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<th>Date</th>
<th>Rev</th>
<th>Description</th>
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<tr>
<td>May-29-2015</td>
<td>1.0</td>
<td>Initial document.</td>
</tr>
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1 Introduction

In this guide, we will show you the four methods of using System Center 2012 R2 Operations Manager (SCOM 2012 R2) to check the health status of a system monitored by SuperDoctor 5®. You can use SCOM 2012 to monitor SD5 by checking event logs, SNMP GET or SNMP trap, allowing you to choose the method that suits your needs.

2 Prerequisites

2.1 Managed Systems - SD5
To install SuperDoctor 5®, please refer to “Chapter 2 Setting Up SD5” in SuperDoctor 5 User’s Guide for details. To quickly install SD5 to multiple systems, see “2.1.4 Tips for Deploying a Large Number of SD5s” in SuperDoctor 5 User's Guide.

2.2 Management Server - SCOM 2012 R2
3 Creating an NT Event Rule to Monitor SD5

The example below illustrates the use of SCOM 2012 to check a managed system’s event log that was written by SD5 when a monitored item was triggered or recovered. In this example, two conditions must be met,

- The SD5 event log function must be enabled. You have to configure the SD5 notification methods in advance. See 4.5.1 Alert Configuration in SuperDoctor 5 User’s Guide for more information.
- The Windows computer with SD5 must be discovered/managed by SCOM 2012.

If the above conditions are met, follow these steps:

**Step 1:** In the Operations Console, click the Authoring Tab.

**Step 2:** Go to Management Pack Objects > Rules. Right-click Rules and select Create a new rule.

**Step 3:** In the Rule Type section, select NT Event Log (Alert) and click New to create a custom SD5 management pack.
Step 4: Type the name, version and description. Click Next to continue.

Step 5: Click Create to start creating the management pack and return to the Create Rule Wizard.
Step 6: In the General section, input the rule name and click Select to set up the Rule target.

Step 8: Select the type of event log. Application is selected by default and click Next.

Step 9: In the Value fields, type 4096 for Event ID and SD5 for Event Source. Click Next to continue.
Step 10: Click Create to start creating a rule for SD5. The dialog box will close.

Step 11: In the Operations Console, click the Monitoring Tab and go to Monitoring > Active Alerts. In the figure below, you can see that a hard disk error (\PHYSICALDRIVE 0 is Unavailable) occurred on the managed system (Slave.TEST.SSM).
Supermicro Server Monitoring with SuperDoctor 5 and SCOM2012
4 Creating an SNMP Probe Monitor for SD5

The example below illustrates the use of SCOM 2012 to probe a managed system’s SNMP OID value. The value changes when a health-monitored item is triggered or recovered. In this example, two conditions must be met:

- SD5 must be set up with the SD5 SNMP extensions configured in advance. See 5 SNMP Extension in SuperDoctor 5 User's Guide for more information.
- SNMP device SD5 must be discovered/managed by SCOM 2012.

If the conditions above are met, follow these steps:

**Step 1:** In the Operations Console, click the Authoring Tab.

**Step 2:** Go to Management Pack Objects > Monitors. Right-click Monitors and select Create a Monitor > Unit Monitor.

**Step 3:** The Create a unit monitor wizard shows up. Go to SNMP > Probe Based Detection > Simple Event Detection > SNMP Probe Monitor and select All SNMP Events Collection as destination management pack. Note that “All SNMP Events Collection” is predefined. Alternatively, you can click New to create a custom management pack.
Step 4: In the General section, click Select.

Step 5: A Select Items to Target dialog box pops up.
Step 6: Look for the **Node** Type, select to **View all targets** and click **OK** to continue.

Step 7: Enter the **Name** of the monitor you are creating and click **Next** to continue.
Step 8: In the First SnmpProbe section, enter `.1.3.6.1.4.1.10876.2.2`\(^1\) for the Object Identifier and click Next to continue.

Step 9: In the Build First Expression section of the Create a unit monitor wizard,

1) Click the Insert button to add a new row.
2) Enter `SnmpVarBinds/SnmpVarBind[OID=".1.3.6.1.4.1.10876.2.2"]/Value` to the Parameter Name field.
3) Click Does not equal in the Operator field.
4) Enter 0 to the Value field.
5) Click Next to continue.

\(^1\) This specifies the all-in-one health status of built-in sensors monitored by SD5.
Step 10: In the **Second SnmpProbe** section, enter `.1.3.6.1.4.1.10876.2.2` for the Object Identifier and click **Next** to continue.

![Frequency and Object Identifier Properties](image)

Step 11: In the **Build Second Expression** section,
1) Click **Insert** to add a new row.
2) Enter `SnmpVarBinds/SnmpVarBind[OID="1.3.6.1.4.1.10876.2.2"]/Value` in the **Parameter Name** field.
3) Click **Equals** in the **Operator** field.
4) Enter `0` in the **Value** field.
5) Click **Next** to continue.

![Filter one or more events](image)

Step 12: In the **Configure Health** section, change the **Operational State** and Health State (see the figure below) and click **Next** to continue.

![Map monitor conditions to health states](image)

Step 13: In the **Configure Alerts** section,
1) Select **Generate alerts for this monitor**.
2) Use the drop-down list to select **The monitor is in a critical health state**.
3) Click **Create** to continue.
Step 14: In the **Operations Console**, click the **Monitoring** Tab and go to **Network Monitoring > Active Alerts**. In the figure below, you can see that the managed system (10.134.14.32) is in a critical state.

![Network Monitoring](image1)

Step 15: Go to **Network Monitoring > Hosts**. In the figure below, you can see the managed systems (10.134.14.32, 10.134.12.13, and 10.134.14.36) are healthy.

![Network Monitoring Hosts](image2)
Step 16: Double-click one of the selected hosts and a Health Explorer dialog box pops up. Click Close to show all monitors.

Step 17: Go to Entity Health > Availability > SD5 - Built-in Sensor Health in the left pane. All state change events for SD5 - Built-in Sensor Health are shown on the State Change Events tab in the right pane.
5 Creating an SNMP Trap Monitor for SD5

The example below illustrates the use of SCOM 2012 to probe a managed system’s SNMP trap that has changed when a health-monitored item is triggered or recovered. In this example, three conditions must be met,

- SD5 SNMP trap function must be enabled. You have to configure SD5 notification methods in advance. See 4.5.1 Alert Configuration in SuperDoctor 5 User’s Guide for more information.
- SD5 must be set up with SD5 SNMP extensions configured in advance. See 5 SNMP Extension in SuperDoctor 5 User’s Guide for more information. Note that this condition is for SD5 to be discovered as an SNMP device.
- SNMP device SD5 must be discovered/managed by SCOM 2012.

If the above conditions are met, follow these steps:

**Step 1:** In the Operations Console, click the Authoring Tab.

**Step 2:** Go to Management Pack Objects > Monitors. Right-click Monitors and select Create a Monitor > Unit Monitor.

**Step 3:** The Create a unit monitor wizard is shown below. Go to SNMP > Trap Based Detection > Simple Trap Detection > SNMP Trap Monitor and select SD5 SNMP Trap Collection as the destination management pack. Note that “SD5 SNMP Trap Collection” is predefined. Alternatively you can create a custom management pack by clicking New.
Step 4: In the **General** section, click **Select**. The **Select Items to Target** dialog box pops up.

Step 5: In the **Look for** field, type “**Node**”, select to **View all targets** and click **OK** to continue.
Step 6: Enter the Name of the monitor you are creating and click Next to continue.

Step 7: In the First SnmpTrapProvider step, enter .1.3.6.1.4.1.10876.100.3.0.103² for the Object Identifier and click Next to continue.

² This means that the fan is critical.
Step 8: In the **Build First Expression** section,

1) Click **Insert** to add a new row.
2) Enter `SnmpVarBinds/SnmpVarBind[OID=“.1.3.6.1.4.1.10876.100.3.0.103”]/Value` in the Parameter Name field.
3) Click **Contains** in the Operator field.
4) Enter **CRITICAL** in the Value field.
5) Click **Next** to continue.

Step 9: In the **Second SnmpTrapProvider** section, enter `.1.3.6.1.4.1.10876.100.3.0.101` as the Object Identifier and click **Next** to continue.

Step 10: In the **Build Second Expression** section,

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3 This means the fan is OK.
1) Click **Insert** to add a new row.
2) Enter `SnmpVarBinds/SnmpVarBind[OID="1.3.6.1.4.1.10876.100.3.0.101"]/Value` in the **Parameter Name** field.
3) Click **Contains** in the Operator field.
4) Enter **OK** in the Value field.
5) Click **Next** to continue.

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**Step 11:** In the **Configure Health** section, change the **Operational State** and Health State as shown below and click **Next** to continue.

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**Step 12:** In the **Configure Alerts** section,

1) Select **Generate alerts for this monitor**.
2) Use the drop-down list to select **The monitor is in a critical health state**.
3) Click **Create** to continue.
Step 13: In the Operations Console, click the Monitoring tab and go to Network Monitoring > Active Alerts. In the figure below, you can see the managed system (10.134.14.32) is in a critical condition.

Step 14: Go to Network Monitoring > Hosts. In the figure below, you can see that the managed systems (10.134.14.32, 10.134.12.13, and 10.134.14.36) are healthy.
Step 15: Double-click one of the selected hosts and a Health Explorer dialog box pops up. Click Close to show all monitors.

Step 16: Go to Entity Health > Availability > SD5 - Fan Health on the left pane. On the right pane are shown all state change events for SD5 with Fan Health are shown on the State Change Events.
6 Creating a Rule for an SNMP Trap to Check SD5 Status

The example below illustrates the use of SCOM 2012 to receive a managed system’s SNMP trap that is sent when a health-monitored item is triggered or recovered. In this example, three conditions must be met,

- The SD5 SNMP trap function must be enabled with SD5 notification methods configured in advance. See 4.5.1 Alert Configuration in SuperDoctor 5 User’s Guide for more information.
- SD5 must be set up with SD5 SNMP extensions configured in advance. See 5 SNMP Extension in SuperDoctor 5 User’s Guide for more information. Note that this condition is for SD5 to be discovered as an SNMP device.
- SNMP device SD5 must be discovered/managed by SCOM 2012.

If the above conditions are met, follow these steps:

**Step 1:** In the Operations Console, click the **Authoring** Tab.

**Step 2:** Go to Management Pack Objects > Rules. Right-click **Rules** and select **Create a new rule**.
Step 3: In the Rule Type section, select **SNMP Trap (Event)** and click **New** to create a custom SD5 management pack.

![Create Rule Wizard](image)

Step 4: Type the name, version and description. Click **Next** to continue.

![Create Management Pack](image)

Step 5: Click **Create** to start creating the management pack and return to the Create Rule Wizard.
Step 6: In the General section, input the rule name and click Select to set up the Rule target.

Step 7: In the Look for field, type “Node”, select View all targets and click OK.
Step 8: In the SNMP Trap Provider step, input `1.3.6.1.4.1.10876` as the Object Identifier and click Create to start creating a rule for SD5.

Step 9: In the Operations Console, click the Monitoring tab and go to Monitoring > Network Monitoring > Network Devices.

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4 For more information regarding the Supermicro MIB tree (1.3.6.1.4.1.10876 OID tree), refer to 5.3 Supermicro MIB in the SuperDoctor 5 User’s Guide.
Step 10: Select the SNMP device (Name: 10.134.14.32) and click Event View on the Navigation panel.

Step 11: In the figure below, the managed system has sent a recovery trap which denotes that the FAN 5 changes from a non-OK state to an OK state.
Supermicro Server Monitoring with SuperDoctor 5 and SCOM2012
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