

CA Spectrum® and CA Service Desk

Integration Guide

CA Spectrum 9.3 / CA Service Desk r12 and later



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CA Technologies Product References

This document references the following CA Technologies products:

- CA Spectrum®
- CA Spectrum® Network Configuration Manager (NCM)
- CA Service Desk
- CA Service Desk Manager
- CA Spectrum® Alarm Notification Manager (SANM)

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Chapter 1: Introducing the CA Spectrum and CA Service Desk Manager Integration

This section contains the following topics:

[Overview of Functionality](#) (see page 7)

[Integration Details](#) (see page 8)

[Fault Tolerance](#) (see page 8)

Overview of Functionality

The CA Spectrum and CA Service Desk Manager integration provides the following features:

- Associates CA Spectrum alarms with the CA Service Desk tickets in the following ways:
 - Creates tickets when manually requested by OneClick operators.
 - Automatically creates tickets for each alarm type.
 - Automatically creates tickets using the CA Spectrum Alarm Notification Manager (SANM) functionality.
- Maintains the consistency of the following information that is shared between a CA Spectrum alarm and its associated CA Service Desk ticket:
 - Status of alarms and associated tickets
 - The current assignee (troubleshooter) assigned to tickets
- Provides a link to launch a CA Service Desk Manager view of a particular ticket directly from within the OneClick console.
- Provides an approval system for host configuration change requests that are initiated in Network Configuration Manager.
- Supports multiple CA Service Desk Manager servers.

Note: Starting with version 12.5 of CA Service Desk, the product name has changed to CA Service Desk Manager. The CA Spectrum integration supports earlier versions that used the previous name. As a result, the two product names are used interchangeably in this guide. The name "CA Service Desk" is used to describe generic product features, such as tickets and assets.

Integration Details

Once the integration has been successfully configured, CA Spectrum and CA Service Desk Manager share data.

- OneClick uses CA Service Desk web services to:
 - Create CA Service Desk tickets.
 - Update alarm owners (the troubleshooters who are assigned to alarms).
 - Close the tickets.
- CA Service Desk Manager uses a custom notification that issues HTTP requests to OneClick to:
 - Update the assigned troubleshooter.
 - Clear the alarms.
- CA Spectrum and the CA Service Desk Manager integration work with SANM to provide automatic ticket creation. You configure the SANM automatic ticket creation using SANM policies. You can then specify which alarms create tickets by configuring alarm properties, such as the date, time, alarm severity, alarm cause, IP address, and the device type.
- CA Spectrum and the CA Service Desk Manager integration also provide an approval system for host configuration changes that are initiated in Network Configuration Manager. When a host configuration change is requested in NCM, a CA Service Desk ticket is created for the request. The ticket requires approval before it can be implemented.

Fault Tolerance

You can specify a list of multiple CA Service Desk Manager servers to enable fault tolerance when you configure the integration. When CA Spectrum detects a loss of connectivity to a CA Service Desk Manager, it attempts to connect to the next server in the list. CA Spectrum continues to step through the list to establish a connection until one is successful.

Important! If CA Service Desk web services are down, CA Spectrum cannot create Service Desk tickets. Or if an alarm is cleared when CA Service Desk web services are down, that ticket is not closed, but remains open.

Chapter 2: Installing and Configuring the Integration

This section contains the following topics:

- [How to Install and Configure the Integration](#) (see page 9)
- [Verify Integration System Requirements](#) (see page 10)
- [Configure the CA Service Desk Manager Server](#) (see page 10)
- [Configure the OneClick Server](#) (see page 24)
- [Customizing Ticket Creation and Closure](#) (see page 30)
- [Examples](#) (see page 39)

How to Install and Configure the Integration

To install and configure the CA Spectrum and CA Service Desk Manager integration successfully, complete the following procedures:

1. [Verify integration system requirements for OneClick and CA Service Desk Manager servers](#) (see page 10).
2. [Set up and configure the CA Service Desk Manager server](#) (see page 10):
 - a. [Download and install integration components on the CA Service Desk Manager server](#) (see page 11).
 - b. [Create a CA Spectrum contact on the CA Service Desk Manager server](#) (see page 16).
 - c. [Create a CA Service Desk ticket template on the CA Service Desk Manager server](#) (see page 16).
 - d. [Create a CA Service Desk web services policy and problem type for CA Spectrum](#) (see page 17).
 - e. [Create a custom CA Service Desk notification method](#) (see page 19).
 - f. [Configure the CA Service Desk ticket notifications OneClick receives](#) (see page 20).
 - g. [Configure CA Service Desk Manager to support duplicate handling with CA Spectrum](#) (see page 24).
3. Set up and configure the OneClick server.
 - a. [Configure communication and enable integration on the OneClick server](#) (see page 25).
 - b. [Choose CA Spectrum alarm types in OneClick for automatic ticket creation](#) (see page 28).

Verify Integration System Requirements

To perform the procedures in this guide, administrator-level permission is required to the CA Service Desk Manager server host computer and the OneClick web server host computer. You must also be a CA Service Desk Manager and OneClick administrator on these computers.

Before you begin, verify that your CA Spectrum and CA Service Desk Manager servers meet the following requirements:

- **CA Spectrum OneClick server software**—CA Spectrum r9.0 and later. Localization support requires CA Spectrum 9.3.

The CA Spectrum and CA Service Desk Manager integration supports the Solaris, Windows, and Linux platforms. For hardware requirements and information about installing CA Spectrum software, see the *Installation Guide*.

- **CA Service Desk software**—CA Service Desk r12 or later. Release 12.7 is supported.

Releases r12 and later support Windows, Solaris, and the Linux platforms.

Information about the CA Service Desk Manager operating environment is available at <http://supportconnect.ca.com/>.

Important! For localization support, CA Service Desk Manager r12.7 is required. English locales support other versions.

Note: Starting with version 12.5 of CA Service Desk, the product name has changed to CA Service Desk Manager. The CA Spectrum integration supports earlier versions that used the previous name. As a result, the two product names are used interchangeably in this guide. The name "CA Service Desk" is used to describe generic product features, such as tickets and assets.

For information about installing CA Service Desk software, see the *CA Service Desk Manager Implementation Guide*. For information about configuring CA Service Desk software, see the *CA Service Desk Manager Administrator Guide*.

- **A supported web browser**—CA Service Desk and CA Service Desk Manager only support Microsoft Internet Explorer v10 if the browser is running in Compatibility Mode. Other versions of Internet Explorer are fully supported. Mozilla Firefox and Google Chrome are also supported.

Configure the CA Service Desk Manager Server

This section describes the procedures that are required to set up the CA Service Desk server for the integration.

Download and Install Integration Components on the CA Service Desk Server

Before you configure CA Service Desk Manager and CA Spectrum to communicate with each other, download and install the integration components on your CA Service Desk Manager server. Use one of the following methods, depending on your operating systems:

- [CA Service Desk and OneClick Web server use different operating systems](#) (see page 11)
- [CA Service Desk and OneClick Web server use the same operating system](#) (see page 12)

CA Service Desk and OneClick Web Server Use Different Operating Systems

Perform the following steps when your CA Service Desk Manager server uses a different operating system than the OneClick web server:

1. Visit <http://supportconnect.ca.com/> to locate a version of the CA Service Desk Manager integration components that are appropriate for your CA Service Desk Manager server.
2. Download and save the appropriate version of the integration components for your operating system to the following directory on your CA Service Desk Manager server:

Service_Desk_Installation_directory/bin
3. After you have saved the integration components to your CA Service Desk Manager server, follow the instructions for [installing and configuring the integration components using the same operating system](#) (see page 12), beginning with Step 5.

CA Service Desk and OneClick Web Server Use the Same Operating System

Download the CA Spectrum and CA Service Desk Manager integration components from the CA Spectrum OneClick web server and install them on the CA Service Desk Manager server.

Follow these steps:

1. From your CA Service Desk Manager server, navigate to the OneClick Administration pages.

`http://OneClick Web server/spectrum/admin/index.jsp`
2. Click the Service Desk Configuration link in the left panel of the Administration page.

The Service Desk Configuration administration page opens in the right panel, as shown:

Service Desk Configuration

Please refer to the CA Service Desk SPECTRUM Integration Guide during the configuration process.

Important: Prior to configuring OneClick to connect to Service Desk using this configuration page, you must download and install the integration components on your Service Desk server. If your Service Desk server uses the same operating system as your OneClick Web Server, use the link below. Otherwise please visit www.concord.com/support to download the appropriate version. Failure to do so will result in an unsuccessful integration.

- [Integration Components](#)

This page allows you to configure OneClick to connect to a Service Desk server. Active OneClick clients will not reflect configuration changes made with this page. To resolve this, restart any active OneClick clients.

Service Desk Server Name

Service Desk Server Port

Service Desk Web Server Port

Service Desk Admin Username

Service Desk Admin Password

Service Desk Servers

☐	Server Name	Server Port	Web Server Port	Username	Priority
No Servers Configured					

3. Click the Integration Components link to download the oc_components.exe file. This self-extracting archive file contains the executable programs to configure the CA Service Desk Manager server.
4. Save the oc_components.exe file to the directory on your CA Service Desk Manager server:

`Service_Desk_Installation_directory/bin`
5. Log in to your CA Service Desk Manager server host computer and navigate to the `Service_Desk_Installation_directory/bin` directory.

6. Locate the oc_components.exe file you downloaded.
7. **Solaris/Linux:** Run the following command to make the oc_components.exe file executable:


```
chmod 755 oc_components.exe
```

Windows: Do not edit the permissions of the downloaded file for the file to be executable.
8. Run the oc_components.exe file.

The OneClickIntegrationSetup(.exe) file is extracted to the
<Service_Desk_Installation_directory>/bin directory.
9. Run the Service_Desk_Installation_directory/bin/OneClickIntegrationSetup(.exe) configuration program. At each prompt, enter the requested information and press Enter to continue. The following table describes each prompt and the required information:

OneClick Integration Setup Prompt	Description
OneClick Server name?>	Enter the hostname of your OneClick Web server.
OneClick Server port?>	Enter the port of the OneClick Web server.
OneClick Homepage path [default="spectrum"]?>	If your OneClick home page URL uses the default value of <code>http://OneClick Web server/spectrum</code>, press Enter to accept it. Otherwise, enter the correct home page path portion of the OneClick home page URL at this prompt. This home page path value is <path>, as in the example <code>http://OneClick Web server>/path</code>. The default value in OneClick is "spectrum."
Username?>	Enter the username of the OneClick Administrator. This name is the CA Spectrum "super user" who installed the OneClick Web server.
Password?>	Enter the password of the OneClick Administrator.
Confirm password?>	Re-type the password of the OneClick Administrator and press Enter.

OneClick Integration Setup Prompt	Description
Enable logging? [yes no]>	Type <i>yes</i> to enable logging or type <i>no</i> to disable logging and press Enter. We recommend enabling logging only when you are troubleshooting an integration problem. An active integration can create a large log file. When logging is enabled, the integration creates a file named <i>oc-notification.log</i> in the <i>Service_Desk_Installation_directory/bin</i> directory. When enabled, logging writes information about Service Desk notifications to this log file. Information is logged each time the CA Spectrum notification occurs and includes the type of activity and whether or not it was a success. In the case of a failed notification, this log file may contain a possible solution such as an invalid port or that the OneClick web server is unavailable.
Enable SSL? [yes no]>	Type <i>yes</i> to enable SSL or type <i>no</i> to disable SSL and press Enter. Note: To enable SSL in CA Spectrum Tomcat, install OneClick and see the <i>Administrator Guide</i>. To enable SSL in CA Service Desk Tomcat, see the <i>Service Desk Administrator Guide</i>.
Path to the JRE root installation directory?>	Type the JRE root installation directory path and press Enter. Specify the JRE root installation directory so that appending "<i>bin/java -version</i>" becomes a successful command. Note: Java 2 Runtime Environment (JRE) version 1.5.0 or later is required.

OneClick Integration Setup Prompt	Description
Close keyword [default="Closed"]?>	If you created customized CA Service Desk notification messages that do not use the default keyword for Close ("Closed"), specify those custom keywords at this prompt. To use default values press Enter at the prompt without specifying a keyword. If you use custom notification messages for the Close action, type the associated keywords at the prompt. You can specify multiple keywords and they will be searched for sequentially. Keywords are case-sensitive. When you have finished entering keywords, leave the line blank and press Enter. Note: For more information, see the example of configuring custom CA Service Desk keywords for CA Service Desk notifications (see page 42).
Transfer keyword [default="Transfer"]?>	If you created customized CA Service Desk notification messages that do not use the default keyword for Transfer ("Transfer"), specify those custom keywords at this prompt. To use default values press Enter at the prompt without specifying a keyword. If you use custom notification messages for the Transfer action, type the associated keywords at the prompt. You can specify multiple keywords and they will be searched for sequentially. Keywords are case-sensitive. When you have finished entering keywords, leave the line blank and press Enter.

The OneClick Integration Setup program creates a file named NotifyOneClick(.bat or .sh, depending on the operating system), in the *Service_Desk_Installation_directory/bin* directory.

Note: To reconfigure this information later, run the OneClickIntegrationSetup program again or manually edit values in the *Service_Desk_Installation_directory/bin/oc-integration.cfg* configuration file. Any changes that are made to this file take effect immediately. No additional restart is required.

Create a CA Spectrum Contact on the CA Service Desk Manager Server

To enable CA Service Desk Manager to communicate with CA Spectrum, create a special CA Spectrum contact on the CA Service Desk Manager server.

Follow these steps:

1. Navigate to your CA Service Desk Manager home page:
`http://<Service Desk server>/CAisd/pdmweb.exe`
2. Click the Service Desk tab.
3. Click File, New Contact.
The Create New Contact window opens.
4. Enter *spectrum* in both the Last Name and System Login fields.
5. Select at least the Analyst option from the Contact Type list so that tickets are assigned to the user.
6. Click Save.

Create a CA Service Desk Ticket Template on the CA Service Desk Manager Server

Create a service desk ticket template for the CA Service Desk tickets that are created from CA Spectrum alarms. This ticket template specifies the format of CA Service Desk tickets that are created from OneClick alarms.

Follow these steps:

1. From the CA Service Desk Manager server home page, select the Service Desk tab.
2. Select File, New Issue.

The Create New Issue window opens.

Note: You can configure CA Service Desk Manager to use Issues, Requests, or Incidents as the default ticket type that OneClick creates. The procedures in this section refer to Issues. To use Requests or Incidents instead (to support Incident and Problem type requests), replace all references to "Issues" with "Requests" or "Incidents". For example, in this step, replace 'File, New Issue' with 'File, New Request,' or with 'File, New Incident'. For an example using Requests, see the topic that describes [creating CA Service Desk tickets automatically for a single alarm type](#) (see page 39).

3. In the Create New Issue window, type *spectrum* in the Affected End User field.

4. (Optional) Take the following actions to configure the integration to assign all CA Service Desk tickets that CA Spectrum creates to a specific troubleshooter by default:

- a. Click the Assignee link.

The Analyst List page opens.

- b. Search for the contact name of the person you want to set as the default troubleshooter.

- c. Click the link in the Name column of the desired troubleshooter.

The troubleshooter is added to the Assignee field as the default.

5. Select the Template tab at the bottom of the Create New Issue page.

6. Type `SPECTRUM_TEMPLATE` in the Template Name field.

7. (Optional) Type a description for this template in the Description field.

8. Click Save.

The template is saved.

Note: You can customize your CA Spectrum and CA Service Desk Manager integration to use more than the default template. By editing the `SPECTRUM_POLICY` Web Services Policy, you can add different problem types that refer to different ticket templates. For more information about adding problem types (error types) to the Web Services Policy in CA Service Desk Manager, see the *CA Service Desk Manager Web Services User Guide*.

More information:

[Customizing Ticket Creation and Closure](#) (see page 30)

Create a CA Service Desk Web Services Policy and Problem Type for CA Spectrum

Create a Web Services Policy and problem type (error type) for CA Spectrum. This policy controls how CA Service Desk Manager processes the requests for the creation of tickets from CA Spectrum alarms. CA Service Desk Manager uses the problem type to specify the `SPECTRUM_TEMPLATE` as the basis for new tickets when CA Service Desk Manager receives a CA Spectrum alarm.

Follow these steps:

1. From the CA Service Desk Manager home page, select the Administration tab.
2. Expand Web Services Policy and click Policies.
3. Click Create New.

The Create New Web Services Access Policy window opens.

4. Take the following actions:
 - a. Enter *SPECTRUM_POLICY* for Symbol.
 - b. Enter *SPECTRUM_POLICY* for Code.
 - c. (Optional) Type a description for the CA Spectrum policy.
 - d. Click Save.

The Create New Web Services Access Policy window closes.
5. Select the *SPECTRUM_POLICY* Web Service Policy that you created.

The Web Services Access Policy Detail window for the *SPECTRUM_POLICY* opens.
6. Click Edit.
7. Click the Error Types tab.
8. Click Add an Error Type.
 - a. Enter *SPECTRUM_PT* in the Symbol field.
 - b. Enter *SPECTRUM_PT* in the Code field.
 - c. Select the Default check box.
 - d. Select Issue from the Ticket Template Type drop-down list.
 - e. Enter *SPECTRUM_TEMPLATE* in the Ticket Template Name field.
 - f. (Optional) Enter a description for the problem type (error type).
 - g. Select the Duplicate Handling tab, and take one of the following actions:
 - To create a unique ticket regardless of underlying cause, select Create Ticket (do not detect duplicates).

- To avoid creating multiple tickets for the same underlying cause, select one of the following options:

- Add Activity Log (do not create ticket)
- Create Standard Log (do not create ticket)
- Attach As Child (create a child ticket)

Specify a value in the 'Maximum time interval for searching duplicates' field. This value must be at least 00:01:00 (one minute). The value the amount of time CA Service Desk Manager looks for duplicates.

Note: These options require support for the CA Service Desk Manager duplicate handling feature. To use this feature, make further modifications to the CA Service Desk Manager and OneClick servers. For more information, see the following topics:

[Configure CA Service Desk Manager Duplicate Handling Feature](#) (see page 24)

[Disable Automatic Closing of Ticket](#) (see page 35)

h. Click Save.

The window closes.

9. Click Save in the Policy Detail window.

The policy and problem type (error type) are created.

Note: You can customize your CA Spectrum and CA Service Desk Manager integration to use more than the default template. By editing the SPECTRUM_POLICY Web Services Policy, you can add different problem types that refer to different ticket templates. For more information about adding problem types (error types) to the Web Services Policy in CA Service Desk Manager, see the *CA Service Desk Manager Web Services User Guide*.

More information:

[Customizing Ticket Creation and Closure](#) (see page 30)

Create a Custom CA Service Desk Notification Method

Create a custom notification method for CA Service Desk Manager to send notifications to OneClick. This method communicates the CA Service Desk ticket changes to OneClick.

Follow these steps:

1. From the CA Service Desk Manager home page, click the Administration tab.
2. Expand the Notifications folder and click Notification Methods.

The Notification Method List opens.

3. Click Create New.

The Create New Notification Method dialog opens.

4. Enter the following information:

- a. Type **SPECTRUM_Notification** in the Symbol field.

- b. Specify the notification method as follows:

For Windows: Type **NotifyOneClick.bat** for the Notification Method.

For Solaris/Linux: Type the full path to the NotifyOneClick script, such as **/opt/CA/ServiceDesk/bin/NotifyOneClick.sh**.

Note: The NotifyOneClick file must be present in the *Service_Desk_Installation_directory/bin* directory.

- c. (Optional) Enter a description for the notification method.

Note: Do not select *write to file* because the integration uses web services instead of reading the information from a file.

- d. Click Save.

The notification method is created.

Configure the CA Service Desk Ticket Notifications that OneClick Receives

CA Service Desk Manager can send OneClick notifications when a ticket that is associated with a OneClick alarm changes. These notifications update the alarm that is associated with a ticket in OneClick to reflect changes to the ticket. The CA Service Desk Manager integration can be configured to generate an automatic Ticket Closed notification that causes OneClick to clear the associated alarm, when a ticket is closed. Similarly, when a ticket has been transferred, a Ticket Transfer notification causes OneClick to update the troubleshooter information for the associated alarm.

Note: OneClick only clears an associated alarm when a ticket is closed in the CA Service Desk Manager if the alarm is user-clearable.

These notifications use CA Service Desk "keywords," which must match keywords that are set in the integration for OneClick. Keywords are case-sensitive. By default, the keyword for the close action is "Closed", and the keyword for the transfer action is "Transfer" (in both CA Service Desk Manager and the CA Spectrum integration setup). These keywords can be customized in CA Service Desk Manager and in the CA Spectrum integration setup.

To configure the CA Service Desk notifications for the CA Spectrum integration with CA Service Desk Manager, complete these procedures:

1. [Enable notifications for the CA Spectrum contact](#) (see page 21).
2. [Enable CA Service Desk notifications for "Ticket Close"](#) (see page 21).
3. [Enable CA Service Desk notifications for "Ticket Transfer" actions](#) (see page 22).

For more information, see the [example of customizing CA Service Desk keywords](#) (see page 42). This example describes configuring a custom keyword for the Close action after you have completed the OneClick configuration steps and enabled the integration.

Enable Notifications for the CA Spectrum Contact

Enable the CA Service Desk notifications for the special CA Spectrum contact (*spectrum*) on the CA Service Desk Manager server:

Follow these steps:

1. From the CA Service Desk Manager home page, select the Service Desk tab.
2. Select Search, Contacts.
The Create New Contact window opens.
3. Type **spectrum** in the Last Name field, and click Search.
The Contact List opens.
4. Click the *spectrum* contact.
The Detail dialog for the *spectrum* contact opens.
5. Click Edit and click the Notification tab.
6. For each of the Notification types (Low, Normal, High, and Emergency) in the list, select *SPECTRUM_Notification* for Method.
7. Click Save.
Notifications are now enabled.

Enable CA Service Desk Notifications for “Ticket Close”

Configure CA Service Desk Manager to send a notification to CA Spectrum when a ticket has been closed. A Ticket Closed notification causes CA Spectrum to clear the associated alarm.

Follow these steps:

1. From the CA Service Desk Manager home page, select the Administration tab.
2. Expand the Notifications folder and select Activity Notifications.
The Notification List opens.

3. Select the Close activity.
The Close Activity Notification Detail dialog opens.
4. Verify that the Object Type is set to the appropriate value. By default, this field is set to Requests. If you opted to create CA Service Desk Issues, select Issues.
5. Click Edit.
6. Take the following steps:
 - a. Click the Notification Rules tab, and then click the name of the notification rule that the close activity uses.
 - b. Click the message template for the transfer activity, and click Edit.
 - c. Select Auto Notification.
7. Click the Contacts tab, and then click Update Contacts.
The Contact Search window opens.
8. Click Search.
The Notification Recipients Update window opens.
9. Add the *spectrum* contact from the Contacts list to the Notification Recipients list, and click OK.
The Close Update Activity Notification window opens.
Note: Do not remove the information in the 'Description: @call_req_id.description' field. CA Spectrum uses this information to associate alarms in CA Spectrum with the CA Service Desk ticket. Without this information, alarms are not cleared in CA Spectrum when a CA Service Desk ticket is closed.
10. Click Save.
11. Close the Close Activity Notification Detail window.
CA Service Desk Manager sends notifications when tickets are closed.

Enable CA Service Desk Notifications for "Ticket Transfer" Actions

CA Service Desk Manager can notify CA Spectrum when a ticket has been transferred. To configure this feature, enable CA Service Desk Manager to send notifications to CA Spectrum when a ticket that has a CA Spectrum alarm is transferred.

Follow these steps:

1. From the CA Service Desk Manager server home page, select the Administration tab.
2. Expand the Notifications folder and select Activity Notifications.
The Notification List opens.

3. Select the Transfer activity.
The Transfer Activity Notification Detail window opens.
4. Verify that the Object Type is set to the appropriate value. The default is Requests. To create CA Service Desk Issues, select Issues.
5. Click Edit.
6. Take the following steps:
 - a. Click the Notification Rules tab, and then click the name of the notification rule that the transfer activity uses.
 - b. Click the message template that the transfer activity uses, and click Edit.
 - c. Select Auto Notification.
7. In the Notification Message body, change the assignment information from:
"Assigned to: @{call_req_id.assignee.combo_name}"
to:
"Assigned to: @{issue_id.assignee.userid}"
Note: Do not remove the information in the 'Description: @{call_req_id.description}' field. CA Spectrum uses this information to associate alarms in CA Spectrum with the CA Service Desk ticket. Without this information, alarms are not cleared in CA Spectrum when a CA Service Desk ticket is closed. The 'issue_id' portion of the assignment is a variable that must match the type of ticket that you are using (in this case, an issue). For requests, use 'call_req_id'.
8. Click the Contacts tab, and then click Update Contacts.
The Contact Search window opens.
9. Click Search.
The Notification Recipients Update window opens.
10. Add the *spectrum* contact to the Notification Recipients list from the Contacts list, and click OK.
The Transfer Update Activity Notification window opens again.
11. Click Save.
12. Close the Transfer Activity Notification Detail window.
CA Service Desk Manager sends notifications when tickets are transferred.

Configure CA Service Desk Duplicate Handling

CA Service Desk Manager provides the duplication handling for scenarios where multiple tickets are created with the same underlying cause within a specified amount of time. To take advantage of this feature, make some modifications to the CA Service Desk Manager server.

Note: To support the duplication handling, enable the Specify Reported By Field when configuring the OneClick server. See [Configure Communication and Enable Integration on the CA Spectrum OneClick Server](#) (see page 25).

Configure support for CA Service Desk duplication handling on the CA Service Desk Manager server.

Follow these steps:

1. Log in to your CA Service Desk Manager server.
2. Take one of the following steps:
 - For CA Service Desk r12.1:
 - a. Open the following file: `$SD_ROOT\bopcfg\majic\cm.maj`
 - b. Change the following line:

```
log_agent SREL cnt WRITE_NEW REQUIRED SERVICE_PROVIDER_ELIGIBLE
```

to

```
log_agent SREL cnt REQUIRED SERVICE_PROVIDER_ELIGIBLE
```
 - c. Save changes and close the file.
 - For CA Service Desk Manager r12.5:
 - Create the mod file in `$SC_ROOT/site/mods/majic`.
 - Include the following line:

```
MODIFY cr log_agent NOT_WRITE_NEW;
```
 - Save changes and close the file.
3. Restart the CA Service Desk Manager Server service after making either of these changes.

Configure the OneClick Server

This section describes the procedures to set up the OneClick server for the integration.

Configure Communication and Enable Integration on the CA Spectrum OneClick Server

Complete the following procedure to configure CA Spectrum and CA Service Desk Manager to communicate with each other.

Follow these steps:

1. Navigate to the OneClick Administration pages:
`http://OneClick Web server/spectrum/admin/index.jsp`
2. Click the Service Desk Configuration link from the left panel of the Administration page.
The Service Desk Configuration administration page opens.
3. Configure OneClick to connect to a CA Service Desk Manager server by entering valid values for the following fields:

This page allows you to configure OneClick to connect to a Service Desk server. Active OneClick clients will not reflect configuration changes made with this page. To resolve this, restart any active OneClick clients.

Service Desk Server Name	
Service Desk Server Port	
Service Desk Web Server Port	
Service Desk Admin Username	
Service Desk Admin Password	
Test	Add/Modify Server

Service Desk Servers

☐	Server Name	Server Port	Web Server Port	Username	Priority
No Servers Configured					

Remove Selected Servers	<i>Remove selected servers from the table</i>
--	---

Service Desk Server Name

The hostname of the CA Service Desk Manager server.

Service Desk Server Port

The HTTP port of the CA Service Desk Tomcat Port. CA Spectrum uses this port to create CA Service Desk tickets.

Service Desk Web Server Port

The HTTP port of the CA Service Desk Web Server. This port is used when launching the CA Service Desk interface from OneClick.

- To integrate with a CA Service Desk Manager server that is running on both a web server (IIS or Apache) and Tomcat, this port is *different* from the port that you specified in the previous Service Desk Server Port field.
- To integrate with a CA Service Desk Manager server that is only running on Tomcat, this port is the *same* as the port that you specified in the previous Service Desk Server Port field.

Service Desk Admin Username

The user name of the CA Service Desk Manager server administrator.

Service Desk Admin Password

The password of the CA Service Desk Manager server administrator.

Note: OneClick clients that are running when you make configuration changes on this page do not reflect the changes. To resolve this problem, restart any active OneClick clients. If you change to a different CA Service Desk Manager server, restart the tomcat server for the changes to take effect.

4. Click Test to verify the connection between the CA Service Desk Manager server and OneClick.

A successful test displays the following information:

Successfully connected to Service Desk web services and interface on server *Service Desk Manager Server Name*.

5. Click Add/Modify Server to add these settings to the Service Desk Manager Server table.

The server is added to the Service Desk Servers table.

Note: The settings are not saved until you click Save.

Service Desk Servers

☐	Server Name	Server Port	Web Server Port	Username	Priority
☐	COE-ACX-SEC1-D1*	8080	8080	Administrator	
☐	COE-ACX-SEC2-D1	8080	8080	Administrator	
☐	COE-ACX-SEC3-D1	8080	8080	Administrator	

Remove selected servers from the table

The table in this image displays all CA Service Desk servers that have been configured for this integration. The asterisk (*) indicates the connection that is currently in use.

6. Click Save to save these settings.

7. To add another Service Desk Manager server, specify the server details, click Add/Modify Server, and then click Save.
8. You can perform the following tasks from the Service Desk Servers table:
 - Edit an existing Service Desk Manager Server by taking the following steps:
 - a. Select the server to modify by highlighting the row in the table.
Note: Do not use the check boxes for the Modify operation.
 - b. Make the necessary changes.
 - c. Click Add/Modify Server, and then click Save.
 - To test a server that has already been added, click that row in the server list, specify a password, and click the Test button.
 - To increase the priority of a CA Service Desk Manager server, click the up arrow icon to move the server up by one row in the table. Connections are tried in the order that the servers appear in the table. Click Save.
 - To remove a CA Service Desk Manager server, select the server, click 'Remove Selected Servers', and then click Save.
9. Supply values for the following additional fields:

SSL Support

Select the Enabled option to enable SSL.

Specify Reported By Field

Select Yes to include the submitting user in the Reported By field when you manually submit Request, Incident and Problem tickets.

Note: Modifications are required on the CA Service Desk Manager server for this feature to function correctly. For more information, see [Configure CA Service Desk Duplication Handling](#) (see page 24).

Assign Assets/Configuration Items

If enabled, lets you associate assets with the CA Service Desk tickets from OneClick.

Reload Asset/CI Mapping

When Assign Assets/Configuration Items is enabled, click this button if you have modified the Service Desk asset/CI mapping in service-desk-asset-mapping.xml and you want to apply the changes without restarting the OneClick server.

Note: The exception "Unable to start ServiceDeskAssetMapping: java.lang.NullPointerException" is logged in the stdout.log file at \$SPECROOT\tomcat\logs when you start OneClick and the SpectroSERVER is inactive. This problem is resolved automatically as CA Spectrum performs Service Desk Asset Mapping when the first Service Desk ticket is generated.

Reload Ticket Rules

Click this button if you have modified the Service Desk ticket configuration rules in service-desk-ticket-config.xml and you want to apply the changes without restarting the OneClick server.

Service Desk Integration

Select the Enabled option to allow communication between CA Spectrum and CA Service Desk Manager.

Note: For information on setting alarm types, see [Choose CA Spectrum Alarm Types in OneClick for Automatic Ticket Creation](#) (see page 28).

10. Click Save. The following message appears:

Successfully saved configuration.

More information:

[How Assets are Added to CA Service Desk Tickets](#) (see page 50)

[CA Service Desk Tickets Not Created After Switching Servers](#) (see page 70)

Select CA Spectrum Alarm Types in OneClick for Automatic Ticket Creation

Configure the CA Spectrum and CA Service Desk Manager integration to create CA Service Desk trouble tickets when CA Spectrum generates alarms of certain types that you specify.

Note: Automatic ticket creation is an optional feature. Operators can instead [create all tickets manually](#) (see page 61). By default, the integration does not automatically create tickets for any CA Spectrum alarms.

Follow these steps:

1. Navigate to your OneClick Administration pages:
`http://OneClick Web server/spectrum/admin/index.jsp`
2. Click the Service Desk Configuration link in the left panel of the Administration page. The Service Desk Configuration administration page opens.

3. Scroll to the bottom of the Service Desk Configuration administration page to the Alarm Types section. The first time that you open the Service Desk Configuration administration page and anytime the cache timeout (one hour) of the page expires, the “Loading Alarm Types” message is displayed as shown:

Loading Alarm Types.....

Selected Alarm Types

NONE

Test Save

The available alarm types are displayed in the Available Alarm Types section of the Service Desk Configuration administration page:

Select the alarm types for which you would like Service Desk tickets created.

Available Alarm Types

ALL
(0x4bd0985)
(0x4bd09cf)
% POOL BUSY HEALTH INDEX (0x11029)
% POOL BUSY TREND (0x11066)
(PROTECTION SWITCHING) FAR END PROTECTION LINE FAILURE (0x3d5002b)
A BGP4 PEER BACKWARD STATE TRANSITION HAS OCCURRED (0x220015)
A BGP4 PEER SESSION HAS BEEN ESTABLISHED (0x220012)
A BGP4 PEER SESSION HAS RESET (0x220014)
A BGP4 PEER SESSION IS DOWN (0x220013)

Add Remove Filter Text: Filter Clear

Selected Alarm Types

NONE

Test Save

4. In the Available Alarm Types section, select the alarms for which you want OneClick to create CA Service Desk tickets, and click Add.

Note: A delay can occur the first time you add alarm types. The delay occurs when all of the probable cause files are loaded for display in the Available Alarm Types section of the Service Desk Configuration administration page.

To generate the CA Service Desk tickets for all CA Spectrum alarms, select ALL from the Available Alarm Types list, and click Add.

Note: To select an individual alarm type, enter some text from a desired alarm type into the Filter Text field and click Filter.

5. Click Save when you have finished adding alarms.

Customizing Ticket Creation and Closure

This section describes the following procedures for customizing ticket creation and closure:

- [Using custom ticket creation rules](#) (see page 30)
- [Using the CA Service Desk duplicate handling feature](#) (see page 34)
- [Controlling automatic closure of tickets](#) (see page 35)
- [Customizing ticket status](#) (see page 36)
- [Customizing ticket summaries](#) (see page 38)

About Ticket Creation Rules

Using custom ticket creation rules, you can extend the functionality of CA Service Desk Manager tickets. Custom rules are available for tickets that are created by Spectrum Alarm Notifier (SANM), or that are created manually through the OneClick interface. You can add contacts to CA Service Desk Manager or problem types to the SPECTRUM_POLICY Web Services Policy. Tickets that CA Spectrum creates can then use different templates or can be assigned to different end users.

Set up custom ticket creation rules to notify the right person who must respond to an alarm. Apply a template with the required information to help IT staff resolve the issue more quickly.

With custom rules, the problem type or affected end user that is assigned to a CA Service Desk ticket is based on information from CA Spectrum. The following parameters can be used to determine the assignment:

- Alarm attribute
- Model attribute
- Model association

The CA Service Desk tickets that CA Spectrum creates use default settings if they are not associated with any of the ticket creation rules. These tickets use the following defaults, which are defined for the SPECTRUM_POLICY Web Services Policy:

- Default problem type (error type) (SPECTRUM_PT)
- Default end user (spectrum).

Add a Ticket Creation Rule

By editing the ticket configuration file (service-desk-ticket-config.xml), you can customize how the CA Service Desk tickets are created from CA Spectrum. You can add a ticket creation rule that is based on any attribute of the CA Spectrum alarm, any attribute of the CA Spectrum model, or any association of the CA Spectrum model.

Any attribute of the CA Spectrum alarm, any attribute of the CA Spectrum model, or any association of the CA Spectrum model can have a certain problem type, affected end user, or both, assigned to the ticket in CA Service Desk Manager. Creating CA Service Desk tickets that are based on custom ticket creation rules enhances the ability of the CA Service Desk Manager user to troubleshoot issues.

Follow these steps:

1. Copy the service-desk-ticket-config.xml and service-desk-ticket-config.xsd files from `<${SPECROOT}>/tomcat/webapps/spectrum/WEB-INF/svdsdk/config` to `<${SPECROOT}>/custom/svdsdk/config`.
2. Open the service-desk-ticket-config.xml file in a text editor.
3. Create an `<sd-ticket>` element inside the `<service-desk-ticket-config>` element for each rule that you want to define. Follow the instructions that are provided in the XML file.

You can create rules that are based on the following information:

- Alarm attribute
- Model attribute
- Model association

For each rule, you can specify a problem type, a user ID, or both—at least one of these attributes must be provided for each rule.

Note: If an alarm is generated for a model where multiple ticket creation rules can be applied, the rules that are defined earliest in the XML file take precedence over the rules that follow.

4. Save the file.

Your ticket creation rules are added to CA Service Desk Manager.

5. Click the Reload Ticket Rules button that exists on the OneClick Administration page for the CA Service Desk Manager integration.

Your custom rules are applied, and CA Service Desk tickets that are created from CA Spectrum use your custom creation rules.

Note: If you restart Tomcat, the custom rules are applied automatically.

Examples: Create a Ticket Creation Rule Based on Alarm Attribute

The following examples show three ticket creation rules that are based on alarm attribute (alarm code). These examples demonstrate how to specify a problem type, a user ID, and both, respectively. For these examples, the SPECTRUM_MGT_PT is a problem type added to the SPECTRUM_POLICY Web Services Policy, and northeast_IT is the system name of a contact in CA Service Desk Manager.

```
<sd-ticket>
  <alarm-attribute>
    <attr-id>0x11f50</attr-id> <!-- attribute ID for alarm code -->
    <value>0x10701</value> <!-- alarm code attribute value -->
  </alarm-attribute>
  <sd-problem-type>SPECTRUM_MGT_PT</sd-problem-type>
</sd-ticket>
```

```
<sd-ticket>
  <alarm-attribute>
    <attr-id>0x11f50</attr-id> <!-- attribute ID for alarm code -->
    <value>0x119d3</value> <!-- alarm code attribute value -->
  </alarm-attribute>
  <sd-userid>northeast_IT</sd-userid>
</sd-ticket>
```

```
<sd-ticket>
  <alarm-attribute>
    <attr-id>0x11f50</attr-id> <!-- attribute ID for alarm code -->
    <value>0x10306</value> <!-- alarm code attribute value -->
  </alarm-attribute>
  <sd-problem-type>SPECTRUM_MGT_PT</sd-problem-type>
  <sd-userid>northeast_IT</sd-userid>
</sd-ticket>
```

Examples: Create a Ticket Creation Rule Based on Model Attribute

The following examples show three ticket creation rules that are based on model attribute (model handle). These examples demonstrate how to specify a problem type, a user ID, and both, respectively. For these examples, the SPECTRUM_MGT_PT is a problem type added to the SPECTRUM_POLICY Web Services Policy, and northeast_IT is the system name of a contact in CA Service Desk Manager.

```
<sd-ticket>
  <model-attribute>
    <attr-id>0x129fa</attr-id> <!-- attribute ID for model handle -->
    <value>0x1000d5</value> <!-- model handle attribute value -->
  </model-attribute>
  <sd-problem-type>SPECTRUM_MGT_PT</sd-problem-type>
</sd-ticket>
```

```
<sd-ticket>
  <model-attribute>
    <attr-id>0x129fa</attr-id> <!-- attribute ID for model handle -->
    <value>0x100012</value> <!-- model handle attribute value -->
  </model-attribute>
  <sd-userid>northeast_IT</sd-userid>
</sd-ticket>
```

```
<sd-ticket>
  <model-attribute>
    <attr-id>0x129fa</attr-id> <!-- attribute ID for model handle -->
    <value>0x100023</value> <!-- model handle attribute value -->
  </model-attribute>
  <sd-problem-type>SPECTRUM_MGT_PT</sd-problem-type>
  <sd-userid>northeast_IT</sd-userid>
</sd-ticket>
```

Examples: Create a Ticket Creation Rule Based on Model Association

The following examples show three ticket creation rules that are based on model association (models dynamically collected by a global collection named 'switch routers collection', models that are monitored by the service container 'northeast service container', or models connecting to another model named 'northeast firewall'). These examples demonstrate how to specify a problem type, a user ID, and both, respectively. For these examples, the SPECTRUM_MGT_PT is a problem type added to the SPECTRUM_POLICY Web Services Policy, and northeast_IT is the system name of a contact in CA Service Desk Manager.

```
<sd-ticket>
  <model-association>
    <relation>0x1003a</relation> <!-- the relation ID for dynamicGlobalCollects -->
    <left-model-name>switch routers collection</left-model-name> <!-- model name of
the lhs -->
  </model-association>
  <sd-problem-type>SPECTRUM_MGT_PT</sd-problem-type>
</sd-ticket>

<sd-ticket>
  <model-association>
    <relation>0x4500004</relation> <!-- the relation ID for SlmMonitors -->
    <left-model-name>northeast service container</left-model-name> <!-- model name
of the lhs -->
  </model-association>
  <sd-userid>northeast_IT</sd-userid>
</sd-ticket>

<sd-ticket>
  <model-association>
    <relation>0x10005</relation> <!-- the relation ID for Connects_to -->
    <right-model-name>northeast firewall</right-model-name> <!-- model name of the
rhs -->
  </model-association>
  <sd-problem-type>SPECTRUM_MGT_PT</sd-problem-type>
  <sd-userid>northeast_IT</sd-userid>
</sd-ticket>
```

About Duplicate Handling

CA Service Desk Manager provides the duplication handling for scenarios where multiple tickets are created with the same underlying cause within a specified amount of time. To take advantage of this feature, make the following modifications to both the CA Service Desk Manager server and the OneClick server.

The following actions serve as a checklist for enabling this feature:

- Configure the CA Service Desk Manager server to support CA Spectrum use of this feature. For more information, see [Configure CA Service Desk Duplicate Handling Feature](#) (see page 24).
 - Modify the OneClick server to disable automatic closing of tickets when the associated alarm is cleared. For more information, see [Disable Automatic Closing of Ticket](#) (see page 35).
 - Make sure that the error type specifies the appropriate duplicate handling action. For more information, see [Create a CA Service Desk Web Services Policy and Problem Type \(Error Type\) for CA Spectrum](#) (see page 17).
- Note:** If the Error Type has already been created, you can edit the Error Type directly.
- Include the Reported By value when manually creating tickets. See the description of the 'Specify Reported By Field' in [Configure Communication and Enable Integration on the CA Spectrum OneClick Server](#) (see page 25).

Disable Automatic Ticket Closure

To use the CA Service Desk Duplicate Handling feature, disable automatic closing of tickets when the associated alarm is cleared. Otherwise, when tickets are closed automatically, duplicate handling does not occur because the ticket is closed before a new ticket request is received.

Follow these steps:

1. Shut down your Tomcat server if it is running.
2. Open the following file in a text editor:

```
<$SPECROOT>/custom/svdesk/config/service-desk-config.xml
```

Note: This file is created after you have configured your OneClick server for integration with CA Service Desk Manager. If this file does not exist, open the following file instead:

```
<$SPECROOT>/tomcat/webapps/spectrum/WEB-INF/svdesk/config/service-desk-config.xml
```

3. Remove the following lines:

```
<handler-action>
  <action-tag>service-desk-clear</action-tag>

  <action-class>com.aprisma.spectrum.app.sd.handler.ServiceDeskClearAction</action-class>
</handler-action>
<alarm-handler-clear-action>
  <service-desk-clear />
</alarm-handler-clear-action>
```

4. Save and close the file.
5. Restart the Tomcat server.

Configure Ticket Status

When an alarm is cleared in CA Spectrum, the ticket status in CA Service Desk Manager is updated to "Closed" status by default. You can change the status of the ticket in a CA Spectrum configuration file.

CA Service Desk tickets are created when an alarm is raised in CA Spectrum, and when it is cleared, Service Desk tickets for alarms that are cleared are set to the status that is defined in the file 'service-desk-config.xml'. If nothing is defined in that configuration file, the default status, "Closed" (CL), is used.

Important! Be sure to verify the code of the status that you want to set. For example, RE is the Code for the status "Resolved"; CL is the code for the status "Closed". If you specify an incorrect code, the CA Service Desk tickets are not updated. They remain open, even after the corresponding alarm is cleared in CA Spectrum.

Follow these steps:

1. Log in to the OneClick server.
2. Open the following file in a text editor:

```
<$SPECROOT>/custom/svdsd/config/service-desk-config.xml
```

Note: This file is created after you have configured your OneClick server for integration with CA Service Desk Manager.

3. Perform a search for the "ticket-status" tag.
4. If "ticket-status" is not found, add the following tag:

```
<ticket-status>RE</ticket-status>
```

Note: RE is the Code for the Resolved status in CA Service Desk.

5. If the `<ticket-status />` tag is present, replace it with the following tag:
`<ticket-status>RE</ticket-status>`
6. Save the `service-desk-config.xml` file.
7. Navigate to the OneClick Administration pages.
8. Click the Service Desk Configuration link from the left panel of the Administration page.
 The Service Desk Configuration administration page opens.
9. Click Save.
 The changes to the XML can now take effect. When an alarm is cleared in CA Spectrum, the ticket status in CA Service Desk Manager is updated to "Resolved" status.

Note: You can instruct CA Spectrum to clear the alarm when you update the corresponding ticket status to "Resolved" in CA Service Desk Manager. For more information, see [Example: Using Custom Keywords for CA Service Desk Notifications](#) (see page 42).

Reset Ticket Status to Default Settings

If you have customized the settings that determine the ticket status of CA Service Desk tickets, you can revert these changes. To reset ticket status to the out-of-the-box setting, edit the same configuration file that you used to select a custom status.

1. Follow these steps:
2. Log in to the OneClick server.
3. Open the following file in a text editor:
`$SPECROOT/custom/svdsk/config/service-desk-config.xml`
4. Perform a search for the "ticket-status" tag.
5. Replace the complete tag (`<ticket-status>RE</ticket-status>`) with the following tag:
`<ticket-status />`.
6. Save the `service-desk-config.xml` file.
7. Navigate to the OneClick Administration pages.
8. Click the Service Desk Configuration link from the left panel of the Administration page.
 The Service Desk Configuration administration page opens.
9. Click Save.
 The changes to the XML can now take effect. Ticket settings are restored to their defaults.

Configure Ticket Summary

When a ticket is created in CA Service Desk Manager for an alarm in CA Spectrum, the Originating Event or Cause Code text in the Summary field of the ticket is populated automatically. You can customize the text that is used to populate the Summary field by modifying a CA Spectrum configuration file.

When an alarm is raised in CA Spectrum, a ticket is created in CA Service Desk Manager. The Summary field of the ticket is populated with the Originating Event text or Cause Code that is defined in the 'service-desk-config.xml' file.

Important! If nothing is configured for this parameter, or if an incorrect attribute is supplied, the Summary field is not updated. CA Service Desk Manager supplies the default Description text in the Summary field.

Follow these steps:

1. Log in to the OneClick server.

2. Open the following file in a text editor:

`$SPECROOT/custom/svdsd/config/service-desk-config.xml`

Note: This file is created after you have configured your OneClick server for integration with CA Service Desk Manager.

3. Perform a search for the "ticket-summary" tag.

4. If "ticket-summary" is not found, add *one* of the following tags:

■ Originating Event :

`<ticket-summary>0x1296e</ticket-summary>`

■ Cause Code :

`<ticket-summary>0x11f50</ticket-summary>`

Note: Only the Originating Event or Cause code text in the Summary field of the CA Service Desk ticket can be customized. The above identifiers include the corresponding required attribute IDs.

5. If "ticket-summary" is found, replace the existing tag with one of the tags that are supplied in the previous step.

6. Save the service-desk-config.xml file.

7. Navigate to the OneClick Administration pages.

8. Click the Service Desk Configuration link from the left panel of the Administration page.

The Service Desk Configuration administration page opens.

9. Click Save.

The changes to the XML can now take effect. The Summary field of each CA Service Desk ticket that is initiated by a CA Spectrum alert is populated with the Originating Event text or Cause Code that you specified.

Reset Ticket Summary to Default Settings

If you have customized the settings that determine the summary text that appears in CA Service Desk tickets, you can revert these changes. To reset ticket summary to the out-of-the-box setting, edit the same configuration file that you used to select a custom summary.

1. Follow these steps:
2. Log in to the OneClick server.
3. Open the following file in a text editor:
`$SPECROOT/custom/svdsdk/config/service-desk-config.xml`
4. Perform a search for the “ticket-summary” tag.
5. Replace the complete tag with the following tag:
`< ticket-summary />`
6. Save the service-desk-config.xml file.
7. Navigate to the OneClick Administration pages.
8. Click the Service Desk Configuration link from the left panel of the Administration page.
The Service Desk Configuration administration page opens.
9. Click Save.

The changes to the XML can now take effect. Ticket settings are restored to their defaults.

Examples

Example: Create CA Service Desk Tickets Automatically for a Single Alarm Type

This section describes a simple example of how to configure the integration to create tickets automatically.

The following figure shows that the CA Spectrum alarm type DEVICE HAS STOPPED RESPONDING TO POLLS (0x10009) has been added to the Selected Alarm Types list from the Available Alarm Types list and that this configuration change has been saved:

The screenshot shows a configuration window with two main sections. The top section, titled "Available Alarm Types", contains a list of alarm types: "CISCO BTS DEVICE HAS INVALID EMS OAMP ID (0x4d70001)", "DEVICE HAS REBOOTED (0x19d0016)", "NEW DEVICE HAS FAILED DUE TO ERROR WITH REBUILD (0x116555b)", "SCSI Device has Failed (0x1169092)", and "SCSI Device has been Replaced (0x1169095)". Below this list are "Add" and "Remove" buttons. To the right, there is a "Filter Text:" field containing "device has", and "Filter" and "Clear" buttons. The bottom section, titled "Selected Alarm Types", contains a single entry: "DEVICE HAS STOPPED RESPONDING TO POLLS (0x10009)". Below this section are "Test" and "Save" buttons. At the bottom of the window, a message states: "Successfully saved configuration to the service-desk-config.xml file."

In this example, CA Spectrum alarms of type DEVICE HAS STOPPED RESPONDING TO POLLS (0x10009) generate corresponding CA Service Desk tickets. The following figure shows an instance of a CA Spectrum alarm of type 0x1009. The Trouble Ticket ID column contains a link to the CA Service Desk ticket that was automatically created for this alarm.

The screenshot shows a table titled "Contents: Workgroup of type LAN" with tabs for "Alarms", "Topology", "List", "Events", and "Information". The "Alarms" tab is selected. The table has columns: "Severity", "Date/Time", "Network Address", "Type", "Alarm Title", "Landscape", and "Trouble Ticket ID". The first row shows a "Critical" alarm from "Sep 20, 2006..." of type "Windows Host" with the title "DEVICE HAS STOPPED RESPONDING TO POLLS". The "Trouble Ticket ID" column contains a link "Request 11746".

Severity	Date/Time	Network Address	Type	Alarm Title	Landscape	Trouble Ticket ID
Critical	Sep 20, 2006...		Windows Host	DEVICE HAS STOPPED RESPONDING TO POLLS		Request 11746

Click the Trouble Ticket ID link to open the web login page for your CA Service Desk Manager server in a browser.

After you log in to your CA Service Desk Manager server, the Service Desk Request Detail page for the OneClick ticket opens, as shown:

Logged in as: **ServiceDesk** ([Log Out](#))

[File](#) ▾ [View](#) ▾ [Activities](#) ▾ [Actions](#) ▾ [Search](#) ▾ [Reports](#) ▾ [Window](#) ▾ [Help](#) ▾

18548 Request Detail
[Edit](#)
[Create Change Order](#)
[Profile Browser](#)

Affected End User	Request Area	Status	Priority
spectrum		Open	None

[Detail](#)

Reported By	Assignee	Group	Asset
ServiceDesk	ServiceDesk		

Severity	Urgency	Impact	Active?
		None	YES

Change	Charge Back ID	Call Back Date/Time	Root Cause

[Summary Information](#)

Summary	Total Activity Time
DEVICE HAS STOPPED RESPONDING TO POLLS This ticket has be...	00:00:00

[Description](#)

DEVICE HAS STOPPED RESPONDING TO POLLS

This ticket has been created by OneClick as a result of the assertion of an alarm.
 Alarm ID: 455b72c2-1910-1000-0186-000874f00c29
 Alarm Creation Date: Wed Nov 15 15:04:18 EST 2006
 Landscape: techwin (0x1800000)
 Model Name: 01-PC
 Model IP Address:192.168.248.123
 Severity: Critical

DEVICE HAS STOPPED RESPONDING TO POLLS

SYMPTOMS:

Device has stopped responding to polls.

PROBABLE CAUSES:

- 1) Device Hardware Failure.
- 2) Cable between this and upstream device broken.
- 3) Power Failure.

Example: Using Custom Keywords for CA Service Desk Notifications

You can customize the keywords that CA Service Desk Manager uses for notifications of ticket actions. Custom keywords must be configured CA Service Desk Manager and in CA Spectrum. The following example explains how to configure both CA Service Desk Manager and CA Spectrum to use “Fixed” as the custom keyword for the ticket closed action.

Follow these steps:

1. From the CA Service Desk Manager server home page, select the Administration tab.
2. Expand the Notifications folder, and select Activity Notifications.
The Activity Notification List opens.
3. Select the Close activity.
The Close Activity Notification Detail dialog opens.
4. Click Edit.
5. Take the following actions:
 - a. Click the Notification Rules tab and then click the name of the notification rule that is being used by the transfer activity.
 - b. Click the message template that is used by the transfer activity, and click Edit.
6. In the Notification Message title field, change the assignment information from (for example):

```
Request @{call_req_id.ref_num} Closed  
to  
Request @{call_req_id.ref_num} Fixed
```

Fixed

Is the keyword that you want to use for the ticket closed action.

Note: Do not remove the information in the 'Description: @{call_req_id.description}' field. CA Spectrum uses this information to associate alarms in CA Spectrum with the CA Service Desk ticket. Without this information, alarms are not cleared in CA Spectrum when a CA Service Desk ticket is closed.

7. Click Save in the Close Update Activity Notification window.
8. Close the Close Activity Notification Detail window.

9. Log in to your CA Service Desk Manager server host computer and navigate to the `<Service_Desk_Installation_directory>/bin` directory.
10. Change the Close keyword in CA Spectrum using one of the following methods:
 - Run the `<Service_Desk_Installation_directory>/bin/OneClickIntegrationSetup(.exe)` configuration program and enter *Fixed* at the Close keyword prompt.
 - Manually edit the value for the Close keyword in the `<Service_Desk_Installation_directory>/bin/oc-integration.cfg` configuration file to reflect the *Fixed* keyword for the close action.

Important! If the keywords that are configured in the CA Spectrum integration for the Close and/or Transfer actions do not match the keywords set in the CA Service Desk Notification Message Title for those actions, closing or transferring CA Service Desk tickets that are associated with CA Spectrum alarms does not clear or assign (respectively) the alarm to a troubleshooter in CA Spectrum.

Chapter 3: Using NCM with CA Service Desk Manager

This section contains the following topics:

[Enable Support of NCM Configuration Changes](#) (see page 45)

[Add an NCM Approval Workflow Error Type to the SPECTRUM POLICY Web Services Policy](#) (see page 46)

Enable Support of NCM Configuration Changes

Instruct CA Service Desk Manager to approve the configuration changes initiated by NCM.

Note: Configure NCM to send the configuration change requests through CA Service Desk Manager. For more information, see the *Network Configuration Manager User Guide*.

Follow these steps:

1. From the CA Service Desk Manager server home page, click the Administration tab.
2. Expand the Notifications folder, and then click Activity Notifications.

The Activity Notification List opens.

3. Search for and click the activity notification that you want to configure.

Note: You can verify the status that an activity notification sends to CA Spectrum by looking at the description of activity notification column in the Activity Notification List.

In many instances, the Update Status activity notification must be configured, unless a more specific activity notification is available for the selected status.

The Activity Notification Detail dialog for the selected notification type opens.

4. Verify that the Object Type is set to the proper value. By default, this field is set to Requests/Incidents/Problems.
5. Click Edit.
6. Click the Notification Rules tab, and then click the name of the notification rule that the activity notification is using.
7. Click the message template that the activity notification is using, and then click Edit.
8. Select Auto Notification.

9. Edit the Notification Message body to say the following:

Ticket Status: @{change_id.status.sym}

Note: The "change_id" portion is dependent on the type of ticket that you are using. Be sure to use the appropriate variable. For example, requests use "call_req_id" instead of "change_id".

10. Click the Contacts tab and then click Update Contacts.

The Contact Search window opens.

11. Click Search.

The Notification Recipients Update dialog opens.

12. Add the *spectrum* contact from the Contacts list to the Notification Recipients list, and click OK.

The Activity Notification dialog opens.

13. Click Save and close the Activity Notification dialog.

The activity notification is enabled.

Add an NCM Approval Workflow Error Type to the SPECTRUM_POLICY Web Services Policy

CA Spectrum invokes CA Service Desk Manager to create a ticket. CA Service Desk Manager determines the type of ticket to create and the default settings to use for the ticket. However, you must create a problem type (error type) to associate with the SPECTRUM_POLICY web services policy. You can add any problem type (error type) to the SPECTRUM_POLICY web services policy.

Add an NCM approval workflow problem type (error type) to the SPECTRUM_POLICY web services policy. CA Spectrum can then use this problem type (error type) when creating approval workflow requests.

Note: For more information about configuring CA Spectrum, see the *Network Configuration Manager User Guide*.

Follow these steps:

1. [Create the SPECTRUM_POLICY web services policy](#) (see page 17).
2. From the CA Service Desk Manager server home page, click the Administration tab.
3. Expand the Web Services Policy folder and then click Policies.
The Web Services Access Policy list opens.
4. Search for and select SPECTRUM_POLICY.
The Web Services Access Policy Detail dialog opens.

5. Click Add A Problem Type, and click Add an Error Type.

The Create New Web Services Error Type dialog opens.

6. Take the following steps:

- Enter NCM Approval WF in the Symbol field.
- Enter NCM_APP_WF in the Code field.
- Select the Default checkbox.
- Select Change Order from the Ticket Template Type drop-down.
- Enter NCM_ChangeOrder_Template in the Ticket Template Name field.

7. Click Save and close the window.

The NCM_APP_WF error type is added to the SPECTRUM_POLICY web services policy.

Chapter 4: Assigning Assets in CA Service Desk Manager

This section describes asset assignment in CA Service Desk Manager. If CA Service Desk Manager is configured to run in ITIL mode, substitute the word “asset” with “configuration item” or “CI” throughout this guide.

This section contains the following topics:

[About Asset Assignment](#) (see page 49)

[How Assets are Added to CA Service Desk Tickets](#) (see page 50)

[How Asset Details are Created in CA Service Desk Manager](#) (see page 52)

[Asset Reporting Customization](#) (see page 53)

About Asset Assignment

You can configure the CA Spectrum and CA Service Desk Manager integration to assign an asset to a ticket submitted from OneClick. Automatically assigning assets to a service ticket helps CA Service Desk Manager users to work efficiently. Through a single click in CA Service Desk Manager, these users can view details about the device responsible for submitting the ticket, such as device attributes and a list of other tickets that are submitted for the same device. Assign an asset to the ticket so that the CA Service Desk Manager user can see that multiple trouble tickets are open for the same device.

When this option is enabled, only CA Spectrum device model types (0x1004b) or a port of a CA Spectrum device model type assigns assets to trouble tickets. Assets are assigned to a CA Spectrum device model type only when it, or one of its ports, submits a trouble ticket. CA Spectrum does not attempt to find or create an asset for a CA Spectrum device model before submitting a trouble ticket.

Note: You can still submit trouble tickets for other CA Spectrum model types, but no asset is assigned to them.

When OneClick submits a trouble ticket with an assigned asset, a CA Service Desk Manager user sees the Asset field that is populated with a link in the information about the trouble ticket, as shown:

91640 Request Detail				Edit	Create Change Order	Profile Browser
Affected End User	Request Area	Status	Priority			
spectrum		Open	None			
▲ Detail						
Reported By	Assignee	Group	Asset			
ServiceDesk	ServiceDesk		cisco2621.7.com			
Severity	Urgency	Impact	Active?			
		None	YES			
Change	Charge Back ID	Call Back Date/Time	Root Cause			
▲ Summary Information						
Summary			Total Activity Time			
LIVE HEALTH: TIME OVER THRESHOLD This ticket has been cre...			00:00:00			
Description						

When you click the linked device in the Asset field, details about the asset appear.

How Assets are Added to CA Service Desk Tickets

Assign an asset to a trouble ticket, which the CA Spectrum submits. Once the asset assignment is enabled, device details are accessible from the CA Service Desk trouble tickets that are submitted by CA Spectrum. The details that are provided after creating a trouble ticket vary, depending on the information available in CA Spectrum. Determine how the assets are added to trouble tickets to understand what to expect in the CA Service Desk tickets. If necessary, troubleshoot communication issues between CA Service Desk Manager and CA Spectrum.

Assets are added to CA Service Desk tickets according to the following workflow:

1. An alarm that is generated by a device model submits a trouble ticket to CA Service Desk Manager.
2. The ServiceDesk_Asset_ID attribute of the CA Spectrum device model is read.

3. If the ServiceDesk_Asset_ID attribute is not set for the CA Spectrum device model, a web service call to CA Service Desk is made to search for an asset that matches the device model.
 - If an asset is found, its identifier is returned to CA Spectrum and is written to the ServiceDesk_Asset_ID attribute of the device model.
 - If no match is found in CA Service Desk Manager, an asset that represents the CA Spectrum device model is created in CA Service Desk Manager. The identifier of the asset is returned to CA Spectrum and written to the ServiceDesk_Asset_ID attribute of the device model. As a result, future alarms on the model do not require additional web service calls to locate the asset.
4. The trouble ticket is created in CA Service Desk Manager using the asset identifier. This identifier is used in the future when creating trouble tickets for the same device.

More information:

[Configure Communication and Enable Integration on the CA Spectrum OneClick Server](#) (see page 25)

[How Asset Details are Created in CA Service Desk Manager](#) (see page 52)

[CA Service Desk Tickets Not Created After Switching Servers](#) (see page 70)

Assign Assets in CA Service Desk Tickets

Assign the assets in the CA Service Desk tickets that OneClick creates. Once the asset assignment is enabled, device details are accessible from the CA Service Desk trouble tickets that CA Spectrum submits. Automatically assigning assets to a service ticket helps CA Service Desk Manager users perform efficient troubleshooting.

Follow these steps:

1. Navigate to the OneClick Administration pages:
`http://OneClick Web server/spectrum/admin/index.jsp`
2. Click the Service Desk Configuration link from the left panel of the Administration pages.
The Service Desk Configuration administration page opens.
3. Select the Enabled option in the Assign Assets/Configuration Items field.
4. Click Save.

The following message appears:

Successfully saved configuration to the service-desk-config.xml file.

Assets are assigned with the CA Service Desk tickets that are submitted from CA Spectrum.

How Asset Details are Created in CA Service Desk Manager

Once the asset assignment is enabled, device details are accessible from the CA Service Desk trouble tickets submitted by CA Spectrum. The details provided upon creating a trouble ticket vary, depending on the information available in CA Spectrum. Knowing how asset information is gathered before adding them to trouble tickets can help you understand what to expect in the CA Service Desk tickets.

The process for creating asset details in CA Service Desk Manager can be customized. However, the following process explains the default method for locating and creating asset details in CA Service Desk Manager:

1. To locate the device details, CA Spectrum searches for the Model_Name of the device model, MAC_Address, and sysName attributes. It matches them to the name of the CA Service Desk asset, mac_address, and system_name attributes, respectively.

Note: If a device model attribute that is defined in the search has no value, it is excluded from the asset query.

2. To create an asset in CA Service Desk Manager for a CA Spectrum device model, CA Spectrum and CA Service Desk Manager perform the following steps:
 - CA Spectrum writes the Model_Name of the device model, Network_Address, MAC_Address, Serial_Number, and sysName attributes to the name of the CA Service Desk asset, alarm_id, mac_address, serial_number, and system_name fields, respectively.
 - CA Service Desk Manager uses "Discovered Hardware" for the asset class and "Device asset" for the asset description.

Note: If the model attribute defined in a mapping has no value, the corresponding asset field is assigned an empty (blank) value.

More information:

[How Assets are Added to CA Service Desk Tickets](#) (see page 50)

[Asset Reporting Customization](#) (see page 53)

Clear the Asset ID from All CA Spectrum Models

Clear out the ServiceDesk_Asset_ID attribute (0x12db9) for each device model. You can then search for and recreate assets in CA Service Desk Manager. For example, if you switch CA Service Desk Manager databases, these values must be repopulated to enable the integration with CA Spectrum. Clear this attribute by using the Attribute Editor in CA Spectrum or by using the CA Spectrum Command Line Interface (CLI). Using the CLI lets you create scripts to automate this procedure.

Follow these steps:

1. Connect to the CLI.
2. Run the following command on each device model that has the attribute set:

```
update mh=<device model handle> attr=0x12db9,val=
```

The ServiceDesk_Asset_ID attribute is cleared.

Note: For more information about the CLI, see the *Command Line Interface User Guide*.

More information:

[CA Service Desk Tickets Not Created After Switching Servers](#) (see page 70)

Asset Reporting Customization

When integrating CA Service Desk Manager and CA Spectrum, you can modify the behavior of finding and creating the CA Service Desk Manager assets. You can modify this behavior when creating a trouble ticket from OneClick. This customization is done by changing the attribute mapping between CA Spectrum models and CA Service Desk Manager assets.

Customizing the asset reporting lets you prioritize the information that is used to identify a device. You can determine which information to record within CA Service Desk Manager. Customization can enhance the efficiency and reporting capabilities of individual CA Service Desk Manager users.

More information:

[How Asset Details are Created in CA Service Desk Manager](#) (see page 52)

How to Customize Asset Assignment

By editing the asset mapping file, you can customize how CA Service Desk Manager assets from OneClick are found and created. Customization can help CA Service Desk Manager users to troubleshoot issues efficiently.

To change the attribute mapping between CA Spectrum models and CA Service Desk Manager assets, perform the following tasks:

1. Copy the service-desk-asset-mapping.xml and service-desk-asset-mapping.xsd files from `$SPECROOT/tomcat/webapps/spectrum/WEB-INF/svdsk/config` to `$SPECROOT/custom/svdsk/WEB-INF/svdsk/config`.
2. [Modify the copy of the service-desk-asset-mapping.xml file](#) (see page 54), located in `$SPECROOT/custom/svdsk/WEB-INF/svdsk/config`.

The XML file includes <asset> elements. An <asset> element defines the asset mapping for a CA Spectrum model type that is defined in the mtype_h attribute of the element. Each <asset> element has a Default child element and multiple <constant> and <mapping> children.

3. [Apply your mapping changes](#) (see page 60).

Edit the Asset Mapping XML File

To change the attribute mapping between CA Spectrum models and CA Service Desk Manager assets, edit the service-desk-asset-mapping.xml file. Editing the file changes how asset information is found and which information about each asset is provided to CA Service Desk Manager.

Follow these steps:

1. Open the service-desk-asset-mapping.xml file in a text editor.
2. Locate the mtype_h attribute for the asset information you want to modify.

Note: Only CA Spectrum device model types assign assets to trouble tickets, and the mtype_h attribute for the device model type is "0x1004b."

3. Create an asset query by modifying the Default parameters.
4. Define the asset mapping for the asset creation. Modify the <constant> and <mapping> attributes of the selected asset.

Note: When creating an asset, the name and class attributes are always required. Additionally, specify any other asset attributes that are stored in the "nr Object" in CA Service Desk Manager. For a complete list of attributes that are defined in the "nr Object," see the *CA Service Desk Manager Technical Reference Guide*.

The information to be recorded in the CA Service Desk trouble ticket is defined.

5. Save the file.

Your asset mapping file edits are complete.

Note: Your changes do not go into effect immediately. Apply the changes in CA Spectrum after your modifications are complete.

More information:

[Customize Asset Search and Assignment](#) (see page 55)

[Apply Asset Mapping Changes](#) (see page 60)

[How to Customize Asset Assignment](#) (see page 54)

Customize Asset Search and Assignment

The service-desk-asset-mapping.xml file is used to customize how asset attributes are mapped between CA Spectrum models and CA Service Desk assets. You can troubleshoot issues with the help of this customization.

The XML file is located in the `$SPECROOT/tomcat/webapps/spectrum/WEB-INF/svdsk/config` folder of any OneClick server. This file includes `<asset>` elements. Each `<asset>` element has a `<search>` child element and multiple `<constant>` and `<mapping>` children. The following sections describe the XML syntax, Elements, and Notes that are required to customize asset search and assignment.

XML Syntax

The XML file has the following basic syntax:

```
- <asset mtype_h="asset_ID">
  - <search>
    - <and>
      - <equals>
        <sd-attribute>SD_name</sd-attribute>
        <model-attribute>SPEC_name_attribute</model-attribute>
      </equals>
      - <equals>
        <sd-attribute>SD_name2</sd-attribute>
        <model-attribute>SPEC_name_attribute2</model-attribute>
      </equals>
    </and>
  </search>
  - <constant>
    <sd-attribute>constant</sd-attribute>
    <value>constant_value</value>
  </constant>
```

```
- <mapping>
  <sd-attribute>mapping_name</sd-attribute>
  <model-attribute>mapping_name_attribute</model-attribute>
</mapping>
</asset>
```

Elements

The XML file syntax includes the following elements:

<asset mtype_h="asset_ID">

Defines the asset mapping for a CA Spectrum model type that is defined in the mtype_h attribute (*asset_ID*) of an element. The only supported <asset> element is for the device model type, which is "0x1004b." This element includes the following child elements:

- <search>
- <constant>
- <mapping>

Example: <asset mtype_h="0x1004b">

<search>

Defines the query to locate an asset in CA Service Desk for the CA Spectrum model. In this element you can define and, or, and equals logic to your asset query by embedding the <and>, <or>, and <equals> child elements respectively. The Default element can contain multiple child elements. Their hierarchy determines the order of operations and placing parenthesis around logical elements when required.

<and>

Indicates that this attribute is required when searching for an asset match between CA Service Desk Manager and CA Spectrum. The <and> element appears between the child elements of the Default element.

<or>

Indicates that this attribute is optional when searching for an asset match between CA Service Desk Manager and CA Spectrum. The <or> element appears between the child elements of the Default element.

<equals>

Defines the CA Service Desk Manager and CA Spectrum attribute mapping for your search. Each <equals> relationship that you define must include the following child elements:

- <sd-attribute>*SD_name*</sd-attribute>—Defines that asset attribute (*SD_name*) for which the query searches. You can use any asset attribute that is defined in the "nr Object" in CA Service Desk Manager for your asset query.
- <model-attribute>*SPEC_name_attribute*</model-attribute>—Defines the model attribute (*SPEC_name_attribute*) text to match when searching.

Note: If a model attribute is not set, the parameter is not used in the query. You can verify the complete list of *nr Object* attributes that is available. For more information, see the *CA Service Desk Manager Technical Reference Guide*.

<constant>

Assigns a specified value (*constant_value*) to the asset attribute (*constant*) when creating an asset, regardless of the attribute values of the model. You can define multiple <constant> rules for the asset creation. Each <constant> element that you define must include the following child elements:

- <sd-attribute>*constant*</sd-attribute>
- <value>*constant_value*</value>

<mapping>

Assigns the value of the model specified attribute (*mapping_name_attribute*) to the specified asset attribute (*mapping_name*) when creating an asset. You can define multiple <mapping> rules for asset creation, but they must appear after all <constant> rules. Each <mapping> element includes the following child elements:

- <sd-attribute>*mapping_name*</sd-attribute>
- <model-attribute>*mapping_name_attribute*</model-attribute>

Notes

When creating an asset, the name and class attributes are always required. In addition, you can specify any other asset attributes that are stored in the "nr Object" in CA Service Desk Manager. For example, you can include the following CA Service Desk attributes in the <sd-attribute> element:

class

(Required) Determines the asset class in CA Service Desk Manager. The asset class must exist before creating an asset.

name

(Required) Defines the asset name.

description

Sets the Notes section text.

alarm_id

Defines the IP address of the asset.

mac_address

Defines the MAC address of the asset.

serial_number

Defines the serial number of the asset.

system_name

Defines the hostname of the asset.

OneClick does not create objects in CA Service Desk tables besides the nr Object. Therefore, certain attributes that are references to other objects (such as the vendor) must be created manually in CA Service Desk Manager. The object identifier is then used to assign each attribute an asset mapping. For a complete list of nr Object attributes, see the *CA Service Desk Manager Technical Reference Guide*.

Note: You can use CA Spectrum search criteria to identify the existing asset. If a search fails to find the asset with the given search criteria, it results in a "No match found" message. A new asset ID is created based on the specified parameters. However, if you change the properties, such as host name, serial number, MAC address, DNS name, or asset label, CA Spectrum does not create a new asset ID. For more information, see [Asset Matching Logic](#) and [About Asset Assignment](#) (see page 49).

Example: Create a Custom Asset Query

This example shows how to locate an asset in CA Service Desk Manager that has a name attribute matching the model name, or an alarm_id attribute matching the model network address (IP address) and a mac_address attribute that matches the model MAC address. The logic here can be represented in the following logical statement:

```
(name='<MODEL_NAME>') OR  
(  
  (alarm_id='<NETWORK_ADDRESS>') AND  
  (mac_address='<MAC_ADDRESS>')  
)
```

Given that the <MODEL_NAME>, <NETWORK_ADDRESS>, and <MAC_ADDRESS> model attributes are 0x1006e, 0x1027f, and 0x110df respectively, modify the <search> element for the asset as follows:

```
<search>
  <or>
    <equals>
      <sd-attribute>name</sd-attribute>
      <model-attribute>0x1006e</model-attribute>
    </equals>
    <and>
      <equals>
        <sd-attribute>alarm_id</sd-attribute>
        <model-attribute>0x1027f</model-attribute>
      </equals>
      <equals>
        <sd-attribute>mac_address</sd-attribute>
        <model-attribute>0x110df</model-attribute>
      </equals>
    </and>
  </or>
</search>
```

Example: Create a Custom Attribute Mapping for Asset Creation

In this example, you want all device model types in CA Spectrum to assign the model attributes MODEL_NAME and MAC_ADDRESS to asset attribute names and a mac_address, respectively. You also want to assign each asset description to read "Device modeled by SPECTRUM OneClick." And you want the class to be "SPECTRUM Device" (previously created manually in CA Service Desk Manager and defined as cr:9).

The following code shows how to configure these parameters by defining two <constant> and two <mapping> elements to the device model asset mapping. Assume that the model attributes for MODEL_NAME and MAC_ADDRESS are 0x1006e and 0x110df, respectively:

```
<asset mtype_h="0x1004b">
  ...
  <constant>
    <sd-attribute>description</sd-attribute>
    <value>Device modeled by SPECTRUM OneClick</value>
  </constant>
  <constant>
    <sd-attribute>class</sd-attribute>
    <value>cr:9</value>
  </constant>
```

```
<mapping>
  <sd-attribute>name</sd-attribute>
  <model-attribute>0x1006e</model-attribute>
</mapping>
<mapping>
  <sd-attribute>mac_address</sd-attribute>
  <model-attribute>0x110df</model-attribute>
</mapping>
</asset>
```

More information:

[Edit the Asset Mapping XML File](#) (see page 54)

Apply Asset Mapping Changes

When you modify the asset mapping file, your changes do not immediately take effect when you save the file. Apply the changes in CA Spectrum after your file modifications are complete. Restarting the OneClick clients is not required.

Follow these steps:

1. Navigate to the OneClick Administration pages:
`http://OneClick Web server/spectrum/admin/index.jsp`
2. Click the Service Desk Configuration link from the left panel of the Administration pages.
The Service Desk Configuration administration page opens.
3. Click the Reload Asset/CI Mapping button.
4. Click Save.

The following message appears:

Successfully saved configuration to the service-desk-config.xml file.

Your asset mapping changes are now applied.

More information:

[How to Customize Asset Assignment](#) (see page 54)

[Edit the Asset Mapping XML File](#) (see page 54)

Chapter 5: Using the Integration

This section contains the following topics:

- [Submit CA Service Desk Tickets from the OneClick Console Manually](#) (see page 61)
- [View CA Service Desk Tickets from the OneClick Console](#) (see page 62)

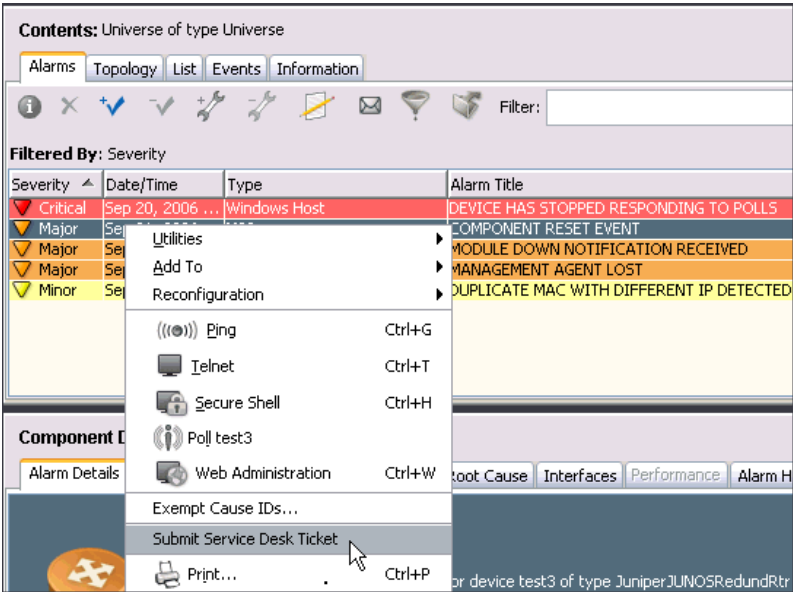
Submit CA Service Desk Tickets from the OneClick Console Manually

You can manually create a CA Service Desk ticket from OneClick.

Follow these steps:

1. In the OneClick Console, right-click an alarm that you want to submit to CA Service Desk.
2. Select Submit Service Desk Ticket, as shown in the following figure. The ticket is sent to CA Service Desk Manager.

The alarm is updated with the Service Desk Trouble Ticket ID. The ID provides a link from the CA Spectrum alarm back to the ticket in CA Service Desk Manager.



Note: After an alarm is submitted to CA Service Desk Manager, right-click the alarm. Select “Service Desk Ticket Information” to view the ticket details.

View CA Service Desk Tickets from the OneClick Console

After a CA Service Desk ticket is created for a CA Spectrum alarm, you can open the ticket in CA Service Desk Manager from within OneClick. Alarms that are associated with CA Service Desk Manager trouble tickets contain a trouble ticket ID link. Once an alarm has been submitted to CA Service Desk Manager, you can view detailed information about the ticket in OneClick.

Follow these steps:

1. In the OneClick Console, right-click an alarm that has an associated CA Service Desk ticket.
2. Select Service Desk Ticket Information. The Service Desk Request Detail window opens for that ticket ID.

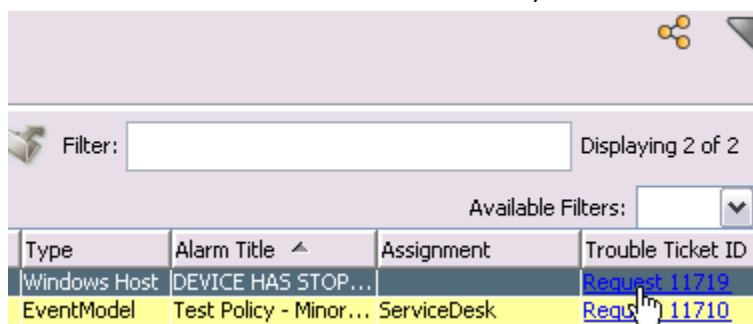
You can also view CA Service Desk tickets by adding the Trouble Ticket ID column to the OneClick Alarms tab view.

Follow these steps:

1. In the OneClick Console, locate an alarm with an existing CA Service Desk ticket.
2. Configure the OneClick client to display the Trouble Ticket ID column in the Alarms tab view as follows:
 - a. Right-click the top of any column in the Alarms tab to launch the Table Preferences dialog.
 - b. In the Columns tab of the dialog, select Trouble Ticket ID.
 - c. Click OK.

Note: For more information about customizing columns, see the *Operator Guide*.

3. Click the Trouble Ticket ID of the alarm in which you are interested.



Type	Alarm Title	Assignment	Trouble Ticket ID
Windows Host	DEVICE HAS STOP...		Request 11719
EventModel	Test Policy - Minor...	ServiceDesk	Request 11710

The Service Desk Request Detail window opens for that ticket ID.

Chapter 6: Using SANM with CA Service Desk Manager

This section provides instructions for configuring and using Alarm Notification Manager (SANM) with the CA Spectrum and CA Service Desk Manager integration.

Note: This section assumes basic knowledge of the use of the AlarmNotifier and SANM functionality. For more information about SANM, see the *Alarm Notification Manager User Guide*.

This section contains the following topics:

[CA Service Desk Manager and SANM Overview](#) (see page 63)

[Best Practices for Automatic Trouble Ticket Creation Using OneClick or SANM](#) (see page 64)

[Configuring the AlarmNotifier Integration Component for CA Service Desk Manager](#) (see page 65)

CA Service Desk Manager and SANM Overview

The Alarm Notification Manager (SANM) is a CA Spectrum component that enhances the functionality of CA Spectrum alarm-processing applications. You can take advantage of the SANM alarm filtering capabilities to configure the alarms that create CA Service Desk Manager trouble tickets. To enable this feature, deploy special Alarm Notifier scripts that create, clear, and update CA Service Desk Manager tickets. The following scripts let you customize alarm parameters:

- ServiceDeskSetScript
- ServiceDeskClearScript
- ServiceDeskUpdateScript

Best Practices for Automatic Trouble Ticket Creation Using OneClick or SANM

When deploying the CA Service Desk Manager integration, an important best practice is to configure alarm creation using only *one* of the following methods:

- Use the Selected Alarm Types filter in OneClick. To configure the Selected Alarm Types filter on the Service Desk Configuration Administration page to create alarms, take the following steps:
 - a. Verify that the Alarm Notifier integration component for CA Service Desk Manager (SDNotifier) is not enabled.
 - b. Follow the [instructions to select alarm types for which to create alarms](#) (see page 28).
- Configure the CA Service Desk Manager integration Alarm Notifier component and SANM to generate alarms. Take the following steps:
 - a. Verify that the Selected Alarm Types filter of the Service Desk Configuration Administration page is set to NONE.
 - b. Configure the SANM CA Service Desk integration component to generate CA Service Desk trouble tickets by completing these tasks:
 - a. [Configure the Alarm Notifier Integration component for CA Service Desk Manager](#) (see page 65)
 - b. [Configure SANM to create CA Service Desk tickets](#) (see page 66)

Important! When using SANM to generate trouble tickets, first set the Selected Alarm Types parameter on the Service Desk Configuration Administration page to NONE. Be sure to save the change.

If the CA Spectrum and CA Service Desk Manager integration is configured to generate alarms using both of these methods, the integration can create unwanted, redundant trouble tickets.

Configuring the AlarmNotifier Integration Component for CA Service Desk Manager

The CA Spectrum and CA Service Desk Manager integration includes the Alarm Notification Manager support files that are required to configure the SANM functionality. These files are saved in the <\$SPECROOT>/Notifier/ and <\$SPECROOT>/Notifier/sd_notifier/ directories.

Follow these steps:

1. Copy the <\$SPECROOT>/Notifier/AlarmNotifier.exe file to the <\$SPECROOT>/Notifier/sd_notifier/ directory, renaming the file as <\$SPECROOT>/Notifier/sd_notifier/SDNotifier.exe.
Note: The executable files that are referenced in this procedure (for example, SDNotifier) do not have an extension on Linux systems.
2. Copy the <\$SPECROOT>/Notifier/.alarmrc file to the <\$SPECROOT>/Notifier/sd_notifier/directory as .alarmrc.
3. In the <\$SPECROOT>/Notifier/sd_notifier/.alarmrc file, modify the Set script, Clear script, and Update script entries to point to the CA Service Desk-specific scripts found in <\$SPECROOT>/Notifier/sd_notifier. The actual scripts are named ServiceDeskSetScript, ServiceDeskClearScript, and ServiceDeskUpdateScript.
Note: Use caution and look for relative pathnames to these scripts. Verify that the pathnames point to the correct directory.
4. In the <\$SPECROOT>/Notifier/sd_notifier/.alarmrc file, change the application name entry to 'SDNotifier'.
5. Run <\$SPECROOT>/Notifier/sd_notifier/ServiceDeskIntegrationSetup.exe.
6. Run SDNotifier.exe.
7. Launch the SANM Policy manager.
8. Create a policy that uses your preferred filters. For more information, see the *Alarm Notification Manager User Guide*.
9. Create an application named "SDNotifier", and apply the policy to your application.

Configure SANM to Create CA Service Desk Tickets

A few additional steps are required to support the SANM functionality in the CA Spectrum and CA Service Desk Manager integration. Configure SANM to create tickets in CA Service Desk Manager. You can add and modify alarm policies and filters in OneClick.

Follow these steps:

1. Start an instance of AlarmNotifier and verify that it is using the ServiceDeskSetScript.
2. Apply a filter policy to your AlarmNotifier instance.

Note: For information about applying a filter policy, see the *Alarm Notification Manager (SANM) User Guide*.

Whenever an alarm matches your filter, a Service Desk ticket is created.

Provide CA Service Desk Ticket Request Number in SDNotifier Output

You can configure the CA Service Desk Manager integration to provide the CA Service Desk ticket request number in the SDNotifier output. Edit the .alarmrc file and the ServiceDeskUpdateScript to include additional instructions.

Follow these steps:

1. Navigate to the sd_notifier directory.
2. Edit the .alarmrc file to add the following new lines:

EXTRA_ATTRS_AS_ENVVARS=0x12022
UPDATE_ATTRS=0x12022
3. Add the following lines to the ServiceDeskUpdateScript:

On Windows:

```
ServiceDesk_Request=$SANM_0X12022  
echo "ServiceDesk_Request:  
echo $SANM_0X12022 | cut -f3 -d'>'
```

On Solaris and Linux:

```
ServiceDesk_Request=$SANM_0x12022  
echo "ServiceDesk_Request:  
echo $SANM_0x12022 | cut -f3 -d'>'
```

Example: CA Service Desk Ticket Request Number in SDNotifier Output

The following is a sample of successful output:

Alarm Notification from SPECTRUM

Alarm UPDATED:

Date: 11/10/2006
Time: 11:24:16
DeviceType: 6G306-06
Mtype: 6G3xx
ModelName: 1.2.4.5
AlarmID: 16600
ServiceDesk_Request:
Request 283</a
Severity: MINOR
ProbableCauseID: 1030a
RepairPerson:
AlarmStatus:
SpectroSERVER: ratchet.ca.com
Landscape: 0x1e00000
ModelHandle: 0x1e0004d
ModelTypeHandle: 0x3d20001
IPAddress: 1.2.4.5
SecurityString:
AlarmState: NEW
Acknowledged: FALSE
UserClearable: TRUE
Location: 6C107
AlarmAge: 0
NotificationData:

ProbableCause: No Associated Text

EventMessage: No Associated Event Message

Chapter 7: Troubleshooting the Integration

This section contains the following topics:

[Troubleshoot the Ticket Creation Rules](#) (see page 69)

[Troubleshooting Redundant Trouble Ticket Issues](#) (see page 70)

[CA Service Desk Tickets Not Created After Switching Servers](#) (see page 70)

Troubleshoot the Ticket Creation Rules

Sometimes CA Service Desk tickets generated by CA Spectrum assign the problem type and affected end user, or both. Tools in CA Spectrum can help you identify problems with ticket creation and correct them.

Ticket rules must be loaded through the CA Service Desk Integration page or by a Tomcat restart. Then the object that manages the ticket rules displays the actual rules that are loaded in memory in the proper order.

Follow these steps:

1. Navigate to the OneClick Administration Debugging Page.
2. Select Context Factory as the option on the left menu.
3. Select **com.aprisma.sd.ServiceDeskTicketConfig**

You can also see how the rules are analyzed and examine the actual web service call that is made to CA Service Desk Manager when a ticket is created. Set the CA Service Desk Integration debugging level to MAX. This debugging level lets you see whether a rule with a higher priority is being unexpectedly applied to your ticket. You can also determine whether the actual web service call results in the expected problem type and affected end-user values.

Troubleshooting Redundant Trouble Ticket Issues

Symptom:

We are seeing two CA Service Desk trouble tickets that are generated for each alarm in OneClick.

Solution:

Duplicate tickets indicate a misconfiguration of the CA Spectrum and CA Service Desk Manager integration. You probably configured the alarm generation using both the OneClick Selected Alarm Types filter and a SANM policy.

If both OneClick and SANM are configured to generate alarms, one of the trouble tickets has a ticket number that matches the Trouble Ticket ID attribute of the associated alarm in CA Spectrum. The ticket number of the redundant trouble ticket does not match the ticket number of the Trouble Ticket ID attribute of any alarm in CA Spectrum.

Even though the redundant trouble ticket does not appear to be associated with a particular alarm, closing it clears the alarm that created it. For the steps to ensure that duplicate tickets are not created by SANM and OneClick, see [Best Practices for Automatic Trouble Ticket Creation](#) (see page 64).

CA Service Desk Tickets Not Created After Switching Servers

Symptom:

I recently switched my CA Spectrum and CA Service Desk Manager integration to use a new CA Service Desk Manager server. I restarted Tomcat, but now CA Spectrum is unable to create tickets in CA Service Desk Manager. The error in my tomcat log is as follows:

```
Oct 15, 2007 1:24:24 PM (AlarmNotifier) (SDIntegration) - SDAlarmHandler -
received alarm SET
Oct 15, 2007 1:24:24 PM (AlarmNotifier) (SDIntegration) - SDAlarmHandler -
attempting to create ticket for alarm 4713a247-0167-1000-0183-0080102af61e
Oct 15, 2007 1:24:24 PM (AlarmNotifier) (SDIntegration) - SDSetAction -
gathering info to create ticket for alarm 4713a247-0167-1000-0183-0080102af61e
Oct 15, 2007 1:24:24 PM (AlarmNotifier) (SDIntegration) - ServiceDesk_Asset_ID
attribute found in CA Spectrum: nr:2929BAB6C548A34FA64FB06A5811A414
Oct 15, 2007 1:24:31 PM - Error occurred while attempting to create a ticket in
Service Desk. Internal err with update_lrel with handle
nr:2929BAB6C548A34FA64FB06A5811A414: NOT FOUND
```

When I try to submit an alarm manually, a "creation failed" message appears. Why can I not create a CA Service Desk ticket from CA Spectrum?

Solution:

If you enable Assign Assets in OneClick, and then switch to a new CA Service Desk Manager server, verify that the new server uses the same database as the old server. If you switch to a server that uses a different database, CA Service Desk Manager cannot create the ticket. The reason is that the CA Spectrum model in the original database is aware of the assets that were created for it in CA Service Desk Manager. The new database does not have information about that asset, causing an error when CA Service Desk Manager attempts to assign the asset from the CA Spectrum alarm.

To continue assigning assets after you switch to a new CA Service Desk Manager database, take one of the following actions:

- Configure the new CA Service Desk Manager server to use the original database.
- Manually clear the ServiceDesk_Asset_ID fields of all the CA Spectrum models.

More information:

[Configure Communication and Enable Integration on the CA Spectrum OneClick Server](#) (see page 25)

[How Assets are Added to CA Service Desk Tickets](#) (see page 50)

[Clear the Asset ID from All CA Spectrum Models](#) (see page 53)

Glossary

AlarmNotifier

AlarmNotifier is a SpectroSERVER-client application that installs with core CA Spectrum components. The AlarmNotifier application connects to a single SpectroSERVER and invokes scripts that provide notifications about CA Spectrum alarm status.

distributed SpectroSERVER (DSS) environment

A *distributed SpectroSERVER (DSS) environment* consists of more than one SpectroSERVER. This environment enables management of a large-scale infrastructure. The SpectroSERVERs in this environment can be located within a single physical location or in multiple physical locations.

landscape

A *landscape* is all the data that is specific to any one virtual network machine (VNM) in a single network. The term also identifies the network domain that is managed by a single SpectroSERVER. In OneClick, a landscape is the network view of one SpectroSERVER.

OneClick Console client

The *OneClick Console client* is a Java JNLP application which provides network operators with a view into the details and health of the network.

OneClick web server

The *OneClick web server* is the server responsible for moving data between SpectroSERVERs and OneClick clients.

SANM

The Alarm Notification Manager (*SANM*) is a CA Spectrum component that enhances the functionality of CA Spectrum alarm-processing applications.

SpectroSERVER

The *SpectroSERVER* is the server responsible for providing network management services such as polling, trap management, notification, data collection, fault management, and so on. This server is also referred to as the Virtual Network Machine (VNM).

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