Barracuda Backup Vx

Virtual Appliance Deployment

White Paper

Document Scope

This document provides guidance on designing and deploying Barracuda Backup Vx on VMware vSphere and Microsoft Hyper-V platforms.

VMware and Hyper-V System Requirements

Barracuda offers the following types of images for the Barracuda Backup Vx deployment. Follow the instructions for your hypervisor to deploy the Barracuda Backup Vx appliance.

IMAGE TYPE	SUPPORTED HYPERVISORS
OVF	VMware ESX and ESXi (vSphere Hypervisor) versions 4.x, 5.x, and 6.x
VHD	Microsoft Hyper-V 2008, 2008 R2, 2012, 2012 R2, and 2016

CPU and RAM System 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.

vCPU Recommendations

BACKUP VOLUME	MINIMUM RECOMMENDED vCPUs	HIGH PERFORMANCE RECOMMENDED vCPUs
0 to 2 TB	1 vCPU	2 vCPUs
2 to 6 TB	2 vCPUs	4 vCPUs
6 to 16 TB	4 vCPUs	8 vCPUs
16 to 32 TB	8 vCPUs	16 vCPUs
32 to 100 TB	16 vCPUs	32 + vCPUs

RAM Recommendations

| BACKUP VOLUME	MINIMUM RECOMMENDED RAM	HIGH PERFORMANCE RECOMMENDED RAM
0 to 1 TB	2 GB	4 GB
1 to 4 TB	4 GB	8 GB
4 to 12 TB	8 GB	16 GB
12 to 16 TB	16 GB	32 GB
16 to 24 TB	32 GB	64 GB
24 to 48 TB	64 GB	128 GB
48 to 100 TB	128 GB	256+ GB

Storage System Requirements

1. Any storage infrastructure consisting of Local/Direct-Attached, SAN, and NAS.

2. Storage with inadequate throughput, read, and write speeds will suffer.

3. Servers with software RAID, slow NAS, and low-RPM drives will yield poor performance.

Technical Notes

1. Barracuda Backup utilizes memory (RAM) for database queries during backup, restore, and offsite replication. Barracuda highly recommends following the recommended minimum resources for memory in the RAM Recommendations table above.

2. Barracuda uses CPU resources for hashing blocks during deduplication, compression for offsite replication, and rehydration of data during restoration. Barracuda highly recommends following the recommended minimum resources for vCPUs in the vCPU Recommendations table above.

3. At 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.

4. 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.

5. Other system components such as network and storage need to be sized accordingly to prevent them from becoming a bottleneck.

6. 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.

7. 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

1. Download and extract the Barracuda Backup Vx .zip archive to a location that can be accessed from a machine running vSphere.

2. Launch vSphere Client, and from the File menu, click **Deploy OVF Template:**
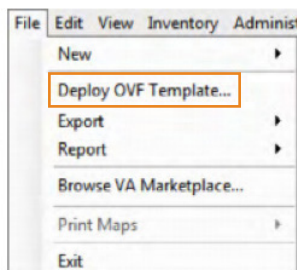
3. The vSphere Client launches the Deploy OVF Template wizard.

4. Click **Browse…,** navigate to the extracted folder, and locate the Barracuda Backup Vx OVF file
(e.g., BarracudaBackupService-vm4.2.4-fw6.2.00.10159-20150807-5x.ovf). Click **Next:**
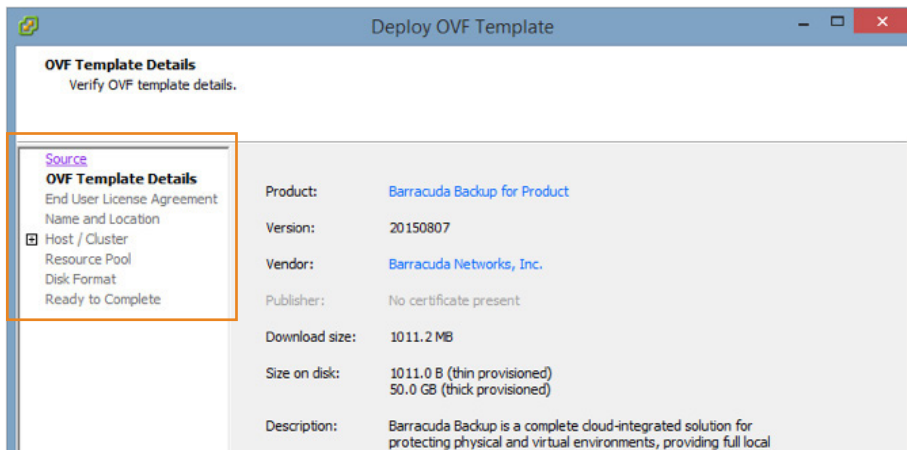
5. In the wizard, complete the following:
   • Review appliance information and correct ESX version.

   • Accept the Barracuda end user license agreement.

   • Name the appliance and define a location where the virtual machine is to be created.

   • Select the data store where the VMDK file is to be stored
   (a dedicated data store is recommended).

   • Select the disk format as **Thick Provisioned Lazy Zeroed.**

   • Review your settings, and then click **Finish** to deploy the appliance.

6. After deployment is complete, locate the appliance within the appropriate data center, host,
or resource pool.

Allocate Space for the Virtual Machine

1. With the virtual machine powered off, right-click the appliance and choose **Edit Settings…**

2. Edit the **CPU, Memory,** and **Hard disk 1 Provisioned Size** settings as defined in the
"Sizing" section above.

   Note: It is recommended that "Thick Provision Lazy Zeroed" is used for the disk provisioning and "Independent
   (Persistent)" for the Mode. These options, chosen by default, are recommended to achieve the best performance
   from your virtual appliance and to prevent snapshots from occurring.
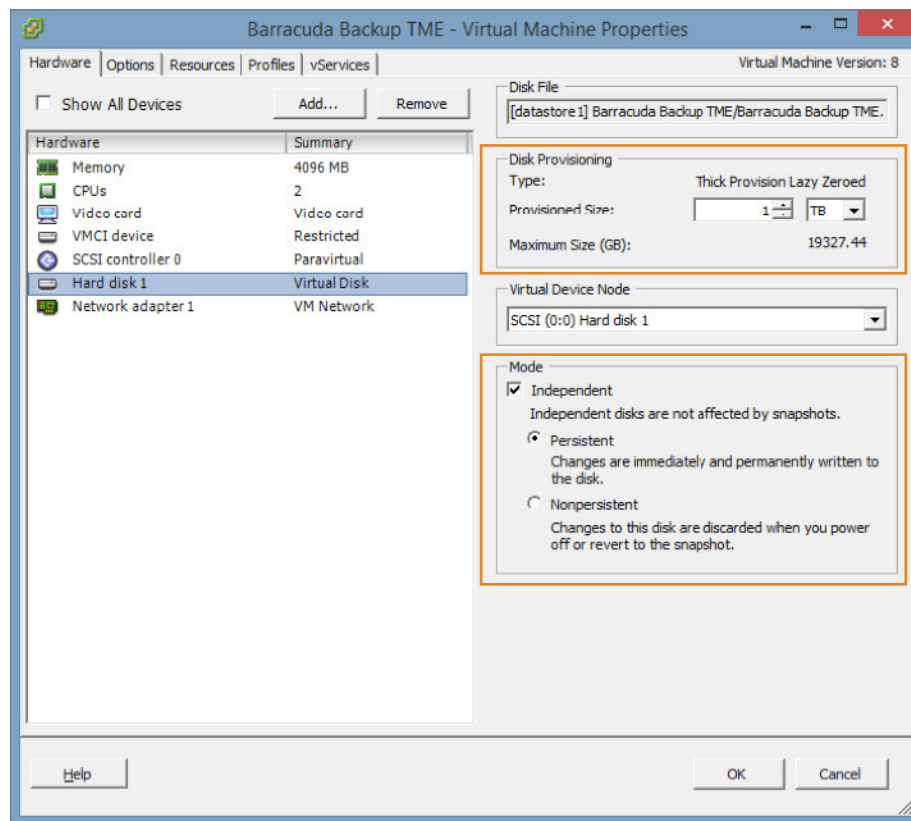
3. Once the hardware settings have been defined, **power on** the virtual appliance.

4. The Barracuda Backup appliance will be prepared for use— this may take several minutes.
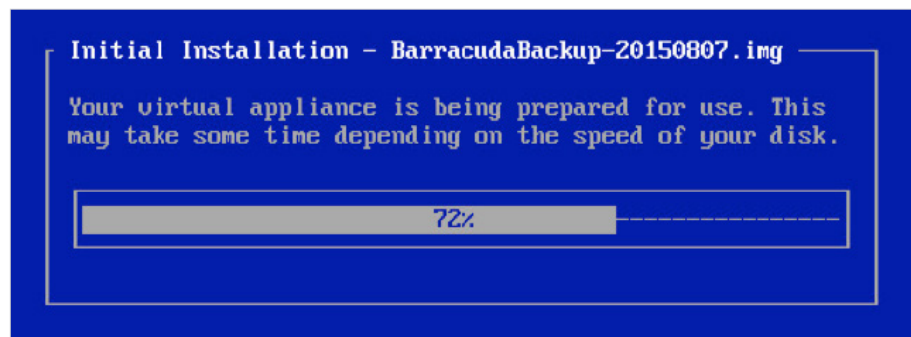
5. Using your keyboard arrows, select **Yes** to format and partition the additional disk space you provisioned in step 2 above.
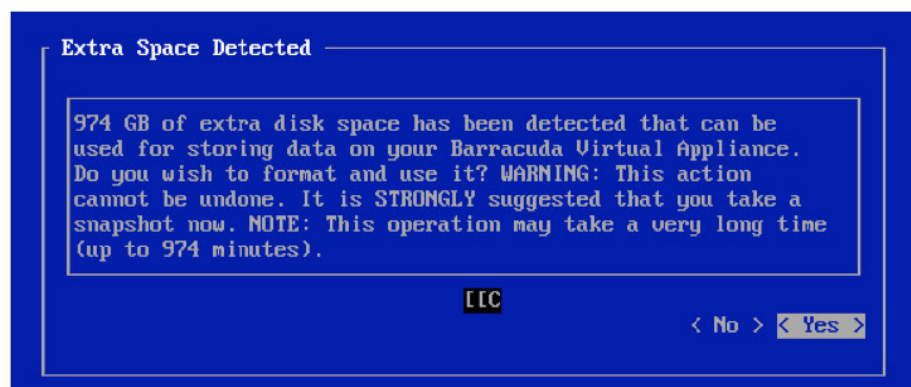
6. The Barracuda Backup Vx expands and formats its partition space.
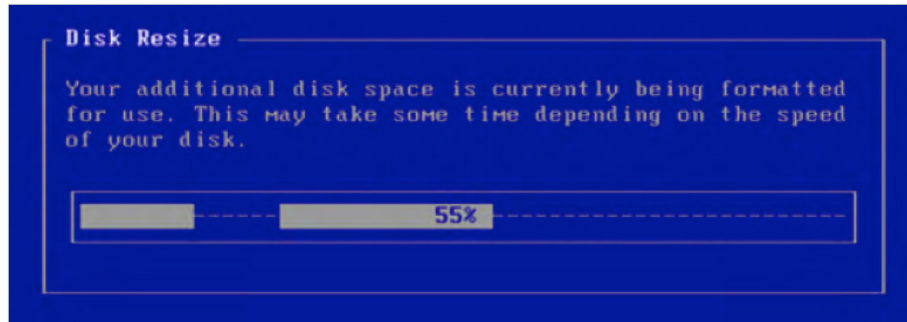
7. Once the formatting has completed, the appliance will reboot and display:
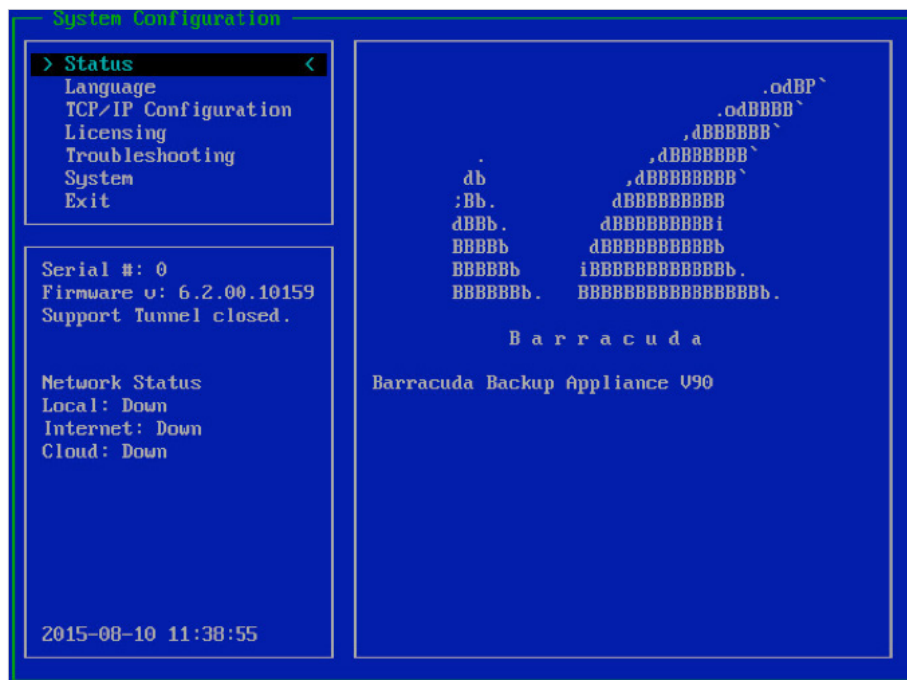
Go to the Open Firewall Ports section on page 10 to continue the VMware configuration.

Microsoft Hyper-V Deployment

1. Download and extract the Barracuda Backup Vx .zip archive to a location that can be accessed from a machine running Hyper-V.

2. In Hyper-V Manager, right-click your VM host, select **Import Virtual Machine,** and click **Next.**

3. Navigate to and select the **HyperV** folder from within the .zip archive that you extracted in step 1, then click **Select Folder,** then click **Next.**
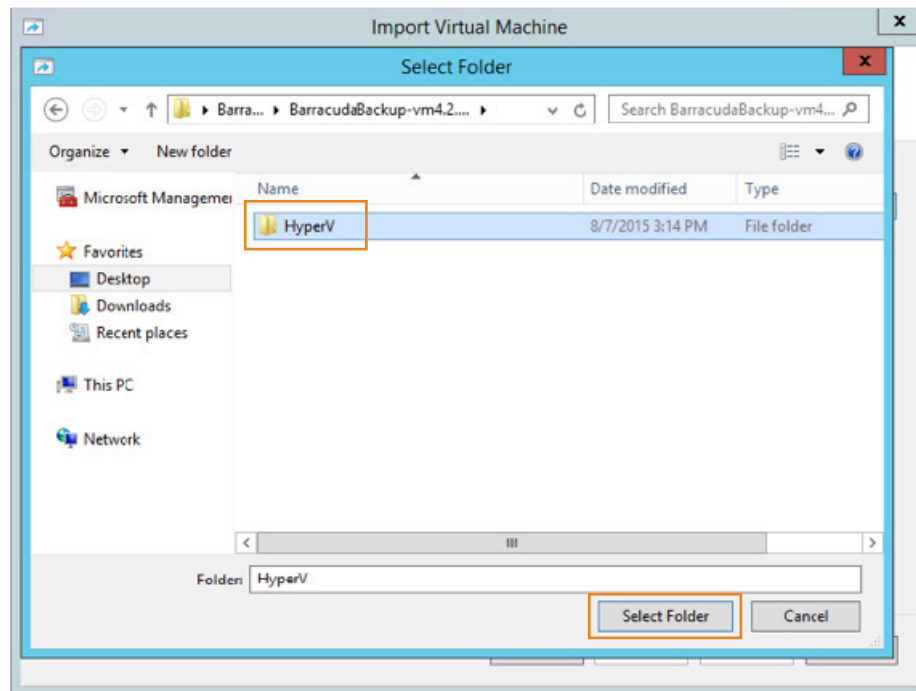
4. Select the virtual machine to import and click **Next.**
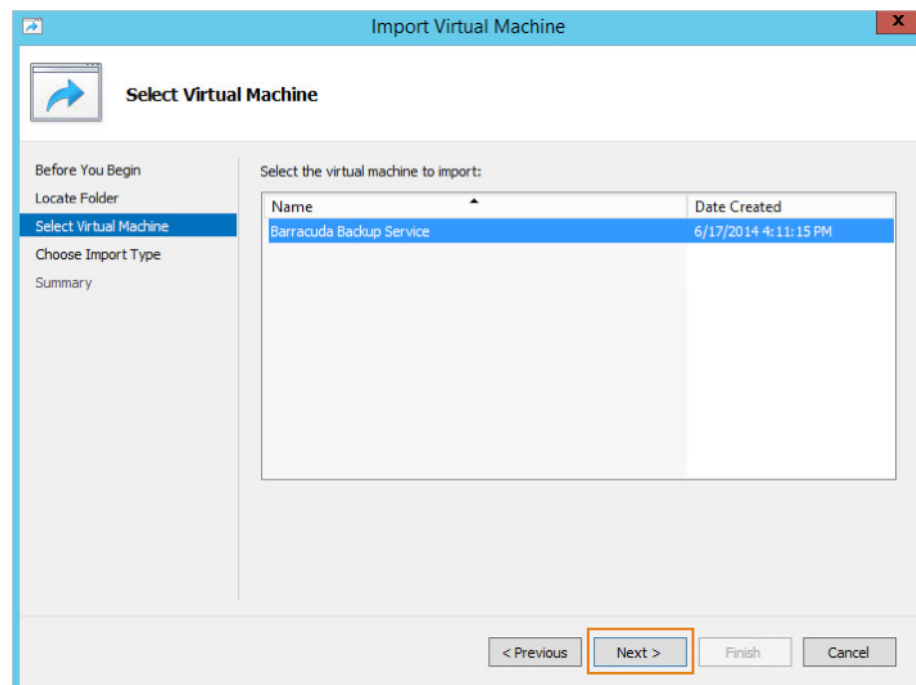
5. Select the import type as **Copy Virtual Machine (create a new unique ID)** and click **Next.**
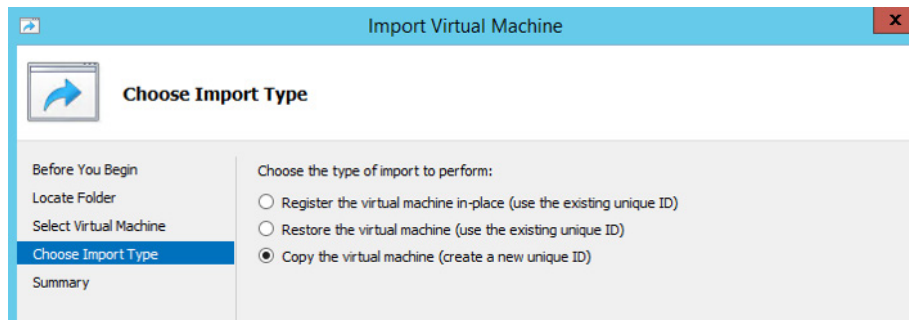
6. Select the default location for configuration files, storage, and network settings for the VHD, or define custom settings, and then click **Next,** and then click **Finish.**
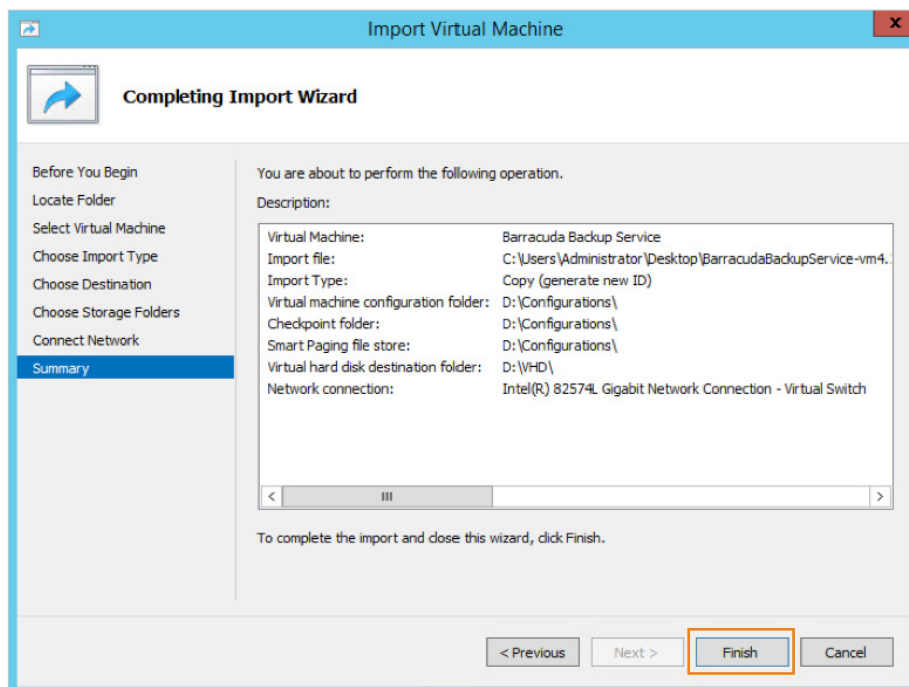
7. Before powering on the virtual machine, right-click on the Barracuda Backup Vx, choose Settings, and define the "Memory and Processor" settings as specified in the "Sizing" section above.

8. Click on **Hard Drive,** under **Virtual hard disk** click the **Edit** button.
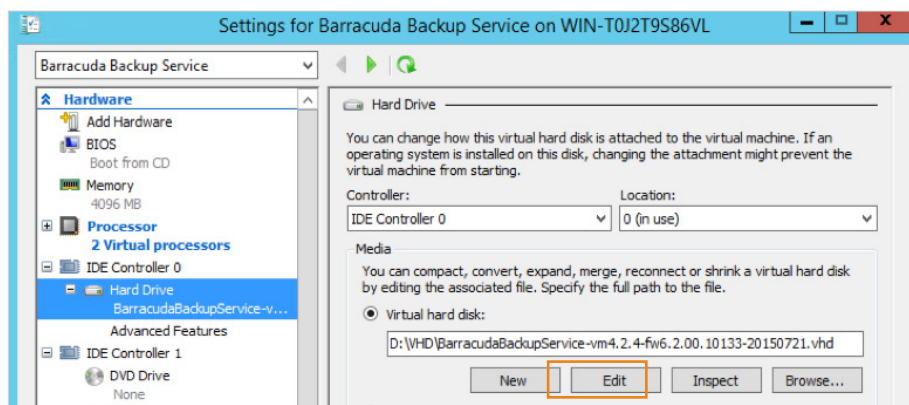
9. Click **Next,** choose **Expand** in the "Choose Action" section, then click **Next.**
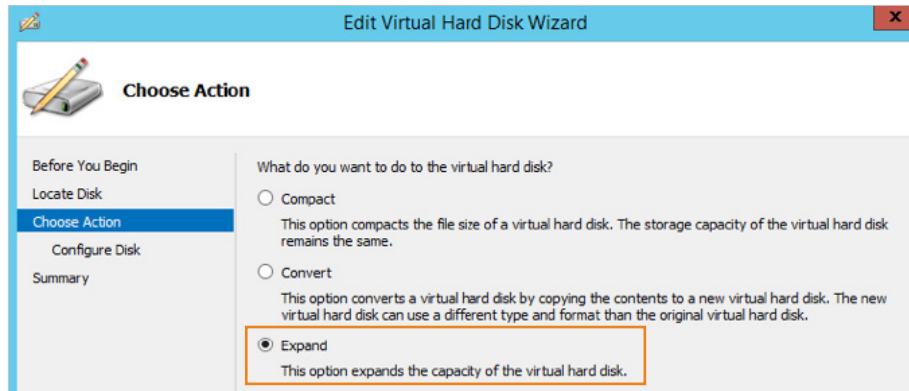
10. Specify the size of the **virtual hard disk** using the settings as specified in the "Sizing" section above, click **Next,** then **Finish.**

11. On the VM Settings window, click **Apply** and then **OK** to finish editing the virtual machine.

12. Power on the Barracuda Backup Vx.

```
┌ Initial Installation - Formatting ─────────────────────┐
│                                                        │
│  Your virtual appliance is being prepared for use. This │
│  may take some time depending on the speed of your disk.│
│                                                        │
│                                                        │
│   ┌──────────────────────── 20% ──────────────────────┐│
│   │███████                                            ││
│   └───────────────────────────────────────────────────┘│
│                                                        │
│                                                        │
└────────────────────────────────────────────────────────┘
```

13. The Barracuda Backup appliance will be prepared for use, this may take several minutes.

```
┌ Initial Installation - BarracudaBackupService-20150721.$ ┐
│                                                          │
│  Your virtual appliance is being prepared for use. This  │
│  may take some time depending on the speed of your disk. │
│                                                          │
│                                                          │
│   ┌────────────────── 13% ──────────────────────────┐   │
│   │████                                             │   │
│   └─────────────────────────────────────────────────┘   │
│                                                          │
│                                                          │
└──────────────────────────────────────────────────────────┘
```

14. Using your keyboard arrows, select **Yes** to format and partition the additional disk space you provisioned in step 10 above.

```
┌ Extra Space Detected ──────────────────────────────────┐
│                                                        │
│  ┌──────────────────────────────────────────────────┐  │
│  │950 GB of extra disk space has been detected that can be│
│  │used for storing data on your Barracuda Virtual Appliance.│
│  │Do you wish to format and use it? WARNING: This action│
│  │cannot be undone. It is STRONGLY suggested that you take a│
│  │snapshot now. NOTE: This operation may take a very long time│
│  │(up to 950 minutes).                               │  │
│  └──────────────────────────────────────────────────┘  │
│                          ▊▊▊                           │
│                              < No >  < Yes >           │
└────────────────────────────────────────────────────────┘
```
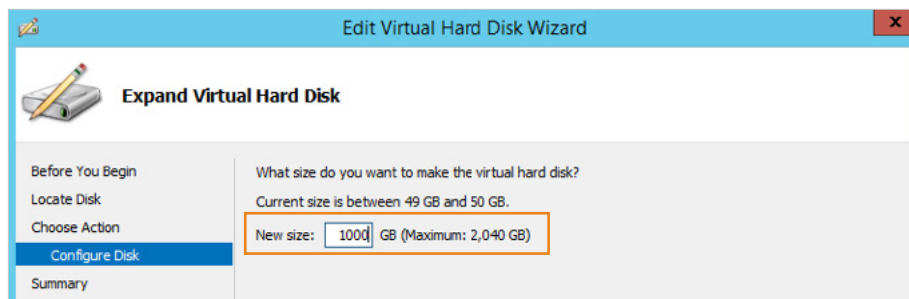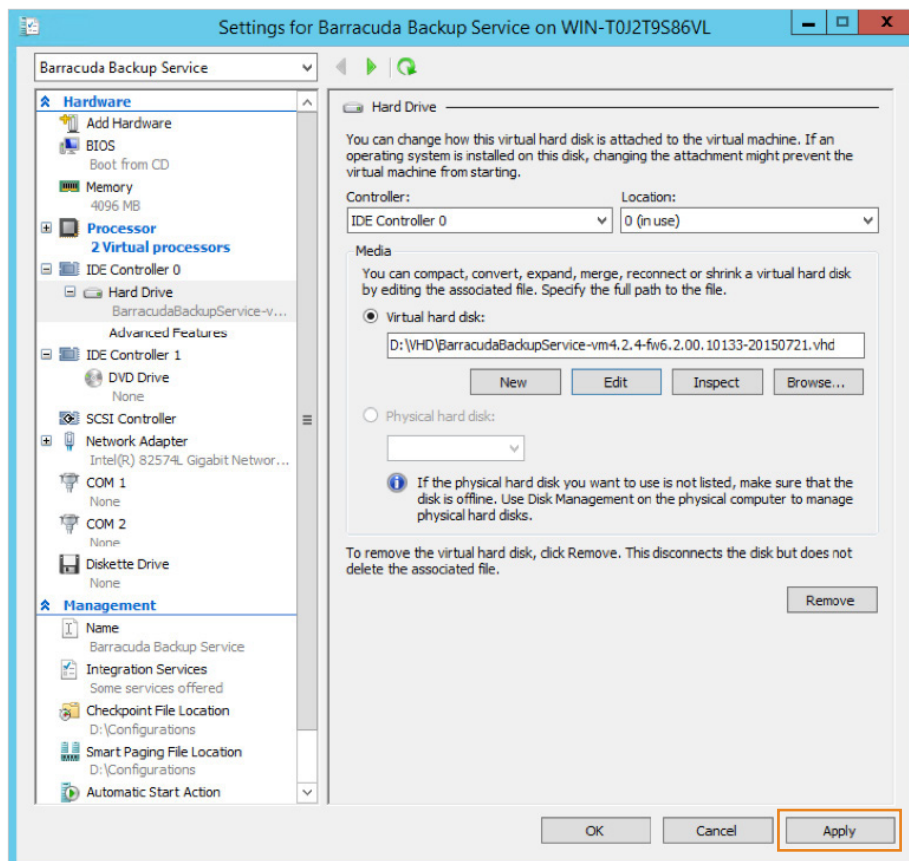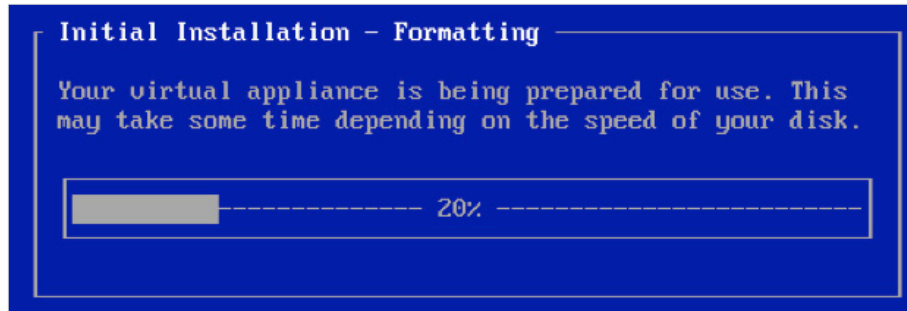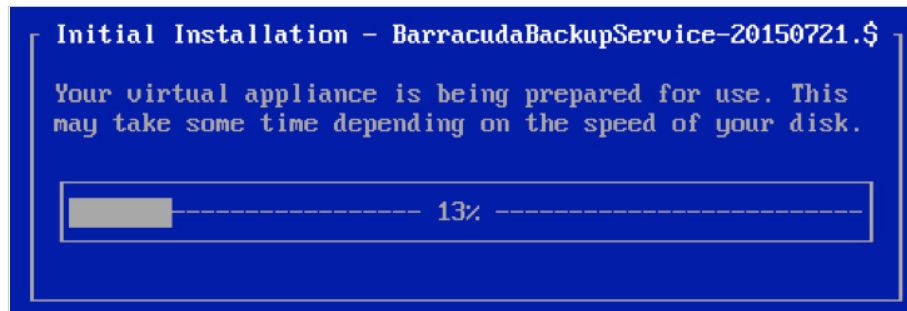
15. The Barracuda Backup Vx expands and formats its partition space.

```
┌ Disk Resize ───────────────────────────────────────────┐
│                                                        │
│   Your additional disk space is currently being formatted│
│   for use. This may take some time depending on the speed│
│   of your disk.                                        │
│                                                        │
│                                                        │
│   ┌────────────────── 55% ──────────────────────────┐  │
│   │█████         █████████                          │  │
│   └─────────────────────────────────────────────────┘  │
│                                                        │
│                                                        │
└────────────────────────────────────────────────────────┘
```

16. Once the formatting has completed, the appliance will reboot and display:
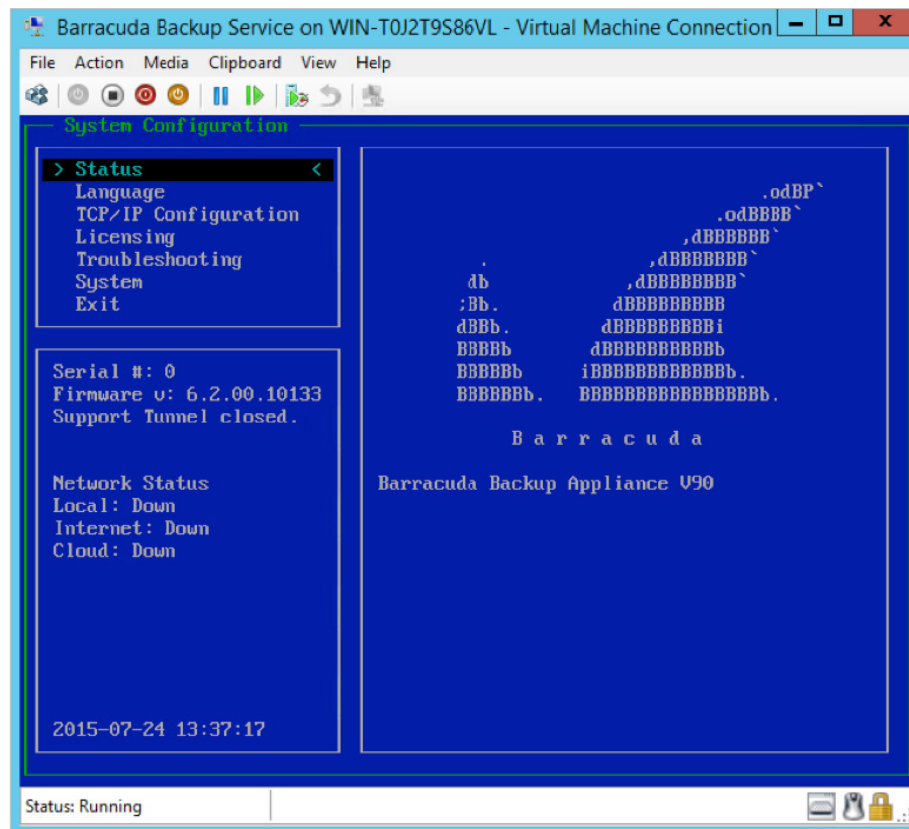
Open Firewall Ports

If your Barracuda Backup Vx is located behind a corporate firewall, open the following ports on your firewall to ensure proper operation:

PORT	PROTOCOL	DIRECTION	USAGE
80	TCP & UDP	OUT	Health Monitoring
443	TCP & UDP	OUT	Health Monitoring
1194	TCP & UDP	OUT	Configuration/ Management
5120	TCP & UDP	OUT	Barracuda Backup Agent
5121-5129	TCP & UDP	OUT	Offsite Replication

Configuring and Activating the Virtual Appliance

Once you deploy Barracuda Backup Vx, you can provision it. You need your Barracuda Vx license token, which you should have received via email or from the website when you downloaded the Barracuda Backup Vx package. If not, you can request an evaluation on the Barracuda Networks website at barracuda.com. The license token looks similar to 01234-56789-ABCDE.

1. On the System Configuration screen, use keyboard arrows to select **TCP/IP Configuration,** specify your network settings, then **Save.**
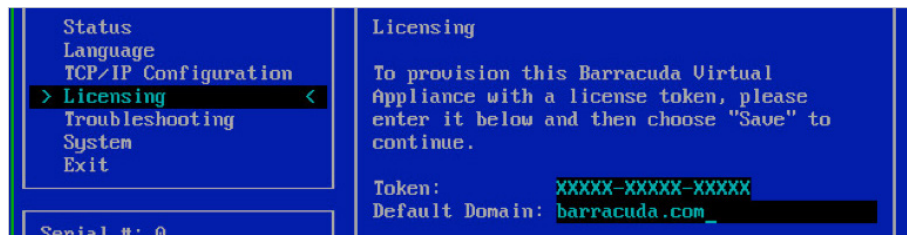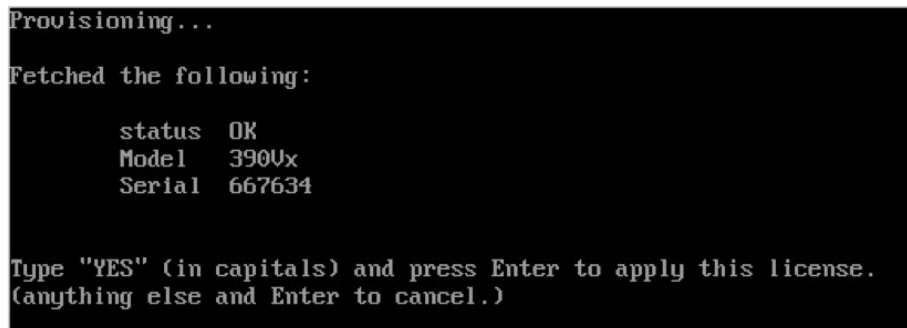
```
 Language
> TCP/IP Configuration <         Use DHCP
   Licensing
   Troubleshooting               IP Address:          10.66.32.177
   System                        Netmask:             255.255.252.0
   Exit                          Default Gateway:     10.66.32.1
                                 Primary DNS Server:  _
                                 Secondary DNS Server:
 Serial #: 0                     Proxy Server Configuration (optional)
 Firmware v: 6.2.00.10159        Server Name/IP:
 Support Tunnel closed.          TCP Port:
                                 Username:
                                 Password:
 Network Status
```
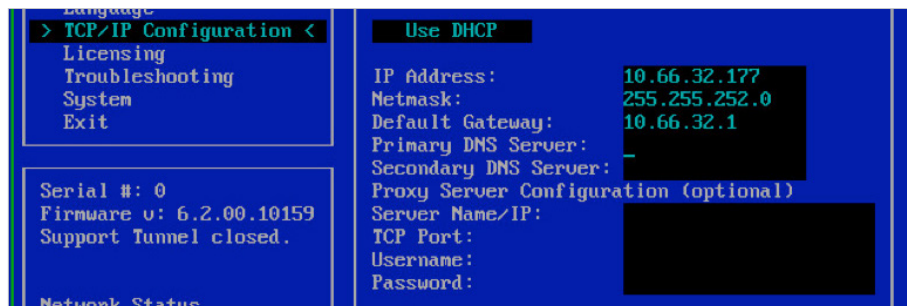
2. Use your keyboard arrows to select **Licensing,** enter the unique token provided to you by Barracuda Networks to activate the Vx appliance, then **Save.**
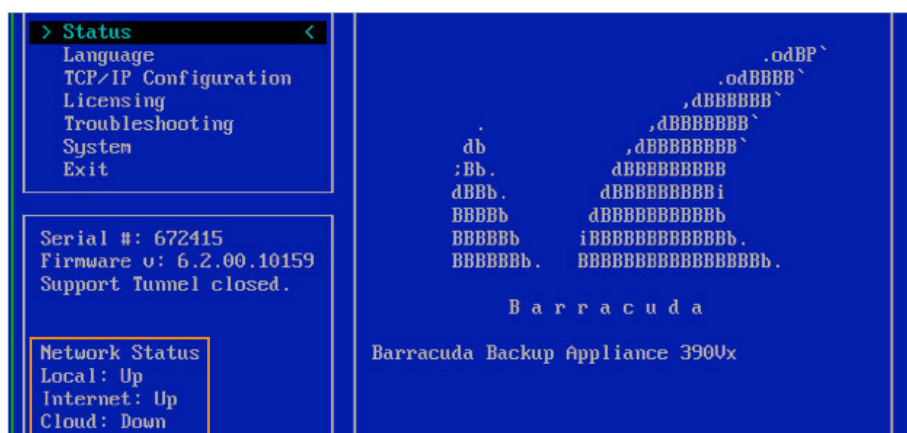
```
   Status                        Licensing
   Language
   TCP/IP Configuration          To provision this Barracuda Virtual
> Licensing              <        Appliance with a license token, please
   Troubleshooting               enter it below and then choose "Save" to
   System                        continue.
   Exit
                                 Token:          XXXXX-XXXXX-XXXXX
 Serial #: 0                     Default Domain: barracuda.com_
```

3. Type **YES,** then press **Enter** to apply the license and provision the virtual machine.

```
Provisioning...

Fetched the following:

        status  OK
        Model   390Vx
        Serial  667634


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

4. Wait for the virtual appliance to be provisioned—this can take several minutes.

5. Once the license has been installed, press **Enter** to reboot the virtual appliance.

6. Once the Barracuda Backup Vx appliance has completed the boot process, verify that both **Local** and **Internet** are "Up" under Network Status.

   **Note:** Cloud will go "Up" once the appliance has been linked (step 7).

```
> Status                 <                                   .odBP`
   Language                                            .odBBBBB`
   TCP/IP Configuration                             ,dBBBBBB`
   Troubleshooting                              ,dBBBBBBB`
   System                           .          ,dBBBBBBBB`
   Exit                            db         ,dBBBBBBBBB`
                                  ;Bb.        dBBBBBBBBBB
                                 dBBb.       dBBBBBBBBBBi
                                 BBBBb       dBBBBBBBBBBBb
 Serial #: 672415                BBBBBb      iBBBBBBBBBBBBb.
 Firmware v: 6.2.00.10159        BBBBBBb.    BBBBBBBBBBBBBBBBb.
 Support Tunnel closed.
                                        B a r r a c u d a

 Network Status             Barracuda Backup Appliance 390Vx
 Local: Up
 Internet: Up
 Cloud: Down
```

7. Refer to the Barracuda Campus article "How to Install the Barracuda Backup Appliance" and follow the instructions under **Link the Appliance** and **Create a Barracuda Cloud Control Account** if you do not already have a Barracuda Cloud Control account.

Expanding the Capacity of the Barracuda Backup Vx - VMware

1. Power down the virtual appliance.

2. Right-click on the virtual appliance and choose **Edit Settings…**

3. Click **Hard disk 1** in the "Hardware" section.

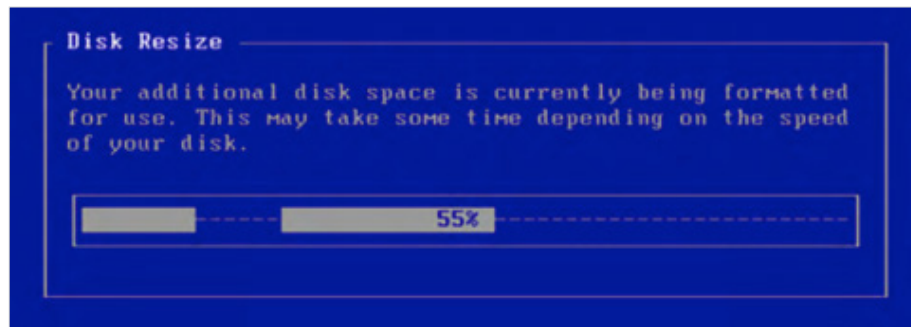4. Change the **Provisioned Size** to the desired capacity.
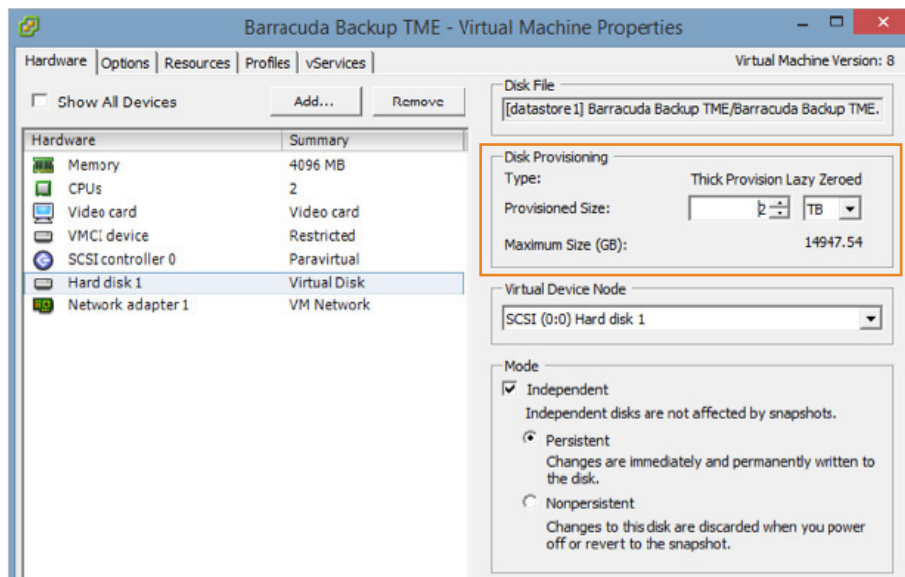
5. Increase the amount of **Memory** or the number of **CPUs** to match the new disk capacity. Refer to the "Sizing" recommendations above for the minimum recommendations.

6. Click **OK** to reconfigure the virtual machine.

7. Power on the virtual appliance.

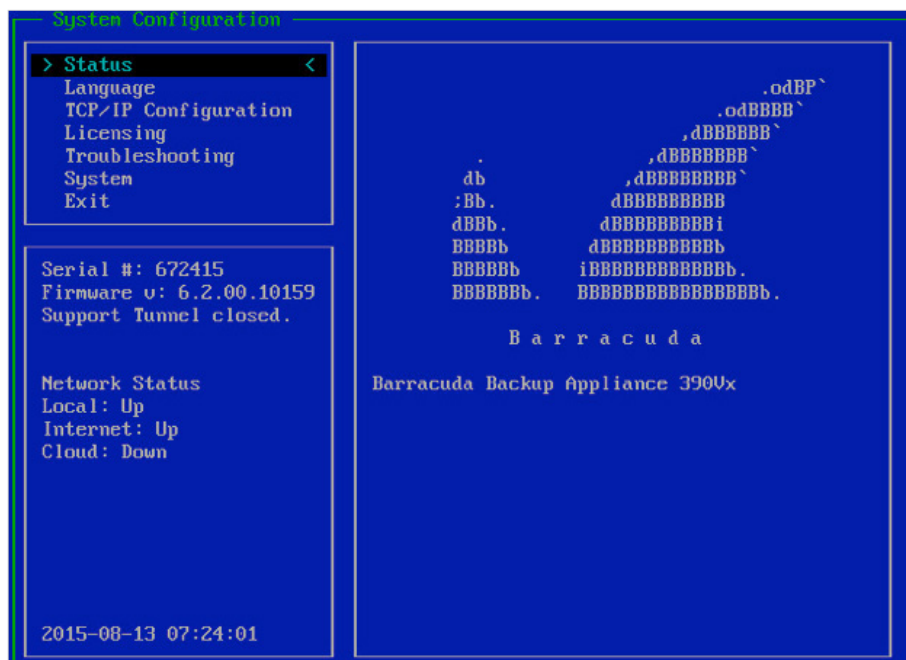8. The additional disk space will be detected, select **Yes** to format and use it.
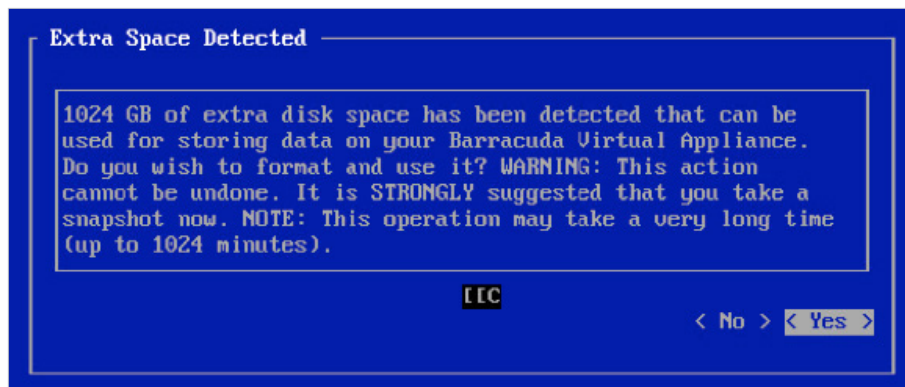
9. The additional disk space will be formatted and the disk resized, this may take several minutes.
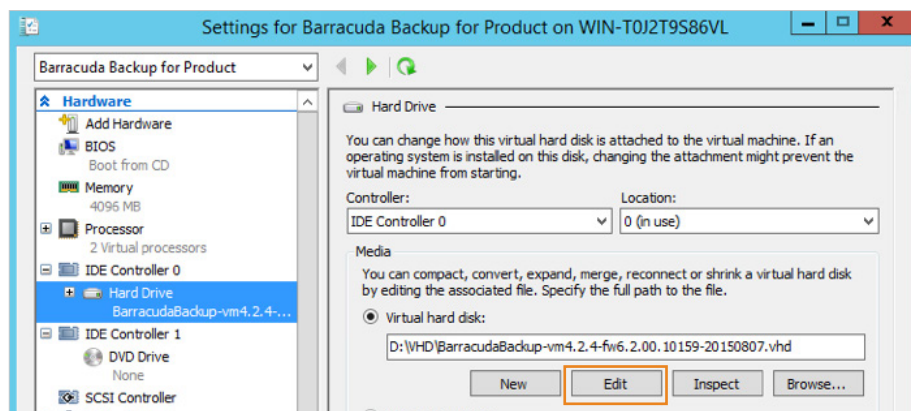
10. Once the formatting and resizing has completed, the appliance will reboot and display:
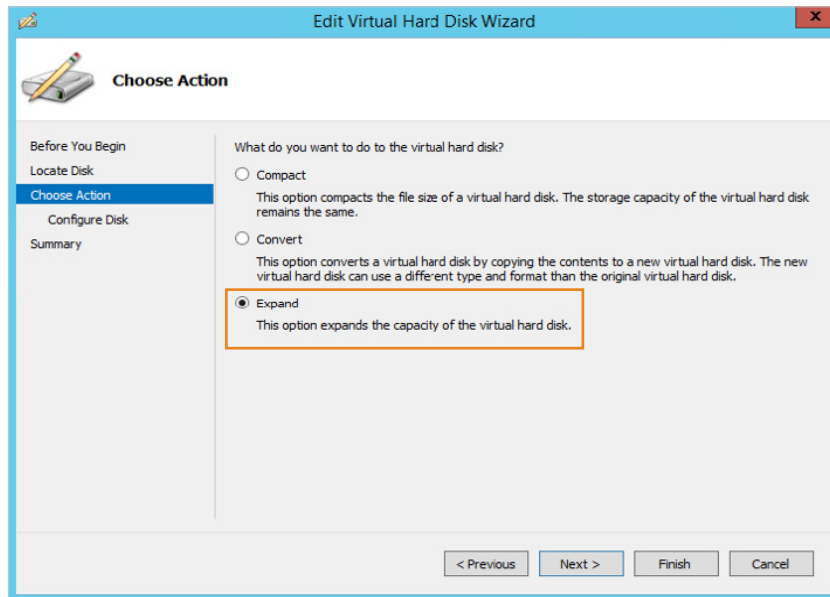

Expanding the Capacity of the Barracuda Backup Vx – Hyper-V

1. Power down the virtual appliance.

2. Right-click on the virtual appliance and choose **Settings…**

3. Click the **Hard Drive** in the "Hardware" section.

4. Under Virtual hard disk, click the **Edit** button.

5. Click **Next,** then choose **Expand.**

6. Click **Next,** then specify the new disk size.
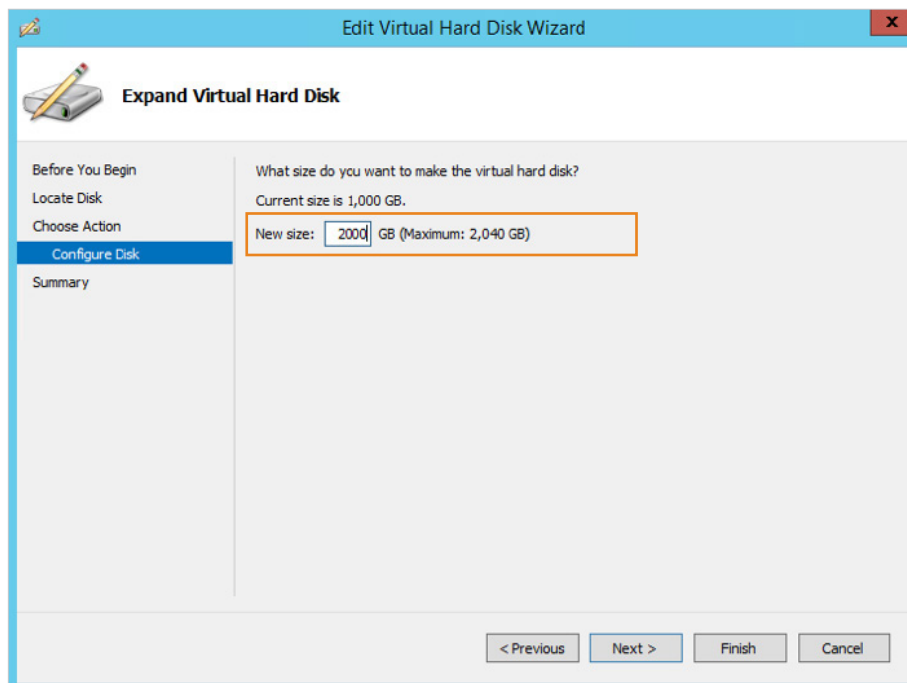
7. Click **Next,** then click **Finish.**

8. Increase the amount of **Memory** or the number of **CPUs** to match the new disk capacity. Refer to the "Sizing" recommendations above for the minimum recommendations.

9. Click **OK** to reconfigure the virtual machine.

10. Power on the virtual appliance.

11. The additional disk space will be detected, select **Yes** to format and use it.

```
Extra Space Detected ─────────────────────────────

  1024 GB of extra disk space has been detected that can be
  used for storing data on your Barracuda Virtual Appliance.
  Do you wish to format and use it? WARNING: This action
  cannot be undone. It is STRONGLY suggested that you take a
  snapshot now. NOTE: This operation may take a very long time
  (up to 1024 minutes).

                          [ OK ]

                                        < No >  < Yes >
```

12. The additional disk space will be formatted and the disk resized—this may take several minutes.

```
Disk Resize ─────────────────────────────

  Your additional disk space is currently being formatted
  for use. This May take some time depending on the speed
  of your disk.

  ┌──────────────────────────────────────────────┐
  │          --------     55%     --------        │
  └──────────────────────────────────────────────┘
```

13. Once the formatting and resizing has completed, the appliance will reboot and display:

```
 ─ System Configuration ─────────────────────────────

  > Status              <                                   .odBP`
    Language                                              .odBBBB`
    TCP/IP Configuration                                ,dBBBBBB`
    Licensing                                          ,dBBBBBBB`
    Troubleshooting                      .            ,dBBBBBBBB`
    System                              db           ,dBBBBBBBB`
    Exit                               ;Bb.           dBBBBBBBBB
                                       dBBb.          dBBBBBBBBBi
                                       BBBBb          dBBBBBBBBBBb
    Serial #: 672415                   BBBBBb        iBBBBBBBBBBBBb.
    Firmware v: 6.2.00.10159           BBBBBBb.     BBBBBBBBBBBBBBBBBBBb.
    Support Tunnel closed.

                                          B a r r a c u d a

    Network Status
    Local: Up                       Barracuda Backup Appliance 390Vx
    Internet: Up
    Cloud: Down
```
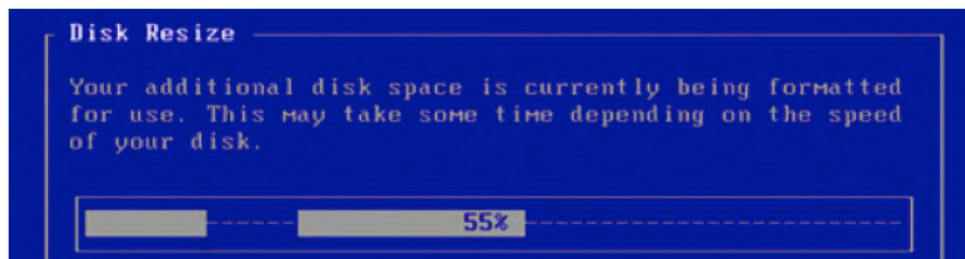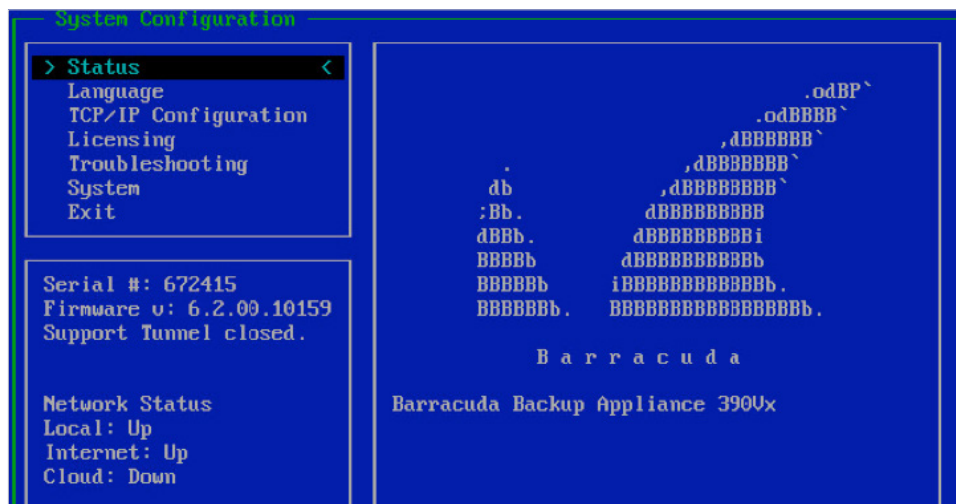
About Barracuda Networks, Inc.

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