



Using the ServiceNow Base Pack PowerPack

PowerPack version 107

Table of Contents

Introduction to the ServiceNow Base Pack PowerPack	1
What Does the ServiceNow Base Pack PowerPack Monitor?	2
Installing the ServiceNow Base Pack PowerPack	3
Configuring ServiceNow Base Pack Monitoring	4
Creating a SOAP/XML Credential for ServiceNow	5
Enabling the Run Book Automation Policies	8
Enabling and Customizing the Run Book Action Policy	9
Customizing the Snippet Code in the Input Parameters Pane	10
Customizing Logging in the Run Book Action	11
Sending Custom Data to ServiceNow Using the Passthrough Option	12
Passing Custom Data to ServiceNow	12
Passthrough Example	14
Snippet Code Example	15
Configuring the "ServiceNow: Click to Create" Automation Policy	16
Creating a Virtual Device for the ServiceNow Base Pack	17
Aligning the ServiceNow Base Pack Dynamic Applications	17
ServiceNow Base Pack Dashboards	19
ServiceNow Open Incidents Dashboard	20

Chapter

1



Introduction to the ServiceNow Base Pack PowerPack

Overview

This chapter describes how to use the "ServiceNow Base Pack" PowerPack in conjunction with one of the ServiceNow SyncPacks that sync SL1 events with ServiceNow components using PowerFlow.

This PowerPack contains the run book automation policies and a run book action policy that you use with the "ServiceNow Cases" SyncPack, the "ServiceNow Events" SyncPack, or the "ServiceNow Incident" SyncPack.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (.
- To view a page containing all of the menu options, click the Advanced menu icon ().

This chapter covers the following topics:

<i>What Does the ServiceNow Base Pack PowerPack Monitor?</i>	2
<i>Installing the ServiceNow Base Pack PowerPack</i>	3

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What Does the ServiceNow Base Pack PowerPack Monitor?

The "ServiceNow Base Pack" PowerPack enables you to model and collect data about ServiceNow Incident and CMDB tables so that you can sync SL1 Events with ServiceNow Incidents, and you can sync SL1 Devices with ServiceNow Configuration Items (CIs). You can also use this PowerPack to sync Events or Cases between SL1 and ServiceNow.

The "ServiceNow Base Pack" PowerPack monitors the ServiceNow Incident and CMDB tables, and it returns information about Incident types, priorities, and states, displaying the information in an easy-to-consume dashboard. The PowerPack also returns information about the CI records that are actively being synced between SL1 and ServiceNow via SL1 PowerFlow, including basic CI metadata as well as an overall count.

This PowerPack contains Run Book Automation policies and a Run Book Action policy that you can use with the "ServiceNow Incident" SyncPack, the "ServiceNow Cases" SyncPack, or the "ServiceNow Events" SyncPack in SL1 PowerFlow.

The "ServiceNow Base Pack" PowerPack includes:

- The "REST: Performance Metrics Monitor (ServiceNow)" Dynamic Application, which collects performance data such as connection errors, latency, SSL errors, and timeouts
- The "ServiceNow: CMDB Configuration" Dynamic Application, which provides data for PowerFlow systems communicating with ServiceNow
- The "ServiceNow: Incident Metrics" Dynamic Application, which collects information about the types, statuses, and properties of ServiceNow Incidents
- The "ServiceNow CMDB: Un-Mapped Device Classes" event policy and additional "REST: Error count" policies
- A "ServiceNow" device class for ServiceNow instances
- The following run book automation policies to automate adding, updating, and clearing cases, events, or incidents, and to automate creating ServiceNow cases, events, or incidents in SL1:
 - ServiceNow: [Cases] - Add/Update
 - ServiceNow: [Cases] - Click to Create
 - ServiceNow: [Cases] - Event Cleared
 - ServiceNow: [Events] - Add/Update
 - ServiceNow: [Events] - Click to Create
 - ServiceNow: [Events] - Event Acknowledged
 - ServiceNow: [Events] - Event Cleared
 - ServiceNow: [Incidents] - Add/Update
 - ServiceNow: [Incidents] - Click to Create
 - ServiceNow: [Incidents] - Event Acknowledged
 - ServiceNow: [Incidents] - Event Cleared

- The following run book action policies:
 - ServiceNow: Add/Update/Clear Case
 - ServiceNow: Add/Update/Clear Event
 - ServiceNow: Add/Update/Clear Incident
- The "ServiceNow: Create, Update, Clear Incident or Event" and the "ServiceNow: Send to PowerFlow" run book action types
- Two Sample SOAP/XML Credentials:
 - "The ServiceNow DA - Example" credential, which connects Dynamic Applications to a ServiceNow instance
 - "The ServiceNow RBA - Example" credential, which sends event payload information to PowerFlow using the run book automations
- The "ServiceNow Open Incidents" Dashboard, which displays information about ServiceNow incident statuses and types

Installing the ServiceNow Base Pack PowerPack

TIP: By default, installing a new version of a PowerPack overwrites all content in that PowerPack that has already been installed on the target system. You can use the **Enable Selective PowerPack Field Protection** setting in the **Behavior Settings** page (System > Settings > Behavior) to prevent new PowerPacks from overwriting local changes for some commonly customized fields. For more information, see the **System Administration** manual.

To install the "ServiceNow Base Pack" PowerPack:

1. Search for and download the "ServiceNow Base Pack" PowerPack from the **PowerPacks** page (Product Downloads > PowerPacks & SyncPacks) at <https://support.sciencelogic.com/s/>.
2. In SL1, go to the **PowerPacks** page (System > Manage > PowerPacks).
3. Click the **Actions** menu and choose *Import PowerPack*. The **Import PowerPack** modal appears.
4. Click **[Browse]** and navigate to the "ServiceNow Base Pack" PowerPack file from step 1.
5. Select the PowerPack file and click **[Import]**. The **PowerPack Installer** modal page displays a list of the PowerPack contents.
6. Click **[Install]**. After the installation is complete, the "ServiceNow Base Pack" PowerPack appears on the **PowerPacks** page.

Chapter



2

Configuring ServiceNow Base Pack Monitoring

Overview

This chapter describes how to configure ServiceNow for monitoring by SL1 using the "ServiceNow Base Pack" PowerPack.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ().
- To view a page containing all of the menu options, click the Advanced menu icon ().

This chapter covers the following topics:

<i>Creating a SOAP/XML Credential for ServiceNow</i>	5
<i>Enabling the Run Book Automation Policies</i>	8
<i>Enabling and Customizing the Run Book Action Policy</i>	9
<i>Sending Custom Data to ServiceNow Using the Passthrough Option</i>	12
<i>Configuring the "ServiceNow: Click to Create" Automation Policy</i>	16
<i>Creating a Virtual Device for the ServiceNow Base Pack</i>	17
<i>Aligning the ServiceNow Base Pack Dynamic Applications</i>	17


Creating a SOAP/XML Credential for ServiceNow

To configure SL1 to monitor a ServiceNow instance, you must first create at least one SOAP/XML credential to enable the Dynamic Applications in the "ServiceNow Base Pack" PowerPack to communicate with ServiceNow and PowerFlow.


The PowerPack includes two sample credentials:

- **ServiceNow DA - Example.** This credential connects the Dynamic Applications in the "ServiceNow Base Pack" PowerPack to a ServiceNow instance. This credential lets you monitor the CMDB and Incident tables in ServiceNow.
- **ServiceNow RBA - Example.** This credential lets you send event payload data from SL1 to PowerFlow and then to ServiceNow. Use this credential to integrate with the Incident, Events, or Cases SyncPacks by aligning this credential with the relevant "ServiceNow: Add/Update/Clear (Incident, Event, or Case)" run book action.

To configure the **ServiceNow DA - Example** credential:

1. In SL1, go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **ServiceNow DA - Example** credential and then click its wrench icon (). The **Edit SOAP/XML Credential** page appears.
3. Complete the following fields:
 - **Profile Name.** Type a name for the ServiceNow Dynamic Applications credential.
 - **Content Encoding.** Select *text/xml*.
 - **Method.** Select *GET*.
 - **HTTP Version.** Select *HTTP/1.1*.
 - **URL.** Type the URL for your ServiceNow system.
 - **HTTP Auth User.** Use the same username used in PowerFlow for connecting to ServiceNow. This is the same user used in the ServiceNow Guided Setup workflow or detailed in the specific PowerFlow application configuration.
 - **HTTP Auth Password.** Use the same password used in PowerFlow for connecting to ServiceNow.
 - **Timeout (seconds).** Type "30".
4. Click the **[Save As]** button.

To configure the **ServiceNow RBA - Example** credential to use with the "ServiceNow: Add/Update/Clear (Incident, Event, or Case)" run book action:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **ServiceNow RBA - Example** credential and then click its wrench icon (). The **Edit SOAP/XML Credential** page appears.
3. Complete the following fields:

- **Profile Name.** Type a name for the ServiceNow run book action credential.
 - **Content Encoding.** Select *text/xml*.
 - **Method.** Select *POST*.
 - **HTTP Version.** Select *HTTP/1.1*.
 - **URL.** Type the host name for PowerFlow.
 - **HTTP Auth User.** Use the same username used in PowerFlow for connecting to ServiceNow. This is the same user used in the ServiceNow Guided Setup workflow or detailed in the specific PowerFlow application configuration.
 - **HTTP Auth Password.** Use the same password used in PowerFlow for connecting to ServiceNow.
 - **Timeout (seconds).** Type "5".
4. Click **[Save As]**.
 5. When the confirmation message appears, click **[OK]**.
 6. On the **Credential Management** page (System > Manage > Credentials), make a note of the value in the **ID** column for the credential you just created:

Credential Management Credentials Found [1]													Actions	Reset	Guide
	Profile Name	Organization	RO Use	RW Use	DA Use	Type	Credential User	Host	Port	Timeout (sec)	ID	Last Edited	Edited By		
1.	ServiceNow RBA - Example	[all orgs]	--	--	--	SOAP/XML Host USERNAME	INTEGRATIONSERVICEHOSTNAME		443	5000	107	2019-07-15 11:10:54	em7admin		

You will use this value with the **sl1_credential_id** parameter when you enable and customize the snippet code of the "ServiceNow: Add/Update/Clear (Incident, Event, or Case)" run book action policy.

The following image shows the **Action Editor** page for the "ServiceNow: Add/Update/Clear Incident" run

book action policy:

Policy Editor | Editing Action [37] Reset

Action Name	Action State
ServiceNow: Add/Update/Clear Incident	[Enabled]
Description	
Adds and Updates Incidents in ServiceNow. SyncPack 4.0.0+	
Organization	Action Type
[System]	ServiceNow: Send to PowerFlow (1.1)
Execution Environment	Action Run Context
[-- Default: ServiceNow Base Pack (python2)]	[Database]
Input Parameters	
<pre>{ "sll_credential_id": "41", "debug": false, "configuration": "<configuration id from PowerFlow>", "queue": "", "cmdb_integration": "SGC" }</pre>	

Save Save As

Enabling the Run Book Automation Policies


NOTE: Versions 104 and later of the "ServiceNow Base Pack" PowerPack separated these run book action policies by Cases, Events, and Incident, such as "ServiceNow: **[Incidents]** - Add/Update".

Before you can run the "ServiceNow: Add/Update/Clear" run book action, you must enable the incident specific run book automation policies in SL1:

- ServiceNow: [Incident] - Add/Update
- ServiceNow: [Incident] - Event Acknowledged
- ServiceNow: [Incident] - Event Cleared

CAUTION: Version 106 and later of the "ServiceNow Base Pack" PowerPack aligned all default Incident Automation policies with the new "ServiceNow: Send to PowerFlow" action type. If you have upgraded to the "ServiceNow Base Pack" PowerPack version 106 or later, but not the "ServiceNow Incident" SyncPack version 4.0.0 or later, you will need to update those default automation policies to align with the older action type. If you made copies of the automation policies, you will not need to update them.

To enable the three ServiceNow run book automation policies:

1. In SL1, go to the **Automation Policy Manager** page (Registry > Run Book > Automation).
2. Locate the "ServiceNow: [Incident] - Add/Update" automation policy and click its wrench icon (). The **Automation Policy Editor** page appears.
3. Update the following fields:
 - **Policy State.** Select *Enabled*.
 - **Policy Priority.** Select *High* to ensure that this PowerFlow automation policy is added to the top of the queue.
 - **Available Actions.** If it is not already selected, select the corresponding ServiceNow run book action policy. Filter the **Available Actions** section by typing "ServiceNow" in the search field.

TIP: By default, the "ServiceNow: [Incidents] Add/Update" automation policy will create ServiceNow Incidents for **all** devices. You can limit the devices affected by making changes to the **Organization, Severity, Match Logic, Aligned Devices, and/or Aligned Events** fields.

WARNING: ScienceLogic highly recommends that you do not make changes to the **Policy Type, Repeat Time, or Align With** fields or the *And event is NOT acknowledged* setting.

4. Click **[Save]**.
5. Repeat steps 2-4 for the "ServiceNow: [Incident] - Event Acknowledged" and "ServiceNow: [Incident] - Event Cleared" run book automation policies.

Enabling and Customizing the Run Book Action Policy

The "ServiceNow: Add/Update/Clear Incident" run book action policy contains snippet code that you can customize to use with the "ServiceNow Incident" SyncPack.

You can edit these values in the **Input Parameters** pane of the **Actions** page for this policy.

NOTE: Make sure you are using the most recent version of the run book action policy. If there are two policies with the same name, always use the policy with the higher number in the **ID** column of the **Actions** page.

To enable and customize the Incident run book action policy:

1. In SL1, go to the **Actions** page (Registry > Run Book > Actions).
2. Locate the "ServiceNow: Add/Update/Clear Incident" policy and click its wrench icon (🔧). The **Action Policy Editor** page appears:

Policy Editor | Editing Action [38] Reset

Action Name: ServiceNow: Add/Update/Clear Incident Action State: [Enabled]

Description: Adds and Updates Incidents in ServiceNow. SyncPack 4.0.0+

Organization: [System] Action Type: ServiceNow: Send to PowerFlow (1.1)

Execution Environment: [-- Default: ServiceNow Base Pack (python2)] Action Run Context: [Database]

Input Parameters

```
{
  "sl1_credential_id": "107",
  "debug": false,
  "configuration": "<configuration id from PowerFlow>",
  "queue": "",
  "cmdb_integration": "<CMDB or SGC>"
}
```

Save Save As

3. For the **Action State** field select *Enabled*.
4. For the **sl1_credential_id** field in the **Input Parameters** pane, specify the credential ID from the **ID** column on the **Credential Management** page (System > Manage > Credentials). For example: `"sl1_credential_id": "107"`
5. Edit the snippet code as necessary, using the information in the **Customizing the Snippet Code in the Input Parameters Pane** section, below.
6. When you are finished, click **[Save]**.

Customizing the Snippet Code in the Input Parameters Pane

SL1 run book action snippets are written in Python. In the event of a syntax error, the policies will no longer run. As a result, you must ensure that all edits adhere to Python standards. True and False options are case-sensitive and must not contain quotes.

NOTE: Make sure you are using the most recent version of the run book action policy. If there are two policies with the same name, always use the policy with the higher number in the **ID** column of the **Actions** page.

You can customize the following values in the "ServiceNow: Add/Update/Clear Event" run book action snippet code:

- **sl1_credential_id**. Specifies the ID of the credential object. You can find this value in the **ID** column of the **Credentials** page (System > Manage > Credentials of SL1). For example: `"sl1_credential_id": "101"`
- **debug**. A true/false value that determines if the action is logged in SL1 and if the application is run in Debug Mode on PowerFlow. Troubleshooting logs are written to `/data/tmp/servicenow_rba.log`.
- **configuration**. Specifies the ID of the configuration object used on PowerFlow. The configuration ID is all lower-case, with spaces in the configuration object "friendly" name replaced by underscores. For example: `"configuration": "docs_configs"`.

NOTE: To find the configuration ID with the PowerFlow API, make a GET request on this endpoint:
`https://<PowerFlow_service_hostname>/api/v1/configurations.`

- **queue**. Specifies the worker queue on which the application runs. Leave this as default.
- **discard_if_no_ci**. *Deprecated*. Previous versions let you specify whether PowerFlow should create cases, events, or incidents in ServiceNow for devices that do not have a matching CI record.

- **cmdb_integration**. Specifies which CMDB SyncPack you are using to ensure that PowerFlow sends the correct identifiers to ServiceNow.
 - If you are using the "ServiceNow CMDB" SyncPack version 3.5.0 or later, use "SGC" to allow CIs to attach to incidents. For example: `"cmdb_integration": "SGC"`
 - If you are using versions of the "ServiceNow CMDB" SyncPack before version 3.5.0, use "CMDB".
 - If you are using the "ServiceNow Service Graph Connector" SyncPack, use "SGC".
- **integration**. Specifies the SyncPack you are using for this run book action. For example: `"integration": "events"`.
- **events_mid_server**. Set this field to *true* if you are using a ServiceNow MID Server with the Event Sync, or set it to *false* if you are not using a MID Server.
- **message_key_template**. This field lets you customize the message key used by PowerFlow to correlate SL1 events with ServiceNow alerts. This field is used with the Event Sync.
 - By default the value is `"{{ '{' }}'.format(event.event_id) }}"`, which creates a ServiceNow alert for each SL1 event; this is the existing MID Server flow behavior.
 - A suggested alternative value is `"{{ '{' }}+EVENT+{{' }}'.format(event.node_id, event.event_policy_id) }}"`, which groups the events by parent entity, such as device or interface, and event policy ID. The SL1 region used in the aligned configuration object in PowerFlow will be prepended to this value to ensure it is unique across stacks.

TIP: If you are using the MID Server and you use the **message_key_template** field to configure a message key with a one-to-many correlation between a single ServiceNow alert and multiple SL1 events, you should schedule the "Sync Alert Details from ServiceNow to SL1 Events" PowerFlow application to run, with the **events_mid_server** parameter selected on the **Configuration** pane for the "Sync Alert Details" application. These settings ensure that the **ext_ticket_ref** is populated when the ServiceNow alert re-opens. If you are using a message key with a one-to-one relationship between alerts and events, you do not need to schedule the "Sync Alert Details from ServiceNow to SL1 Events" application.

Customizing Logging in the Run Book Action

You can customize the following logging-related items in the "ServiceNow: Add/Update/Clear Event" run book action snippet code:

- `logfile = /data/tmp/ServiceNow_add_update_clear_incident.log`
 - Location for logging output.
 - Will be created if it does not exist.
 - Will be appended with each Run Book job.
 - Is case-sensitive.

- `do_debug_logging = True`
 - True is on, False is off.
 - Is case-sensitive.
 - For troubleshooting, these can be enabled or changed.
 - Writes logs to `/data/tmp/servicenow_rba.log`.

Sending Custom Data to ServiceNow Using the Passthrough Option

You can use the "ServiceNow: [(Cases/Events/Incidents)] Add/Update" run book automation and the "ServiceNow: Add/Update/Clear (Case/Event/Incident)" run book action to "pass through" custom data about SL1 cases, events, or incidents to ServiceNow (depending on the SyncPack you are using with PowerFlow).

For example, you might want to use the passthrough functionality to overwrite the impact and urgency of a ServiceNow incident, which is the only way to change the priority of the incident.

To pass custom data to ServiceNow:

- Create a new run book action that pulls the relevant data and adds it to a dictionary called `EM7_RESULT`.
- Add the new run book action to the "ServiceNow: [(Cases, Events, or Incident)] Add/Update" run book automation Policy, ahead of the "ServiceNow: Add/Update/Clear (Case/Event/Incident)" run book action so that the new action runs first, and then is consumed by the ServiceNow action.

Passing Custom Data to ServiceNow

The following procedure describes how to configure the passthrough functionality, using the "ServiceNow: [Incident] Add/Update" run book automation and the "ServiceNow: Add/Update/Clear Incident" run book action as examples.

To pass custom data to ServiceNow:

1. In SL1, go to the **Actions** page (Registry > Run Book > Actions) and click **[Create]** to create a new run book action policy.
2. Complete the following fields:
 - **Action Name.** Type a unique name for the action.
 - **Action State.** Select *Enabled*.
 - **Action Type.** Select *Run a Snippet*.
 - **Execution Environment.** Select *ServiceNow Base Pack*.
 - Complete the other fields as needed, or leave them at their default settings.

3. In the **Snippet Code** pane, add the snippet code you want to include for the EM7_RESULT dictionary. For example, the following snippet code lets you override the ServiceNow Incident work notes with a hardcoded note:

```
EM7_RESULT = {"work_notes": "This is a new note"}
```

Additional notes about the structure of the EM7_RESULT dictionary:

- `EM7_RESULT` is required for the dictionary, and the formatting of the keys should match the example above.
 - All keys defined in the EM7_RESULT dictionary need to map to field IDs on the **ScienceLogic Events** table in ServiceNow.
 - You can hard-code the values in the EM7_RESULT dictionary, or you can use variables and functions, like the "Snippet Code Example", below.
 - As a best practice, avoid sending null passthrough values to ServiceNow. If you must send 'null' or 'NULL' values to ServiceNow, pass through that value as an empty string, such as `"location": ""`. Also, only pass through values that you need. For example, instead of sending `{"location": "", "work_notes": "stuff"}`, simply send `{"work_notes": "stuff"}`.
 - A long snippet might delay the ticket being created
4. Click **[Save]**.
 5. Go to the **Automation Policy Manager** page (Registry > Run Book > Automation) and open the "ServiceNow: Add/Update Incident" run book automation Policy.

6. In the **Available Actions** section, add the new run book action *before* the "ServiceNow: Create, Update, Clear Incident" run book action:

The screenshot shows the 'Automation Policy Editor | Creating New Automation Policy' interface. The 'Policy Name' is 'ServiceNow: Add/Update Incident'. The 'Policy Type' is 'Active Events', 'Policy State' is 'Enabled', 'Policy Priority' is 'High', and 'Organization' is 'System'. The 'Criteria Logic' is '[Severity >=] [Major] [and no time has elapsed] [since the first occurrence.] [and event is NOT cleared] [and all times are valid]'. The 'Match Logic' is '[Text search]'. The 'Repeat Time' is '[Only once]' and 'Align With' is '[Devices]'. The 'Trigger on Child Rollup' checkbox is checked. The 'Available Devices' list contains 'System' and 'ServiceNow: Instance: ven01056'. The 'Available Events' list contains several critical alerts. The 'Available Actions' list is highlighted with a red box and contains several snippets, including 'Snippet [5]: Example Passthrough EM7_RESULT'. The 'Aligned Actions' list shows the new action being added before the 'ServiceNow: Create, Update, Clear Incident' action.

NOTE: The output of this new run book action will be consumed by the "ServiceNow: Create, Update, Clear Incident" run book action, ensuring that the EM7_RESULT dictionary is passed through to ServiceNow. The "ServiceNow: Create, Update, Clear Incident" run book action automatically populates the passthrough values with any values from EM7_LAST_RESULT. The passthrough overwrites any other previously defined fields, such as assignment group.

7. You can add additional run book actions to the run book automation Policy for any additional workflows that you might want to run. The Automation Policy execute these Actions in a sequential, top-down order. However, the "ServiceNow: Create, Update, Clear Incident" run book action only consumes the EM7_RESULT dictionary from the run book action directly above it.

Passthrough Example

For the Dictionary Entry of the ServiceNow field on the import table, you can reference the XML of the record. You will need to copy the `<sys_name>` value so you can use that as the key for the passthrough.

In this example, you want to bring in an additional field called **sl1 category**.

1. Create the new **s11 category** field on the import table in ServiceNow. You can right-click on the header of the form to view the XML:

The screenshot shows the ServiceNow Dictionary Entry form for 's11 category'. The form fields are:

- * Table: ScienceLogic Incident Import [x_sclo_incide...]
- * Type: String
- * Column label: s11 category
- * Column name: u_s11_category
- * Max length: 24

Below the form fields, there are tabs for 'Choice List Specification' and 'Default Value'. The 'Choice List Specification' tab is active, showing a list of suggested values in a Choice list. Below this, there are buttons for 'Delete Column' and 'Update'.

On the right side of the screenshot, the XML view of the dictionary entry is displayed. The XML structure is as follows:

```
<reference_qual/>
<reference_qual_condition/>
<reference_type/>
<incident/>
<spell_check>false/>spell_check
<staged>false/>staged
<sys_class_name>sys_dictionary</sys_class_name>
<sys_created_by>admin</sys_created_by>
<sys_created_on>2023-05-11 15:13:11</sys_created_on>
<sys_id>4fcd8741bbee102e420fa6c4bcb52</sys_id>
<sys_mod_count>2</sys_mod_count>
<sys_name>ScienceLogic s11: Incident Automation</sys_name>
<sys_package display_value="ScienceLogic s11: Incident Automation"
  source="x_sclo_incident">Indcc1b036cf090aef3d4c4bcb3d</sys_package>
<sys_policy/>
<sys_scope display_value="ScienceLogic s11: Incident Automation">Indcc1b036cf090aef3d4c4bcb3d</sys_scope>
<sys_update_name>sys_dictionary_x_sclo_incident_import_u_s11_category</sys_update_name>
<sys_updated_by>admin</sys_updated_by>
<sys_updated_on>2023-05-11 15:49:05</sys_updated_on>
<table_reference>false/>table_reference
<text_index>false/>text_index
<unique>false/>unique
<use_dependent_field>false/>use_dependent_field
<use_dynamic_default>false/>use_dynamic_default
<use_reference_qualifier=simple/>use_reference_qualifier
<virtual>false/>virtual
<virtual_type>script</virtual_type>
<widget/>
<write_roles/>
<xml_view>false/>xml_view
</sys_dictionary>
</xml>
```

2. Look for the `<sys_name>` value.
3. Copy that value directly out and use that in your EM7_RESULT for the passthrough value (in the Snippet Code pane):

```
EM7_RESULT = {'s11 Category': 'test'}
```

Snippet Code Example

The following snippet code example shows how to pull additional information and make it available for passthrough. All of the additional information that is going to be sent is contained in a dictionary variable called EM7_RESULT. You can pass through multiple items through in a single run book action by adding additional keys to the EM7_RESULT dictionary.

This example lets you assign assignment groups to an Incident based on certain criteria, such as event policy IDs:

```
from future.utils import iteritems

def invert_mappings(mappings):
    """
    Invert received one-to-many mappings and converts it into a one-to-one
    mapping.

    Args:
        mappings (dict): Dictionary of mapped values

    Returns:
        dict: inverted dictionary.

    """
```

```

inverted_mappings = dict()
for key, values in iteritems(mappings):
    for sub_value in values:
        invert_mappings[sub_value] = key
return inverted_mappings

# Example of assignment group to list of event policy ids mapping.
assignment_groups_to_event_policies = {
    "sys_id_1": [1, 2, 3, 4, 5],
    "sys_id_2": [6, 7, 8, 9, 10],
}
# which sys_id to use if the current event_policy_id isn't mapped
default_sys_id = "sys_id_3"

# invert the mappings
event_policy_to_assignment_group = invert_mappings(assignment_groups_to_event_policies)

# Send assignment group sys_id to IS RBA
EM7_RESULT = {
    "assignment_group": event_policy_to_assignment_group.get(
        EM7_VALUES["%3"], default_sys_id
    )
}

```


Configuring the "ServiceNow: Click to Create" Automation Policy

The "ServiceNow: [(Cases/Events/Incident)] - Click to Create" automation policy lets you manually create a case, event, or incident in ServiceNow by clicking the **Actions** button (⋮) in SL1 for an event and selecting "Create External Ticket" (or by clicking the life-preserver icon (🛟) for an event in the classic user interface).

This run book action policy is available in the "ServiceNow Base Pack" PowerPack.

To configure the "ServiceNow: Click to Create" run book action policy:

1. In SL1, go to the Behavior Settings page (System > Settings > Behavior) and set the **Event Console Ticket Life Ring Button Behavior** option to *Create/View External Ticket*.
2. Click **[Save]** to save your changes. You might need to log out of SL1 and log back into SL1 for the changes to update.
3. Go to the **Automation** page (Registry > Run Book > Automation).

4. Locate the "ServiceNow: (Cases/Events/Incident) - Click to Create" policy and click its wrench icon (). The **Automation Policy Editor** page appears:
5. Update the following fields:
 - **Policy State.** Select *Enabled*.
 - In the **Criteria Logic** section, select *and external ticket IS requested* in the fifth drop-down. Leave the other values in this section at their default settings.
 - **Repeat Time.** Specify the frequency at which SL1 should execute the automation policy while the conditions are still met. The choices range from "every 30 seconds until satisfied" to "every 2 hours until satisfied", or "only once". By default, the policy only runs once.
 - **Available Actions.** If it is not already selected, select *ServiceNow: Send to PowerFlow: ServiceNow: Add/Update/Clear Incident* and add it to the **Aligned Actions** field.
6. Click **[Save]**. The "Click to Create" feature is now available on the **Events** and **Event Investigator** pages.

Creating a Virtual Device for the ServiceNow Base Pack

To monitor ServiceNow, you must create a **virtual device** that represents the root device for ServiceNow. You can use the virtual device to store information gathered by policies or Dynamic Applications.


To create a virtual device that represents your ServiceNow instance:

1. Go to the **Device Manager** page (Devices > Device Manager or Registry > Devices > Device Manager for the classic user interface).
2. Click the **[Actions]** button and select *Create Virtual Device* from the menu. The **Virtual Device** modal page appears.
3. Complete the following fields:
 - **Device Name.** Type a name for the device.
 - **Organization.** Select the organization for this device. The organization you associate with the device limits the users that will be able to view and edit the device. Typically, only members of the organization will be able to view and edit the device.
 - **Device Class.** Select *ServiceNow | Instance*.
 - **Collector.** Select the collector group that will monitor the device.
4. Click the **[Add]** button to create the virtual device.

Aligning the ServiceNow Base Pack Dynamic Applications

Before you can run the Dynamic Applications in the ServiceNow Base Pack, you must manually align each Dynamic Application to the virtual device you created in the previous step. When you align the Dynamic Applications, you should use the ServiceNow credential that you created from the **ServiceNow DA - Example** credential.

To align the ServiceNow Base Pack Dynamic Applications with the ServiceNow virtual device:

1. Go to the **Device Manager** page (Devices > Device Manager or Registry > Devices > Device Manager for the classic user interface).
2. Click the wrench icon () for the virtual device you created in the previous section. The **Device Properties** page appears.
3. Click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
4. Click the **[Actions]** button and select *Add Dynamic Application*. The **Dynamic Application Alignment** modal page appears.
5. In the **Dynamic Applications** field, select the first of the three ServiceNow Dynamic Applications.
6. In the **Credentials** field, select the credential you created based on the **ServiceNow DA - Example** credential.
7. Click the **[Save]** button.
8. Repeat steps 4-7 for each remaining Dynamic Application.

Chapter



3

ServiceNow Base Pack Dashboards

Overview

This chapter describes the system dashboard that is included in the "ServiceNow Base Pack" PowerPack.

Use the following menu options to navigate the SL1 user interface:

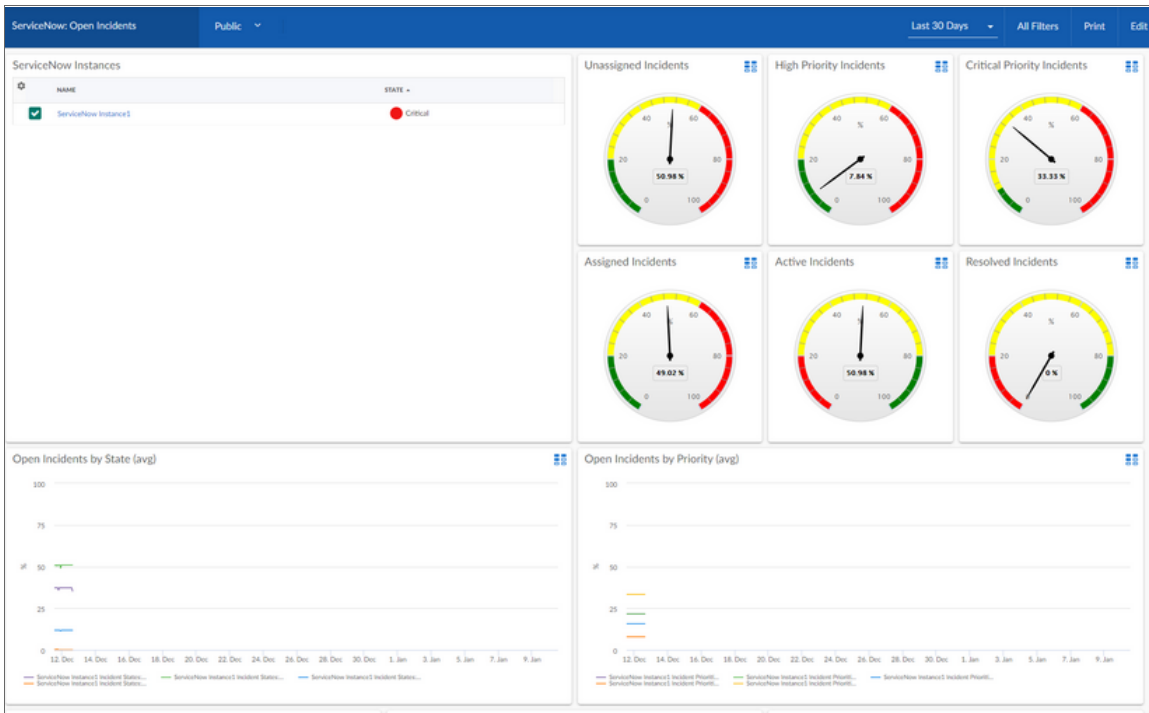
- To view a pop-out list of menu options, click the menu icon ()
- To view a page containing all of the menu options, click the Advanced menu icon ().

This chapter covers the following topics:

<i>ServiceNow Open Incidents Dashboard</i>	20
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ServiceNow Open Incidents Dashboard

If you are using the new user interface for SL1, you can download the "ServiceNow: BasePack SL1 Dashboards" PowerPack to add this dashboard to the **Dashboards** page.



The ServiceNow Open Incidents system dashboard displays the following information:

- Open incidents by state
- Open incidents by priority
- Unassigned incidents
- High priority incidents
- Critical priority incidents
- Assigned incidents
- Active incidents
- Resolved incidents
- Incidents unassigned or assigned by percentage
- Incidents source by percentage
- Total open incidents

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