

OpenManage Integration for VMware vCenter Version 4.0 Release Notes

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This document describes the features, known issues and resolutions in OpenManage Integration for VMware vCenter (OMIVV) Version 4.3.1.

Release Type and Definition

OpenManage Integration for VMware vCenter Version 4.0

OpenManage Integration for VMware vCenter (OMIVV) enables you to manage the Dell hosts better from the VMware web client by providing enhanced capabilities for deployment, manage, monitor and upgrade.

Version

4.0

Release Date

Feb 2017

Previous Version

3.1

The *OpenManage Integration for VMware vCenter* documentation includes:

- [OpenManage Integration for VMware vCenter Version 4.0 Web Client User's Guide](#)
- [OpenManage Integration for VMware vCenter Version 4.0 Web Client Installation Guide](#)
- [OpenManage Integration for VMware vCenter Version 4.0 Web Client Compatibility Matrix](#)
- [OpenManage Integration for VMware vCenter Version 4.0 Release Notes](#)

Importance

OPTIONAL: Dell recommends the customer to review specifics about the software update to determine if it applies to your system. The update contains changes that impact certain configurations, or provides new features that may/may not apply to your environment.

Platform(s) Affected

For the list of supported platforms, see the section “BIOS, iDRAC, Lifecycle Controller versions” in the *OpenManage Integration for VMware vCenter Version 4.0 Compatibility Matrix* at Dell.com/support/manuals.

What is Supported

For the list of supported software, hardware, BIOS, iDRAC firmware, networking ports, and VMware software, and the Dell compatibility lists, see the *OpenManage Integration for VMware vCenter Version 4.0 Compatibility Matrix* at Dell.com/support/manuals.

What’s New

The release highlights of OpenManage Integration for VMware vCenter Version 4.0 are:

- Support for vSphere 6.5 and 6.0 U2
- Support for vSphere 6.5 Proactive HA and customize severity of the Dell host and chassis components
- Support for parallel firmware update jobs on multiple clusters
- Support for integration with vRealize Operations (vROPS)
- Support for OMSA 8.3 and OMSA 8.4
- Notification on the availability of the latest version of OMIVV
- Support for up to 1000 hosts with a single vCenter instance or multiple vCenter servers
- Support for all 13th generation platforms

Important Notes

1. From OMIVV 4.0 onwards, only VMware vSphere Web client is supported and the vSphere Desktop client is not supported
2. For vCenter 6.5 and later, the OMIVV appliance is only available for the flash version. The OMIVV appliance is not available for the HTML5 version.
3. For using the DNS server, the recommended practices are:
 - a. OMIVV supports only IPv4 IP addresses. Although both static IP assignment and DHCP assignment are supported, Dell recommends you to assign a static IP address. Assign a static IP address and host name when you deploy an OMIVV appliance with a valid DNS registration. A static IP address ensures that during the system restart, the IP address of the OMIVV appliance remains same.
 - b. Ensure that OMIVV host name entries are present in both forward and reverse lookup zones in your DNS server.
4. For the OMIVV appliance mode, ensure that you deploy OMIVV in the appropriate mode based on your virtualization environment. For more information, see the section, “System requirements for deployment modes” in *OpenManage Integration for VMware vCenter Version 4.0 Installation Guide*.
5. Configure your network to match the port requirements. For more information, see the section, “Port information” in *OpenManage Integration for VMware vCenter Version 4.0 Installation Guide*.

Known Issues and Resolutions

- **Issue 1:** In the **Welcome** page of the **Firmware Update** wizard, the message displayed under Note is not applicable for web client.

Description: The text displayed under the Note in the **Welcome** page of the **Firmware Update** wizard, the **Run compliance wizard for vSphere Hosts from Dell Management Center in vSphere Client** is not relevant for vSphere Web client. The text is specific to vSphere Desktop client, which is not supported for the OMIVV version 4.0.

Version affected: 4.0

Resolution/Workaround: None

- **Issue 2:** The **Export All** button fails to export to .CSV file in the Google chrome.

Description: After registering a vCenter server, if you add a host and create a connection profile, and then view the inventory details of the host, the **Export All** button returns a failure. The **Export All** button does not export the information to a .CSV file.

 **NOTE:**

In all versions of the Google chrome browser, the **Export All** button does not export the information to a .CSV file in **Incognito mode**.

Version affected: 4.0

Resolution/Workaround: To export information to a .CSV file by using the Export All button in the Google chrome, disable the **Incognito mode** in chrome browser.

- **Issue 3:** iDRAC license type and description are displayed incorrectly for non-compliant vSphere hosts.

Description: If a host is noncomplaint when CSIOR is disabled or has not been run, the iDRAC license information is displayed incorrectly although valid iDRAC license is available. Hence, you can view the host in vSphere hosts list, but when you click the host for details, the information in **iDRAC License Type** is displayed as empty and **iDRAC License Description** is displayed as "Your license needs to be upgraded".

Version affected: 4.0

Resolution/Workaround: None

- **Issue 4:** Although deployment job fails due to inaccessible file share, the status is displayed as "Cancel".

Description: When you create a hypervisor profile with invalid credentials such as, invalid credentials for CIFS share, and select the same hypervisor profile for deployment, the deployment task fails. However, the status displayed in the **Job Queue** page is **Cancel** instead of **Failed**.

Version affected: 3.0 and later

Resolution/Workaround: None

- **Issue 5:** Dell icon is not displayed after unregistering vCenter from an earlier OMIVV version and then registering same vCenter with a later OMIVV version.

Description: If you unregister an earlier OMIVV version with vCenter server, and then register a later OMIVV version with the same vCenter server, there is an entry in the vsphere-client-serenity folder, which is old data from the earlier OMIVV version. Hence, the Dell icon is not displayed after registering the later OMIVV version as old data specific to the earlier OMIVV version exists in the vsphere-client-serenity folder of the vCenter appliance.

Version affected: All

Resolution/Workaround: Perform the following steps:

1. Go to `/etc/vmware/vsphere-client/vc-packages/vsphere-client-serenity` folder in the vCenter appliance and see that old data exists, such as:
`com.dell.plugin.OpenManage_Integration_for_VMware_vCenter_WebClient-3.0.0.197`
2. Manually delete the folder corresponding to the earlier OMIVV version.
3. Restart the vSphere web client service on the vCenter server.

- **Issue 6:** Initial Configuration wizard settings are overridden by default settings each time it is invoked.

Description: After you configure inventory, warranty retrieval schedules; events and alarms in the initial configuration wizard and then relaunch the configuration wizard again, the previous inventory and warranty retrieval schedules are not retained. The inventory and warranty schedules are reset to the default settings each time the configuration wizard is invoked, whereas the events and alarms retain the updated settings.

Version affected: 3.0 and later

Resolution/Workaround: Replicate the previous schedule in the inventory and warranty schedule pages before completing the wizard functions so that the previous schedule is not overridden by the default settings.

- **Issue 7:** The **OpenManage Integration** icon is not displayed after backup and restore from an earlier OMIVV version to a later OMIVV version.

Description: The OpenManage Integration icon is not displayed after restoring an earlier OMIVV version appliance database to a later OMIVV version appliance.

Version affected: 3.0 and later

Resolution/Workaround: The IP address of the later OMIVV version appliance must be the same as the earlier OMIVV version appliance for the plug-in to work correctly after restore.

- **Issue 8:** Storage overview returning incorrect number of physical disks for inventory.

Description: Systems with software RAID show incorrect number of physical disks on the storage overview page.

Version affected: All

Resolution/Workaround: None. The ESXi does not support software RAID. If the system has software RAID, it shows incorrect disks.

- **Issue 9:** System Event Logs are not showing in OpenManage Integration for VMware vCenter vSphere client when power supply redundancy is lost.

Description: When the power redundancy is lost on the PowerEdge 12th Generation modular servers, the system logs get cleared.

Version affected: 3.0 and later

Resolution/Workaround: None

- **Issue 10:** Memory data displays a negative value for a host after successful inventory.

Description: The Total Memory capacity displays as "0" and Memory Installable displays a negative value on the Host Memory overview page. This issue occurs because of some issue in the iDRAC.

Version affected: All

Resolution/Workaround: Restart the system and check if the issue is resolved. If issue is not resolved, you may have to reset the iDRAC.

- **Issue 11:** Chassis and server health is displayed as warning on the **Chassis Summary** page when server becomes critical.

Description: When a critical entry is made to SEL logs, the health of the server (blade) changes to critical. This is correctly reflected on the **Host Summary** page. However, this is not reflected on the **Chassis Summary** page. The server health is displayed as warning. If the chassis was normal earlier, the health of the chassis also changes to warning.

Version affected: 3.0 and later

Resolution/Workaround: None. This is a known defect in the RACADM. The defect will be fixed in the next release of RACADM for chassis.

- **Issue 12:** The physical disk name is not displayed at data center and cluster level inventory in some situations.

Description: Although the physical disk name is displayed when you view the inventory at the host level, the physical disk name is displayed empty when you view the inventory of the host at the data center and cluster level.

Version affected: 3.0 and later

Resolution/Workaround: This issue does not affect the functionality of the features, and you can view the inventory at the host level to see the physical disk name.

- **Issue 13:** Invalid data is displayed for physical disks and virtual disks at data center and cluster inventory intermittently.

Description: When you create connection profile for hosts and run an inventory for the hosts, verify the physical disk and virtual disk information at the data center, cluster, and host level. On verification, the host level inventory displays valid data whereas in some situations, at the data center and cluster level, invalid data is displayed along with the valid set of data.

Version affected: 3.0 and later

Resolution/Workaround: This issue is infrequent, and you can press the **Refresh** option in the same screen to display valid data.

- **Issue 14:** Processor Version is not displayed for 12th generation servers on the overview firmware page of host.

Description: For 12th generation servers, processor version is not displayed on the overview page for firmware inventory. This information is available for 11th and earlier generation systems.

Version affected: 2.0 and later

Resolution/Workaround: None

- **Issue 15:** Hard disk option is not disabled in the Deployment wizard for all the servers that do not contain hard disk drives.
Description: While navigating through the Deployment wizard, if the bare-metal servers do not have any hard disk drive, then the hard disk option should be disabled on the **Global Settings** tab. However, the option is available for selection.
Version affected: 2.0 and later
Resolution/Workaround: None
 - **Issue 16:** The **Initial Configuration** wizard is displayed continuously.
Description: The **Initial Configuration** wizard may be displayed if you click **Cancel** after selecting the **Do not show again** option. To properly read the **Do not show again** option, the wizard should move to the next page.
Version affected: 2.0 and later
Resolution/Workaround: Select the **Do not show again** option, and then click **Next** to move to the next page. Click **Cancel** to close the dialog box.
 - **Issue 17:** Internal Dual SD Module is disabled for a server that has Internal Dual SD Module and no Hard Disk.
Description: The **Dual SD Module** check box is disabled for server that has Internal Dual SD Module and no Hard Disk if you open or create the hardware profile on the deployment template while navigating on the deployment wizard.
Version affected: 1.5 and later
Resolution/Workaround: If you see this behavior, perform the step to select the bare-metals, reselect the bare-metals, and continue with the wizard.
 - **Issue 18:** While applying RAID from reference server, the physical disk order is not maintained as it is in the reference server.
Description: After deploying Hardware Profile, the Virtual Disks are created on the physical server. However, the RAID levels are applied to the same order of the physical disks as in the reference server.
Version affected: All
Resolution/Workaround: None
 - **Issue 19:** Using OpenManage Integration to update an Intel Network card with the firmware version of 13.5.2 is not supported.
Description: There is a known issue with Dell PowerEdge 12th generation servers and some Intel Network cards with the firmware version of 13.5.2. Updating some models of the Intel network cards at this version of firmware fails when the firmware update is applied using the Lifecycle Controller.
Version affected: All
Resolution/Workaround: Customers with this version of firmware must update the network driver software using an operating system. If the Intel Network card has a version of firmware other than 13.5.2, you can update using OpenManage Integration. For more information, see <http://en.community.dell.com/techcenter/b/techcenter/archive/2013/03/20/intel-network-controller-card-with-v13-5-2-firmware-cannot-be-upgraded-using-lifecycle-controller-to-v13-5-6>
- NOTE:**
- When using the one-to-many firmware update, avoid selecting Intel network adapters that are at version 13.5.2, as this fails and stops the update task from updating remaining servers.
- **Issue 20:** Firmware upgrade or downgrade of Broadcom NetXtreme II 10 Gigabit Ethernet adapter (BCM57712) from firmware version of 6.2.x or earlier is not supported.
Description: Using the OpenManage Integration to upgrade a Broadcom NetXtreme II 10Gigabit Ethernet adapter (BCM57712) from firmware version of 6.2.x or earlier, or downgrade to a firmware version of 6.2.x or earlier is not supported.
Version affected: All
Resolution/Workaround: There is a known issue with the Broadcom NetXtreme II 10Gigabit Ethernet adapter (BCM57712) where updating the adapter from firmware version of 6.2.x or earlier, or downgrade to a firmware version of 6.2.x or earlier fails when the update is applied using the Lifecycle Controller. When attempting to perform this update using the OpenManage Integration, the update may incorrectly show that it completed successfully. However, the firmware update has failed and remains at the previous level. One way to successfully update the adapter software for the Broadcom NetXtreme II 10Gigabit Ethernet adapter (BCM57712) is for customers to update the adapter firmware from an operating system.
 - **Issue 21:** Running firmware update may display an error message, **The firmware repository file does not exist or is invalid.**

Description: While running the Firmware Update wizard, at the data center or cluster level, an error message may be displayed: **The firmware repository file does not exist or is invalid.** This may be due to a daily background process that was unable to download and cache the catalog file from the repository. This occurs if the catalog file is not reachable at the time the background process runs.

Version affected: All

Resolution/Workaround: After resolving any catalog connectivity issues that may exist, you can reinitiate the background process by changing the firmware repository location, and then setting it back to the original location. Allow about 5 minutes for the background process to complete and ensure that there is no @ character present in the credential provided for the CIFS share.

- **Issue 22:** An error occurs while installing the OpenManage Integration for VMware vCenter.

Description: While installing the OpenManage Integration for VMware vCenter, the following error is displayed: **Network card 'VirtualE1000' has a DVPort backing, which is not supported. This could be because the host does not support VDS or because the host has not joined a VDS.**

Version affected: All

Resolution/Workaround: Set the network interface to the VM Network during the OVF installation. After the virtual machine is created, remap the networking to the VDS port group.

- **Issue 23:** The NIC connection status is not reflected correctly on Dell PowerEdge 12th generation servers.

Description: Under the **Dell Server Management** tab, the **Hardware Inventory Information > NICs section**, the Network Interface Cards may display incorrect connection status as "NO" on the Dell PowerEdge 12th generation servers. This is due to a defect in recent versions of the Lifecycle Controller firmware. This Lifecycle Controller defect will be addressed in a future Lifecycle Controller firmware release.

Version affected: All

Resolution/Workaround: None

- **Issue 24:** The Service Tag is not displayed during a firmware update.

Description: In the firmware inventory and on the **Select Update Bundles** tab, the Service Tag information is not displayed for the Dell PowerEdge 11th generation servers. This information is not displayed if VMware vCenter does not provide the Service Tag.

Version affected: All

Resolution/Workaround: You can view the Service Tag information on the **Host Overview** page from where you launched the firmware update.

- **Issue 25:** Associated Connection Profile is not displayed in the host compliance page when inventory is not able to get iDRAC IP for the host.

Description: If the iDRAC IP is not retrieved because of non-responsive iDRAC, the inventory fails and host to be associated with the connection profile is not displayed on the host compliance page.

Version affected: 1.6 and later

Resolution/Workaround: Reset the iDRAC to fix the issue of iDRAC not being responsive, and then rerun the inventory. If the inventory is able to get the iDRAC IP, then the host will be associated with the correct connection profile.

- **Issue 26:** A communication error message is displayed after clicking the Firmware link from vSphere Client.

Description: If you have a slow network speed (9600BPS), you may get a following communication error message after clicking on the Firmware link in vSphere Client for the OpenManage Integration. The communication error message occurs when the connection times out (which was initiated by the Microsoft Internet Explorer) while trying to obtain the Software Inventory list. For Microsoft Internet Explorer 8/9/10, the default "Receive Time out" value is set to 10 seconds. The error that displays when the value is set too low is:

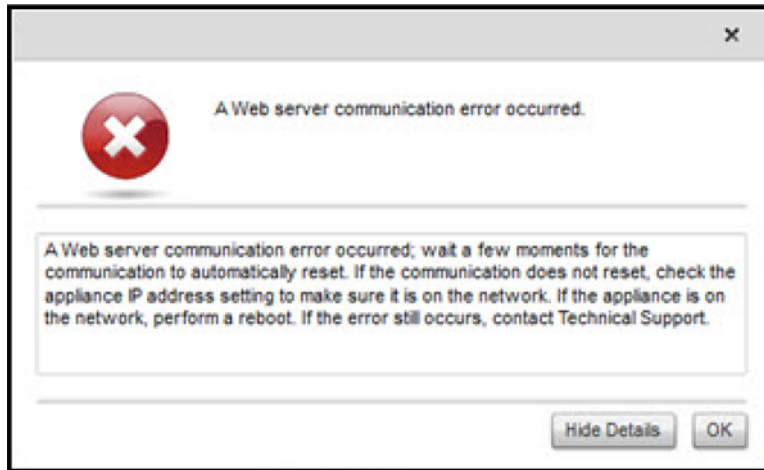


Figure 1. Communication error

Version affected: 1.5 and later

Resolution/Workaround: Do the following steps to fix the issue:

1. Open RegEdit.
2. Navigate to the following location:
`KHEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings.`

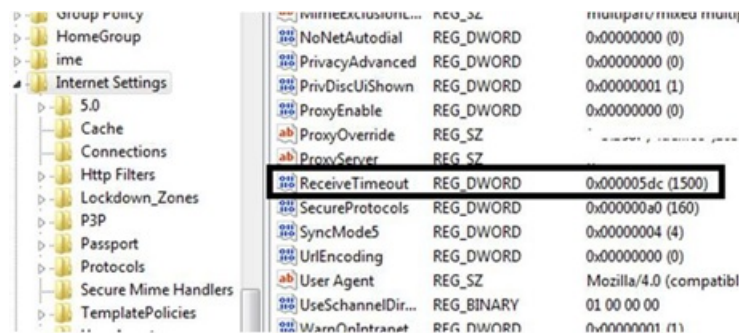


Figure 2. Registry

3. Add a new DWORD value for ReceiveTimeout.
4. Set the value to 30 seconds (30000). Try with higher value based on your environment requirements.
5. Exit RegEdit.
6. Restart Internet Explorer.

NOTE:

Opening a new Internet Explorer window does not resolve this issue. You must restart the Internet Explorer browser.

- **Issue 27:** Using local host for host name causes issues in identifying the source of SNMP alerts.

Description: Starting with ESXi 5.1, a value of local host for the host name causes issues in identifying the source of SNMP alerts. The use of local host is not supported and a Fully Qualified Domain Name (FQDN) must be used instead.

Version affected: 1.6 and later

Resolution/Workaround: When deploying an ESXi 5.1 server using DHCP, it is strongly recommended that a combination of a DHCP reservation based on the selected NIC MAC addresses, and a DNS host entry using the reservation's IP address must be configured. You can view the MAC address in Deployment Wizard's Server Identification page, Network Interface drop-down, and provided to help identify the network interfaces. The DHCP reservation and DNS entry should be created for the server prior to scheduling the deployment, and if properly configured, should set the hostname to the value from DNS.

- **Issue 28:** Deployments failure error message displayed on R210 II machines.

Description: Timeout issue on R210 II systems produces a hypervisor deployments failure error due to failure of BIOS to boot from attached ISO.

Version affected: 1.5.1 and later

Resolution/Workaround: Manually install hypervisor on the machine.

- **Issue 29:** OpenManage Integration gets a security error message.

Description: Although the SSL Certificate is valid on a vCenter and user credentials are correct, an error message displayed: **There are either too many Virtual Management Console connections or an incorrect user name or password or session ID, or an incorrect SSL certificate. Please verify these items and try again.**

Version affected: All

Resolution/Workaround: This happens due to an invalid session in vCenter. Close and re-open the vSphere client to resolve this issue. You can check your session by clicking "Sessions" under Administration in the vSphere Client for advanced troubleshooting.

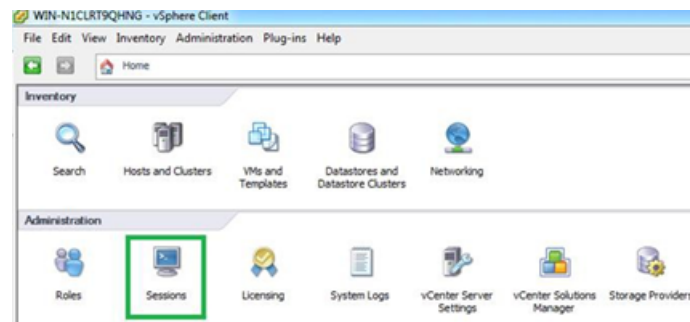


Figure 3. vSphere client

- **Issue 30:** Unable to boot to service partition while deploying OS ISO.

Description: Hypervisor deployments are failing on Dell 11th and 12th generation servers with this error displayed on the screen during POST: "*Warning: Unable to boot to Service Partition*". There is a BIOS issue to identify the network ISO when there is a local USB CD-ROM installed on the system and that USB CD-ROM is the only USB mass storage device plugged into the system.

Version affected: 1.5.1 and later

Resolution/Workaround: Remove the local USB CD-ROM (note that not all local CD-ROM would expose this issue), or plug in additional USB floppy or USB key on the system, or attach the virtual media (virtual floppy and virtual CD) from the iDRAC.

- **Issue 31:** A firmware update fails with an error message saying that USC is in use and it must be retried after 30 seconds.

Description: During a firmware update, the update fails with the error message: **If USC is in use, wait until USC has exited and retry the action. Otherwise retry after 30 seconds to check if network connectivity caused this error.**

Version affected: 1.5.1 and later

Resolution/Workaround: To fix this issue, reset iDRAC and wait until iDRAC boots properly and try the firmware update again.

- **Issue 32:** Events from different vCenter are posted to another vCenter from a shared OpenManage Integration appliance.

Description: This situation can occur when a bare-metal server that was deployed in one vCenter is rediscovered again as bare-metal server but then selected for a hypervisor deployed in another vCenter. This situation occurs if the host that was already on one of the registered vCenter was added to another registered vCenter. In this case the host on first vCenter appears as disconnected.

Version affected: All

Resolution/Workaround: Remove the host from the first vCenter where it is now showing as disconnected.

- **Issue 33:** CSIOR status is displayed as "Unknown".

Description: A server may show as non-compliant with CSIOR status, "Unknown".

Version affected: All

Resolution/Workaround: An unknown CSIOR state indicates a non-responsive iDRAC on the host. A manual iDRAC reset on the host fixes this issue.

- **Issue 34:** Hypervisor installation fails.

Description: Hypervisor installation fails with the error message: **Mount network share failed – incorrect IP address or share name.**

Version affected: 1.5 and later

Resolution/Workaround: Restart the appliance.

- **Issue 35:** NFS mount remains mounted after successful deployment by using ESXi 5.0.

Description: After the hypervisor deployment is complete and the host is added to the vCenter tree, there is an entry in the **Summary** page under the data sources called, "remote-install-location (inactive) (unmounted)" for the new host added.

Version affected: 1.5 and later

Resolution/Workaround: None

- **Issue 36:** Health Status is showing Warning for chassis while one or more Power supply is critical.

Description: The overall health information is displayed warning on summary page for VRTX chassis that has power supply in critical state.

Version affected: All

Resolution/Workaround: Each power supply status is shown correctly as critical.

- **Issue 37:** Health Status is showing as Healthy for chassis while Storage status is Warning.

Description: The overall health information is displayed Healthy on summary page for VRTX chassis that has a storage component as Warning.

Version affected: VRTX firmware version 2.0

Resolution/Workaround: Storage component health status is shown correctly as Warning.

- **Issue 38:** Blower information is showing as N/A for a chassis when a Blower is removed.

Description: Blower inventory information is displayed as N/A on the **Monitor** page for VRTX chassis when a Blower is removed from a slot.

Version affected: 2.0 and later

Resolution/Workaround: You can see the fan inventory before the blower was removed.

- **Issue 39:** File type '.csv' is not be appended to the file, if the file name is anything other than "Export List".

Description: When we export any of the grid details from any OMIVVC pages (from IE9), the default File Name "ExportList" is shown. If saved as is, it will be saved as "ExportList.csv". If the file name is changed to anything other than "Export List", the file will be saved without any extension.

Opening the file will show all details in comma separated value format. Issue is just to append.

Version affected: M1000e firmware version 5.0

Resolution/Workaround:

1. Login to web client from IE 9, and export any grid value from pages like HW profile, Hypervisor profile, Host - firmware inventory.
2. While saving, change the file name from ExportList to something else, say ExportList123.
3. Save the file with the file extension (in case the default name is changed.)

- **Issue 40:** I see a web communication error in the vCenter web client after changing the DNS settings in OpenManage Integration for VMware vCenter?

Description: If you see any kind of web communication error in the vCenter web client while doing any OpenManage Integration for VMWare vCenter related tasks after changing the DNS settings, clear the browser cache or logout and login from the web client.

Version affected: 2.x and later

Resolution/Workaround: Clear the browser cache or log out and log in from the web client.

Limitations

The following are the limitations for this release of OMIVV:

- If the Dell Cloud server model C6320 contains H730 controller and micro SD card in the riser, the micro SD card might not be detected in some situations. This limits the OS deployment on the SD card.
- In the Dell Cloud server model C6320, deployment through LSI 2008 is not supported.

Installation Prerequisites

For the installation prerequisites, see the section “Prerequisite checklist” in the *OpenManage Integration for VMware vCenter Version 4.0 Web Client Installation Guide* at [Dell.com/support/manuals](https://www.dell.com/support/manuals).

Installation Procedure

For installation related information, see the *OpenManage Integration for VMware vCenter Version 4.0 Web Client Installation Guide* at [Dell.com/support/manuals](https://www.dell.com/support/manuals).

Installation and Configuration Notes


For installation and configuration-related information, see the *OpenManage Integration for VMware vCenter Version 4.0 Web Client Installation Guide* at [Dell.com/support/manuals](https://www.dell.com/support/manuals).

Accessing documents from the Dell EMC support site

You can access the required documents in one of the following ways:

- Using the following links:
 - For Dell EMC Enterprise Systems Management, Dell EMC Remote Enterprise Systems Management, and Dell EMC Virtualization Solutions documents — www.dell.com/esmmanuals
 - For Dell EMC OpenManage documents — www.dell.com/openmanagemanuals
 - For iDRAC documents — www.dell.com/idracmanuals
 - For Dell EMC OpenManage Connections Enterprise Systems Management documents — www.dell.com/OMConnectionsEnterpriseSystemsManagement
 - For Dell EMC Serviceability Tools documents — <https://www.dell.com/serviceabilitytools>
- From the Dell EMC Support site:
 1. Go to <https://www.dell.com/support>.
 2. Click **Browse all products**.
 3. From **All products** page, click **Software**, and then click the required link from the following:
 - **Analytics**
 - **Client Systems Management**
 - **Enterprise Applications**
 - **Enterprise Systems Management**
 - **Mainframe**
 - **Operating Systems**
 - **Public Sector Solutions**
 - **Serviceability Tools**
 - **Support**
 - **Utilities**
 - **Virtualization Solutions**
 4. To view a document, click the required product and then click the required version.
- Using search engines:
 - Type the name and version of the document in the search box.


Contacting Dell

 **NOTE:** 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.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to **Dell.com/support**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.

Notes, cautions, and warnings

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

 **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.