Dell Engineered Solutions for VMware EVO:RAIL

Version 1.2.1 Management and Maintenance User's Guide

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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EVO:RAIL Management

After your initial EVO:RAIL Appliance is deployed and configured, EVO:RAIL Management is where you perform your day-to-day tasks such as:

- Create virtual machines (VMs)
- Monitor virtual machines (VMs)
- Monitor the status of an EVO:RAIL cluster, appliances, and nodes
- Add EVO:RAIL appliances
- Enter appliance licenses
- Select localization setting
- Update EVO:RAIL software components

Access EVO:RAIL Management

To access EVO:RAIL Management:

- From your EVO:RAIL workstation or laptop, browse through the EVO:RAIL IP address **https://<evo:rail-ip-address>:7443**.
- Log in to EVO:RAIL management console by using username as `adminstrator@vsphere.local` and the password specified during EVO:RAIL Initial Configuration.

The latest versions of Firefox, Chrome, and Internet Explorer 10 and later are all supported. The minimum recommended screen resolution is 1280x1024.

Create VMs

EVO:RAIL Management streamlines the creation of VMs with simple selections for:

- Guest operating system (OS)
- Virtual machine size
- Network segment (VLAN)
- Security options

In EVO:RAIL Management, use the following procedure to create a VM:

1. Click **Create VM** in the left pane to begin the VM creation process. You have the option to either click **Cancel** or **Go Back** to a previous step.

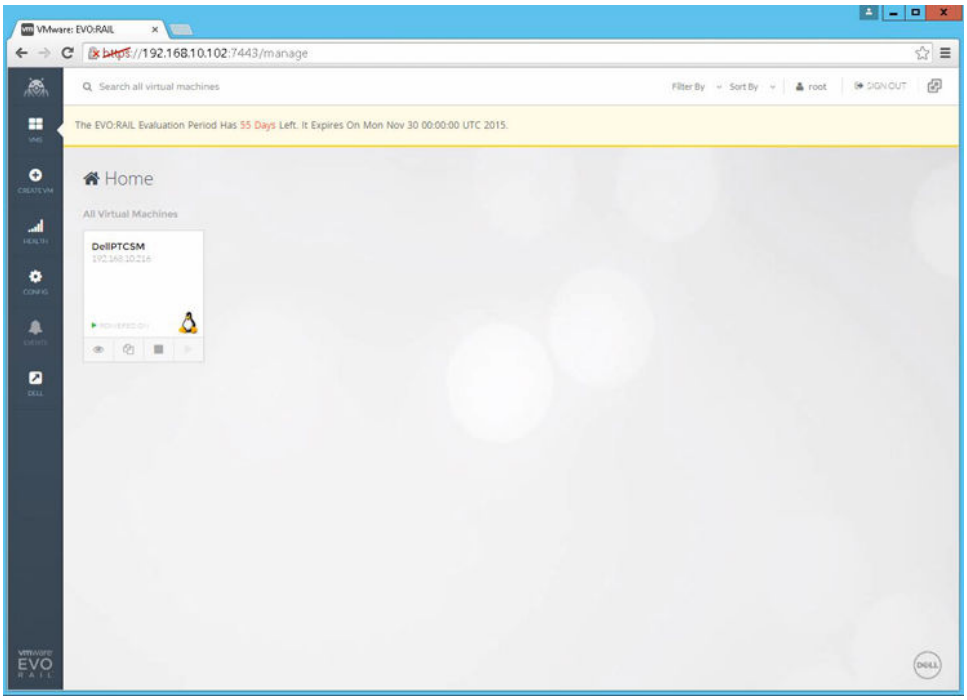


Figure 1. EVO:RAIL Management — Create VMs

2. In the **Enter VM Name** box, type a name for your VM.
3. To load your ISO image file to be used for your Guest OS, follow one of these procedures:

   a. If you are uploading the ISO image file for local storage, click **Upload Image**.

      1. Click **Choose File** to open the standard file selection dialog box.
      2. Locate the ISO image file on your local file system and select it.
      3. Click **Open** to return to EVO:RAIL Management.
      4. Click **Upload Image**. The ISO image that is copied to the Virtual SAN datastore.

      NOTE: If the file is too large to upload, see the resolution section of *VMware Knowledge Base Article 2109915*.

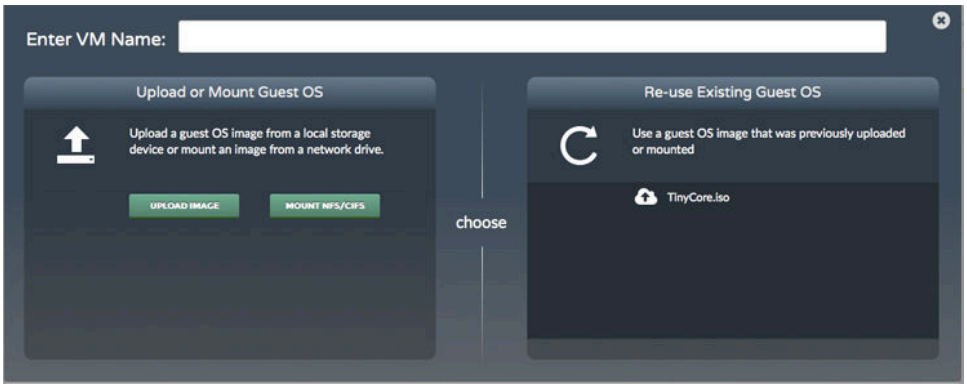
   b. If you are uploading the ISO image file from a network drive, click **Mount NFS/CIFS**.

      1. Click the protocol of the network drive you are accessing: **NFS** or **CIFS**
      2. Type the URL `format:[protocol]:/[host]/path/to/file.iso`.
      3. Click **Mount Remote Image**. The ISO image is copied to the Virtual SAN datastore.

   c. If you are using a previously uploaded guest OS, you can reuse an existing image by double-clicking the guest OS name.

NOTE: The ISO image file must have a unique name from those already loaded onto the Virtual SAN datastore. If the name is identical to one or more, you are unable to proceed after the message is displayed until you refresh your browser to clear the dialog box.

NOTE: EVO:RAIL Management does not support importing existing prebuilt copies of VMs in OVA/OVF format. Workaround is to use the vSphere Web Client interface to create VMs from an existing OVA/OVF format. The template can then be viewed in EVO:RAIL Management as a VM, which you can use to clone to make a VM from the template.



4. Confirm Guest OS Version that was loaded from the drop-down menu, click **Continue**.
5. Select a VM size: **Small**, **Medium** or **Large**.

   NOTE: EVO:RAIL has a set of predefined VM sizes based on standard VMware recommendations for each Guest OS. See the Appendix A section in this document.
6. Click **VM Size**.
7. Select one or more network segments the VM should connect to.
8. Click **Select VM Networks**.

9. Select the security policy: **No Policy, Risk Profile 3**, **Risk Profile 2,** or **Risk Profile 1**.

   These profiles are a collection of VM Advanced Settings, based on a particular Risk Profile from the vSphere 5.5 Security Hardening Guide, http://vmware.com/security/hardening-guides. For more information about the technical settings, see the Appendix B section in this document.

   - **No Policy**: Indicates that no security configuration options are applied to the VM.
   - **Risk Profile 3**: Indicates guidelines that must be implemented in all environments. These are VMware best practices for all data centers.
   - **Risk Profile 2**: Indicates guidelines for more sensitive environments or small/medium/large enterprises that are subject to strict compliance rules.

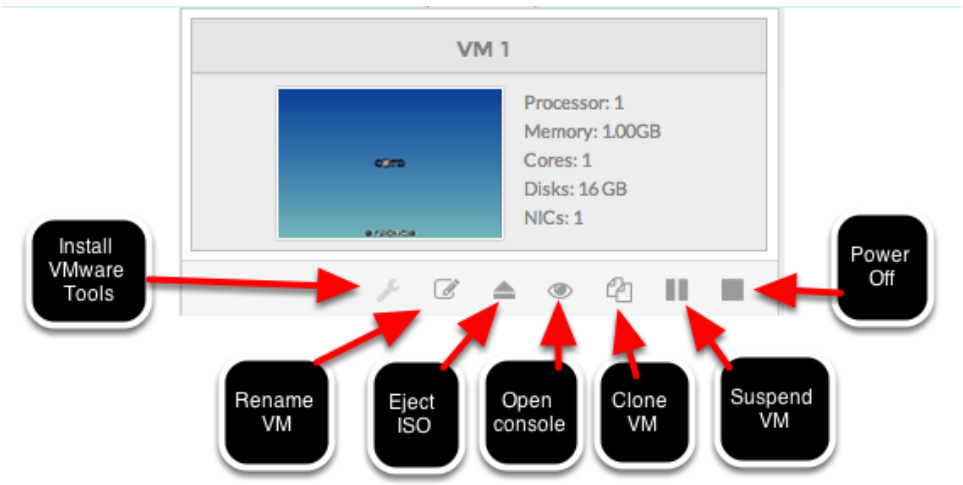
- **Risk Profile 1**: Indicates guidelines for the highest security environments, such as top-secret government or military installations, or anyone with sensitive data or in a highly regulated environment.

NOTE: By selecting a more secure policy, you lose some VM functionality, such as automated tools, inability to shrink VM disks, persistent mode only, no logging and performance information, blocked device interactions, and limited remote console connections. See the hardening guides for more details.

10. Click **Create and Start a New VM**.
11. After the VM is created, the EVO:RAIL Management interface is displayed.

Monitor VMs

EVO:RAIL Management allows users to view all VMs in a grid. Use the **Filter By** and **Sort By** lists in the upper-right corner to arrange the VMs. Use the **Search** box to search for VMs by name.



If you click a VM, you can have the following options depending on the state of your VM. To view all the options, click the VM.

- Install VMware Tools

NOTE: To install VMware Tools, your guest OS must already be installed on your VM, and the guest OS ISO disk must be ejected from the virtual CD drive.

- Rename VM
- Eject ISO
- Open console
- Clone VM

NOTE: The VM is same as the original. A message is displayed asking you to type a new CM name.

- Suspend or Resume
- Delete

NOTE: Only accessible if VM is shut down or turned off.

- Turn on or turn off

Monitor appliance health

EVO:RAIL Management simplifies live compute management with health monitors for CPU, memory, storage, and VM usage for an entire EVO:RAIL cluster, individual appliances, and individual nodes.

- Click **Health** in the left pane.

Status is displayed on the appliance health page for the nodes, HDD, SSD, ESXi device, and NIC. If everything is normal, a green checkmark is displayed. In case of an issue, a yellow color triangle is displayed. A critical alarm is indicated with a red color triangle. All alarms and warnings are from vCenter Server.

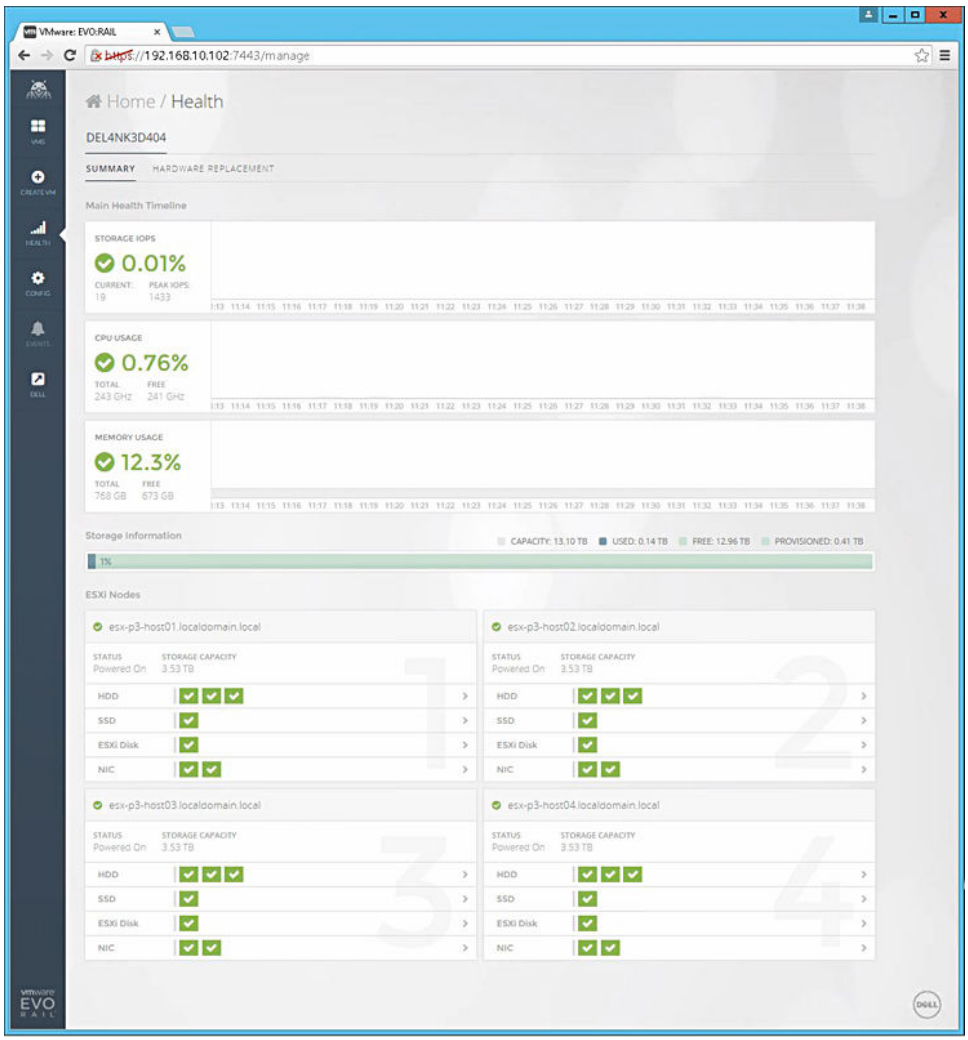


Figure 2. EVO:RAIL Management — Monitor appliance health

Add EVO:RAIL Appliances to an EVO:RAIL cluster

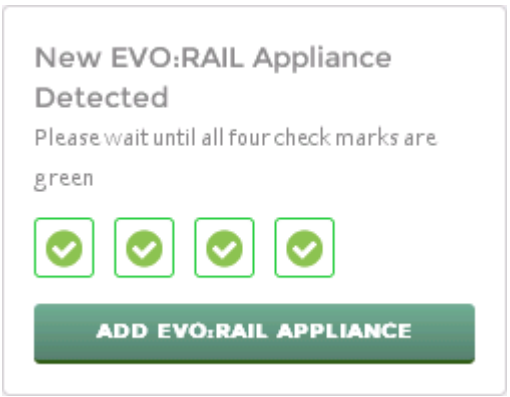
EVO:RAIL Management revolutionizes the scale-out feature. Increasing compute, network, and storage resources is as easy as turning on a new appliance to join an existing EVO:RAIL cluster.

Prerequisites

Dell recommends that all VMware components (ESXi, vCenter Server, and EVO:RAIL) are of the same version on all EVO:RAIL appliances in an EVO:RAIL cluster. See Appendix A in the *EVO:RAIL Customer Release Notes* for supported configurations.

Procedure

Whenever EVO:RAIL detects a new appliance, the following message and button are displayed on the EVO:RAIL Management page:

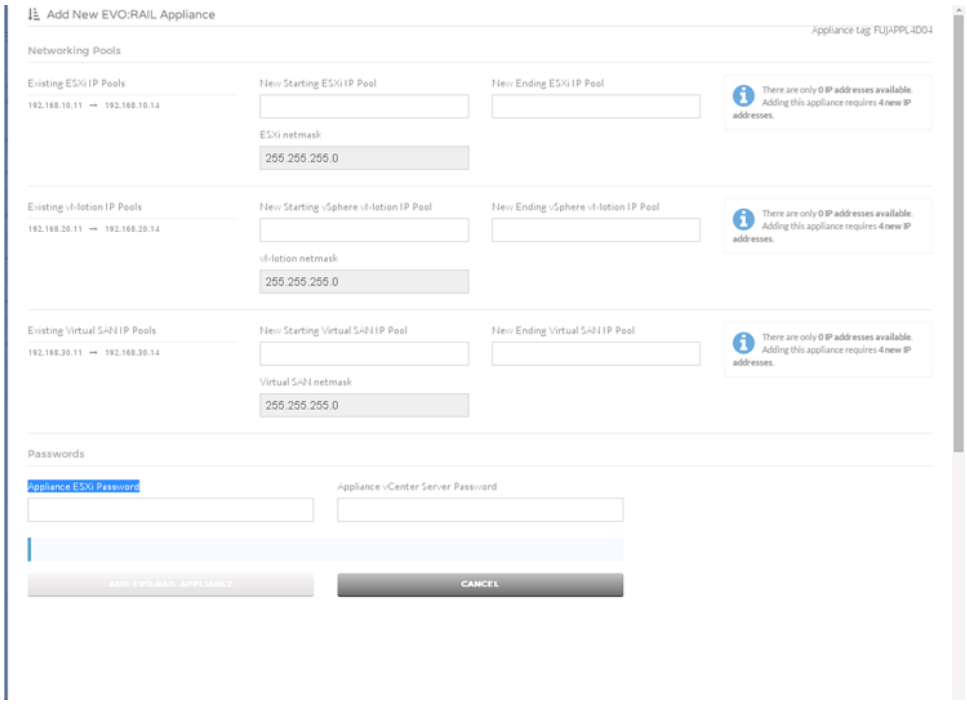


EVO:RAIL automatically distributes the configuration to seamlessly add new appliances with zero additional configuration. All you do is supply the passwords you created in EVO:RAIL Configuration; the other fields are grayed-out if you've configured enough IP addresses as shown in the following figure.

CAUTION: Only one appliance can be added at a time. To add multiple appliances; turn on one at a time, making sure that each is properly configured before turning on the next appliance.

To add an EVO:RAIL appliance,

1. Click **ADD EVO:RAIL APPLIANCE**.
2. If more IP addresses are not required, the input areas are grayed out. If you are required to enter IP addresses, you must ensure that none of them conflict with existing IP addresses in your network.
   a. Enter the New Starting and Ending addresses for the ESXi IP Pool for the new appliance.
   b. Enter the New Starting and Ending addresses for the vMotion IP Pool for the new appliance.
   c. Enter the New Starting and Ending addresses for the Virtual SAN IP Pool for the new appliance.
3. Type the Appliance ESXi Password.
4. Type the Appliance vCenter Server Password.
5. Click **ADD EVO:RAIL APPLIANCE**.
6. When the process is complete, click **Finish**.



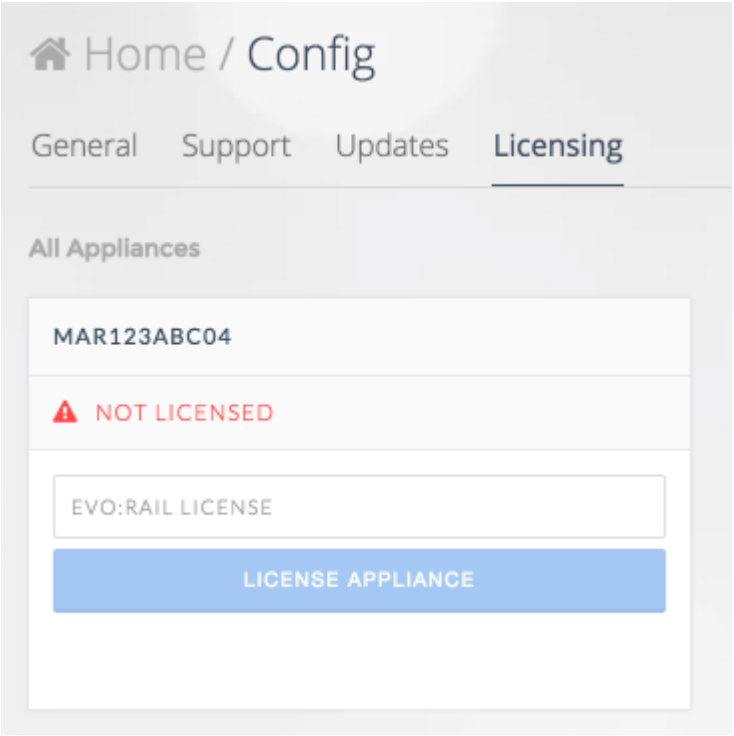
Ongoing configuration

The ongoing configuration tasks in EVO:RAIL Management include licensing, localization, and updates. All these can be found when you click **Config** in the left pane.

Activating EVO:RAIL licenses

To license your EVO:RAIL Appliance,

1. You receives an e-mail from Dell with your Partner Activation Code (PAC).
2. Go to **https://www.vmware.com/oem/code.do?Name=DELL-AC** and type your PAC(s).
   a. You receive an e-mail with your license key(s).
3. Click **Config** in the left pane.
4. Under the **Licensing** tab, type your license key(s):
5. Click **License Appliance**.



6. If the license is part of the vSphere Loyalty Program in EVO:RAIL Release 1.2, do the following:

   a. Go to **https://my.vmware.com/web/vmware/login** to group the required set of licenses into a single license key.

      1. Create a folder within MyVMware with the licenses called EVORAIL.
      2. Send a service request, to the VMware license team with the license keys you need combined into a single license key.

   b. Type the single license key obtained above, and then click **License Appliance**.

   c. Ensure that you want to you use this license, and then click **License Appliance**.

   d. No other licenses are required. Your EVO:RAIL appliance is now fully licensed.

Localizing GUI

EVO:RAIL Management is available in English, French, German, Japanese, Korean, Simplified Chinese, and Traditional Chinese. To select your language,

1. Click **Config** in the left pane.
2. Select **General** → **Choose your Language** → **Selection**.

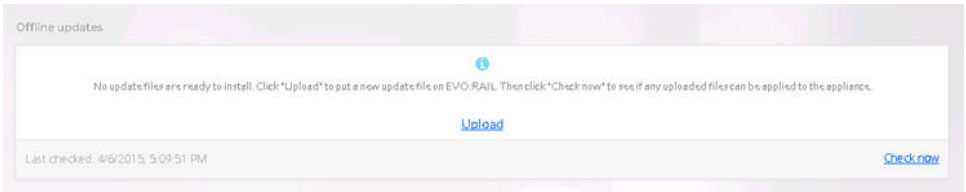
Updating appliance software

EVO:RAIL supports vCenter, ESXi, and EVO:RAIL software patch and upgrade. With a minimum of four independent ESXi hosts in an EVO:RAIL cluster, updates are nondisruptive and require zero downtime.

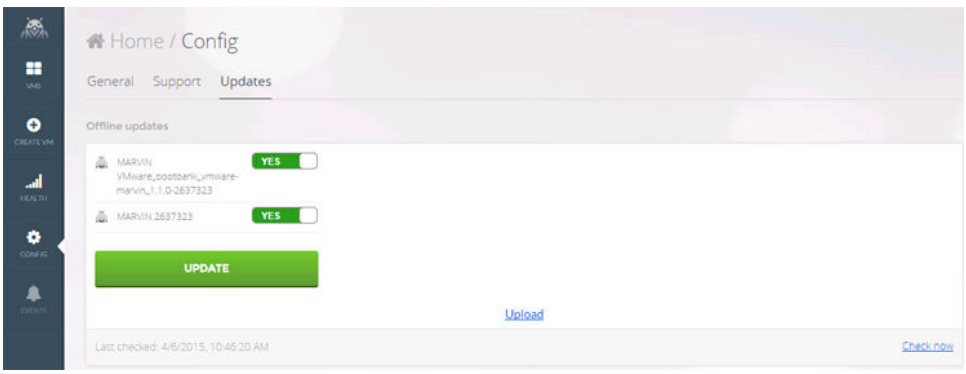
- Create a snapshot or backup copy of the vCenter Server virtual appliance. This can be accomplished by connecting to VMware vSphere Web Client through **https://<hostname>:9443**, where <hostname> is the IP address or hostname of EVO:RAIL.
- All files must be uploaded from **www.my.vmware.com** into a directory accessible from your EVO:RAIL Management workstation or laptop. See the *Release Notes* for updated files list.

To update an appliance software version:

1. Click **Config** in the left pane.
2. Under the **Updates** tab, click **Upload**, and browse through to the directory with the components you are updating:
   - <vmware-marvin-release-build>.rpm
   - <EVO_RAIL_release-build.>.zip
   - <VMware-vCenter-Server-Appliance-release-build-updaterepo>.zip (if applicable)
   - <ESXI-release-build>.zip (if applicable)



   a. Select a file, and click **Open**.
   b. Repeat for each component in the EVO:RAIL Release
3. Click **Check now**. If the EVO:RAIL check succeeds, the **Offline Updates** box adds a switch for you to enable to perform the update.
4. Click to change the state of Offline Updates from **No** to **Yes**.
5. Click **Update**.



After the update is complete, you will receive a notification that you were disconnected from EVO:RAIL Management. It can take up to 5 minutes for the new EVO:RAIL RPM to initialize. It can take up to 15 minutes for the vCenter Server to restart and for all of services to initialize. The update time for ESXi depends on the quantity of VMs and might take a few hours to complete; however, the appliance will function as normal during that time.

6. After EVO:RAIL Management restarts, you are prompted to log in.

NOTE: If EVO:RAIL Management is not fully present after the automatic restart, refresh the web browser. For more information, see the *VMware Knowledge Base Article 2101828*.

Updating appliance firmware, driver, BIOS

Dell Power Tools Cluster Services Manager (CSM) provides a cluster-aware solution integrated into the EVO:RAIL UI for updating firmware (FW), drivers and BIOS. CSM provides notification whenever a host component's firmware or software is determined to be out of date. By using the CSM user interface, you

can update the system across the cluster automatically. The CSM manages the migration of the virtual machines, performs all of the updates, and brings the host back online one at a time (also known as rolling updates).

For more information, see the *Dell Power Tools Cluster Services Manager User's Guide* at **Dell.com/support/home**.

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EVO:RAIL Maintenance

EVO:RAIL has provided many facilitated maintenance procedures. This section describes the EVO:RAIL maintenance procedures such as:

- Access vSphere Web Client
- Logging and Events
- Hardware Replacement
- Appliance Shutdown

Access vSphere WebClient

EVO:RAIL Management allows you to access the vSphere Web Client to perform more complicated tasks than those found in the streamlined EVO:RAIL interface.

1. Click the VMware vSphere Web Client icon in the upper right corner of the EVO:RAIL Management **VMS** page.
2. Log in with the administrator login and password you set up during EVO:RAIL Configuration.

NOTE: From vSphere Web Client, do not use service datastores when creating or moving VMs. These datastores are only to be used by Dell for serviceability.

NOTE: If you use the vSphere Web Client to perform tasks that are automated by EVO:RAIL, you may run into situations where the automated flow does not work properly.

Logging and Events

EVO:RAIL Management provides several ways to access log information:

- *Events* — displays EVO:RAIL tasks and critical alarms in the EVO:RAIL Management interface.
- *vRealize Log Insight* — provides access to the default EVO:RAIL logging mechanism. You may alternately select an existing third-party syslog server during initial configuration.
- *Support Logs* — combines diagnostic information for vCenter Server, ESXi, and EVO:RAIL into one bundle to send to support.

Events

EVO:RAIL Management provides you access to the list of events occurring in EVO:RAIL Management, either initiated by EVO:RAIL or by the user. This is available from **Events** in the left pane. Events can be organized by on the basis of criticality (Critical) and time (Most Recent).

vRealize Log Insight

EVO:RAIL is deployed with vRealize Log Insight. However, you may choose to use your own third-party syslog servers. To use vRealize Log Insight, point your browser to the configured IP address; the

username is `admin`. If you ssh to Log Insight, the username is `root`. The password, in either case, is the one you specified for vCenter Server. See VMware vRealize Log Insight Documentation.

If you configured an existing third-party syslog server, follow the instructions supplied with that product.

Support Logs

EVO:RAIL Management combines diagnostic information for vCenter Server, ESXi, and EVO:RAIL into one log bundle. This log bundle can be uploaded to technical support as part of a support request (SR). To gather the log information from your EVO:RAIL appliance, follow these steps:

1. Click **Config** in the left pane.
2. Under the **Support** tab, click **Generate Support Bundle**.

   NOTE: This process can take from 20 minutes to several hours. It is run in the background, so you can continue to use EVO:RAIL Management.
3. After the Support Log is generated, click **Download Support Bundle**.

   The .zip file is downloaded to your workstation.

Live Logging

EVO:RAIL Management provides you to access a live stream of EVO:RAIL log messages as each message is created. To access this feature:

1. Click **Config** in the left pane.
2. Under the **Support** tab, click **Show EVO:RAIL Live Logging**.

   A window opens at the bottom of the EVO:RAIL Management interface. You have the ability to search for key words, show only alarms, only errors, or all messages. The arrows can be used to expand or collapse the viewer.
3. To turn off live logging, click **Config** in the left pane.
4. Under the **Support** tab, click **Hide EVO:RAIL Live Logging**.

Hardware replacement

EVO:RAIL supports the replacement of the following Field Replacement Units (FRUs): node, CPU, motherboard, memory, storage adapter, ESXi boot device, HDD, SSD, and the PSU. Contact Dell for specific hardware replacement procedures.

Appliance shutdown

An EVO:RAIL appliance can be turned off and restarted manually. See the Appendix C section in this document.

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Appendix A – VM size by guest OS

Table 1. VM size by guest OS

Guest OS	EVO:RAIL Size	vDisk	vCPU	Core	vMEM
Red Hat Enterprise Linux 7 (64-bit) Red Hat Enterprise Linux 6 (64-bit) Red Hat Enterprise Linux 5 (64-bit) Ubuntu Linux (64-bit) CentOS 4/5/6 (64-bit)	Small	16 GB	1	1	1 GB
	Medium	24 GB	2	1	2 GB
	Large	32 GB	4	1	6 GB

Table 2. VM size by guest OS

Guest OS	EVO:RAIL Size	vDisk	vCPU	Core	vMEM
Microsoft Windows Server 2012 (64-bit) Microsoft Windows Server 2008 (64-bit)	Small	40 GB	1	1	1 GB
	Medium	60 GB	2	1	4 GB
	Large	80 GB	4	1	8 GB

Table 3. VM size by guest OS

Guest OS	EVO:RAIL Size	vDisk	vCPU	Core	vMEM
Microsoft Windows Server 2003 (64-bit)	Small	16 GB	1	1	1 GB
	Medium	32 GB	2	1	4 GB
	Large	60 GB	4	1	8 GB

Table 4. VM size by guest OS

Guest OS	EVO:RAIL Size	vDisk	vCPU	Core	vMEM
Microsoft Windows 8 (64-bit)	Small	32 GB	1	1	2 GB
	Medium	40 GB	2	1	4 GB
	Large	60 GB	2	1	8 GB

Table 5. VM size by guest OS

Guest OS	EVO:RAIL Size	vDisk	vCPU	Core	vMEM
Microsoft Windows 7 (64-bit)	Small	32 GB	1	1	1 GB
	Medium	40 GB	2	1	4 GB
	Large	60 GB	2	1	8 GB

Table 6. VM size by guest OS

Guest OS	EVO:RAIL Size	vDisk	vCPU	Core	vMEM
Microsoft Windows XP	Small	16 GB	1	1	1 GB
	Medium	32 GB	2	1	2 GB
	Large	60 GB	2	1	4 GB

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Appendix B — Security profile details

The policies that match the VMware Security Hardening Guide for vSphere 5.5 Update 1 (**http://www.vmware.com/security/hardening-guides**) are found in the VM advanced settings (key/value) for each of the three security risk profiles.

Risk Profile 1

Guidelines that should only be implemented in the highest security environments, for example, top-secret government or military-sensitive data.

```
isolation.tools.autoInstall.disable = true
isolation.tools.diskShrink.disable = true
isolation.tools.diskWiper.disable = true
isolation.tools.hgfsServerSet.disable = true
logging = false
isolation.monitor.control.disable = true
isolation.tools.ghi.autologon.disable = true
isolation.bios.bbs.disable = true
isolation.tools.getCreds.disable = true
isolation.tools.ghi.launchmenu.change = true
isolation.tools.memSchedFakeSampleStats.disable = true
isolation.tools.ghi.protocolhandler.info.disable = true
isolation.ghi.host.shellAction.disable = true
isolation.tools.dispTopoRequest.disable = true
isolation.tools.trashFolderState.disable = true
isolation.tools.ghi.trayicon.disable = true
isolation.tools.unity.disable = true
isolation.tools.unityInterlockOperation.disable = true
isolation.tools.unity.taskbar.disable = true
isolation.tools.unityActive.disable = true
isolation.tools.unity.windowContents.disable = true
isolation.tools.unity.windowContents.disable = true
isolation.tools.vmxDnDVersionGet.disable = true
isolation.tools.guestDnDVersionSet.disable = true
isolation.tools.vixMessage.disable = true
RemoteDisplay.maxConnections = 1
tools.setInfo.sizeLimit = 1048576
isolation.device.connectable.disable = true
isolation.device.edit.disable = true
```

Risk Profile 2

Guidelines that should be implemented for more sensitive environments. For example, those handling more sensitive data, are subjected to stricter compliance rules.

```
isolation.tools.autoInstall.disable = true
isolation.tools.diskShrink.disable = true
isolation.tools.diskWiper.disable = true
RemoteDisplay.maxConnections = 1
log.keepOld = 10
```

```
log.rotateSize = 100000
tools.setInfo.sizeLimit = 1048576
isolation.device.connectable.disable = true
isolation.device.edit.disable = true
```

Risk Profile 3

Guidelines that should be implemented in all environments.

```
isolation.tools.diskShrink.disable = true
isolation.tools.diskWiper.disable = true
RemoteDisplay.maxConnections = 2
log.keepOld = 10
log.rotateSize = 100000
tools.setInfo.sizeLimit = 1048576
isolation.device.connectable.disable = true
isolation.device.edit.disable = true
```

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Appendix C: EVO:RAIL appliance shutdown or restart

The following are manual procedures for: Appliance shutdown and appliance restart. For these procedures, there are two categories of VMs:

Service: Includes VMware vCenter Server Appliance, VMware vCenter Log Insight, and any Dell Solution VMs.

Client: Included of all other VMs.

EVO:RAIL cluster shutdown

The following manual procedure is for graceful cluster shutdown of a complete cluster (single or multiple appliances):

1. From the **RAIL Management** menu, click **VMS** in the left pane.
2. Turn off all client VMs by doing the following
   a. If a VM is turn on, click **Power Off/Shutdown**.
   b. A confirmation message is displayed, click **Confirm Shutdown**.
   c. Repeat for each VM.

   NOTE: Do not turn off any Dell VMs.
3. Click the **VMware vSphere Web Client** icon in the upper-right corner, and then login with administrator privileges.
4. Click **vCenter** in the left pane. The vCenter home page is displayed.

5. Migrate all the Service VMs (VMware vCenter Server Appliance, VMware vCenter Log Insight, and any Dell VMs) by using the following steps:

   a. From the **Inventory Lists** menu, select **Virtual Machines**.

   b. Right-click the VM and select **Migrate**.

   c. On **Select Migration Type**, select **Change host**, and then click **Next**.

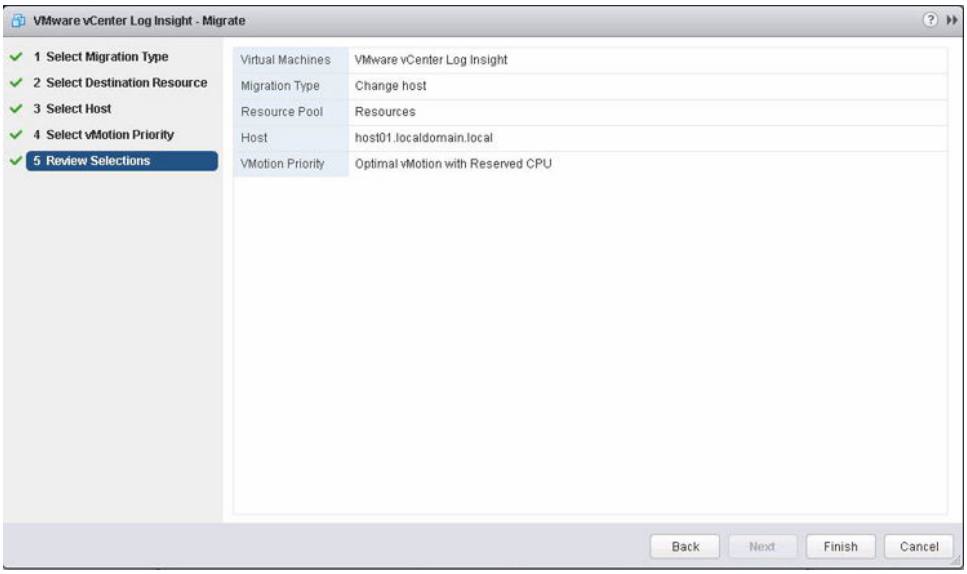
   d. On **Select Destination Resource**e, select **Marvin-Virtual-SAN-Cluster-<id>**, and then click **Next**.

   e. On **Select Host**, select the first ESXi host, such as **esxi-node01.vm.vmworld.local**, and then click **Next**.

   f. On **Select vMotion Priority**, select **Reserve CPU for optimal vMotion performance (Recommended)**, and then click **Next**.

   g. Review all information and click **Finish**.

   h. Repeat for all Service VMs. (VMware vCenter Server Appliance, VMware vCenter Log Insight, and any Dell VMs)



6. Enable Maintenance Mode on all but the first ESXi host by using the following steps:

   a. Return to the **vCenter Home** page.

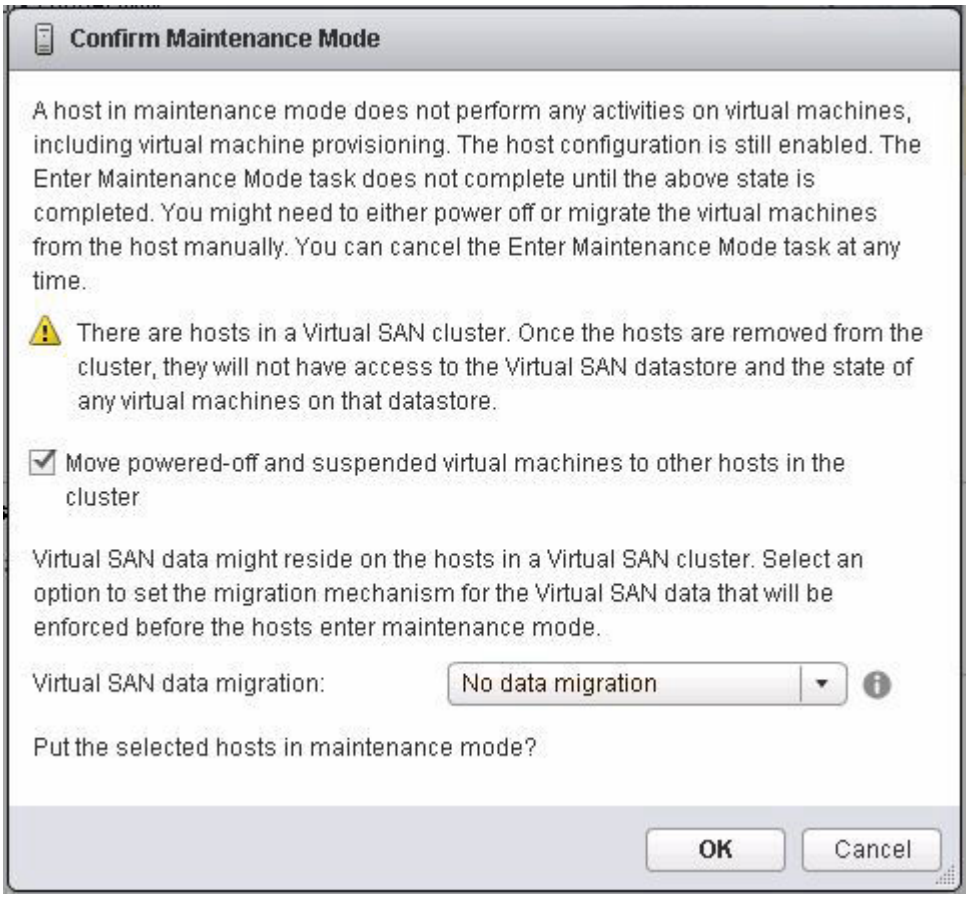
   b. From the **Inventory Trees** menu, select **Hosts**.

   c. For each ESXi host 02, 03, 04, right-click and select **Enter Maintenance Mode**.

   d. Select the **Move powered-off and suspended virtual machines to other hosts in the cluster** check box.

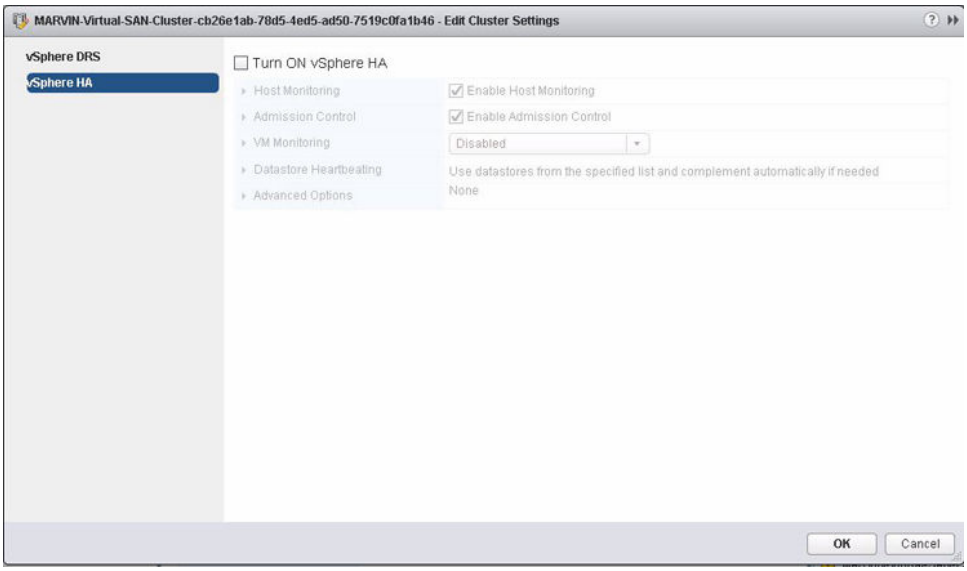
   e. Select **No data migration** from the **Virtual SAN data migration** drop-down menu.

   f. Click **OK**.



7. Disable High Availably by using the following steps:

    a. Return to **vCenter Home** page.
    b. From the **Inventory Trees** menu, select **Clusters**.
    c. Select **MARVIN-Virtual-SAN-Cluster-<id>** in either the left or center panes.
    d. Select **Manage**, and then **Settings** in the center pane.
    e. Under **Services**, select **vSphere HA**.
    f. If the center pane says **vSphere HA is Turned ON**, click **Edit.**
    g. Clear the **Turn ON vSphere HA** check box.
    h. Click **OK**.



8. Enable automatic start for all Service virtual machines (VMware vCenter Server Appliance, VMware vCenter Log Insight, and any Dell VMs) by using the following steps:

   a. Return to the **vCenter Home** page.

   b. From the **Inventory Trees** menu, select **Hosts**.

   c. Select the first ESXi host, such as **esxi-node01.vm.vmworld.local.**

   d. Select **Manage**, and then **Settings** in the center pane.

   e. Under **Virtual Machines**, select **VM Startup/Shutdown**.

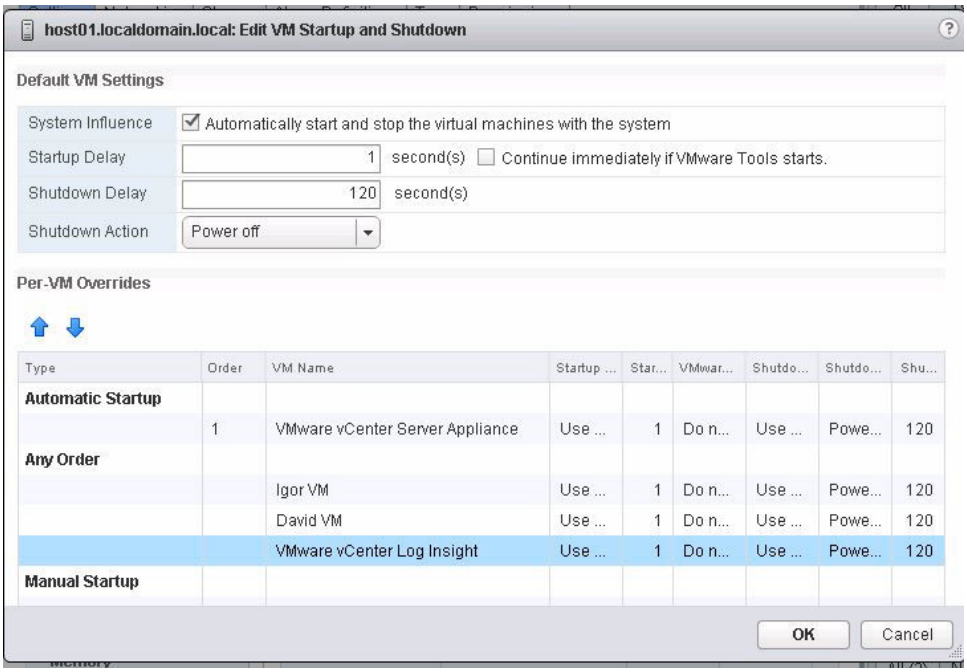
   f. Click **Edit** in the center pane.

   g. Select **Automatically start and stop the virtual machines with the system**.

   h. Select each service VM, use the up arrow key to move each to the **Automatic Startup** section in the following **required** order:

      1. VMware vCenter Server Appliance (Set **Startup Delay** to 30 seconds)
      2. VMware vCenter Log Insight
      3. Dell VMs, if any are present

   i. Click **OK**.



9. Turn off all Service VMs (VMware vCenter Server Appliance, VMware vCenter Log Insight, and any Dell VMs) by using the following steps:

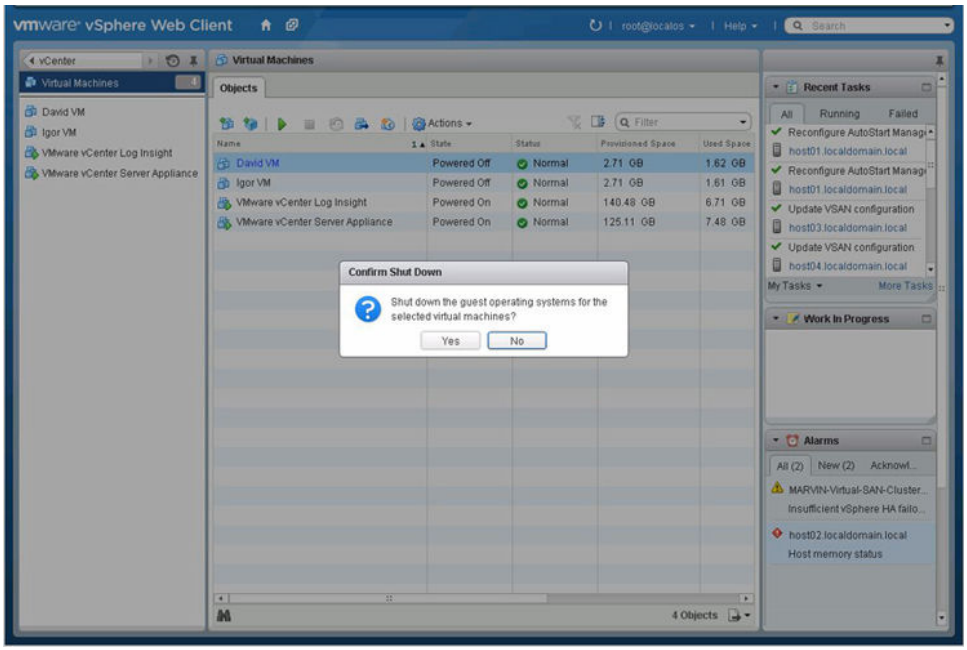
   a. Return to the **vCenter Home** page.

   b. From the **Inventory Trees** menu, select **Virtual Machines**.

   c. Right-click the Service VM and select **Shut Down Guest OS**.

   d. To turn off the services, click **Yes**.

   e. Repeat until all Service VMs are turned off.

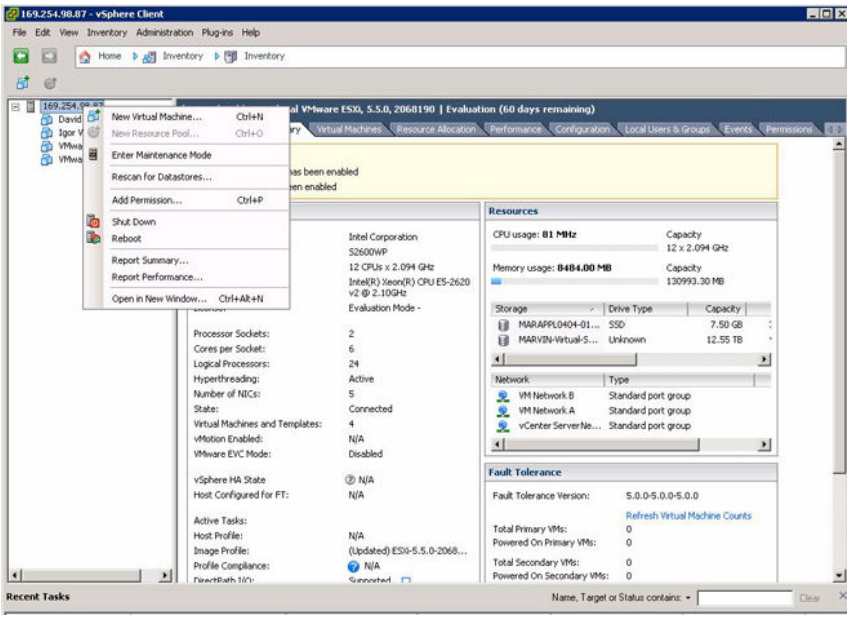


10. For each appliance, turn off all nodes. The vSphere web Client is no longer accessible. Therefore, your options are:

    a. Press the power button on each EVO:RAIL node, or

    b. Use out-of-band management if ACPI is available, or

    c. Use the vSphere C# Client to connect to each node and use the `shutdown` command.



EVO:RAIL cluster restart

The cluster is restarted in the reverse order:

1. Turn on each EVO:RAIL appliance. Turn on Node 1, last.

   NOTE: It may take up to 15 minutes for all services to be fully restored and for EVO:RAIL Management to be accessible.

2. Log in to vSphere Web Client as by using an account with administrator privileges.
3. Click **vCenter** in the left pane and the **vCenter Home** page is displayed.
4. Enable High Availably with the following steps:
   a. From the **Inventory Lists**, select **Clusters**.
   b. Select **MARVIN-Virtual-SAN-Cluster-*id*** in either the left or center panes
   c. Select **Manage,**, and then **Settings** in the center pane.
   d. Under **Services**, select **vSphere HA**.
   e. If the center pane says **vSphere HA** is **Turned OFF**, click **Edit**.
   f. Check **Turn ON vSphere HA**.
   g. Click **OK**.

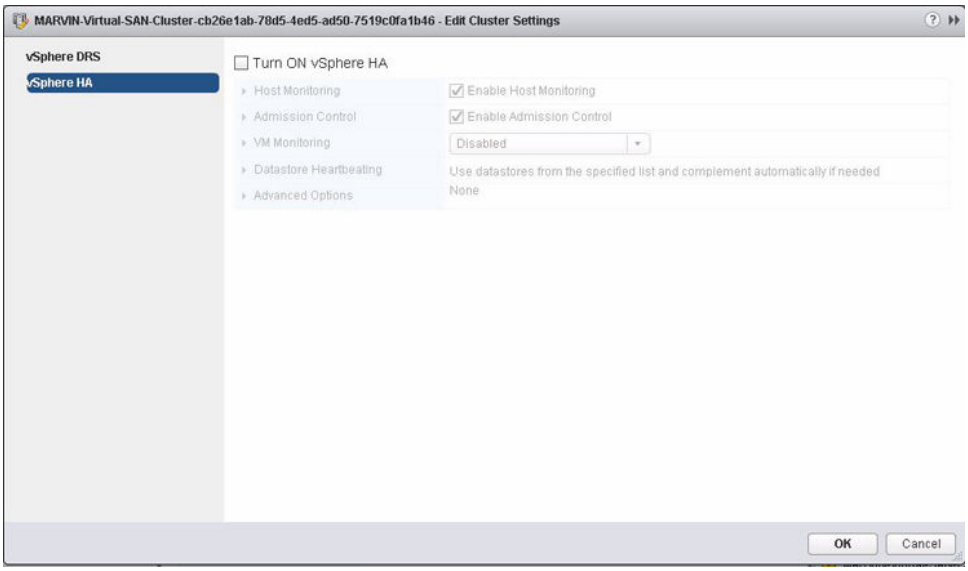


Figure 3. EVO:RAIL appliance restart

5. Exit the Maintenance Mode on the ESXi by using the following steps:
   a. Go to the **vCenter Home** page.
   b. From the **Inventory Lists** menu, select **Hosts**.
   c. Right-click the ESXi host and select **Exit Maintenance Mode**.
6. From EVO:RAIL Management, click **VMS** in the left pane.
7. For each client VM, click **Power On**.

EVO:RAIL single appliance shutdown

The following manual procedure is for graceful cluster appliance shutdown of a single appliance in a multi appliance cluster:

1. Identify the **Appliance ID** on the identification sticker on the physical appliance.
2. From EVO:RAIL Management, identify the ESXi hostnames on the appliance that are shut down with the following steps:
   a. Click the **Health** icon in the left pane.
   b. Click the **Appliance ID** that you identified in step 1.
   c. Identify the ESXi hostnames on the four nodes on the appliance you are shutting down.
3. Click the **VMware vSphere Web Client** icon in the upper-right corner, and then login with administrator privileges.
4. Enable Maintenance Mode on the four ESXi hosts identified in step 2 by using the following steps:
   a. Click **vCenter** in the left pane. The vCenter home page is displayed.
   b. From the **Inventory Tress** menu, select **Hosts**.
   c. For each of the four ESXi hosts, right-click and select **Enter Maintenance Mode**.
   d. Select **Move powered-off and suspended virtual machines to other hosts in the cluster**.
   e. Select **Full data migration** from the **Virtual SAN data migration** drop-down menu.
   f. Click **OK**.

WARNING: Do one ESXi host at a time. Wait until the ESXi host has entered maintenance mode before proceeding to the next. Full Data Migration can take a long time. For information, see Place a Member of Virtual SAN Cluster in Maintenance Mode and Virtual SAN — Maintenance Mode Monitoring.

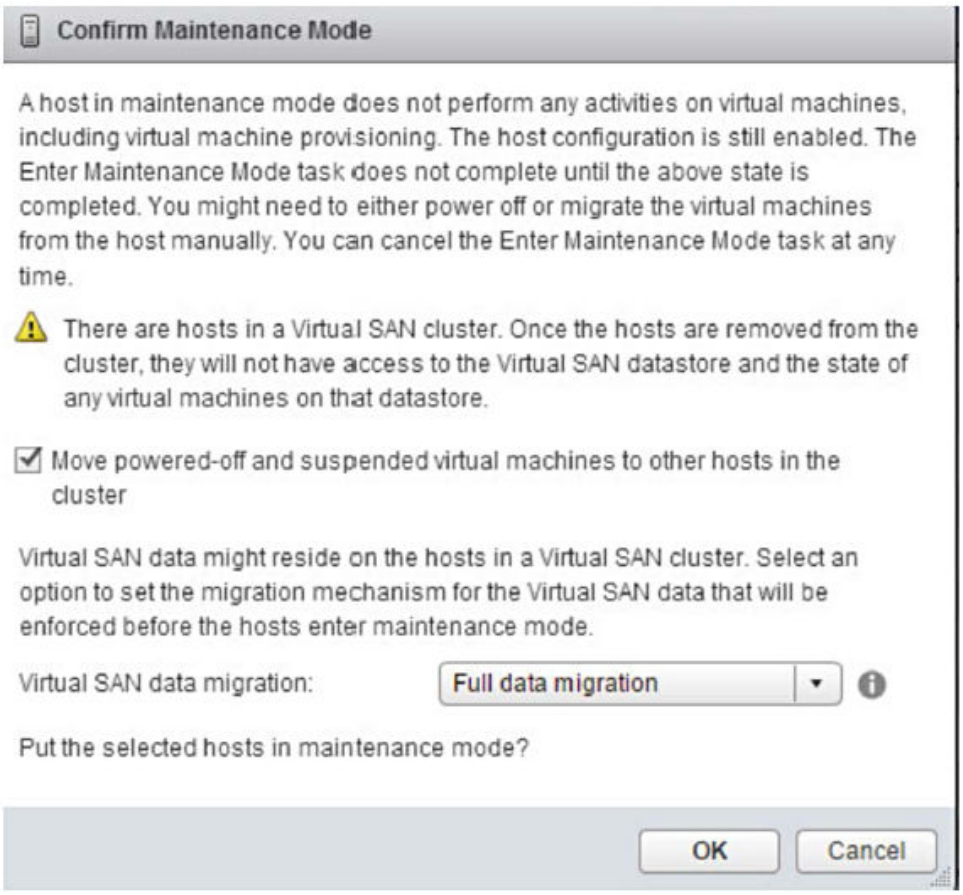


Figure 4. EVO:RAIL Single Appliance Shutdown

5. Turn off the four ESXi hosts by using the following steps:
   a. From **Inventory Trees**, select **Hosts**.
   b. Right-click the ESXi host, and then select **Shut Down**.
   c. Type the reason for the shutdown and click **OK**.
   d. Repeat for each ESXi host.

EVO:RAIL single appliance restart

The cluster is restarted in the reverse order:

1. Turn on each EVO:RAIL appliance.
2. Log in to vSphere Web Client as by using an account with administrator privileges.
3. Click **vCenter** in the left pane and the **vCenter Home** page is displayed.
4. Exit the Maintenance Mode on the ESXi by using the following steps:
   a. Go to the **vCenter Home** page.

b. From the **Inventory Lists** menu, select **Hosts**.
c. Right-click the ESXi host and select **Exit Maintenance Mode**.
d. Repeat for each ESXi host.

6

Getting help

Contacting Dell

Dell provides several online and telephone-based support and service options. If you do not have an active internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical assistance, or customer-service issues:

1. Go to **Dell.com/support**.
2. Select your country from the drop-down menu on the bottom right corner of the page.
3. For customized support:
   a. Enter your system Service Tag in the **Enter your Service Tag** field.
   b. Click **Submit**.
      The support page that lists the various support categories is displayed.
4. For general support:
   a. Select your product category.
   b. Select your product segment.
   c. Select your product.
      The support page that lists the various support categories is displayed.

Documentation matrix

The documentation matrix provides information on documents that you can refer to for setting up and managing your system.

Table 7. Documentation matrix

To...	See the...
Install your system into a rack	Rack documentation included with your rack solution
Set up your system and know the system technical specifications	*Getting Started With Your System* that shipped with your system or see **Dell.com/poweredgemanuals**
Install the operating system	Operating system documentation at **Dell.com/operatingsystemmanuals**
Get an overview of the Dell Systems Management offerings	Dell OpenManage Systems Management Overview Guide at **Dell.com/openmanagemanuals** > **OpenManage software**

To...	See the...
Configure and log in to iDRAC, set up managed and management system, know the iDRAC features, and troubleshoot by using iDRAC	Integrated Dell Remote Access Controller User's Guide at **Dell.com/idracmanuals**
Know about the RACADM subcommands and supported RACADM interfaces	RACADM Command Line Reference Guide for iDRAC at **Dell.com/idracmanuals**
Launch, enable, and disable Dell Lifecycle Controller, know the features, use and troubleshoot Dell Lifecycle Controller	Dell Lifecycle Controller User's Guide at **Dell.com/idracmanuals**
Use Dell Lifecycle Controller Remote Services	Dell Lifecycle Controller Remote Services Quick Start Guide at **Dell.com/idracmanuals**
Set up, use, and troubleshoot OpenManage Server Administrator	Dell OpenManage Server Administrator User's Guide at **Dell.com/openmanagemanuals** > **OpenManage Server Administrator**
Install, use, and troubleshoot OpenManage Essentials	Dell OpenManage Essentials User's Guide at **Dell.com/openmanagemanuals** > **OpenManage Essentials**
Know the features of the storage controller cards, deploy the cards, and manage the storage subsystem	Storage controller documentation at **Dell.com/storagecontrollermanuals**
Check the event and error messages generated by the system firmware and agents that monitor system components	Dell Event and Error Messages Reference Guide at **Dell.com/openmanagemanuals** > **OpenManage software**