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Preface

This guide describes how to integrate Wily Introscope with SPECTRUM. This integration provides an out-of-the-box method for forwarding Wily Introscope alerts to SPECTRUM. Alarms are generated by Wily Introscope, and you can then generate and clear the alarms on the appropriate SPECTRUM models.

Intended Audience

This guide is intended for network administrators who want to integrate SPECTRUM OneClick with Wily Introscope. Administrators should be familiar with SPECTRUM OneClick and Wily Introscope concepts and capabilities.

Text Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Element</th>
<th>Convention Used</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td><em>Italic in angle brackets</em> (&lt;&gt;)*</td>
<td>Type the following: DISPLAY=&lt;workstation name&gt;:0.0 export display</td>
</tr>
<tr>
<td>(The user supplies a value for the variable.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The directory where you installed SPECTRUM</td>
<td>&lt;$SPECROOT&gt;</td>
<td>Navigate to: &lt;$SPECROOT&gt;/app-defaults</td>
</tr>
<tr>
<td>(The user supplies a value for the variable.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Documentation Location and Feedback

Check the following site for the latest updates and additions to SPECTRUM documents:

http://ca.com/support

To send feedback regarding SPECTRUM documentation, access the following web address:

http://supportconnectw.ca.com/public/ca_common_docs/docserver_email.asp

Thank you for helping us improve our documentation.

## Contact Technical Support

For online technical assistance and a complete list of locations, primary service hours, and telephone numbers, contact Technical Support at the following web address:

http://ca.com/support

<table>
<thead>
<tr>
<th>Element</th>
<th>Convention Used</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux, Solaris, and Windows directory paths</td>
<td>Unless otherwise noted, directory paths are common to both operating systems, with the exception that slashes (/) should be used in Linux and Solaris paths, and backslashes () should be used in Windows paths.</td>
<td><code>&lt;$SPECROOT&gt;/app-defaults</code> on Linux and Solaris is equivalent to <code>&lt;$SPECROOT&gt;\app-defaults</code> on Windows.</td>
</tr>
<tr>
<td>On-screen text</td>
<td>Courier</td>
<td>The following line displays: path=&quot;/audit&quot;</td>
</tr>
<tr>
<td>User-typed text</td>
<td>Courier</td>
<td>Type the following path name: C:\ABC\lib\db</td>
</tr>
<tr>
<td>References to SPECTRUM documents (title and number)</td>
<td><em>Italic</em></td>
<td><em>Installation Guide (5136)</em></td>
</tr>
</tbody>
</table>
Chapter 1: How Wily Introscope and SPECTRUM Work Together

Wily Introscope consists of an Enterprise Manager (EM) and one or more agents. Wily agents are installed on machines running Java virtual machines (JVMs). The agents deliver information on numerous metrics, such as servlet response time and report metrics to the Enterprise Manager.

The Enterprise Manager uses a Management Module (MM) to organize and report on the metric data provided by an agent. By configuring thresholds on reported metrics, Enterprise Manager can create an alert when a threshold is violated and clear the alert when the threshold is no longer violated. Wily agents are polled every 60 seconds to determine if a threshold has been violated or if a previously violated threshold has been cleared. An alert is created each time a threshold event occurs.

SPECTRUM models the Wily infrastructure using two model types, the IntroscopeAdmin model and the WilyAgent model. The IntroscopeAdmin model represents a single Enterprise Manager and a WilyAgent model represents an application container (JVM or CLR). Each time a discovery is initiated by the user or by Tomcat restart; SPECTRUM requests a list of application containers from the Enterprise Manager and models them as WilyAgent models.

When an alert is generated by Wily Introscope, data concerning the metric and its threshold is forwarded to SPECTRUM, and results in an alarm on a WilyAgent model. If the alert is cleared, SPECTRUM is notified and clears the associated alarm.

The SPECTRUM/Wily integration also actively monitors the inventory of application containers that exist on an Enterprise Manager. When an EM starts to monitor a new application container, SPECTRUM is notified and automatically creates a WilyAgent model to represent the application container. If a previously discovered application container is no longer being monitored by an EM, SPECTRUM will generate an alarm on the corresponding WilyAgent model.
Chapter 2: Configuration

This section describes the configuration process for integrating SPECTRUM and Wily Introscope.

This section contains the following topics:

Configure the Trap Generation Plugin on the Introscope Enterprise Manager on page 3

Configure WebServices on the Introscope Enterprise Manager on page 5

Configure SPECTRUM on page 5

Configure the Trap Generation Plugin on the Introscope Enterprise Manager

Introscope forwards alert data to SPECTRUM in the form of SNMP traps generated by the spectrumAction plugin. The spectrumAction plugin has been designed to convert alert data into an SNMP trap that SPECTRUM is able to use to generate and clear alarms on WilyAgent models.

Install the spectrumAction Plugin

The spectrumAction plugin is comprised of three components:
- spectrumAction-em.jar
- spectrumAction-ws.jar
- snmp6_0.jar

These components ship with SPECTRUM and are located in the Install-Tools/wily directory.
To Install the spectrumAction Plugin on a Solaris/Linux Enterprise Manager

1. Shut down the Enterprise Manager.
3. Copy snmp6_0.jar to <Introscope Home>/lib.
4. Ensure that the files are executable and have the same permissions as the install owner.
5. Open <Introscope Home>/Introscope_Enterprise_Manager.lax with a text editor.
6. Append lib/snmp6_0.jar to the lax.class.path property, save the file and exit the editor.
7. Start the Enterprise Manager.
   The plugin is now installed.

To Install the spectrumAction Plugin on Windows with Introscope Running as a Windows Service

1. Shut down the Enterprise Manager.
3. Copy snmp6_0.jar to <Introscope Home>/lib.
5. Open <Introscope Home>/EMService.conf with a text editor.
6. Add a new Java Classpath entry. e.g. wrapper.java.classpath.x=./lib/snmp6_0.jar (where x is the next available element number). Save the file and exit the editor.
7. Execute <Introscope Home>/RegisterEMService.bat
8. Start the Enterprise Manager.
   The plugin is now installed.

To Install the spectrumAction Plugin on Windows where Introscope is Not Running as a Service

1. Shut down the Enterprise Manager.
3. Copy snmp6_0.jar to <Introscope Home>/lib.
4. Ensure that the files are executable and have the same permissions as the install owner.
5. Open <Introscope Home>/Introscope Enterprise Manager.lax with a text editor.
6. Append lib/snmp6_0.jar to the lax.class.path property, save the file and exit the editor.
7. Start the Enterprise Manager.
   The plugin is now installed.

Configure the spectrumAction Plugin

By using the plugin, the user is able to specify which alerts forward data to SPECTRUM. To configure the trap action for an alert the user must apply the Spectrum SNMP Trap action to the alert and provide the following information:

- SpectroSERVER IP address
- SpectroSERVER SNMP trap port
- Community string
- Enterprise Manager IP address
- Webview port
  (Wily Webview must be installed and running to enable URL launch back)
- Management Module name
- Dashboard name

Configure WebServices on the Introscope Enterprise Manager

See the Wily Introscope WebServices Guide for information about configuring web services on the Enterprise Manager.

Configure SPECTRUM

After you configure the Wily Enterprise Manager you must configure the SPECTRUM component of the integration.

Specify the Integration Server

The SPECTRUM component of the integration begins with designating a OneClick Tomcat server as the integration server host. The integration server host can be the server you use to access OneClick or you can designate a headless server, a server dedicated only for processing Wily information. Any OneClick Tomcat server within the distributed environment can be designated as the integration server host. This allows you to dedicate a OneClick Tomcat server to the integration in the event that the load on the server generated by the integration becomes excessive.
Enable/Disable the Integration

Once you have specified the integration server you must enable the integration.

**To Enable the Integration**

1. Select Administration from the OneClick home page.
   The OneClick Administration web page opens.
2. Select Wily Integration Configuration from the OneClick Administration web page.
   The Wily Configuration page opens.
3. Enter the integration server host name and integration server port, select Enabled, and click Save. See Specify the Integration Server on page 5 for more information.
   The Successfully saved configuration message appears.

The integration can be disabled at any time by returning to the OneClick Administration web page and selecting the disable option.

**Note:** Disabling the integration disables all IntroscopeAdmin models in a Distributed SpectroSERVER environment. CA requires a singular IntroscopeAdmin model modeling a singular Enterprise Manager in a Distributed SpectroSERVER environment.

Create IntroscopeAdmin Models

After you enable the integration (as described in Enable/Disable the Integration on page 6) you must create an IntroscopeAdmin model to represent the connection to an Enterprise Manager. The Enterprise Manager can be modeled in any landscape in a Distributed SpectroSERVER environment.

**Note:** Although it is possible to model an IntroscopeAdmin model in each landscape in a distributed SpectroSERVER environment to monitor a singular Enterprise Manager, CA requires a singular IntroscopeAdmin model monitoring a single Enterprise Manager in a distributed SpectroSERVER environment. Disabling the integration disables all IntroscopeAdmin models.

**To Create the IntroscopeAdmin Model**

1. Select the Universe subview from the OneClick Navigation panel and select the Topology tab from the Contents panel.
   The OneClick Topology view is displayed in the Contents panel.
2. Click the Model by Type icon in the toolbar menu.
   The Select Model Type dialog opens.
3. Select IntroscopeAdmin from the list and click OK.
   The Create Model Of Type IntroscopeAdmin dialog opens.
4. Enter a unique name, network IP address of the Wily Introscope host system, and click OK.
   The IntroscopeAdmin model is created.

**Discover Wily Introscope Agents**

The final step in the configuration process is for SPECTRUM to discover the Wily Introscope Agents that are configured to send information to SPECTRUM.

**To Discover Wily Introscope Agents**

1. Select the Universe subview from the OneClick Navigation panel and select the IntroscopeAdmin model. In the Contents panel, select the Information tab.
   IntroscopeAdmin configurations and information are displayed.
2. Expand the Introscope Integration Administration node.
   Integration configurations are displayed.
3. Verify the settings listed are correct. To modify any of the settings listed click the set link next to the setting, enter the appropriate information in the field, and press Enter.
   When your settings are correct click the Discover Agents button.
   Discovery status is displayed in the Status window.
Chapter 3: Alarms, Events and Application Statistics

This section describes how to view alarms, events, and application statistics.

This section contains the following topics:

View Introscope Alarms or Events in OneClick on page 9
Launch Introscope Dashboard from OneClick on page 9

View Introscope Alarms or Events in OneClick

This section describes how to view events and alarms generated by Wily Introscope in OneClick. See the Modeling Your IT Infrastructure Administrator Guide (5167) for more information about SPECTRUM alarms and events.

To View Introscope Alarms or Events in OneClick

1. Launch OneClick. Expand the Universe subview in the Navigation panel and select the IntroscopeAdmin model.
   
   Information about the IntroscopeAdmin model are displayed in the Contents panel.

2. Click the Alarms tab in the Contents panel to display alarms or click the Events tab to display events.

   Alarms or Events are displayed in the Contents panel. Information about the Agent causing the event or alarm is displayed in the Component Detail panel when an alarm or event is selected in the Contents panel.

Launch Introscope Dashboard from OneClick

To launch an Introscope Dashboard quickly from the OneClick console, select an alarm and click on the URL provided in the Alarm Details tab.
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