CA Spectrum® and CA Wily Introscope® (CA APM)

Integration Guide

CA Spectrum 9.3 / CA APM 9.1.x

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Contents

Chapter 1: Integration Overview

This section contains the following topics:

Integration Prerequisites

Beginning with version 9.1 of CA Application Performance Management (CA APM), the name "Wily" was dropped from the CA Introscope® product. This guide retains the name where it helps to clarify compatibility with previous versions of CA APM.

The integration of CA Spectrum and CA APM supports versions of CA Wily Introscope up to **CA APM version 9.1.x**. Our limited testing with version 9.5 did not include any APM product features that were introduced in that version.

How the Integration Works

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

The EM uses a Management Module (MM) to organize and report on the metric data provided by an agent. By configuring thresholds on reported metrics, EM creates an alert when a threshold is violated and clears the alert when the threshold is no longer violated. CAWily Introscope agents are polled every 60 seconds to determine whether a threshold has been violated or whether a violated threshold has been cleared. An alert is created when a threshold event occurs.

CA Spectrum models the CA Wily Introscope infrastructure using two model types, the IntroscopeAdmin model and the WilyAgent model.

- The IntroscopeAdmin model represents one EM.

- The WilyAgent model represents an application container (JVM or CLR). When you initiate a Discovery, or when a Discovery is initiated when you restart Tomcat, CA Spectrum requests a list of application containers from the EM and models them as WilyAgent models.

When CA Wily Introscope generates an alert, data about the metric and its threshold is forwarded to CA Spectrum. An alarm is generated on a WilyAgent model. If the alert is cleared, CA Spectrum is notified and clears the associated alarm.

The CA Spectrum integration with CA Wily Introscope also actively monitors the inventory of application containers on an EM.

■ When an EM starts to monitor a new application container, CA Spectrum is notified and automatically creates a WilyAgent model to represent the application container.

■ When an EM no longer monitors a discovered application container, CA Spectrum generates an alarm on the corresponding WilyAgent model.

Note: If you move a CA Wily Introscope agent from one EM to another, a new IntroscopeAgent model is created and associated with the IntroscopeAdmin model that represents the EM to which the agent was moved. This activity results in two identical IntroscopeAgent models associated with two distinct IntroscopeAdmin models. Destroy the original IntroscopeAgent model so that the new IntroscopeAgent model receives all subsequent events.

Integration Architecture

The following diagram depicts the architecture of the CA Wily Introscope and CA Spectrum integration, and identifies the direction of data transfers.
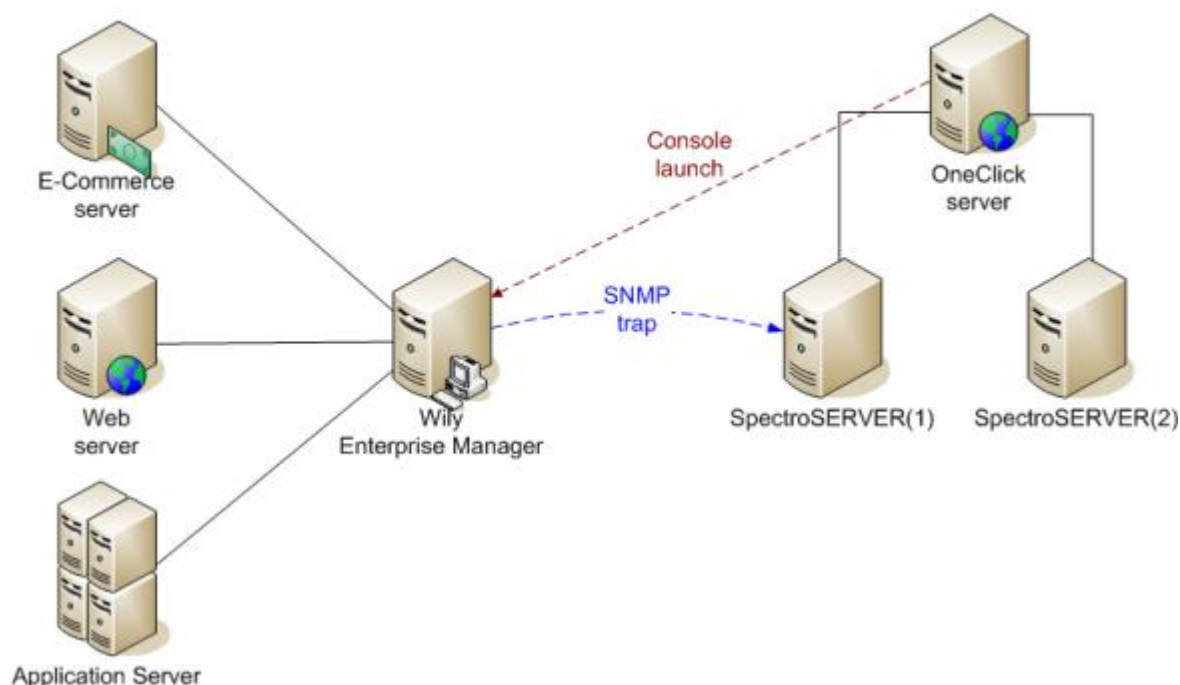
Integration considerations:

- The integration combines web services with trap notifications:

    – A traditional axis 1.4 polling web service that provides inventory information, such as the Management Module, the agent, alert definitions, alerts, and Management Module/Agent pairs that help determine the CA Spectrum model. CA Spectrum uses only the agent information.

    – A bi-directional subscription web service, introscope-wssdk-consumer, uses the Apache Muse framework, which is deployed inside SPECROOT/ tomcat/webapps. The introscope-wssdk-consumer web service listens for and processes asynchronous updates from CA Wily Introscope.

- Trap notifications require the installation of a trap generation plugin (see page 13) on the CA Wily Introscope Enterprise Manager.

- All communication between CA Spectrum and CA Wily Introscope passes through the Tomcat web server for agent inventory

- The integration can be enabled on only one server.

- In a distributed SpectroSERVER environment, designate a OneClick server as the integration server (see page 16).

Maintenance Mode

You can put WilyAgent models into maintenance mode. However, the status of a WilyAgent model is dependent upon event updates that the Enterprise Manager (EM) sends through SNMP traps. Therefore, before putting WilyAgent models into maintenance mode, consider the following:

- If the WilyAgent model is in an alarm state, and the EM posts an alarm clear update during maintenance mode, the model remains in an alarm state when it comes out of maintenance.

- If the WilyAgent model is in a normal state, and the model's counterpart on the EM goes into an alarm state during maintenance mode, the model remains in a normal state when it comes out of maintenance.

Chapter 2: Installing and Setting Up the Integration

This section contains the following topics:

Configuring the Integration

The following diagram illustrates the process of installing and configuring the integration of CA Wily Introscope and CA Spectrum:

How to Configure the CA Wily and CA Spectrum Integration
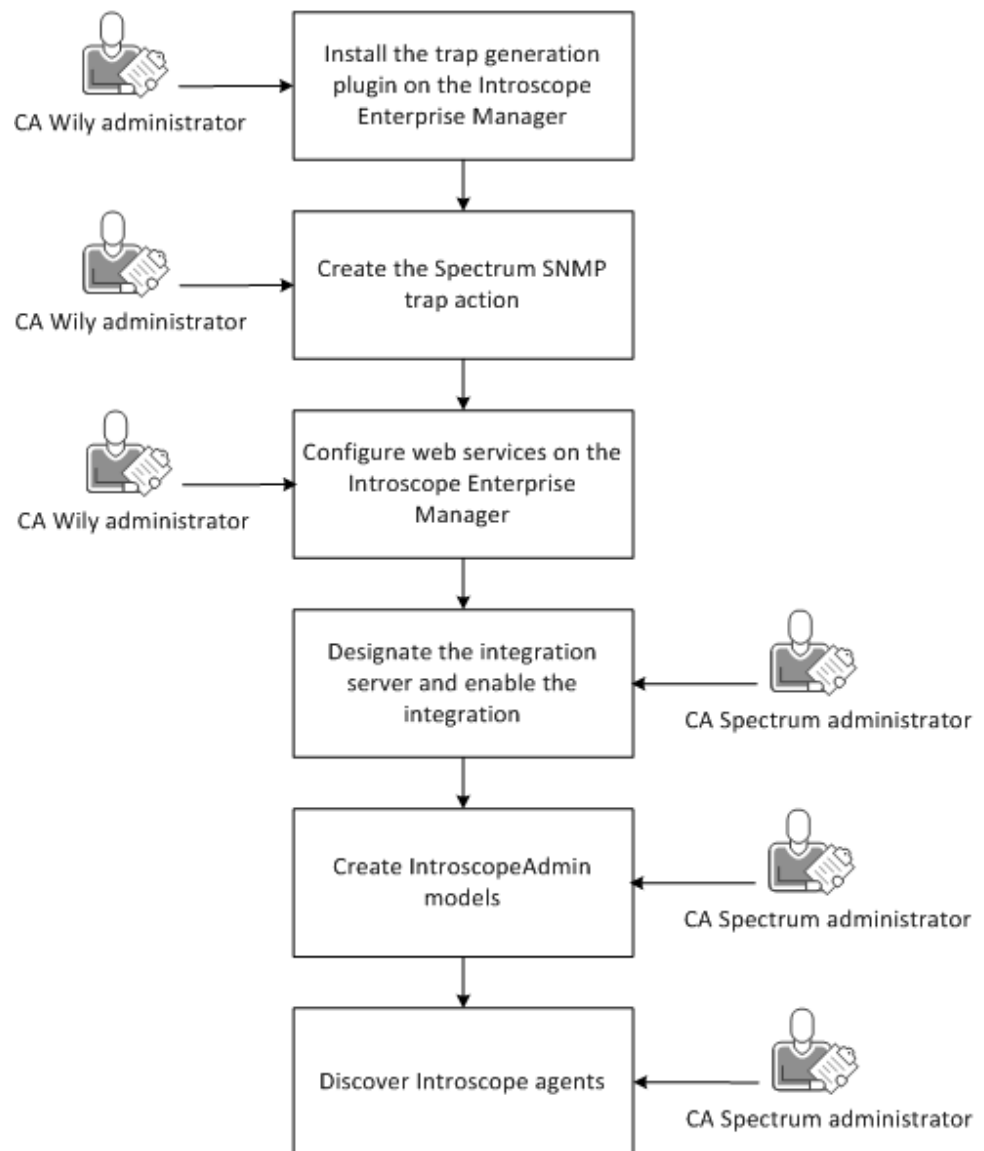
Install the Trap Generation Plugin on the Introscope Enterprise Manager

Alert data is forwarded to CA Spectrum in the form of SNMP traps generated by the spectrumAction plugin. The spectrumAction plugin converts alert data into an SNMP trap that CA Spectrum uses to generate and clear alarms on WilyAgent models.

The spectrumAction plugin consists of three components:

- spectrumAction-em.jar
- spectrumAction-ws.jar
- snmp6_0.jar

These components ship with CA Spectrum and are located in the Install-Tools/wily directory.

Install the spectrumAction Plugin on Solaris and Linux Enterprise Manager

You can install the spectrumAction plugin on a Solaris or Linux Enterprise Manager.

Follow these steps:

1. Shut down the Enterprise Manager.
2. Copy spectrumAction-em.jar and spectrumAction-ws.jar to *<Introscope Home>*/ext.
3. Copy snmp6_0.jar to *<Introscope Home>*/lib.
4. Verify 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.

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

You can install the spectrumAction plugin on Microsoft Windows where CA Wily Introscope is running as a Windows service.

Follow these steps:

1. Shut down the Enterprise Manager.

2. Copy spectrumAction-em.jar and spectrumAction-ws.jar to *<Introscope Home>*/ext.

3. Copy snmp6_0.jar to *<Introscope Home>*/lib.

4. Execute *<Introscope Home>*/DeregisterEMService.bat.

5. Open *<Introscope Home>*/EMService.conf with a text editor.

6. Add a new Java Classpath entry to the file as follows:

   wrapper.java.classpath.x=./lib/snmp6_0.jar

   x

   > Specifies the next available element number.

7. Save the file and exit the editor.

8. Execute *<Introscope Home>*/RegisterEMService.bat.

9. Start the Enterprise Manager.

   The plugin is now installed.

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

You can install the spectrumAction plugin on Microsoft Windows where CA Wily Introscope is not running as a Windows service.

Follow these steps:

1. Shut down the Enterprise Manager.

2. Copy spectrumAction-em.jar and spectrumAction-ws.jar to *<Introscope Home>*/ext.

3. Copy snmp6_0.jar to *<Introscope Home>*/lib.

4. Verify 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.

Create the Spectrum SNMP Trap Action

Use the CA Wily Management Module Editor to create a trap action for the alert that forwards data to CA Spectrum.

Follow these steps:

1. Open the CA Wily Management Module Editor.

2. Select Elements, New Action, New Spectrum SNMP Trap.

3. Provide a name for the new action and select the Management Module that contains the alert that forwards data to CA Spectrum. T

4. Click OK.

5. Select the check box labeled 'Active.'

6. Complete the following fields in the SNMP Destination panel:

   ■ **Host IP**. The IP address of the SpectroSERVER.

   ■ **Trap Port**. The port number of the SNMP trap for the SpectroSERVER.

   ■ **Community**. The SNMP community string for the SpectroSERVER. The default is 'public.'

7. Complete the following fields in the Introscope WebView panel:

   ■ **Host IP**. The IP address of the Enterprise Manager.

   ■ **Port**. The port number of the Enterprise Manager WebView.

   Note: WebView must be installed and running to enable URL launch back.

   ■ **Management Module**. The name of the Management Module that contains the alert that forwards data to CA Spectrum. This is the same Management Module you selected in step 3.

> ■ **Dashboard Name**. The name of the dashboard for Alarm/Event launch back.

8. Click Apply.

   The trap action is configured.

Notes:

   ■ See the CA Wily Introscope documentation for information about creating Management Modules and Dashboards and Alerts.

   ■ Alerts associated with the trap actions must have their 'Notify by Individual Metric' check box selected.

Configure Web Services on the Introscope Enterprise Manager

See the *CA Wily Introscope Web Services Guide* for information about configuring web services on the Enterprise Manager.

Designate the Integration Server and Enable the Integration

Designate a OneClick Tomcat server as the integration server host. You can designate the server you use to access OneClick or you can designate a headless server, which is dedicated to processing Wily data. Because you can designate any OneClick Tomcat server within the distributed environment, select a server that can accommodate the extra load of the Wily data.

Important: The Wily integration becomes disabled when you designate a headless server as the integration server host and then you stop and restart a OneClick Tomcat server that is not the integration server host. In such a situation, re-enable the integration.

You designate the integration server and enable the integration at the same time.

Follow these steps:

1. Select Administration from the OneClick home page.

   The OneClick Administration page opens.

2. Select Wily Integration Configuration from the left panel.

   The Wily Configuration page opens.

3. Complete the fields as follows:

   ■ **Integration Server Host Name**. The integration server host name.

   ■ **Integration Server Port**. The port number for the integration server.

4. Select Enabled in the Wily Introscope Integration field.

5. Click Save.

    The Successfully saved configuration message appears.

Tip: You can disable the integration at any time.

Follow these steps:

1. Select Administration from the OneClick home page.

    The OneClick Administration page opens.

2. Select Wily Integration Configuration from the left panel.

    The Wily Configuration page opens.

3. Select Disabled in the Wily Introscope Integration field.

4. Click Save.

    The Successfully saved configuration message appears.

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 (see page 16), 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: You can create an IntroscopeAdmin model in each landscape in a distributed SpectroSERVER environment to monitor a singular Enterprise Manager. However, only a single IntroscopeAdmin model can monitor a single Enterprise Manager in a distributed SpectroSERVER environment. Disabling the integration disables all IntroscopeAdmin models.

Follow these steps:

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 (Model by Type).

    The Select Model Type dialog opens.

3. Select IntroscopeAdmin from the list, and then click OK.

   The 'Create Model of Type IntroscopeAdmin' dialog opens.

4. Enter the unique Model name and network IP address of the CA Wily Introscope host system, and then click OK.

   The IntroscopeAdmin model is created.

Discover Introscope Agents

The final step in the configuration process is for CA Spectrum to discover the CA Wily Introscope agents that are configured to send information to CA Spectrum.

Follow these steps:

1. Select the Universe subview from the OneClick Navigation panel and select the IntroscopeAdmin model.

   Information about the IntroscopeAdmin model is displayed in the Contents panel.

2. Click the Information tab.

   IntroscopeAdmin configurations and information are displayed.

3. Expand the Introscope Integration Administration node.

   Integration configurations are displayed.

4. Verify the settings.

   To change a setting, click the 'set' link next to the setting, enter the appropriate information in the field, and press Enter.

5. When your settings are correct, click Discover Agents.

   The CA Wily Introscope agents are discovered, and the Discovery status is displayed in the Status window.

Chapter 3: Alarms, Events, and Application Statistics

This section contains the following topics:

View CA Wily Introscope Alarms and Events

You can view CA Wily Introscope alarms and events in OneClick.

Note: See the *Modeling and Managing Your IT Infrastructure Administrator Guide* for more information about CA Spectrum alarms and events.

Follow these steps:

1. Launch OneClick.

2. Expand the Universe subview in the Navigation panel, and select the IntroscopeAdmin model.

   Information about the IntroscopeAdmin model is displayed in the Contents panel.

3. Click the Alarms tab to display alarms or click the Events tab to display events.

   CA Wily Introscope alarms or events are displayed in the Contents panel. Information about the agent that caused the event or alarm is displayed in the Component Detail panel when you select an alarm or event in the Contents panel.

4. (*Optional*) Launch the Introscope Dashboard to view more information about the alert in the CA Wily interface:

   a. Select an alarm.

   b. Click the URL on the Alarm Detail tab.

      The Introscope Dashboard launches.

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