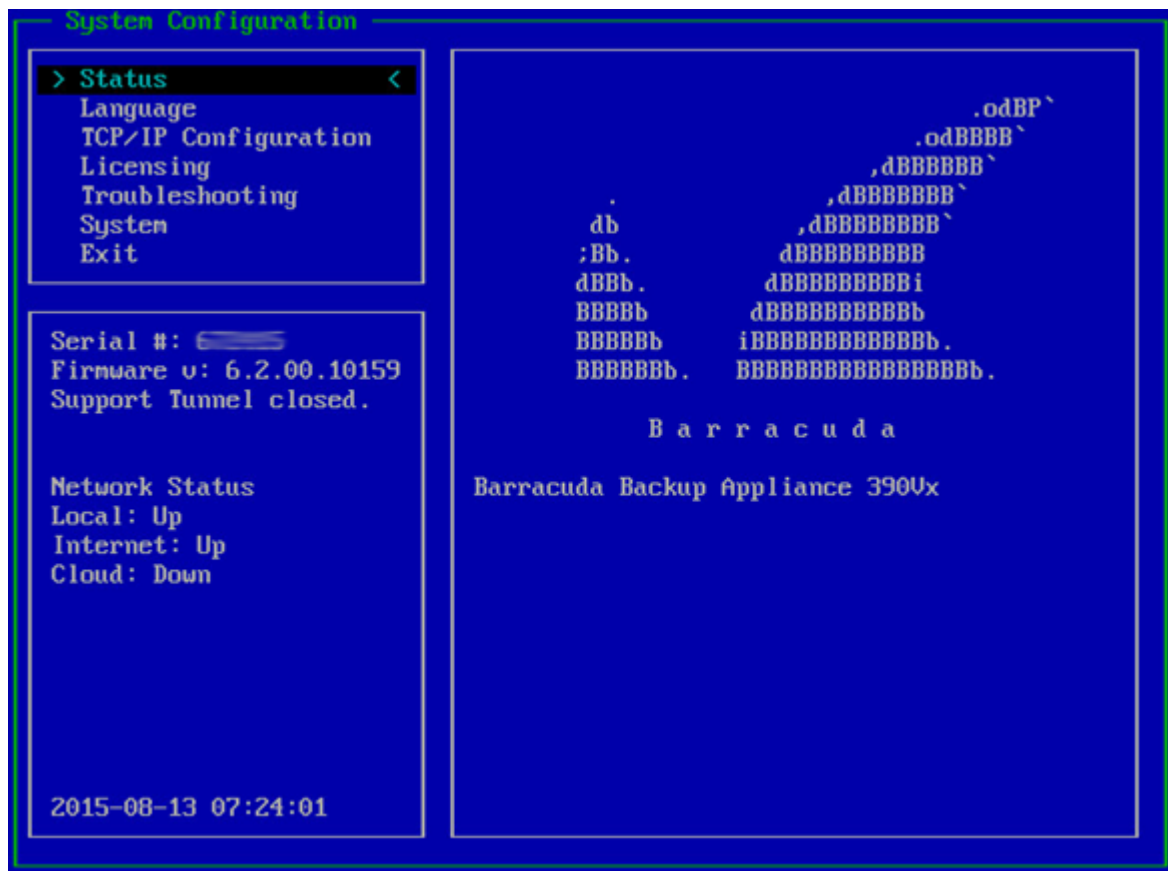
4. Click **Next**. Choose **Expand** as the action:



5. Click **Next**. Specify the new disk size:



6. Click **Next** , and click **Finish** .
7. Increase the amount of **Memory** or the number of **CPUs** to match the new disk capacity; refer to the tables in the *System Resource Requirements* section of this article for minimum recommendations .
8. Click **OK** to reconfigure the VM.
9. Power on the VM. The additional disk space is detected; select **Yes** to format and use it.
10. The additional disk space is formatted and the disk resized; this may take several minutes.
11. Once formatting and resizing is complete, the appliance reboots:



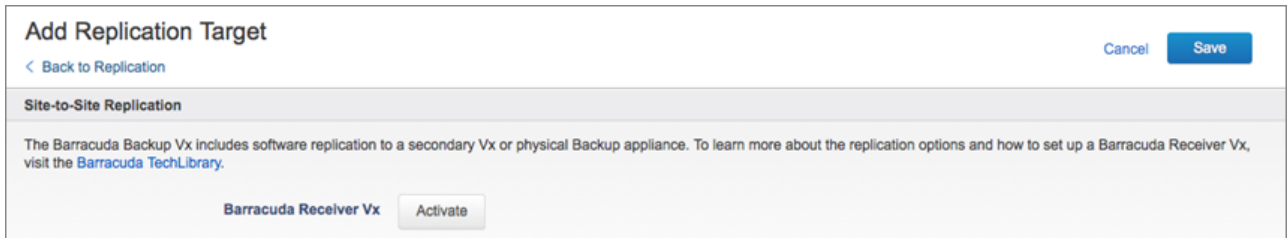
## How to Set Up a Barracuda Receiver Vx

Barracuda Backup Vx includes one-way basic software replication to a Barracuda Receiver Vx. A single Barracuda Receiver Vx license is included with each Barracuda Backup Vx subscription for one-way replication.

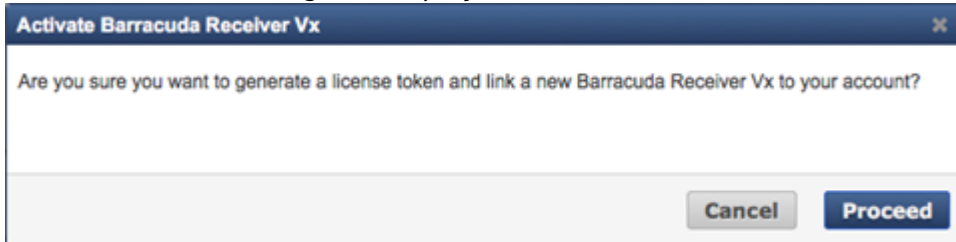
You can use the Barracuda Receiver Vx as a replication target and for restores. With a Receiver Vx subscription, you can pair a physical appliance and a Barracuda Receiver Vx, one-to-one. Additionally, it can be used for site-to-site replication or in conjunction with Barracuda Cloud Storage for multiple offsite copies.

To generate a license, link to your account, and provision the Barracuda Receiver Vx:

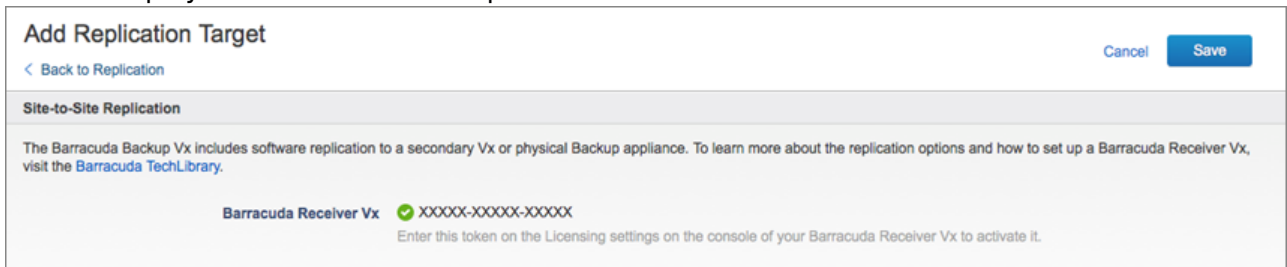
1. Log in to Barracuda Backup, go to the **Backup > Replication** page, and click **Add Target**.  
Once you click **Activate**, the Barracuda Receiver Vx license token for provisioning your virtual machine is generated, and then activates and links the system to your Barracuda Cloud Control account.
2. In the **Site-to-Site Replication** section, click **Activate**:



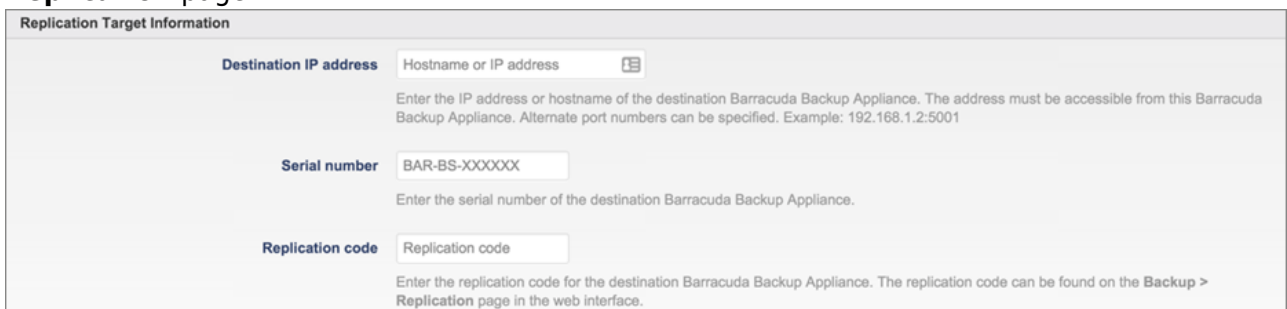
3. The confirmation dialog box displays:



4. Click **Proceed** to activate and link the Barracuda Receiver Vx to your account. The license token displays on-screen.
5. Use the license token to provision your Barracuda Receiver Vx using the same virtual image used to deploy the Barracuda Backup Vx:



6. After provisioning the Barracuda Receiver Vx and booting the system, configure replication settings on the **Backup > Replication > Add Target** page using the destination IP address, serial number, and replication code. This information is located on the Barracuda Receiver Vx **Replication** page:



7. The Barracuda Backup Vx is now ready to replicate data.

## Barracuda Backup Vx Replication Options

The Barracuda Backup Vx appliance can replicate data to Barracuda Cloud Storage for offsite disaster recovery or site-to-site for basic software replication to a virtual or physical Barracuda Backup



appliance.

**Table 1. Barracuda Backup Vx Replication Options**




Barracuda Backup Vx can replicate to one or more destinations.

Replication Target	Direction	Type
Barracuda Cloud Storage	One way	Site-to-cloud
Barracuda Backup Appliance	One way	Site-to-site
Barracuda Backup Vx	Bidirectional	Site-to-site
Barracuda Receiver Vx	One way	Site-to-site

### Barracuda Cloud Storage

No additional configuration is necessary to set up Barracuda Cloud Storage. Each Barracuda Backup Vx is preconfigured with Barracuda Cloud Storage as a target within **Backup > Replication** and is enabled by default for users who have either purchased or are evaluating the service:

#### Sending Data To

TARGET LIST	Status	Send All Local Backups	Total Stored	Queue Age	Queue Size
 <b>Barracuda Cloud</b> <a href="#">Settings</a> Bandwidth Rate Limit Default: 60% · 330 Mb/s	Online 	 ON	2.56 TB		0 bytes

Data replicated to Barracuda Cloud is stored encrypted on geographic and locally redundant storage with billing applied against the amount of storage hosted offsite, after deduplication and compression. Leverage Barracuda Networks' scalable cloud architecture to avoid the complexity and risk of allocating and managing offsite storage sites. Contact your Barracuda Networks partner or [Barracuda sales representative](#) for more information.

### Barracuda Backup Appliance

You can configure the Barracuda Backup Vx appliance to replicate one-way to a Barracuda Backup appliance, model 490 and above, for site-to-site replication.

Use this option in multi-site environments with mixed physical and virtual Barracuda Backup appliances or in an environment with a physical Barracuda Backup appliance and two or more locations. Ensure that the Barracuda Backup appliances have suitable storage and are sized appropriately to host data being replicated to it as well as the data locally backed up to the appliance.



## Barracuda Backup Vx

You can configure the Barracuda Backup Vx appliance to replicate bidirectionally to another Barracuda Backup Vx or to a Barracuda Backup appliance.

Use this option in environments where two or more sites host primary backed up data, and where site-to-site replication is preferred. This is the recommended method for site-to-site replication for the Barracuda Backup Vx as the virtual appliance storage can be scaled to meet storage demands over time.

Each Barracuda Backup Vx can be set up as a replication target for one-to-one replication between virtual appliances or to a physical device as a replication pair. Note that many-to-one replication is not available with the Barracuda Backup Vx appliance.

For optimum performance, ensure that the appliance at each location is set up with the minimum system requirements as described in the tables in the *System Resource Requirements* section of this article. See [Configure an Offsite Replication Destination](#) for details on setting up a site-to-site replication target.

## Barracuda Receiver Vx

The Barracuda Receiver Vx is included with the Barracuda Backup Vx subscription for basic software replication and can be set up as a replication target and can perform restores. With a Receiver Vx subscription, you can pair a physical appliance and a Barracuda Receiver Vx, one-to-one.

Use this option in environments where an offsite location can host the virtual appliance as a storage target but does not have primary data to back up, or in environments where you want to replicate the Barracuda Backup Vx within the same site. You can use the Barracuda Receiver Vx in conjunction with Barracuda Cloud Storage for two offsite copies. The Barracuda Receiver Vx has the same benefits as the Barracuda Backup Vx. You can add the Barracuda Receiver Vx to a physical appliance.

## How to Migrate a Barracuda Backup Vx to New Storage

Use the steps in this section to migrate a Barracuda Backup vx to new storage.

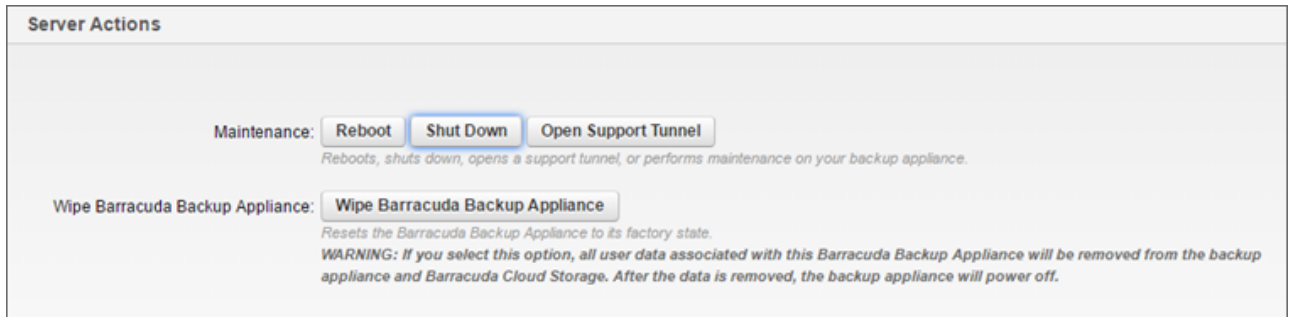
### Step 1. Shut Down the Barracuda Backup Vx

Select the manner in which to shut down the server.

### Local User Interface

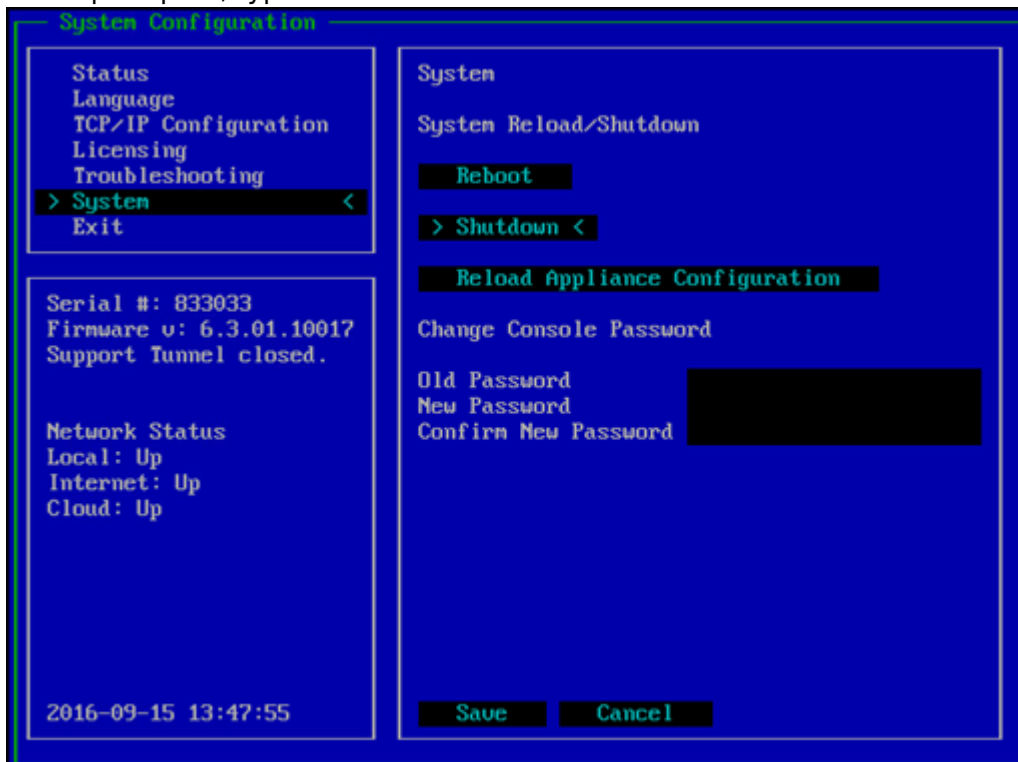
1. Log into the local user interface, and click **System > Device Information**.

2. Scroll down to **Server Actions**, and click **Shut Down**:



## Local Console

1. Log into the local console.
2. Arrow down to **System**, and press **Enter**.
3. Arrow down to **Shutdown**, and press **Enter**.
4. When prompted, type: YES



## Step 2. Migrate the Barracuda Backup Vx to New Location

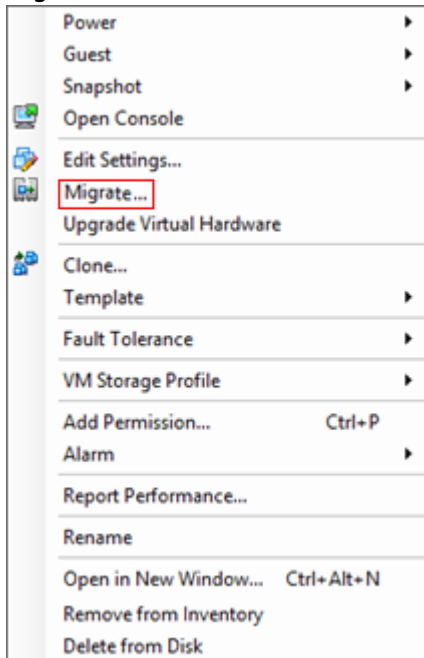
Select the manner in which to migrate the VM.

### Migrate via Storage vMotion

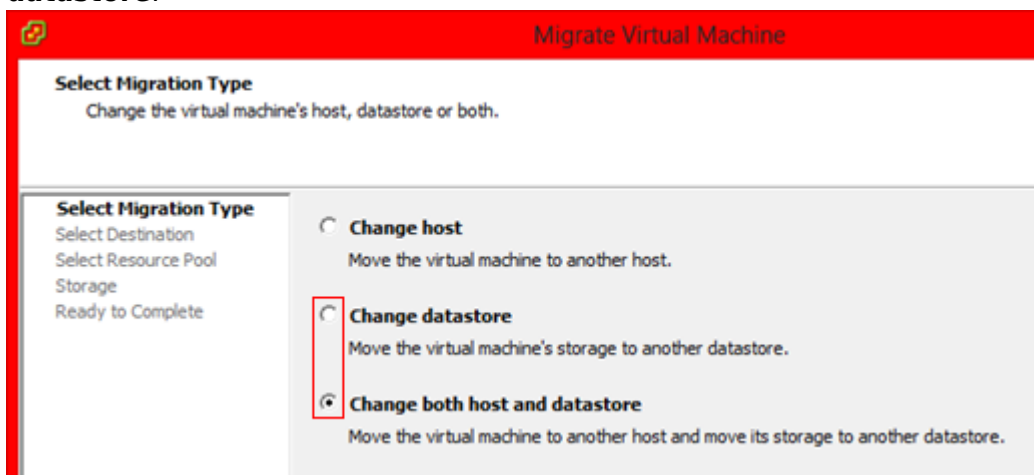
1. Log into VMware via vSphere or the web client, and locate the Barracuda Backup virtual

machine (VM).

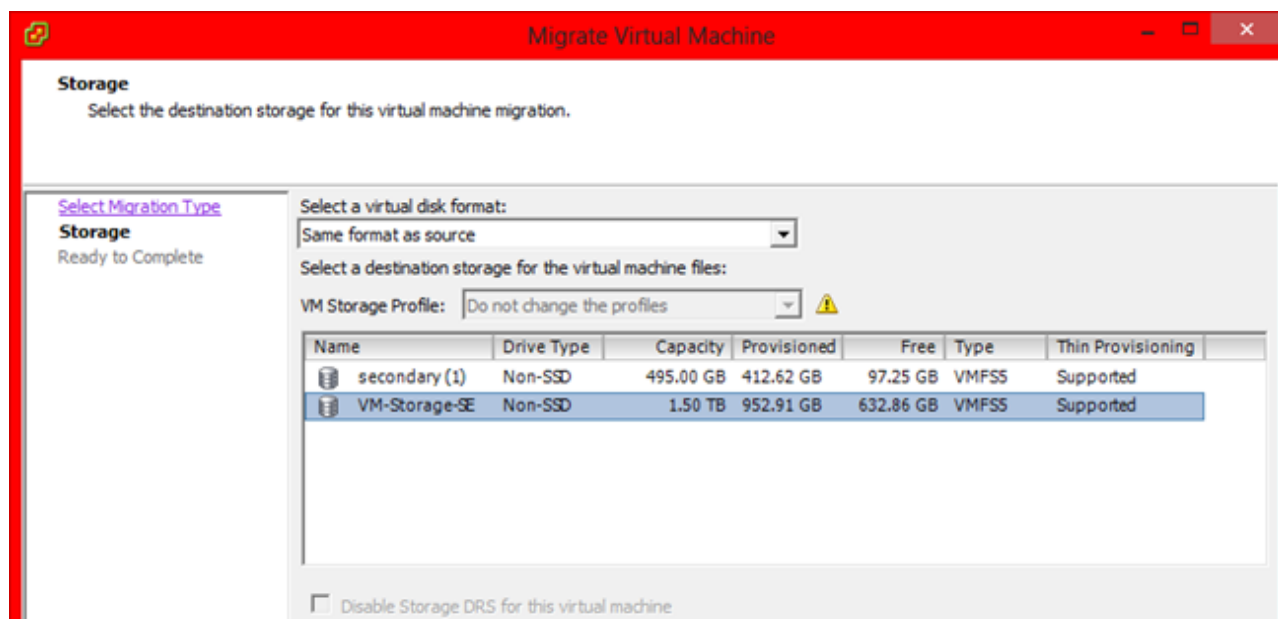
2. Right-click the VM, and click **Migrate**:






3. In the **Select Migration Type** page, select **Change datastore** or **Change both host and datastore**:



4. Click **Next**. In the **Storage** page, select storage/datastore:



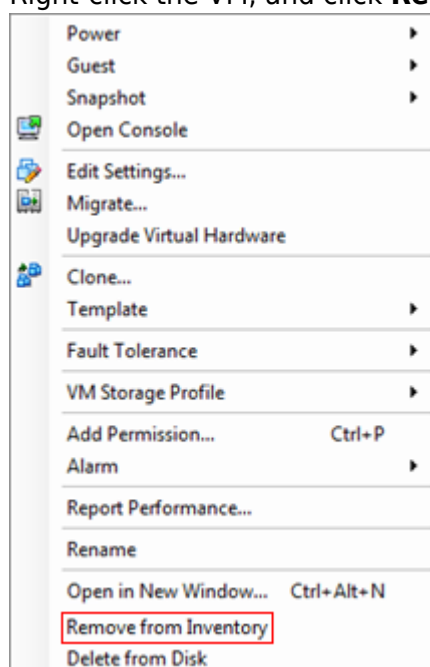
- Click **Next**. Verify the configuration, and click **Finish**.
- The **Status** indicator displays the relocation progress:

Name	Target	Status	Details	Initiated by
 Relocate virtual machine	 Haags-BBSx	37% 	Copying Virtual Machine files	STOREDEV\mhaag

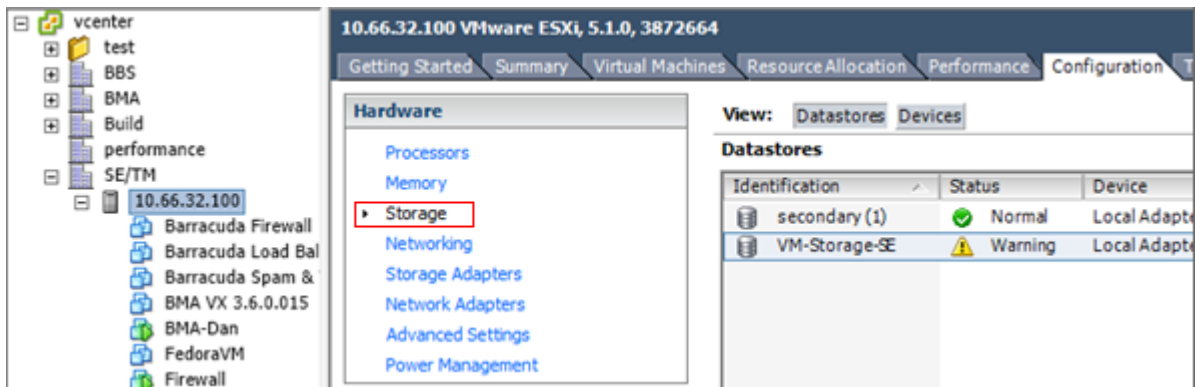
- Allow the relocation to complete.

## Manually Migrate the VM

- Log into VMware via vSphere or the web client, and locate the Barracuda Backup VM.  
Verify the datastore where the VM is located.
- Right-click the VM, and click **Remove from inventory**:

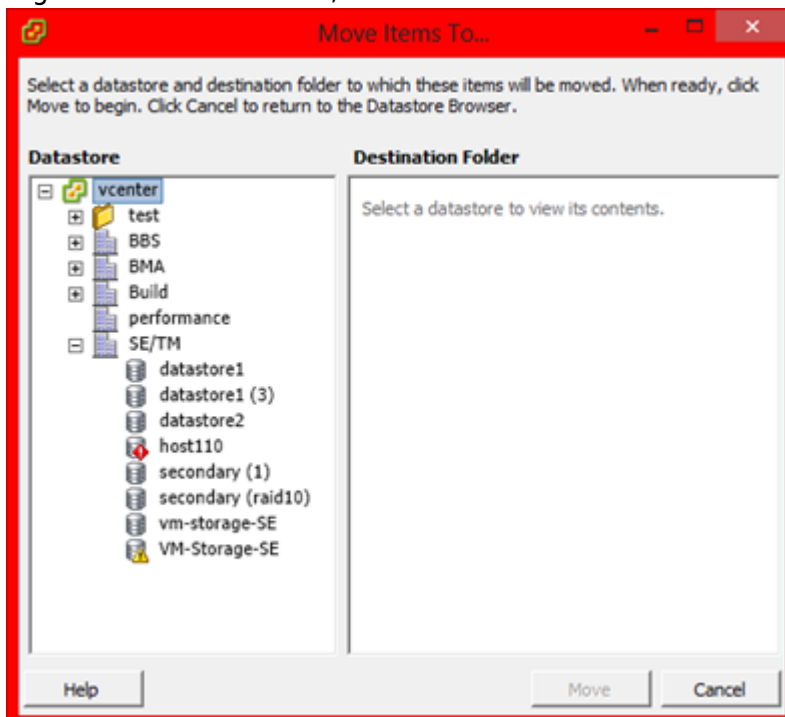


- Click on the host. Click the **Configuration** tab, and click **Storage**:



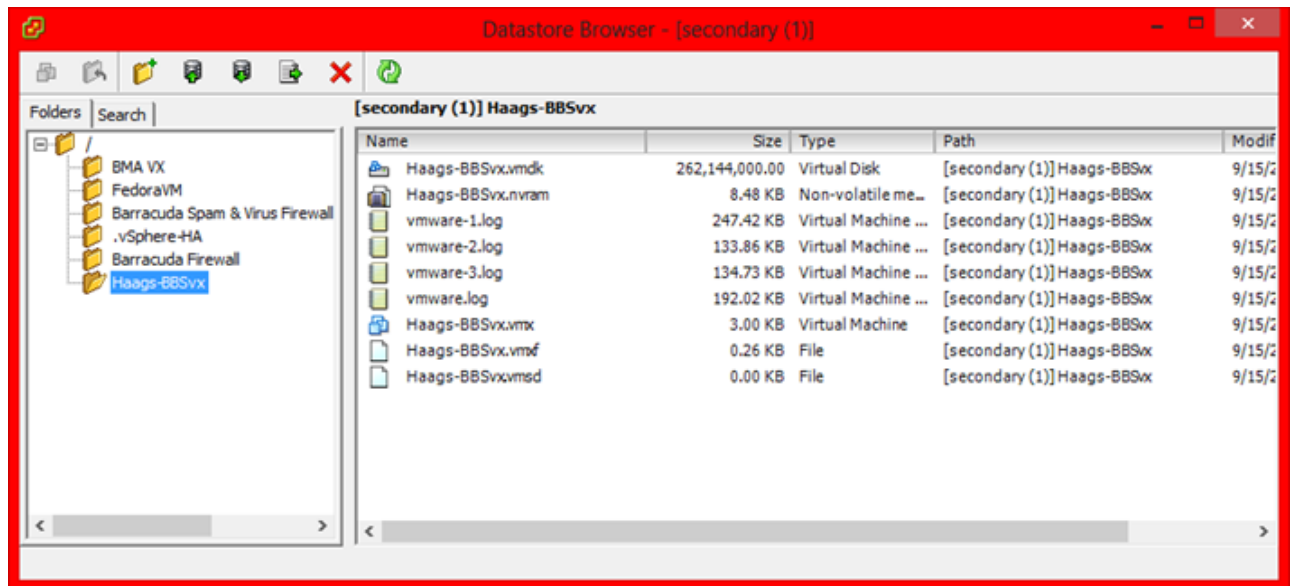
4. Right-click the **Datastore**, click **Browse datastore**.

5. Right-click the VM folder, and click **Move to**:

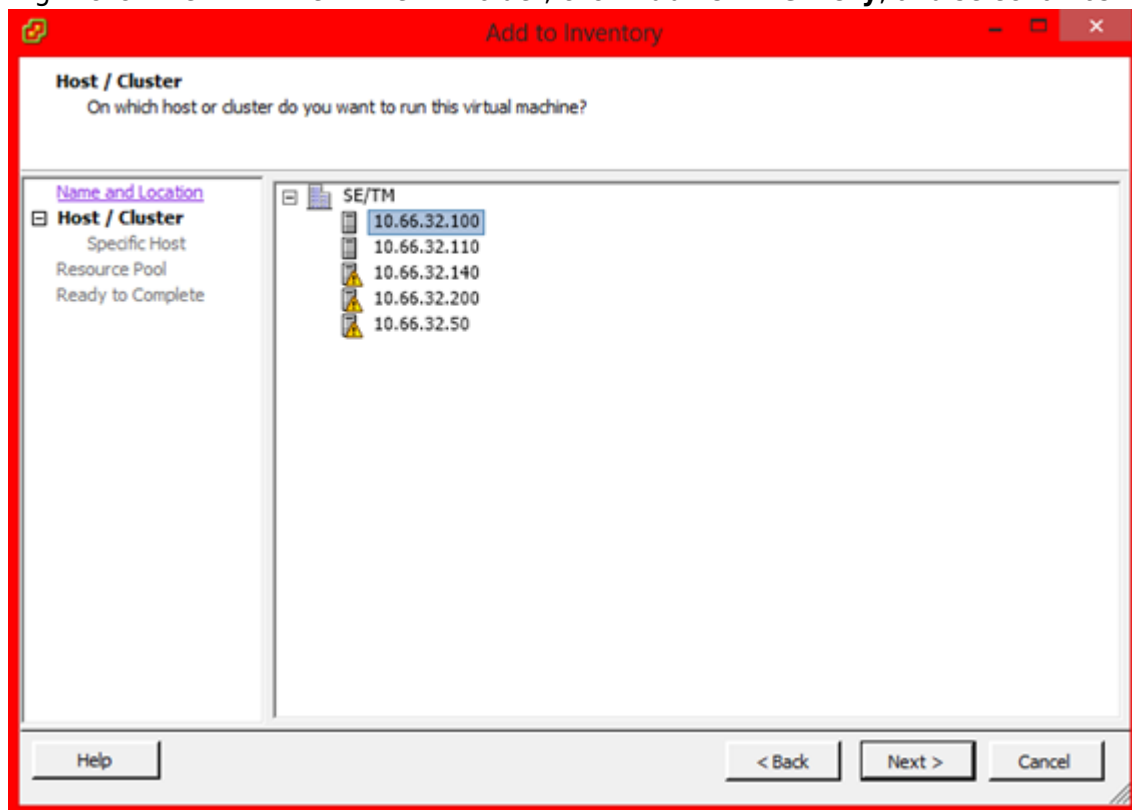


6. Select the datastore where you want to move the VM folder, and click **Move**.

7. Right-click the new datastore, click **Browse Datastore**, and open the VM folder:



8. Right-click the **.vmx** file in the VM folder, click **Add to Inventory**, and select a host:



9. Click **Next**, and then click **Finish**.

The VM is now ready to restart.

## Figures

1. deploy\_ovf.png
2. deploy\_ovf02.png
3. disk\_provision.png
4. extra\_space\_detected\_2016.png
5. BBS\_Vx.png
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