
Dell OpenManage Essentials v1.2 - Support For Dell Client Devices

This Dell technical white paper provides the required information about Dell client devices (OptiPlex, Precision, Latitude) support in OpenManage Essentials.

OME Engineering Team



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Executive Summary

Dell OpenManage Essentials (OME) is a lightweight, Web-based, one-to many systems management solution that provides a comprehensive view of Dell systems, devices, and components in an enterprise network. OME lets you discover Dell business client devices (Dell OptiPlex, Dell Precision, and Dell Latitude), and perform some management operations on these devices. OME retrieves client device hardware information using the WMI protocol and can do so with or without Dell OpenManage Client Instrumentation (OMCI) being present on the remote device. OME requires OMCI to show the device health, hardware logs, and to perform specific operations on multiple devices using the generic command line task framework. Discovery and device classification works without OMCI installed on the remote device.

Introduction

This document helps you understand the Dell client devices support with Dell OpenManage Essentials. To learn more, go to: www.delltechcenter.com/ome

Scope

The scope of this document is to discover/inventory Dell business client devices and explore various OME features for client devices. The following devices fall under the Business client category:

- OptiPlex
- Precision
- Latitude

Note: OME may work for Dell Vostro and Dell XPS business client devices as well but with very limited functionality and OMCI does not support these models.

Assumption

This document is specific to client devices supported by OME. It is assumed that you are already aware of OME, its installation and how to discover devices features. To learn more about OME and its features, go to www.delltechcenter.com/ome

What is supported?

Dell client device support was introduced in OpenManage Essentials v1.1 providing the following support to Dell client devices:

- Discovery and inventory
- Hardware logs
- Warranty
- Health monitoring alerts

Dell OpenManage Client Instrumentation

Dell OpenManage Client Instrumentation (OMCI) is available on Dell OptiPlex, Dell Precision Workstation, and Dell Latitude client systems. Using OMCI, system administrators can remotely manage assets, monitor system health, and inventory deployed systems in the enterprise. To learn more and to download OMCI, go to:

<http://en.community.dell.com/techcenter/systems-management/w/wiki/1773.openmanage-client-instrumentation-omci.aspx>

The default OMCI install exposes hardware information with the help of the `\root\dcim\sysman` WMI namespace. Remotely, OME retrieves client device health and hardware logs from this namespace.

Prerequisites

The following are the requirements for discovery and classification of the client devices in OME:

- Supports only Dell client devices.
- Device should respond to WMI queries. WMI specific settings are enabled on the remote device.
- Client device should have the following supported operating systems installed:
 - Microsoft Windows 8
 - Microsoft Windows 7
 - Windows Vista
 - Windows XP.
- OMCI 8.x (Optional - Helps you retrieve more information. Refer to Table 1.)

Note: Dell Clients with Linux kernels/Operating systems are not supported by OpenManage Essentials.

OpenManage Essentials can discover clients with or without having OMCI installed. When OMCI is absent, OME fetches the information from client's operating system. It consumes data from `\root\cimv2` WMI namespace. However, installing OMCI is recommended and the differences are included in the table below.

Table 1. Feature comparison with/without OMCI

Feature	With OMCI	Without OMCI
Discovery - Basic Information	Yes	Yes
Inventory - Basic Information	Yes	Yes
Inventory - Additional Information*	Yes	No
Device Health & Status Available	Yes	No
Device's Hardware Logs Available	Yes	No

* To learn more about the "Inventory - Additional Information," refer to Table 2: Discovery and inventory details with/without OMCI.

Discovery and Inventory

Use the following steps for the discovery of client devices using OME:

1. Launch OpenManage Essentials.
2. Navigate to **Manage** → **Discovery and Inventory**.
3. In the left panel, click **Add Discovery Range**.
4. Enter the IP address of the specific client device or the IP range having all the client devices with the subnet mask details.

Figure 1. Specifying IP address, host name, and subnet mask.

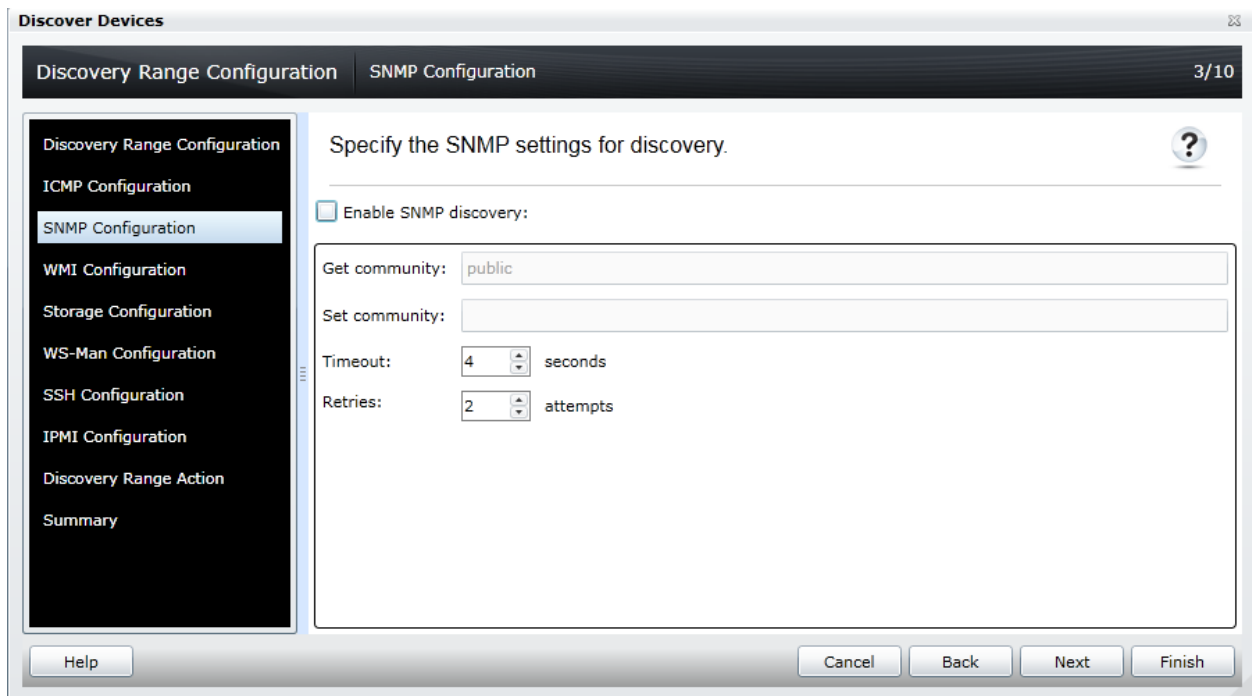
The screenshot shows the 'Discover Devices' window with the 'Discovery Range Configuration' dialog open. The dialog has a sidebar on the left with the following options: Discovery Range Configuration (selected), ICMP Configuration, SNMP Configuration, WMI Configuration, Storage Configuration, WS-Man Configuration, SSH Configuration, IPMI Configuration, Discovery Range Action, and Summary. The main area is titled 'Specify IP address, range, or host name.' and contains the following text: 'Enter an IP address or a range. The first octet cannot be zero. Specify a range (for example, 12-115) or wildcard(*) in the last two octets.' There are two radio buttons: 'IP address / range:' (selected) and 'Host name:'. The 'IP address / range:' section has four input boxes for the IP address and a 'Name:' input box. The 'Host name:' section has a single input box. Below these is the 'Subnet mask:' section with four input boxes for the subnet mask, showing the values 255, 255, 255, and 0. There are three buttons: 'Add', 'Remove', and 'Import...'. At the bottom of the dialog is a table with the following data:

IP Range / Host Name	Discovery Range Name	Subnet Mask
10.94.20.44		255.255.255.0

At the bottom of the window are buttons for 'Help', 'Cancel', 'Next', and 'Finish'.

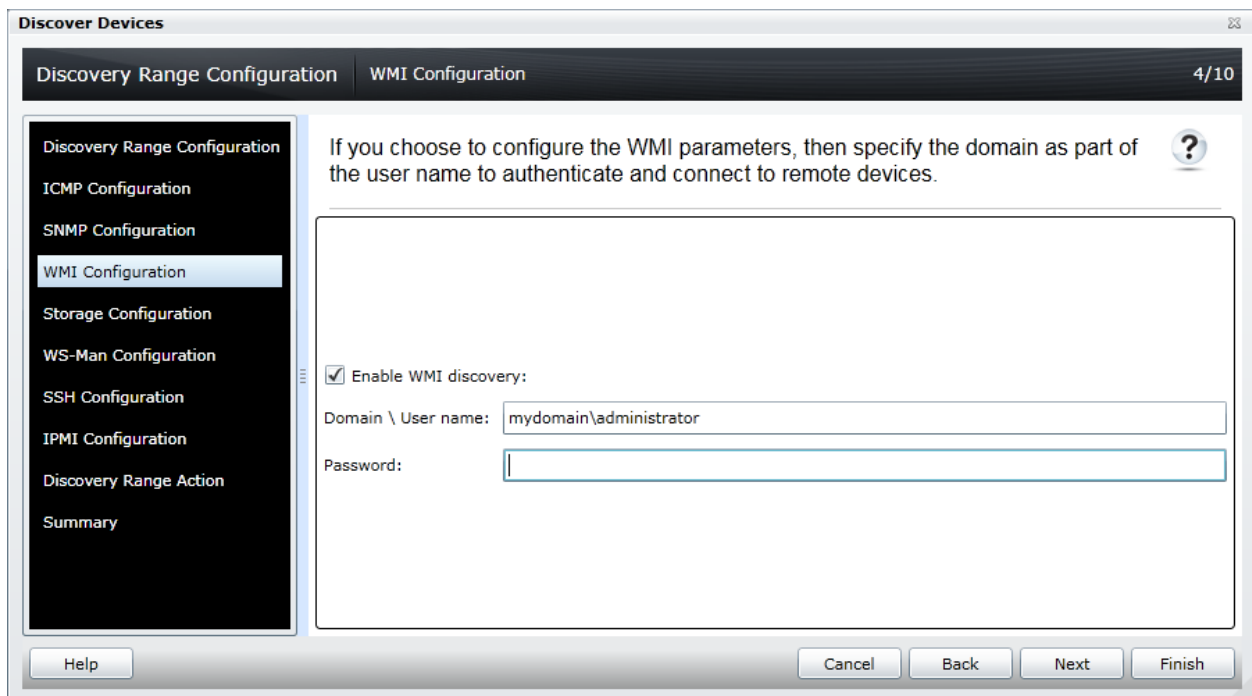
5. Click **Next**.
6. In the ICMP Configuration page, click **Next**.
7. In the SNMP Configuration page, clear the **Enable SNMP discovery** check box.

Figure 2. Discovery Range Configuration - clear the Enable SNMP discovery check box.



8. Click Next.
9. In the WMI Configuration page, select **Enable WMI discovery**.

Figure 3. Discovery Configuration - Enable WMI discovery.

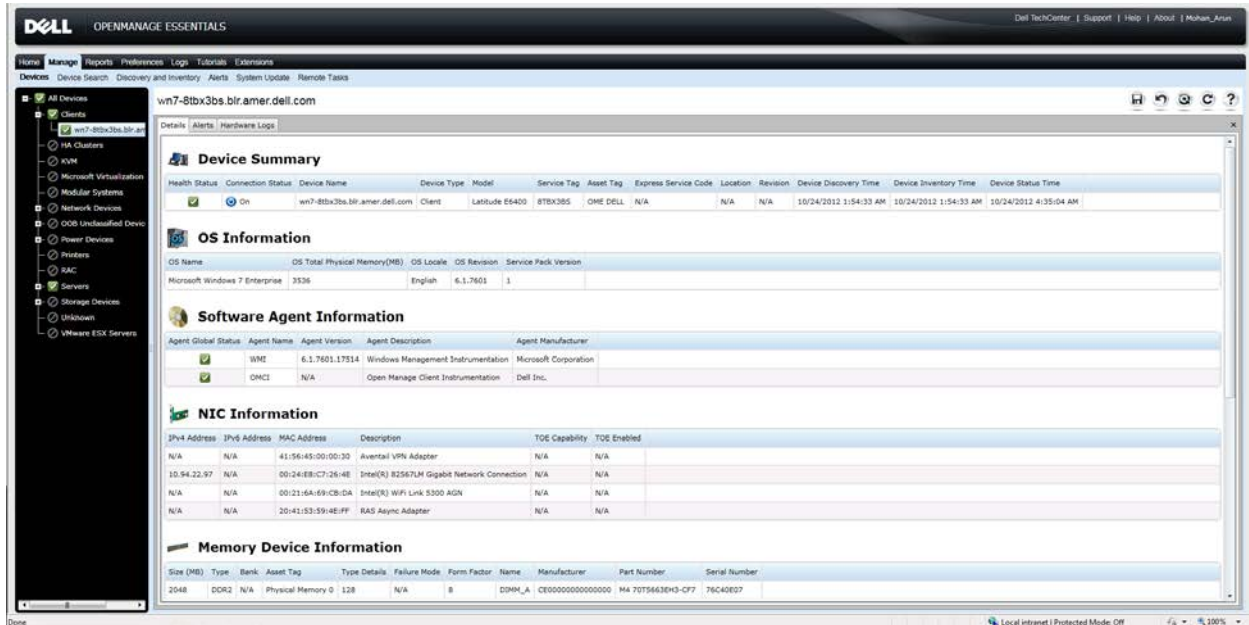


10. Provide the WMI credentials for the remote devices.

11. Click **Finish**.

Once the discovery task finishes, OpenManage Essentials classifies the client devices under the *Clients* device group.

Figure 4. Clients discovered and classified in the device tree



Inventoried Information With and Without OMCI

Table 2 shows information about discovery and inventory with and without OMCI.

Table 2. Discovery and Inventory tables available for Dell Client devices

Category	With OMCI	Without OMCI
Device Summary *	✓	✓
OS Information	✓	✓
Software Agent Information *	✓	✓
NIC Information	✓	✓
Processor Information	✓	✓
Memory Device Information	✓	✓
Firmware Information	✓	✓
Controller Information	✓	✓
Physical Disk Information	✓	✓
Volume Information	✓	✓
Contact Information	✓	✓
FRU Information	✓	X

* If OMCI is not installed on a Dell Client device, then the “Software Agent Information” table will show only one entry for the WMI agent and health will be displayed as *Unknown*.

Hardware Logs

OME helps you see the hardware logs of a remote client device on which Dell OpenManage Client Instrumentation is installed.

These logs are not stored in the OME database. The latest logs are fetched from the device when you request them by clicking on the Retrieve button. Connection to the device is made with discovery credentials. Make sure OME has connectivity to the device to fetch the logs.

Figure 5. Hardware logs (Initial)

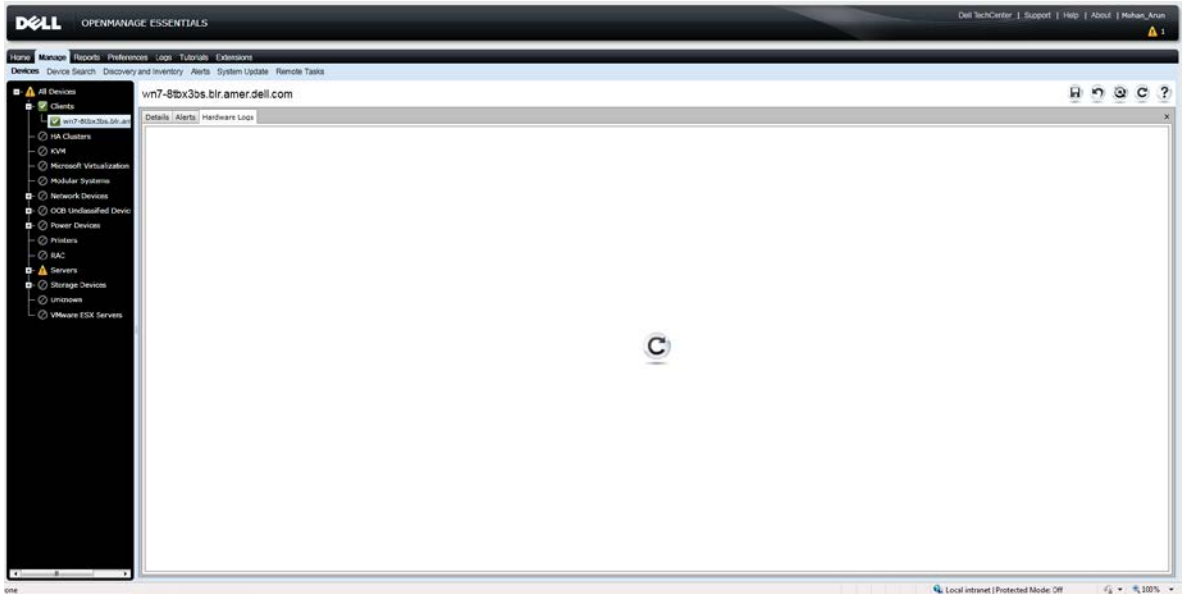
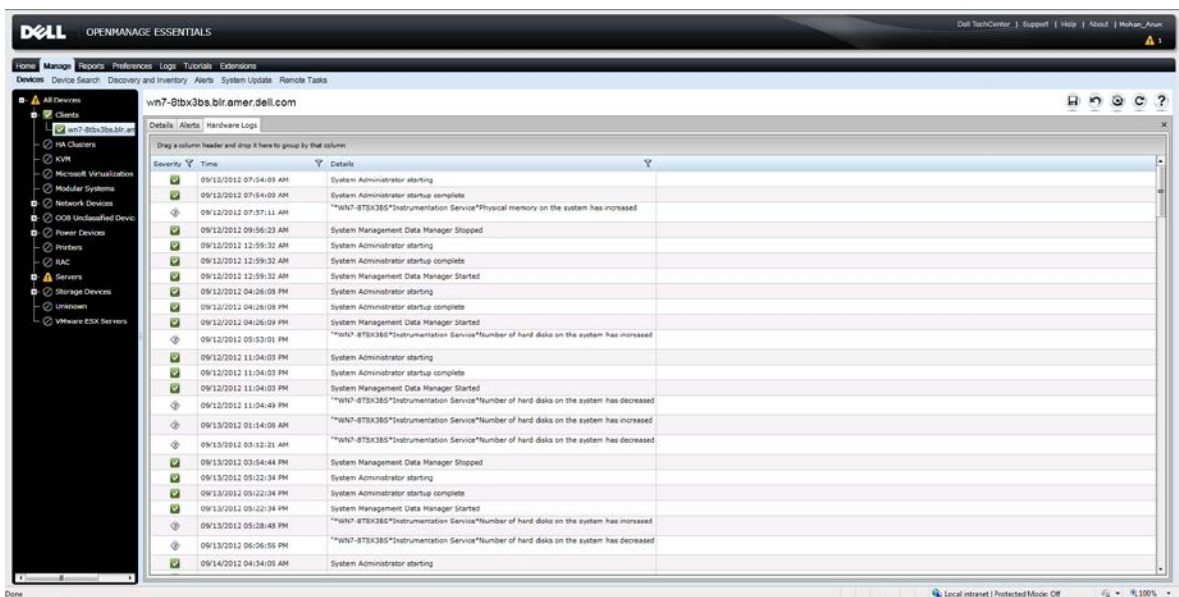


Figure 6. Hardware Logs - Loaded

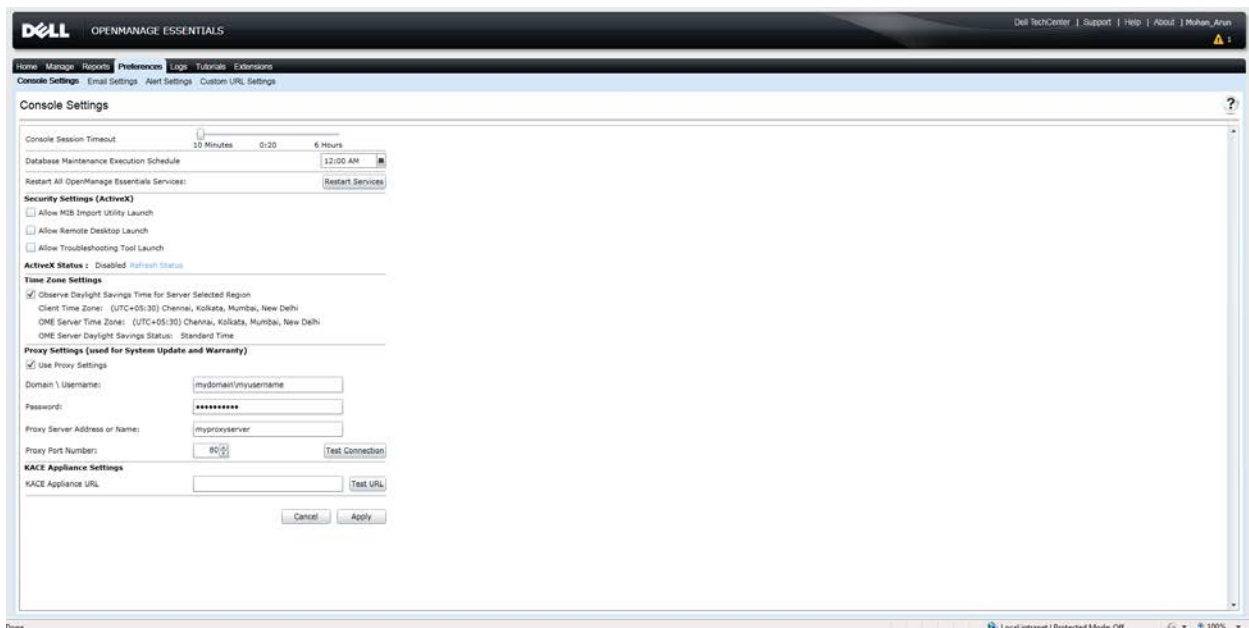


Warranty Information

OpenManage Essentials has a built-in warranty report that shows warranty information for discovered client devices. Warranty information for the client devices is available as part of this report. OME retrieves this information from the Dell Web site for the given device Service Tags.

Because this is live data, OpenManage Essentials expects connectivity to the Dell Web site when you run the report. If OpenManage Essentials is installed behind the proxy server, then provide the proxy server details in the **Preferences** → **Console settings** page.

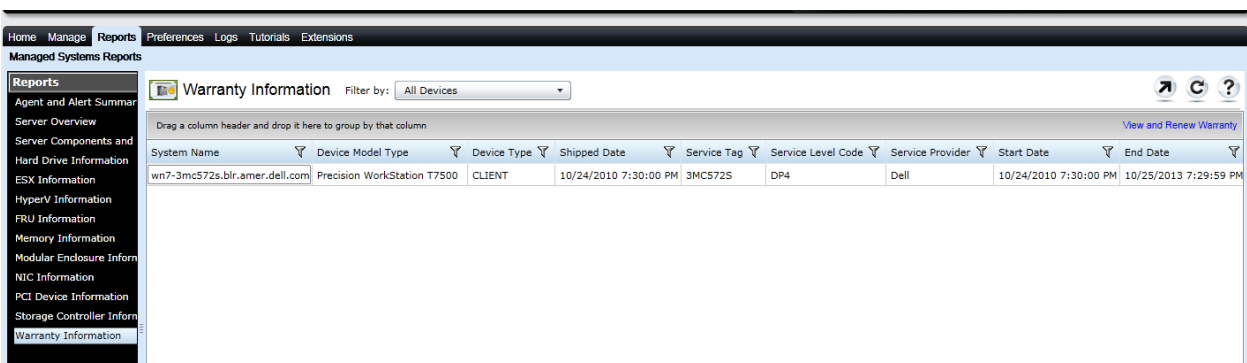
Figure 7. Configuration proxy server.



Warranty Report

The Warranty report shows all the warranty information related to the service tag of the client hardware. To view the warranty report, navigate to **Reports** → **Warranty Information**.

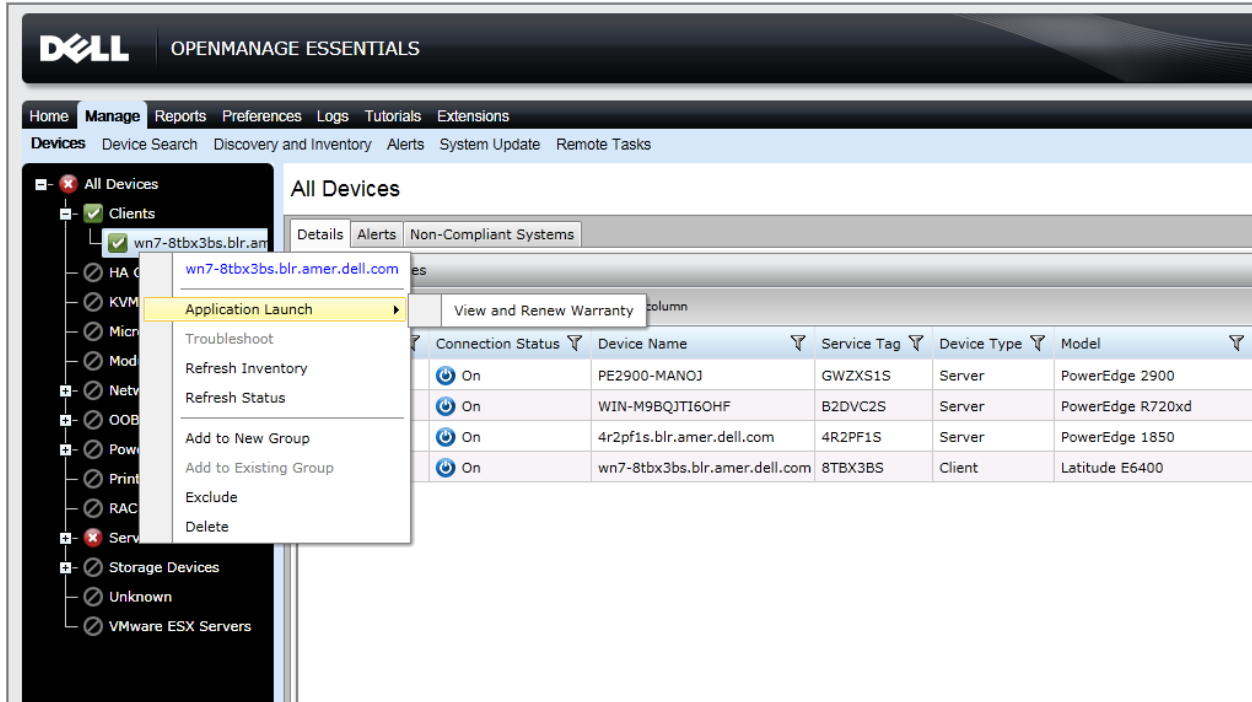
Figure 8. Warranty Information



Viewing Information and Renewing Warranty

1. To view and renew the warranty of a client device, right-click on the device in device tree → **Application Launch** → **View and Renew Warranty**.

Figure 9. Application Launch warranty.



This takes you to www.dell.com and displays the warranty information page for the specific device. You can renew the warranty from this location.

Figure 10. Warranty Information on the Dell Web site.

The screenshot shows the Dell website's warranty information page for a Latitude E6400. The page features a navigation bar with options like Shop, Support, and Community, and a search bar. The main content area displays the product name, service tag (8TBX3B5), and a table of warranty services. A sidebar on the right offers additional support options like 'Need configuration or software help? - Pay by Incident' and 'Related Links'.

Product Support for Latitude E6400

Latitude E6400
 Service Tag: 8TBX3B5
[Select A Different Product >](#)

Product Support | System Configuration | Drivers & Downloads | Parts & Upgrades | Manuals & Documentation | **Warranty**

Warranty Information

Country: India
 Ship Date: 9/2/2009

Services	Provider	Start Date	End Date
COMPLETECOVER COVERAGE PROGRAMME	Dell	9/2/2009	9/3/2012
POW (Parts only Warranty)	Dell	9/2/2011	9/3/2012
NBD (Next Business Day on-site)	Dell	9/2/2011	9/3/2012

[Renew/Upgrade Warranty >](#)

[Add to My Product and Services List >](#)

Need configuration or software help? - Pay by Incident
 Get expert help to optimize your PC, configure your network, remove a virus or more.
 Call 1-800-945-8061 for as needed assistance.

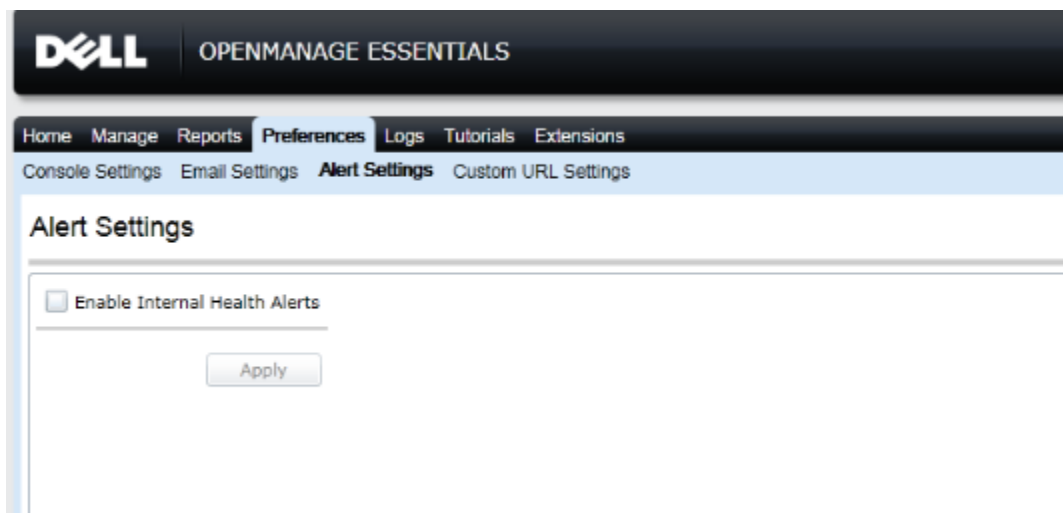
Related Links

- Order Status
- Drivers Help
- My Products and Services
- Service Contracts
- Dell Supported Operating Systems
- Dispatch / Repair Status
- Getting Started with a new Dell product
- Retail Registration
- Ownership Transfers

Internal Health Alerts

Currently, OpenManage Essentials does not have the WMI events listening functionality. Alerts generated by Client devices are not shown in OME. OME generates internal health alerts whenever it detects a change in the health state of the device. Check **Enable Internal Health Alerts** on the Preferences → Alert Settings page.

Figure 11. Internal health alert preferences.



If this feature is enabled, OME monitors the health status. The health depends upon the schedule status task. Change in the client device status generates internal traps, which you can view in the Event console and then you can configure the required alert actions for these traps.

Note: As this feature is related to client health status, it requires that *Dell Open Manage Client Instrumentation* be installed on the remote device.

Figure 12. Internal health alert warning.

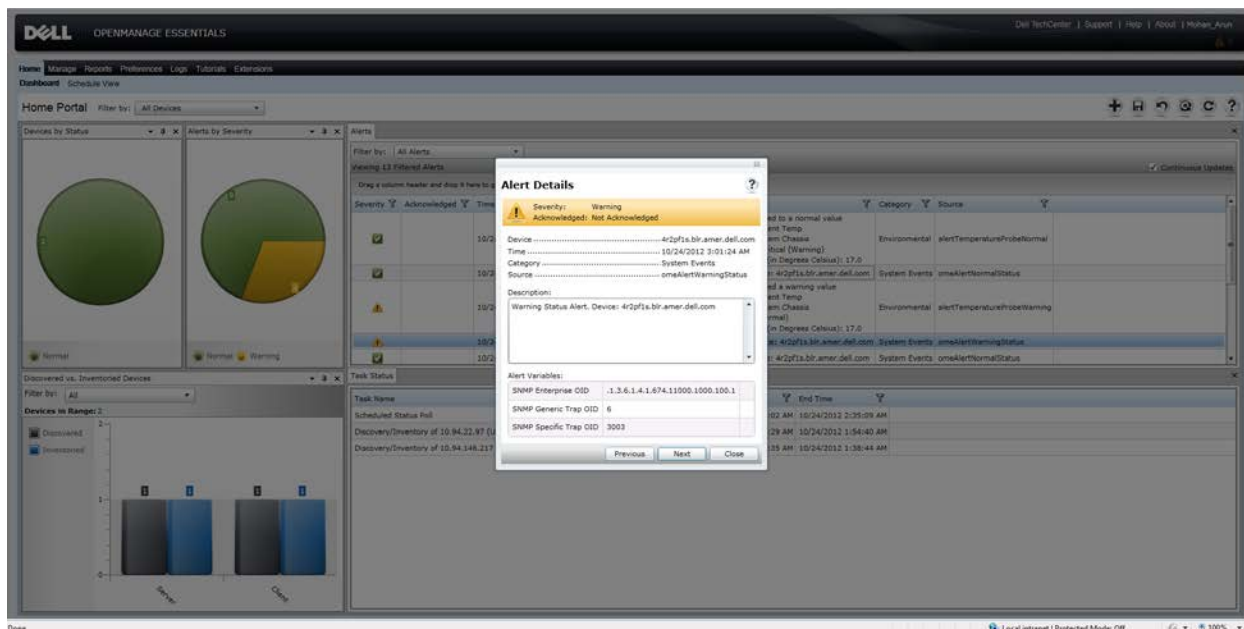
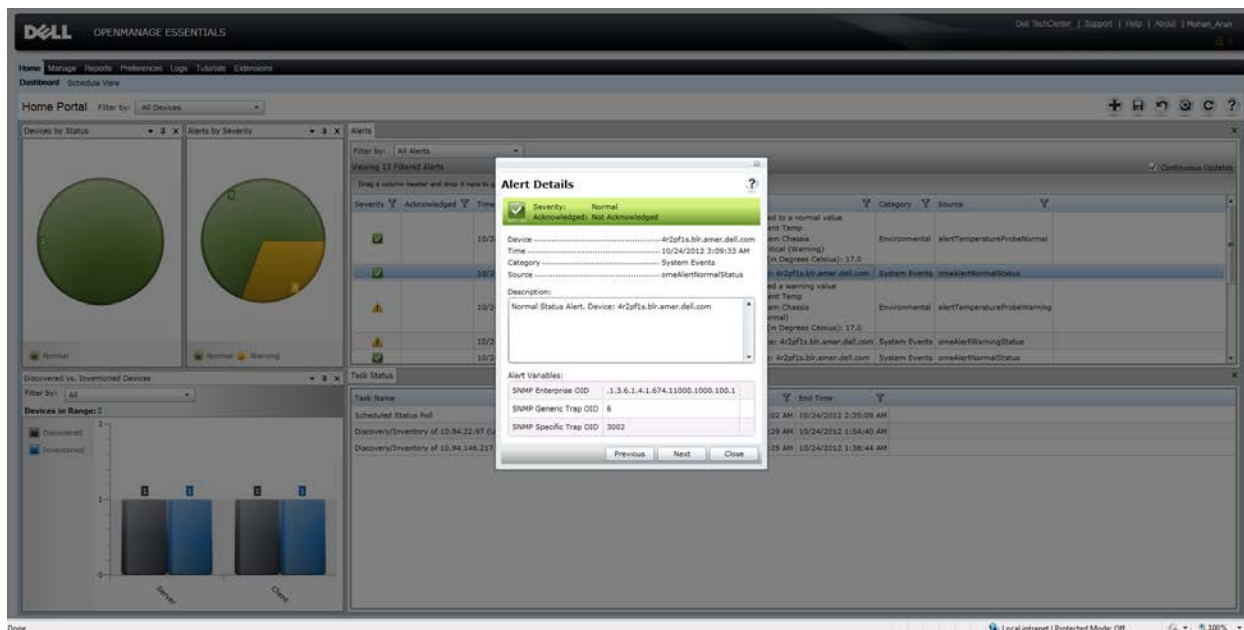


Figure 13. Internal health alert - Normal.

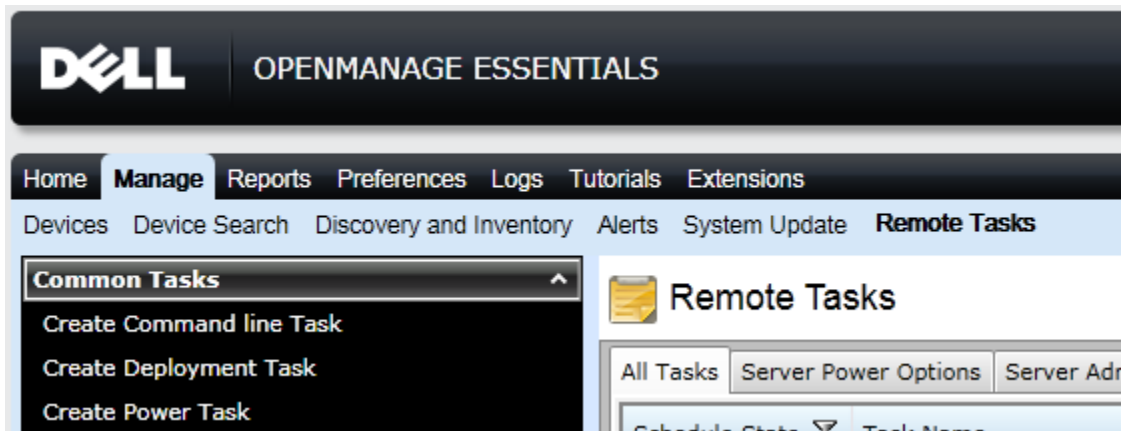


Command line - Remote Tasks

OME supports execution of generic command-line tasks on remote computers. This feature lets you run/schedule a task against a selected set of discovered devices. You can run any custom script against the client devices and perform operations on them.

To create remote command-line task navigate to **Manage → Remote Tasks → Create Command Line Task**.

Figure 14. Command line task



The benefits of using remote command-line tasks against your environment include:

- Leverages the scripting capabilities within the product.
- Targets one-to-many configurations.
- Targets only specific hosts or devices groups.
- Windows power shell commands/scripts
- OMCI scripts to get/set values (PowerShell/VB Script).

Running Command-Line Tasks and Configuring Custom Scripts

OME makes use of Windows power shell scripts for a variety of purposes including, but not limited to, software deployment and power cycling the device. For detailed information on how to make use of windows power shell against OME, refer to:

http://en.community.dell.com/techcenter/extras/m/white_papers/20024495.aspx

OMCI supports VBScript and PowerShell based scripting. Use these scripts for:

- Remote BIOS update
- Remote system shutdown/restart
- Retrieve/set BIOS password
- Enabling/Disabling PXE boot on next reboot

To see sample OMCI scripts, refer to: <http://en.community.dell.com/techcenter/systems-management/w/wiki/omci-sample-scripts.aspx>

The section below is a step-by-step creation of generic command-line task to run one OMCI script to fetch the Service Tag for many client devices in a single report file.

----- Script Begins-----

```
*****
*** Name: serviceTag.vbs
*** Purpose: To get service tag & bios version on a Dell OMCI client.
```



```
*** Usage: cscript.exe //nologo serviceTag.vbs <systemname>
*** This sample script is provided as an example only, and has not been
*** tested, nor is warranted in any way by Dell; Dell disclaims any
*** liability in connection therewith. Dell provides no technical
*** support with regard to such scripting. For more information on WMI
*** scripting, refer to applicable Microsoft documentation.
*****
```

Option Explicit

```
*** Declare variables
Dim strNameSpace
Dim strComputerName
Dim strClassName
Dim strClassNameBIOS
Dim strKeyValueChassis
Dim objInstance
Dim ColSystem
Dim objWMIService
Dim strMessage
*** Check that the right executable was used to run the script
*** and that all parameters were passed
If (LCase(Right(WScript.FullName, 11)) = "wscript.exe") Or _
    (WScript.Arguments.Count < 1) Then
    Call Usage()
    WScript.Quit
End If

*** Initialize variables
strNameSpace = "root/dcim/sysman"
strComputerName = WScript.Arguments(0)
strClassName = "DCIM_Chassis"
strClassNameBIOS = "DCIM_BIOSElement"
strKeyValueChassis = "DCIM_Chassis"

*** Retrieve the instance of DCIM_Chassis class (there should
*** only be 1 instance).
*** Establish a connection to the dcim\sysman namespace
Set objWMIService = GetObject("winmgmts:{impersonationLevel=impersonate," & _
    "AuthenticationLevel=pktprivacy}\\\" & strComputerName & "\" & _
    strNameSpace)

Set ColSystem=objWMIService.execquery ("Select * from " & strClassName)
For each objInstance in ColSystem
    if (objInstance.CreationClassName = strKeyValueChassis) Then
        strMessage = "Asset Tag: "
        strMessage = strMessage & objInstance.Properties_.Item("ElementName").Value
        strMessage = strMessage & vbCRLF & "Service Tag: "
        strMessage = strMessage & objInstance.Properties_.Item("Tag").Value
    End if
Next

*** Retrieve all instances of DCIM_BIOSElement (there should
*** only be 1 instance).
Set ColSystem=objWMIService.execquery ("Select * from " & strClassNameBIOS)
```

```
For each objInstance in ColSystem
    strMessage = strMessage & vbCRLF & "BIOS Version: "
    strMessage = strMessage & objInstance.Properties_.Item("Version").Value
Next
**** Display the results
WScript.Echo strMessage

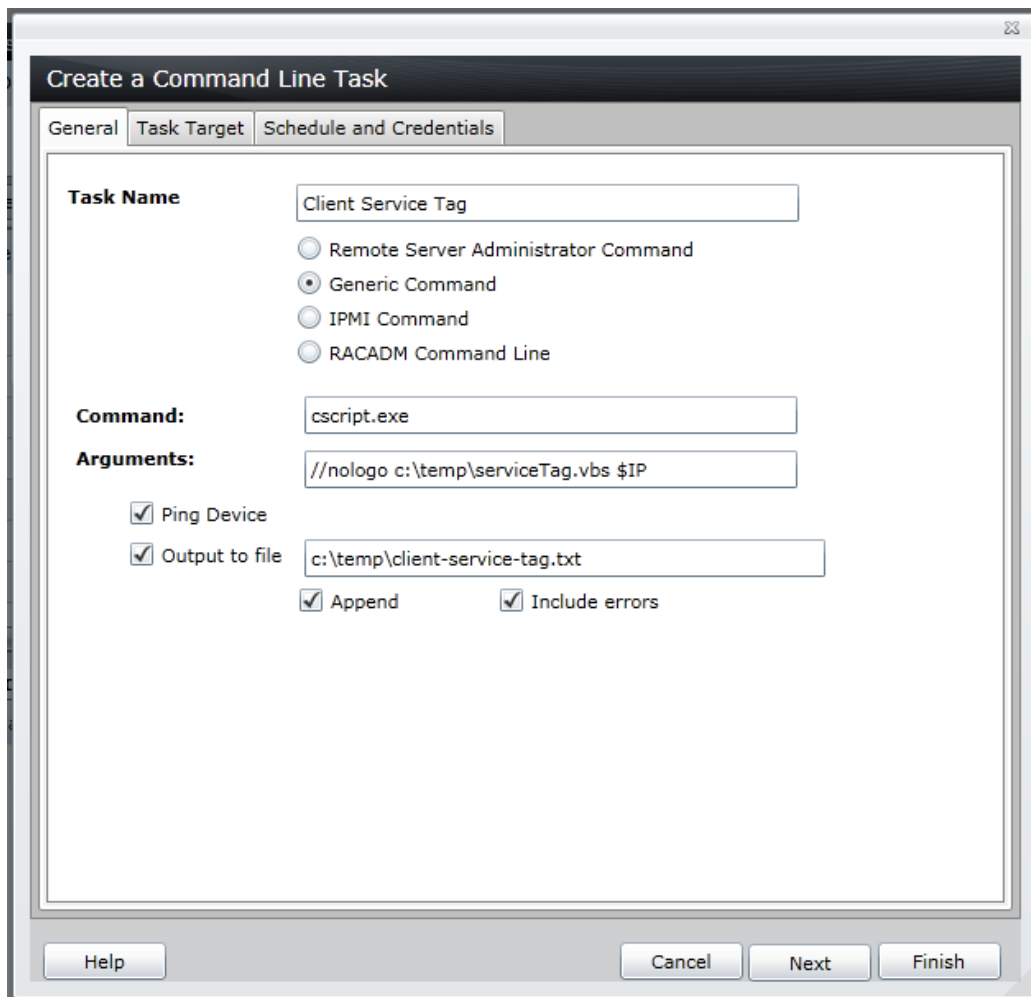
**** Sub used to display the correct usage of the script
Sub Usage()
Dim strMessage
strMessage = "incorrect syntax. You should run: " & vbCRLF & _
"cscript.exe //nologo serviceTag.vbs <systemname>"
WScript.Echo strMessage
End Sub
----- Script Ends -----
```

Note: If you copy the above contents into the script, run it first before configuring with OME. This makes sure that any doc/pdf characters are not breaking the script.

Steps:

1. Copy the contents (between "Script Begins" and "Script Ends") and save the file as serviceTag.vbs to the C:\temp directory.
2. Launch the OME console and navigate to **Manage → Remote Tasks**.
3. Select **Create Command Line Task**.
4. Select **Generic Command**.
5. Name the task, for example: Client Service Tag.
6. In **Command**, type: cscript.exe
7. In **Arguments**, provide: //nologo c:\temp\serviceTag.vbs \$IP
Note: \$IP is used to select a Task Target.
8. Select **Output to file**. Name the file: C:\temp\client-service-tag.txt and select the **Append and Include errors** check boxes.

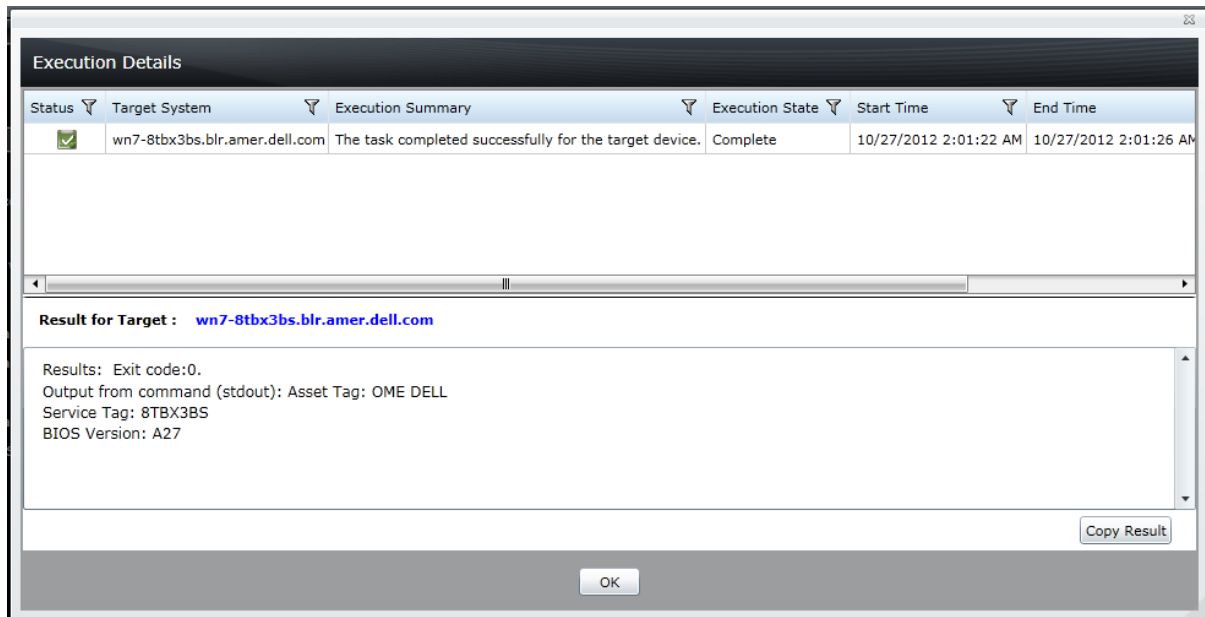
Figure 15. Configuring a generic command-line task.



9. Click **Next**.
10. Select the client devices for which you want to run this task.
11. Click **Next**.
12. Select **Run Now** or schedule the task as per your requirement.
13. Provide the OME Administrator credentials, which are applicable to this OME system (as this script runs on the OME system).
14. Finish the task.
15. Verify that the task completed successfully by right-clicking the task under Task Execution History and selecting Details

A successful result is included below. You can see the Service Tag collected from all the devices in the C:\temp\client-service-tag.txt file.

Figure 16. Executed Command result window



Recommendations

The following recommendations are for performance reasons and to avoid confusion between clients and server classification.

- Use the WMI protocol for client devices.
- Enable *Internal Health Alerts* only if necessary. Some alert actions are associated with it and affect the performance of OpenManage Essentials.

Known Behaviors in OpenManage Essentials

The following information lists known behaviors in OpenManage Essentials considering support for Dell client devices:

- OMCI version is shown as *N/A*. OMCI 8.x is not exposing the correct version information, so OME will show *N/A* for OMCI version.
- As of now, OMCI does not support XPS, Vostro devices. Health status for these devices will appear *Unknown*.

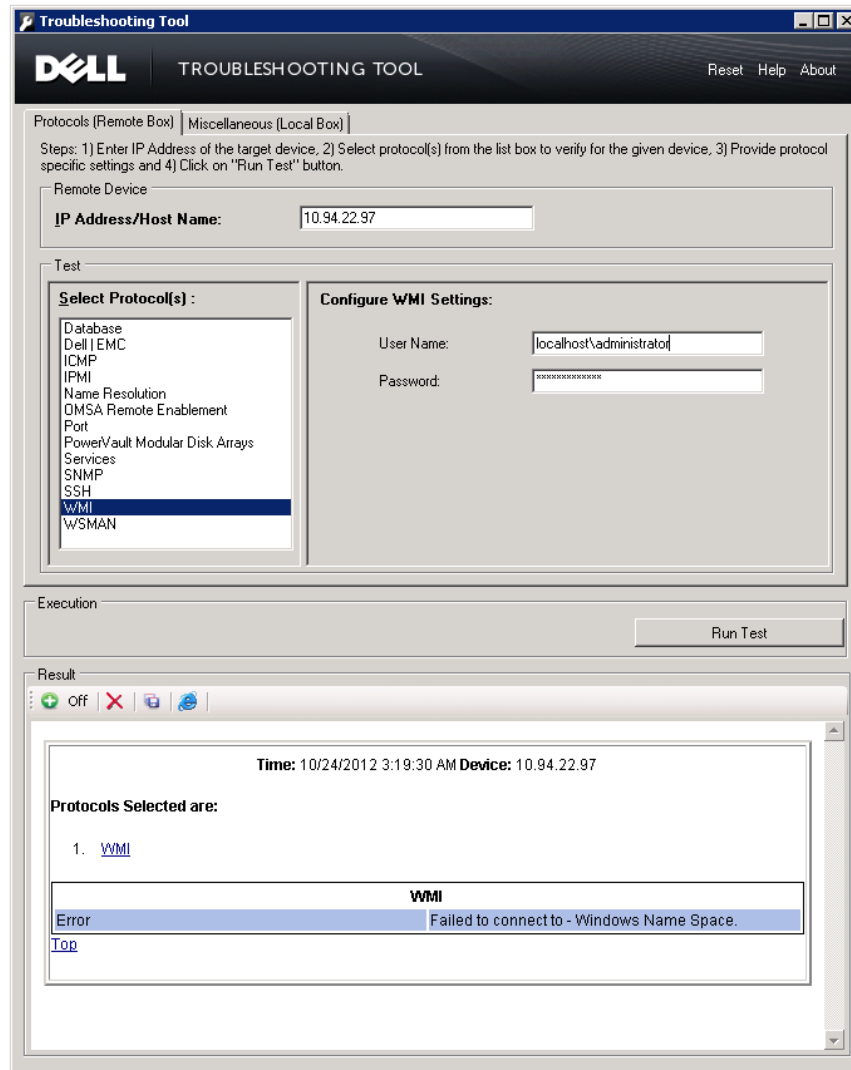
Troubleshooting tips

The Dell Troubleshooting Tool is bundled along with OpenManage Essentials and is installed with the product. Use this tool to root-cause if client devices are not getting discovered, or classified under the *Clients* device group, or if warranty reports are not showing information for these devices.

Not Able to Discover Client Device

Make sure that the client device is reachable from the OME system and that the credentials are proper for a successful discovery. You can run the WMI protocol test using the troubleshooting tool to verify this. An error message like “Failed to connect to windows name space” means that OME could not connect to the client device.

Figure 17. Troubleshooting tool - failure.



If Ping works and WMI the connection fails for the administrator credentials, then perform the following steps on the remote (client) device:

1. Run `secpol.msc`.
2. Go to **Local Policies** → **Security Options** → **Network Access: Sharing and security model for local accounts**.
3. Right click and select **Properties** → **Change** → **Local Security Settings to Classic: local users authenticate as themselves**.

4. Restart the WMI service.

Now rerun the *Dell Troubleshooting Tool* against the same client device. The Dell Troubleshooting Tool should connect to the device, and show the available namespaces found on the remote device.

Note:

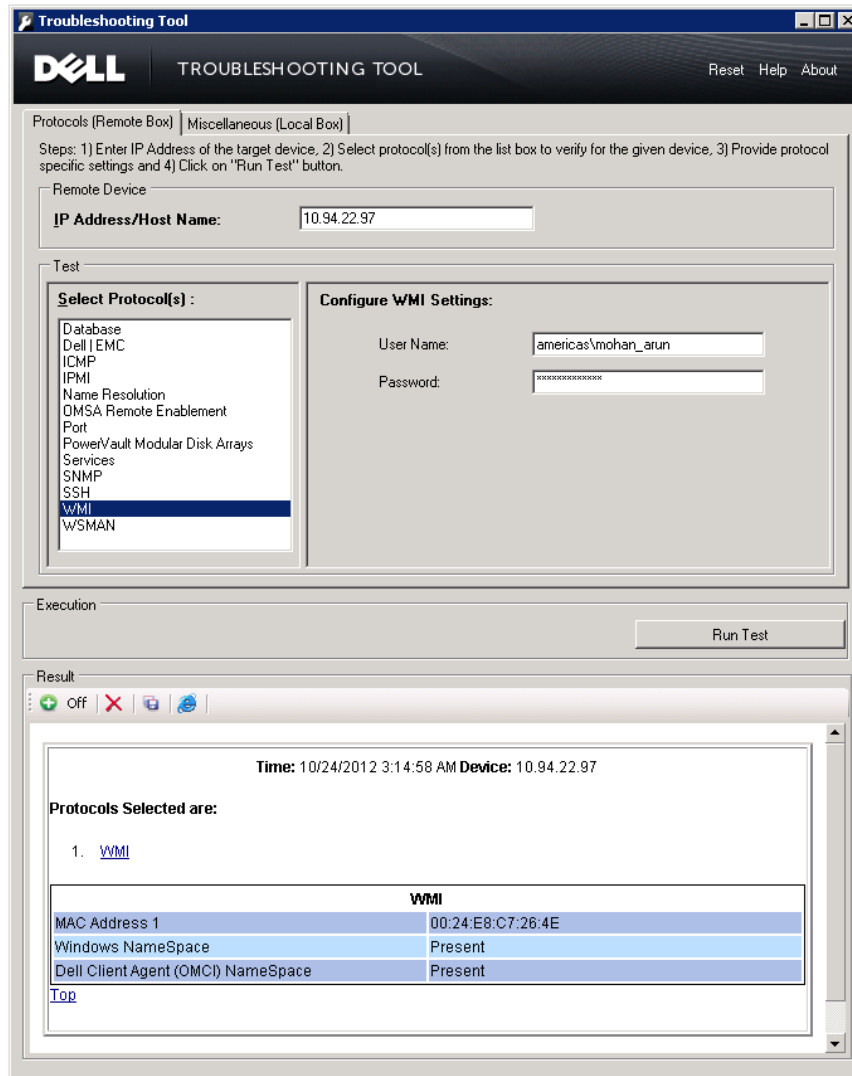
- The Dell OpenManage Client Instrumentation (OMCI) agent Namespace presence depends on whether the OMCI is installed on the client device or not.
- Absence of OMCI does not impact the discovery of the client device.

Hardware Logs for the Client Device Do Not Display

The hardware logs for a device are not cached or stored in the database. To show these logs, OME connects to the device when you click on the refresh/retrieve icon under *Hardware Logs* tab for the given device.

Make sure that OME can connect to the specific remote client device and that the supported OMCI (8.0 or higher) is installed on that device. Use the Dell Troubleshooting Tool to verify the OMCI presence on the remote device.

Figure 18. Troubleshooting Tool - success with OMCI



Learn More

To learn more, visit: www.delltechcenter.com/ome

Conclusion

Dell OpenManage Essentials provides Dell business client support using the WMI protocol. Use OME to discover and properly classify business client devices. In addition, you can view a client device's health status and hardware logs if Dell OpenManage Client Instrumentation (OMCI) 8.x is installed on the remote device. Making use of the task framework from OME enables you to simplify remote system management of Dell business client devices.