



Granular Installation and Sanity Check for Management Interfaces on Microsoft® Windows® Operating System

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1 Introduction to OpenManager Server Administrator

OpenManage Server Administrator (OMSA) provides a complete, one-to-one systems management solution. OMSA can be categorized into:

- Integrated - web browser-based Graphical User Interface (GUI)
- Command Line Interface (CLI) - through the operating system

OMSA is designed for system administrators to manage systems locally and remotely on a network. OMSA allows system administrators to focus on managing servers on the entire network by providing a complete, one-to-one systems management solutions package.

From OMSA v7.2, the Instrumentation and Management interfaces are being separated. The instrumentation is needed for management interfaces such as SNMP and OS logging to work. The reason for the split of Management Interfaces in the OMSA installer is to reduce the foot print, reduce backend process on the server.



2 Granular Installation on OMSA

When you try to install OMSA on any system, the setup program provides the following options on the **Setup Type** screen:

- **Typical** – All the program features that apply to the system configuration are automatically selected and installed. This is recommended for most users.
- **Custom** – You can choose the program features that you want to install and you can also choose where the program feature must be installed. This option is recommended for advanced users.

The **Custom Setup** is what is referred to as granular installation. The **Custom Setup** option allows you to select the software components you want to install. The options available during a custom installation are:

- **Server Administrator Web Server** – Web-based Systems Management functionality that enables you to manage systems locally or remotely
- **Server Instrumentation** – Server Administrator Instrumentation Service
- **Storage Management Server Administrator Storage Management**
- **Command Line Interface (Management Interface)** – Command Line Interface of Server Instrumentation
- **WMI (Management Interface)** – Windows Management Instrumentation Interface of Server Instrumentation
- **SNMP (Management Interface)** – Simple Network Management Protocol Interface of Server Instrumentation
- **Remote Enablement (Management Interface)** – Instrumentation Service and CIM Provider
- **Operating System Logging (Management Interface)**
- **DRAC Command Line Tools** – Hardware application programming interface and iDRAC 12G or iDRAC, DRAC 5, or DRAC 4 (depending on the type of the system)
- Intel SNMP Agent (NIC Interfaces)
- Broadcom SNMP Agent (NIC Interfaces)

The following sections describe the Management Interfaces and its uses. These sections also provide steps to perform a sanity check of these Management Interfaces.

Note: For more information on Custom Setup, see *Server Administrator Installation Guide* at dell.com/openmanagemanuals.

2.1 Using Simple Network Management Protocol

The first Management interface that we are going to talk about is **Simple Network Management Protocol (SNMP)**. OMSA installs a plug-in to the SNMP agent in the operating system (OS), to respond to SNMP queries. The SNMP may or may not be installed depending on the operating system and how the operating system was installed.



To install only **SNMP plug-in** as a Management Interface in OMSA installer, under **Management Interfaces** select only **SNMP** during the installation. You can view the **Custom Setup** screen on the OMSA installer, if you select **Custom** on the **Setup Type** screen.

Note: If you select **Typical** on the **Setup Type** screen, all the Management Interfaces are installed, except **Remote Enablement**.

The following is a screen shot of the **Custom Setup** dialog box:

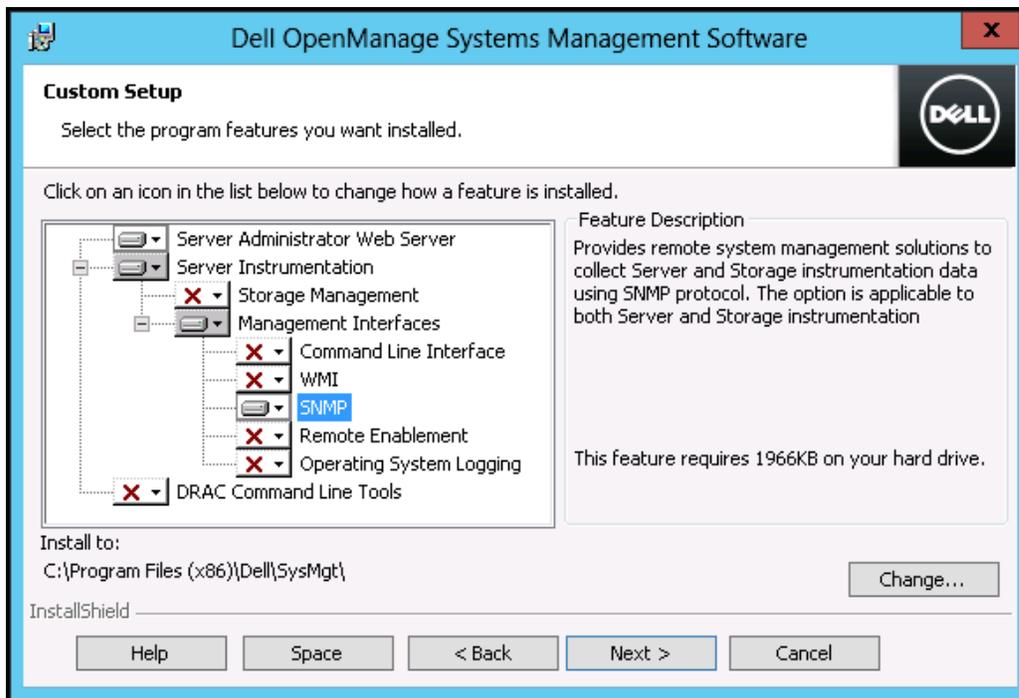


Figure 1 Custom Setup: Simple Network Management Protocol (SNMP)

To check whether the SNMP interfaces are installed and working correctly with Server Instrumentation, you can use the SNMP Tester and perform an SNMP Walk for the **OID 1.3.6.1.4.1.674.10892**. If you have installed OpenManage Storage Management (OMSS), then perform a **Walk** with **OID 1.3.6.1.4.1.674.10893**. The same verification can be performed using the **Troubleshooting Tool**. This tool is available with OpenManage Essentials (OME). You have to type the IP Address and click **Run Test**. The following is a screen shot of the **Troubleshooting Tool**:



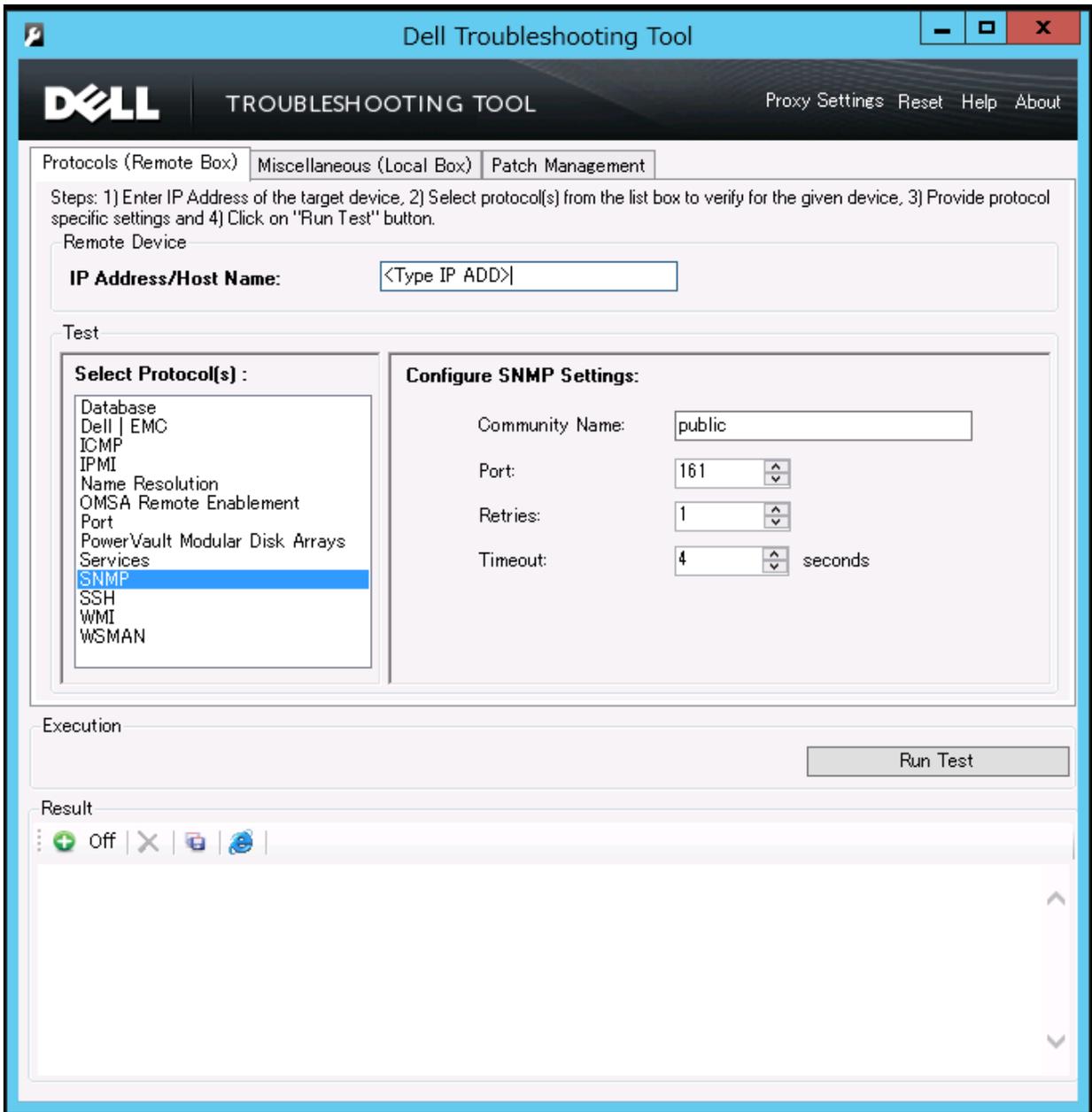


Figure 2 Troubleshooting Tool: SNMP

With SNMP being installed with OMSA, Management Station such as OME will be able to discover Dell systems. OMSA can now send SNMP traps to the Management Station if the SNMP agent has been properly configured in OS.



2.2 Using Windows Management Instrumentation

Windows Management Instrumentation (WMI) is the infrastructure for management data and operations on Windows-based operating systems.

To install only **WMI** as Management Interface in OMSA installer, under **Management Interfaces** select only **WMI** during the installation. You can view the **Custom Setup** screen on the OMSA installer, if you select **Custom** on the **Setup Type** screen. The following is a screen shot of the **Custom Setup** screen:

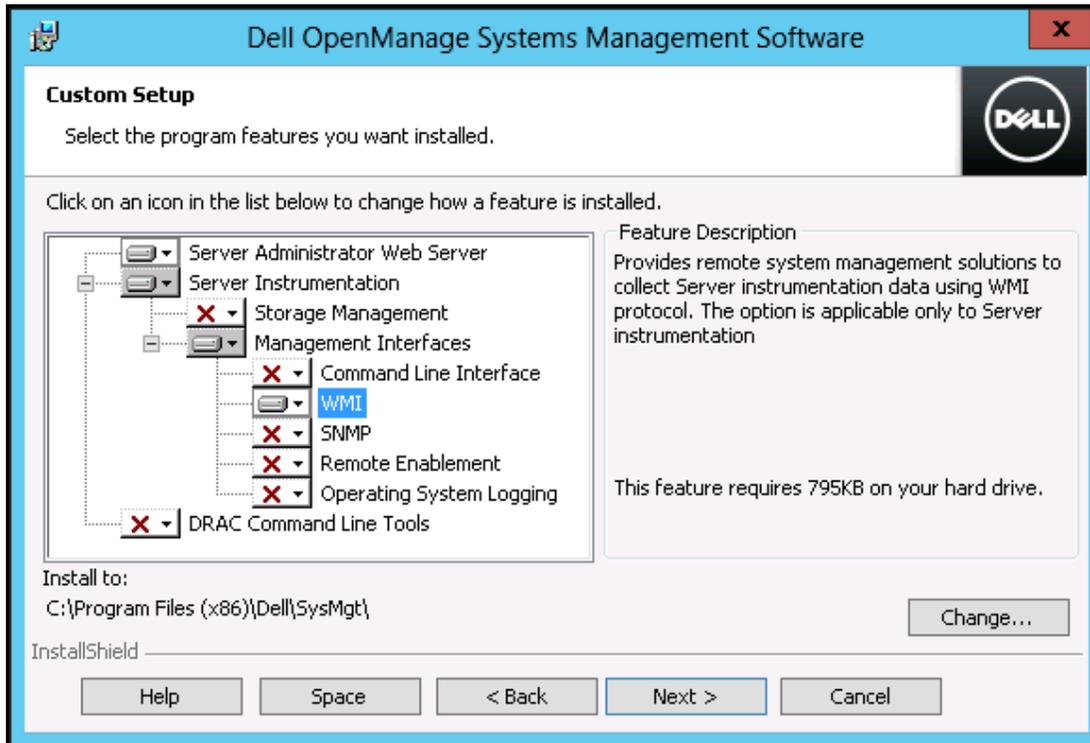


Figure 3 Custom Setup: WMI

To check whether WMI connection is configured correctly; you can use the same **Troubleshooting Tool** in OpenManage Essentials as mentioned in the earlier section. You must select **WMI** under **Select Protocol(s)** and then type the **IP Address/Host Name**, **User Name**, and **Password**. Click **Run Test** and check the status under **Results**. The following is a screen shot of the **Troubleshooting Tool**:

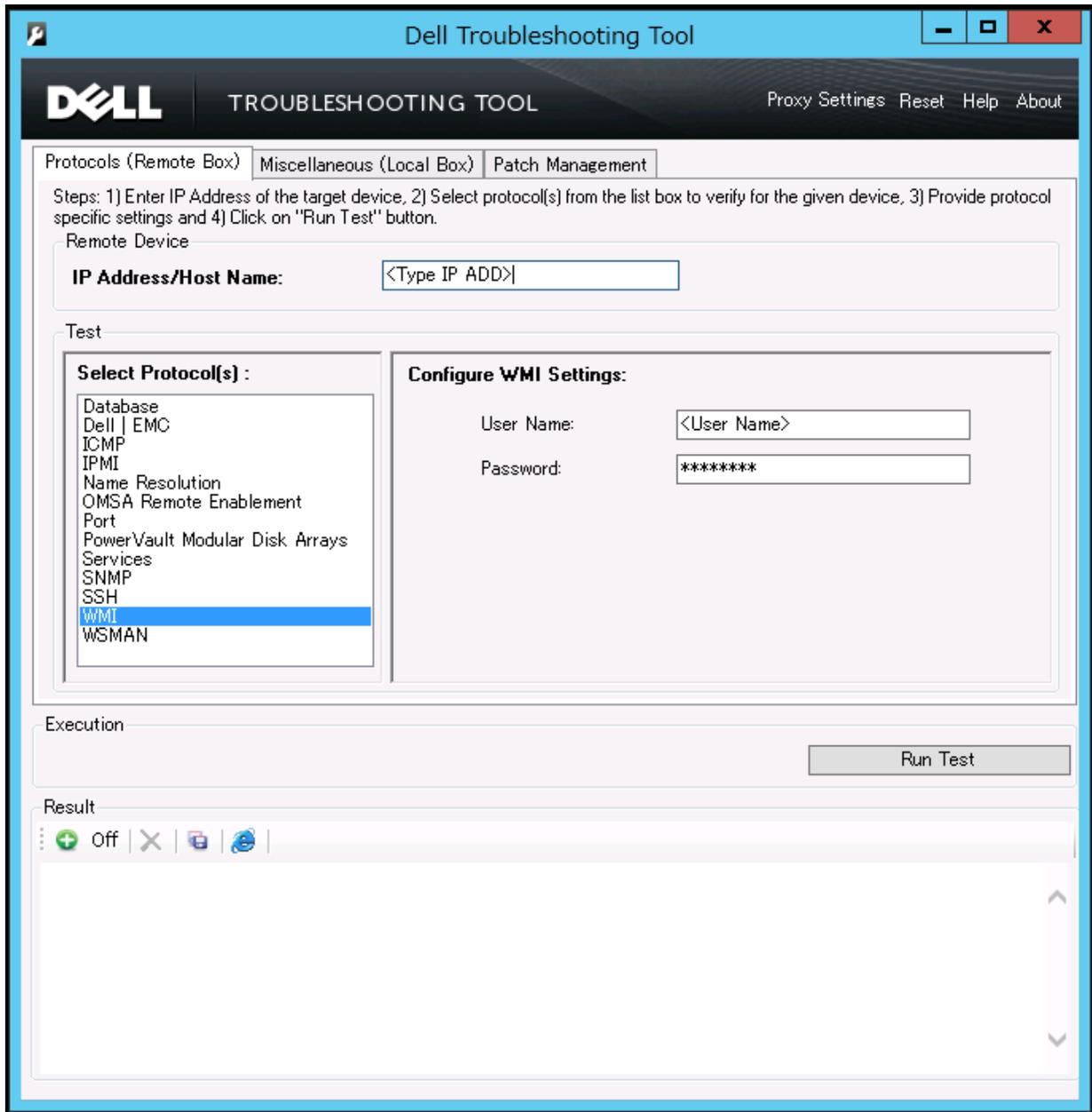


Figure 4 Troubleshooting Tool: WMI

With the help of the WMI interface, OME can identify/discover Dell systems.

We can also use PowerShell to check the working of WMI. The following are the commands.

1. `Get-WmiObject -Class Dell_RemoteAccessServicePort -Namespace root/cimv2/dell AccessInfo`
(used to get iDRAC IP address.)
2. `Get-WmiObject -Class Dell_Chassis -Namespace root/cimv2/dell AssetTag`
(used to get AssetTag.)



3. `Get-WmiObject -Class DELL_Firmware -Namespace root/cimv2/dell Name`
(used to get name of iDRAC firmware.)
4. `Get-WmiObject -Class DELL_Firmware -Namespace root/cimv2/dell Version`
(used to get iDRAC firmware version.)

2.3 Using Command Line Interface

The Command Line Interface (CLI) is set of commands that allow you to retrieve data from the system in command line. The data can be overall health status of the system, voltage information, revolutions per minute of the fan, memory functioning and more. The OMSA CLI allows administrators to write batch programs for the operating system. For an enterprise with many systems, an administrator can write a configuration script that specifies the warning thresholds for each major component of a system. The configuration script can also specify a set of actions that the administrator wants each system to take in the event of a warning or failure. In most critical cases, the administrator can write a script so that the system shuts down to prevent further damage. The administrator can then distribute and execute the script to many managed systems at the same time. Such a scenario accelerates the configuration of new systems acquired by a company and makes implementation of new system-administration policies easier across many existing systems that require reconfiguration.

Note: The CLI does not use the Server Administrator Web Server. For concerns on encryption, from the CLI, run the **omconfig system webserver action=stop** command to turn off the **Server Administrator Web Server**. The Server Administrator Web Server starts automatically after a reboot, so you must run this command each time the system is rebooted.

NOTE: After installing Dell OpenManage Server Administrator, ensure that you log out and log in to reset the path to access Dell OpenManage CLI utilities.



To install **Command Line Interface**, under **Management Interfaces** select **Command Line Interface** only during the installation. The following is the screen shot of the **Custom Setup** screen:

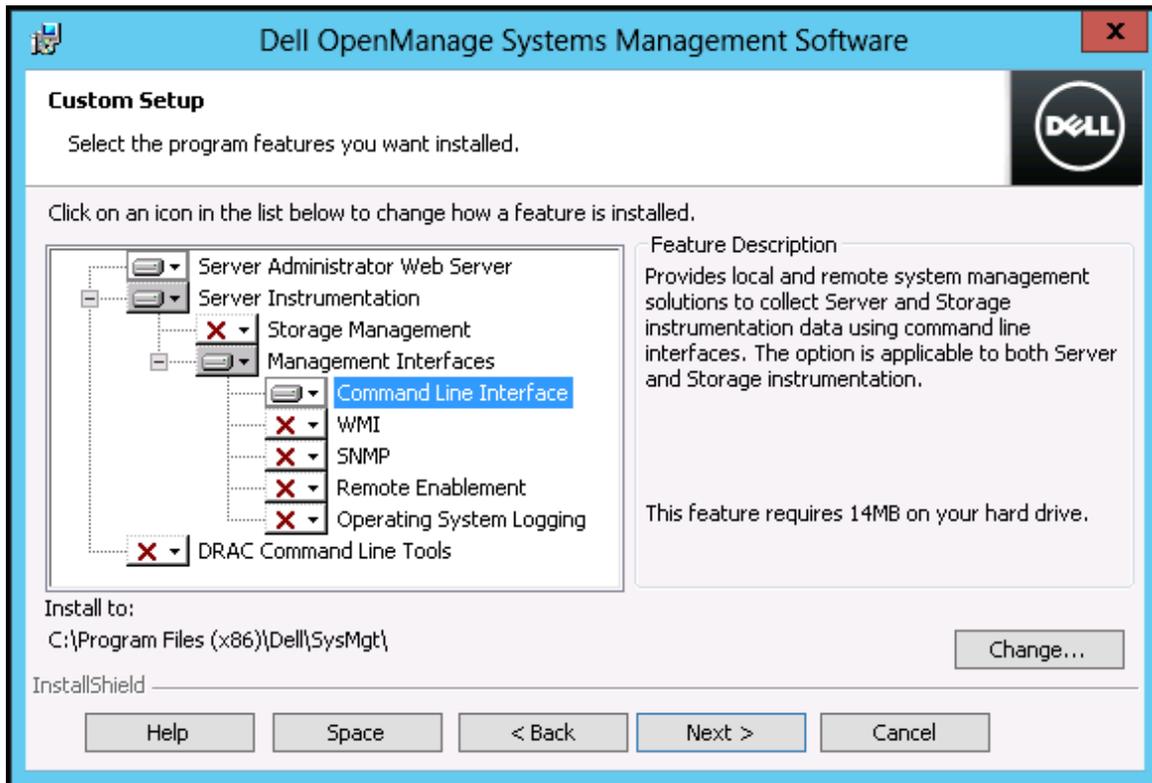


Figure 5 Custom Setup: Command Line Interface

The primary commands that carry out the functions of Server Administrator are:

- **omconfig**: The **omconfig** command writes values that you assign to object properties. You can specify values for warning thresholds on components or prescribe actions that the system must perform the event of a warning or failure. You can also use the **omconfig** command to assign specific values to the asset information parameters of the system, such as the purchase price of the system, the asset tag of the system, or the location of the system. Use the **omconfig about** command to find out the product name and version number of the Systems Management application installed on the system.
- **omreport**: The **omreport** command allows you to view detailed information about the system components. You can also retrieve summaries for many system components at one time, or retrieve details about a specific component. Few commands you can use are:
 - **omreport chassis temps**: Displays the list of probes and the probe indexes.
 - **omreport system summary**: Displays the system information such as operating system, version, chassis model and more.



- **omhelp:** The **omhelp command** displays short-text help for CLI commands. The shorthand equivalent of omhelp is the command for which you want help followed by **-?**. For example, to display the Help for the **omreport** command, type one of the following commands. The few commands to try out are as follows:
 - **omhelp about:** Displays the product name, version, and company.
 - **omhelp omreport:** Display the usage of the **omreport** command.

2.4 Using Remote Enablement Instrumentation

You can install Remote Enablement to perform remote system management tasks. Install **Remote Enablement** on one system **and Server Administrator Web Server** on another system. You can use the server with Server Administrator to remotely monitor and manage the systems which has remote enablement.

To install the Remote Enablement feature, configure the following on the system:

- Windows Remote Management (WinRM)
- CA/Self-Signed Certificate
- WinRM HTTPS Listener Port
- Authorization for WinRM and Windows Management Instrumentation (WMI) Servers

Note: For information about Remote Enablement Requirements and Configurations, see the *Server Administrator Installation Guide* at dell.com/openmanagemanuals.



To install **Remote Enablement**, under **Management Interfaces** select **Remote Enablement** only using the installation. The Remote Enablement feature is available only through the **Custom Setup** option. The following is the screen shot of the **Custom Setup** screen:

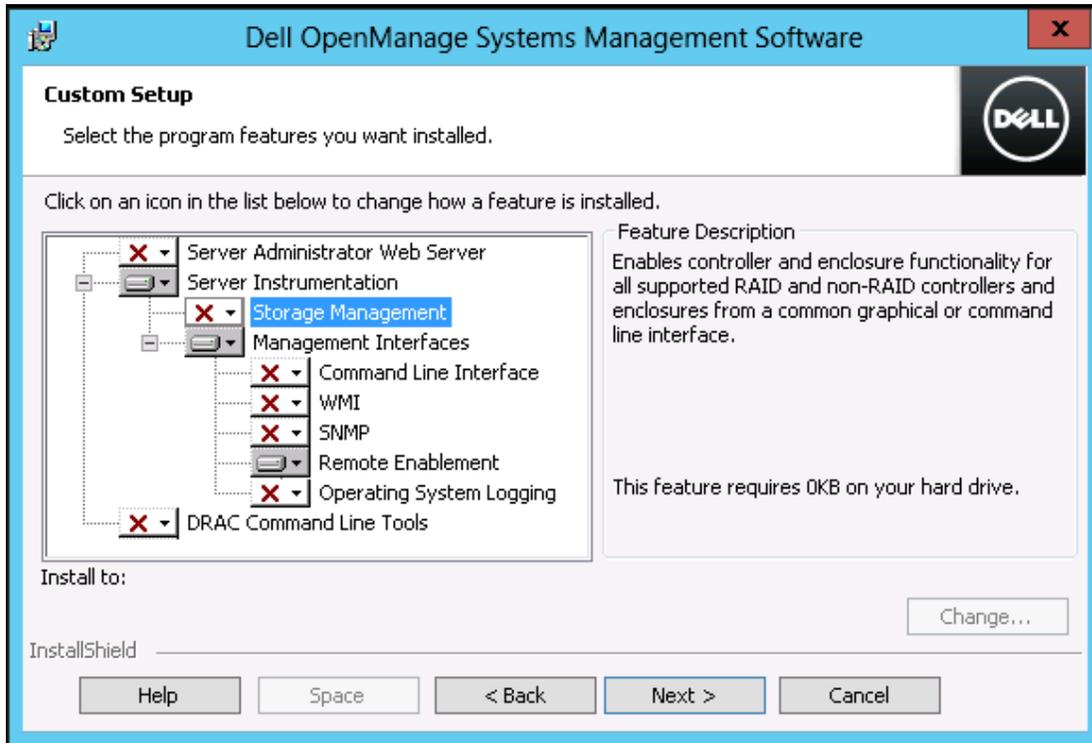


Figure 6 Custom Setup: Remote Enablement

To check the Management Node connection of Server Administrator, you can use the **Troubleshooting Tool** provided by OpenManage Essentials. Select the **OMSA Remote Enablement** in **Select Protocol(s)** category and enter the **IP Address/Host Name**, **User Name**, **Password**, and **Port** number. Click **Run Test** and check the connectivity.



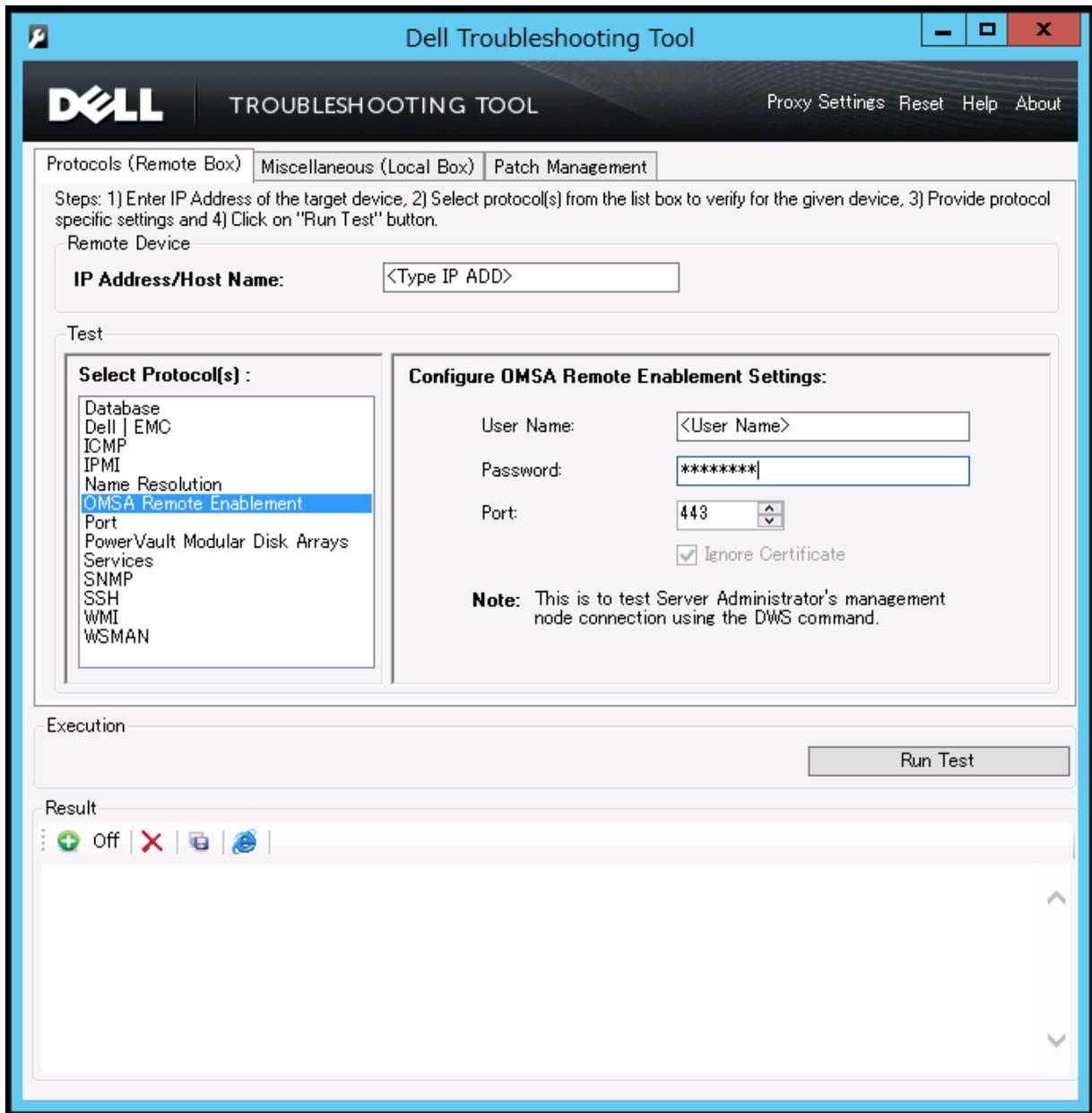


Figure 7 Troubleshooting Tool: OMSA Remote Enablement

2.5 Using Operating System Logging

To install **Operating System Logging**, under **Management Interfaces** select **Operating System Logging** and continue with the installation. This interface is installed to allow local System Management-specific events logging on the operating system for Server and Storage instrumentation. On systems running the Microsoft Windows operating system, you can use the **Event Viewer** to locally view the events that are logged. With this feature, all events that are generated by OMSA can be viewed in **Event Log**.



3 Conclusion

This Technical Whitepaper is written to help you understand the Management Interfaces available in OMSA and to conduct sanity checks to identify, if the Management Interfaces are working as expected.



A Additional resources

dell.com/support is focused on meeting your needs with proven services and support.

DellTechCenter.com is an IT Community where you can connect with Dell Customers and Dell employees for the purpose of sharing knowledge, best practices, and information about Dell products and installations.

Referenced or recommended Dell publications:

- For more information on Management Interfaces, see *Server Administrator Installation Guide* at **dell.com/openmanagemanuals**
- Dell TechCenter.com (OMSA)
<http://en.community.dell.com/techcenter/systems-management/w/wiki/1760.openmanage-server-administrator-omsa.aspx>
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