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# Monitoring ServiceNow

ServiceNow Base Pack PowerPack version 104

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# Chapter

# 1

## Introduction to the ServiceNow Base Pack PowerPack

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### Overview

This chapter describes how to monitor ServiceNow in SL1 using the *ServiceNow Base Pack PowerPack*. This PowerPack also contains the Run Book Automation policies and a Run Book Action policy that you use with the *ServiceNow Incident Synchronization PowerPack* or the *ServiceNow Events Synchronization PowerPack* in SL1 PowerFlow.

**NOTE:** After the 2.1.0 release of the Integration Service platform, the *Integration Service* was rebranded as *SL1 PowerFlow*, which is available in SL1 Standard solutions. Also, the *Automation Builder* was rebranded as *SL1 PowerFlow builder*, which is available in SL1 Premium solutions.

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 (⋮).

The following topics describe how to use the *ServiceNow Base Pack PowerPack*:

<a href="#">What Does the ServiceNow Base Pack PowerPack Monitor?</a> .....	2
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## What Does the ServiceNow Base Pack PowerPack Monitor?

To monitor a ServiceNow instance with SL1, you must install the *ServiceNow Base Pack PowerPack*. This PowerPack enables you to model and collect data about ServiceNow Incident and CMDB tables.

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 PowerFlow, including basic CI metadata as well as an overall count.

This PowerPack also contains the Run Book Automation policies and a Run Book Action policy that you use with the *ServiceNow Incident Synchronization PowerPack* or the *ServiceNow Events Synchronization PowerPack*.

The *ServiceNow Base Pack PowerPack* includes:

- 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
- A Device Class for ServiceNow instances
- The following Run Book Automation policies to automate adding, updating, and clearing incidents or events, and to automate creating ServiceNow incidents or events in SL1:
  - 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 "ServiceNow: Add/Update/Clear Incident" and "ServiceNow: Add/Update/Clear Event" Run Book Action policies.
- The "ServiceNow: Add/Update/Clear Incident or Event" Run Book Action Type

- Two Sample Credentials: one for connecting Dynamic Applications to a ServiceNow instance, and one for sending event payload information to SL1 PowerFlow, which is required for integration with the ServiceNow Incident Management Module
- The "ServiceNow CMDB: Un-Mapped Device Classes" Event Policy.
- The "ServiceNow Open Incidents" Dashboard, which displays information about ServiceNow incident statuses and types

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## Installing the ServiceNow Base Pack PowerPack

To monitor a ServiceNow instance with SL1, you must import and install the latest version of the *ServiceNow Base Pack PowerPack*.

**NOTE:** If you are upgrading from SyncServer, you must disable the old SyncServer Run Book Actions and Run Book Automation policies before 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. Download the latest version of the PowerPack from the Customer Portal to a local computer.
2. In SL1, log in and go to the **PowerPack Manager** page (System > Manage > PowerPacks).
3. Click **[Actions]** and select *Import PowerPack*.
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 **PowerPack Manager** page.



## Configuring ServiceNow Base Pack Monitoring

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### 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:

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# 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 if you want to integrate with the ServiceNow Incident Synchronization PowerPack by aligning it with the “ServiceNow: Add/Update/Clear Incident” Run Book Action. You can also use this credential to integrate with the ServiceNow Event Synchronization PowerPack by aligning it with the “ServiceNow: Add/Update/Clear Event” 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:

The screenshot shows the 'Edit SOAP/XML Credential #90' interface. It features a top bar with 'New' and 'Reset' buttons. The main content is organized into four panels: 'Basic Settings' (with fields for Profile Name, Content Encoding, Method, HTTP Version, URL, HTTP Auth User, HTTP Auth Password, and Timeout), 'Soap Options' (with an Embedded Password field and four Embed Value fields), 'Proxy Settings' (with fields for Hostname/IP, Port, User, and Password), and 'CURL Options' (with a list of options and a large text area). At the bottom, there are 'Save' and 'Save As' buttons.

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**. Type the ServiceNow administrator username.
- **HTTP Auth Password**. Type the ServiceNow administrator password.
- **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" 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**. Type the PowerFlow administrator username.
  - **HTTP Auth Password**. Type the PowerFlow administrator password.
  - **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:

Profile Name	Organization	RO Use	RW Use	DA Use	Type	Credential User	Host	Port	Timeout (ms)	ID	Last Edited	Edited By
servicenow_rba	[all orgs]	--	--	--	SOAP/XML Host USERNAME	INTEGRATIONSERVICEHOSTNAME		443	5000	107	2019-07-15 11:10:54	em7admin

You will use this value with the `s11_credential_id` parameter when you enable and customize the snippet code of the "ServiceNow: Add/Update/Clear Incident" or the "ServiceNow: Add/Update/Clear Event" Run Book Action policy:

**Policy Editor | Editing Action [455]**

Action Name: ServiceNow: Add/Update/Clear Incident

Action State: [Disabled]

Description: Adds and Updates Incidents in ServiceNow.

Organization: [System]

Action Type: ServiceNow: Create, Update, Clear Incident or Event (1.1)

Execution Environment: [-- Default: ServiceNow Base Pack]

Action Run Context: [Database]

Input Parameters:

```
{
  "s11_credential_id": "107",
  "debug": false,
  "configuration": "",
  "queue": "",
  "discard_if_no_ci": false,
  "is_app_name_new": "incident_sync_update_create",
  "is_app_name_ack": "event_acknowledged",
  "is_app_name_clear": "event_cleared",
  "servicenow_state_new": "1",
  "servicenow_state_ack": "",
  "servicenow_state_clear": "6",
  "correlation_type": "5",
  "assignment_group_new": "",
  "assignment_group_ack": ""
}
```

Buttons: Save, Save As

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## Enabling the Run Book Automation Policies

Before you can run the "ServiceNow: Add/Update/Clear Incident" Run Book Action, you must enable the three related Run Book Automation policies in SL1 :

- ServiceNow: Add/Update
- ServiceNow: Event Acknowledged
- ServiceNow: Event Cleared

**NOTE:** Version 104 of the ServiceNow Base Pack PowerPack separated these Run Book Action policies by Event and Incident, such as "ServiceNow: [Events] - Add/Update" and "ServiceNow: [Incident] - Add/Update". This update lets you choose the Run Book Actions based on whether you are using the *ServiceNow Events Synchronization PowerPack* or the *ServiceNow Incident Synchronization PowerPack*.

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: Add/Update" automation policy and click its wrench icon (🔧). The **Automation Policy Editor** page appears:

The screenshot shows the 'Automation Policy Editor' interface for editing the 'ServiceNow: Add/Update Incident' policy. The interface is divided into several sections:

- Policy Configuration:** Includes fields for Policy Name, Policy Type (Active Events), Policy State (Enabled), Policy Priority (High), and Organization (System). The 'Policy State' and 'Policy Priority' dropdowns are highlighted with red boxes.
- Criteria Logic:** A series of dropdown menus for defining the policy's criteria, such as '[ Severity >= ]', '[ Notice, ]', '[ and no time has elapsed ]', '[ since the first occurrence, ]', '[ and event is NOT cleared ]', and '[ and all times are valid ]'.
- Match Logic:** Includes a 'Text search' field and a 'Match Syntax' dropdown.
- Repeat Time:** A dropdown menu set to '[ Only once ]'.
- Align With:** A dropdown menu set to '[ Devices ]'.
- Include events for entities other than devices:** A checkbox that is currently unchecked.
- Trigger on Child Rollup:** A checked checkbox.
- Available Devices:** A list of devices including 'System' and several ScienceLogic EM7 All-In-One devices.
- Aligned Devices:** A list containing '(All devices)'. Navigation arrows are present between the available and aligned lists.
- Available Events:** A list of events including '[3569] Critical: AKCP: AC Voltage sensor detects no current', '[3578] Critical: AKCP: DC Voltage sensor High Critical', '[3579] Critical: AKCP: DC Voltage sensor Low Critical', '[3568] Critical: AKCP: Dry Contact Sensor Low Critical', '[3574] Critical: AKCP: Smoke Detector Alert!', and '[3572] Critical: AKCP: Water Sensor has detected water'.
- Aligned Events:** A list containing '(All events)'. Navigation arrows are present between the available and aligned lists.
- Available Actions:** A list of actions including 'SNMP Trap [1]: EM7 Event Trap', 'Snippet [5]: AWS: Disable Instance By Tag', 'Snippet [5]: AWS: Discover from EC2 IP', 'Snippet [5]: AWS: Get EC2 Instance Configuration', 'Snippet [5]: AWS: Merge Physical with Component', and 'Snippet [5]: AWS: Vanish Terminated EC2 Instances'.
- Aligned Actions:** A list containing '1. ServiceNow: Create, Update, Clear Incident [100]: Sr'. Navigation arrows are present between the available and aligned lists.

At the bottom of the editor, there are 'Save' and 'Save As' buttons.

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.

**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: Event Acknowledged" and "ServiceNow: Event Cleared" Run Book Automation policies.

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## Enabling and Customizing the Run Book Action Policy

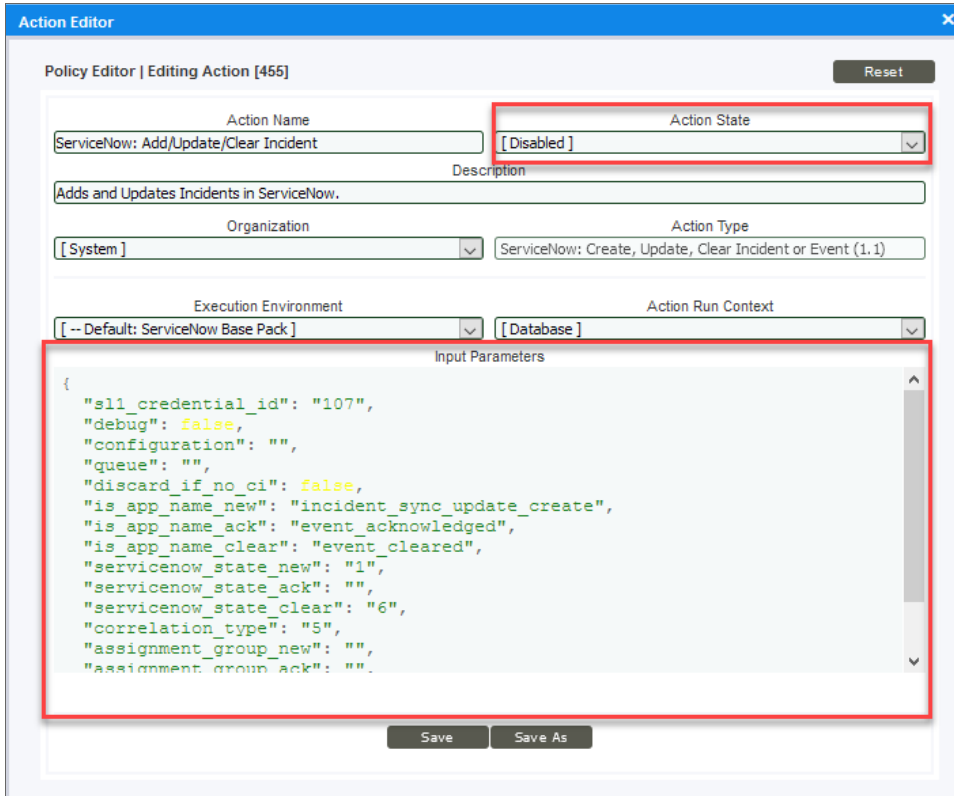
The "ServiceNow: Add/Update/Clear Event" and the "ServiceNow: Add/Update/Clear Incident" Run Book Action policies contain several default values in the snippet code for the policy that you can customize to use with the *ServiceNow Events Synchronization PowerPack* or the *ServiceNow Incident Synchronization PowerPack*.

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

For example, the **Correlation Type** is a value that you can use to correlate an SL1 event with a ServiceNow incident. For the Correlation Type, which is also called the "Correlation ID", you can choose a number of different ways in which an incident can be created. The default setting is "correlation\_type": "5", which means that this Run Book Action correlates all events by device ID and event policy ID, and if the event matches and the state is active, the Action updates the existing incident. The Action creates a new incident if the event does *not* match by device ID and event policy ID. As a result, the Correlation Type helps determine which events get rolled up under an incident. All Run Book Action scripts should use the same Correlation Type value, otherwise correlation will fail.

To enable and customize the Run Book Automation policies:

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



3. For the **Action State** field select *Enabled*.
4. In the **Input Parameters** pane, edit the snippet code as necessary, using the information in the **Customizing the Snippet Code in the Input Parameters Pane** section, below. 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:** Previous SyncServer users had three separate Run Book Action scripts for add/update, acknowledge, and clear. These have been rolled into a single Run Book Action in PowerFlow, but there are still three Automation policies.

You can customize the following values in the "ServiceNow: Add/Update/Clear Incident (or 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).
- **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": "servicenow\_syncpack\_configs"

**NOTE:** To find the configuration ID with the API, make a GET request on this endpoint:  
[https://<powerflow\\_hostname>/api/v1/configurations](https://<powerflow_hostname>/api/v1/configurations).

- **queue**. Specifies the worker queue on which the application runs. Leave this as default.
- **discard\_if\_no\_ci**. Specifies whether PowerFlow should create incidents or events in ServiceNow for devices that do not have a matching CI record. The default is *false*. Your options include:
  - *true*. If a device is not mapped to a CI, PowerFlow will *not* create an incident or event in ServiceNow, and SL1 is not updated. The following log message appears: "No CI found".
  - *false*. If a device is not mapped to a CI, PowerFlow *will* create an incident or event in ServiceNow and update SL1.

**NOTE:** The following parameters are specific to the "ServiceNow: Add/Update/Clear Incident" Run Book Action.

- **servicenow\_state\_new**:
  - 1. Incident state is "New". This is the default value.
  - 2. Incident state is "In Progress".
  - 3. Incident state is "On Hold".
  - 6. Incident state is "Resolved".
  - 7. Incident state is "Closed".
  - 8. Incident state is "Canceled".

- **servicenow\_state\_ack:**

- 1. Incident state is "New". There is no default value.
- 2. Incident state is "In Progress".
- 3. Incident state is "On Hold".
- 6. Incident state is "Resolved".
- 7. Incident state is "Closed".
- 8. Incident state is "Canceled".

- **servicenow\_state\_clear:**

- 1. Incident state is "New".
- 2. Incident state is "In Progress".
- 3. Incident state is "On Hold".
- 6. Incident state is "Resolved". This is the default value.
- 7. Incident state is "Closed".
- 8. Incident state is "Canceled".

- **correlation\_type.** Correlates an SL1 event with a ServiceNow incident. For this value, which is also called the "Correlation ID", you can choose a number of different ways in which an incident can be created. The default setting is "correlation\_type": "5", which means that this Run Book Action correlates all events by device ID and event policy ID, and if the event matches and the state is active, the Action updates the existing incident. The Action creates a *new* incident if the event does *not* match by device ID and event policy ID. As a result, the Correlation Type helps determine which events get rolled up under an incident. All Run Book Action scripts should use the same Correlation Type value, otherwise correlation will fail.

The possible Correlation Type values include the following:

- 1. Correlate all duplicate incidents by SL1 ID only.
- 2. Correlate all duplicate incidents by event policy ID only.
- 3. Correlate all duplicate incidents by device ID only.
- 4. Correlate all duplicate incidents by Interface ID only. This correlation requires that the SL1 event has an interface aligned. If there is no interface aligned to the event, the returned Interface ID will be 0.
- 5. Correlate all duplicate incidents by device ID and event policy ID. This is the default Correlation Type value.
- 6. Correlate all duplicate incidents by device ID, event policy ID, and event sub entity ID.
- 7. Correlate all duplicate incidents by device ID, event policy ID, region, and event ID. Please note that using this correlation type will result in all events triggering new incidents.
- 8. Correlate all events to the root device ID of the component device into one incident. Please note that using this correlation type might lead to undesirable behavior, as not all events generated on a child device indicate a problem on the root device. As a result, ScienceLogic recommends that you only use this correlation type against specific event policies.

- You can assign the assignment group to one of the new, acknowledged, or cleared incidents that are mapped. To disable this feature, ensure that no values are set. After an incident is created, the assignment group value will not be changed by the Run Book Action. To assign an assignment group, set the variable value to the **sys\_id** of the ServiceNow Assignment Group. In the following example, the assignment group is assigned to incidents that are *cleared*:

```
"assignment_group_new": "",  
"assignment_group_ack": "",  
"assignment_group_clear": "sys_id"
```

## Customizing Logging in the Run Book Action

You can customize the following logging-related items in the "ServiceNow: Add/Update/Clear Incident" 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**.

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## Sending Custom Data to ServiceNow Using the Passthrough Option

You can use the "ServiceNow: [Incident] Add/Update" Run Book Automation and the "ServiceNow: Add/Update/Clear Incident" Run Book Action to "pass through" custom data about incidents to ServiceNow. 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.

**NOTE:** You can also use the "ServiceNow: [Events] Add/Update" Run Book Automation and the "ServiceNow: Add/Update/Clear Event" Run Book Action to "pass through" custom data about events to ServiceNow. The steps in the following procedure use the Incident Automation and Incident Action as an example.

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: Add/Update Incident" Run Book Automation Policy, ahead of the "ServiceNow: Add/Update/Clear Incident" Run Book Action so that the new Action runs first, and then is consumed by the ServiceNow Action.

The following procedure describes how to configure the passthrough functionality.

## Passing Custom Data to ServiceNow

To pass custom data to ServiceNow:

1. In SL1, go to the **Action Policy Manager** page (Registry > Run Book > Actions) and click **[Create]** to create a new Run Book Action policy:

The screenshot shows the 'Policy Editor | Creating New Action' interface. It features a 'Reset' button in the top right corner. The form contains the following fields and values:

- Action Name:** Example Passthrough EM7\_RESULT
- Action State:** [Enabled]
- Description:** Passthrough data using EM7\_RESULT dictionary
- Organization:** [System]
- Action Type:** Run a Snippet
- Snippet Credential:** (None)
- Action Run Context:** Database
- Execution Environment:** [-- Default Environment]
- Snippet Code:** EM7\_RESULT = {"work\_notes": "This is a new note"}

A 'Save' button is located at the bottom center of the form.

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.

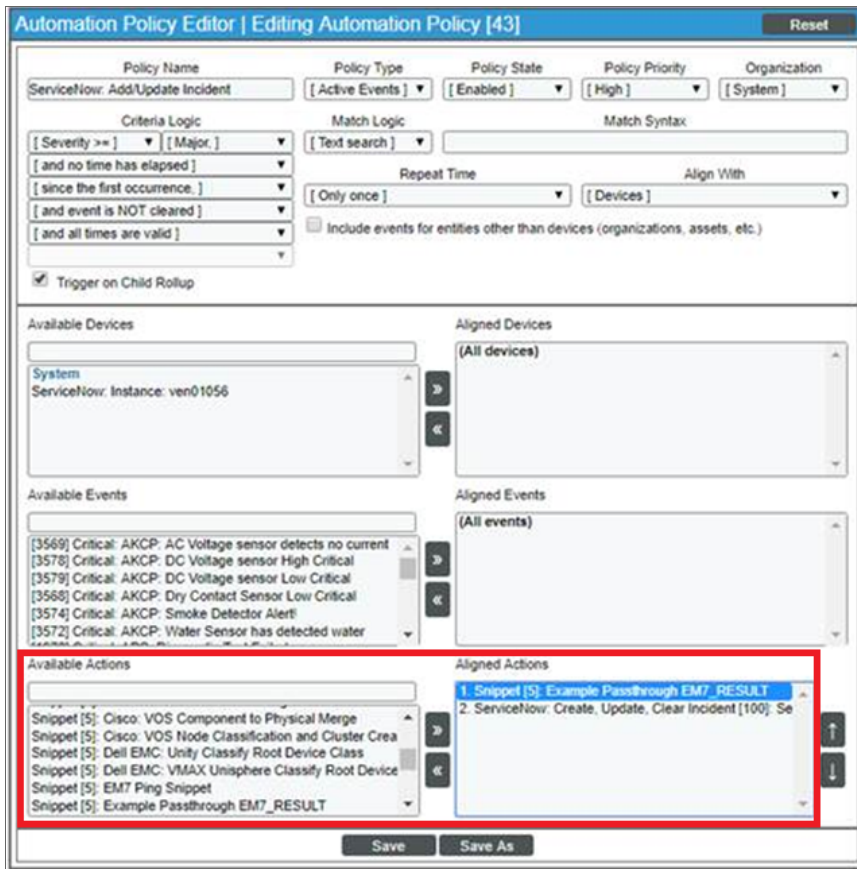
3. In the **Snippet Code** pane, add the snippet code you want to include for the EM7\_RESULT dictionary. For example, the following snippet code lets you override the ServiceNow Incident work notes with a hardcoded note:

```
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.

- In the **Available Actions** section, add the new Run Book Action *before* the "ServiceNow: Create, Update, Clear Incident" Run Book 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.

- 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.

## 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: Click to Create" Run Book Automation policy lets you manually create an incident in ServiceNow by clicking the life-preserver icon (🛟) in SL1. This policy is available in the *ServiceNow Base Pack PowerPack*.

**NOTE:** Version 104 of the ServiceNow Base Pack PowerPack separated this Run Book Automation policies by Event and Incident: "ServiceNow: [Event] Click to Create" and "ServiceNow: [Incident] Click to Create".

To configure the "ServiceNow: Click to Create" 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.
3. Go to the **Automation Policy Manager** page (Registry > Run Book > Automation).
4. Locate the **ServiceNow: Click to Create Incident** policy and click its wrench icon (🔧). The **Automation Policy Editor** page appears:

The screenshot shows the 'Automation Policy Editor' interface for editing the 'ServiceNow: Click to Create Incident' policy. The interface is divided into several sections:

- Policy Information:** Policy Name: ServiceNow: Click to Create Incident; Policy Type: Active Events; Policy State: Enabled (highlighted with a red box); Policy Priority: Default; Organization: System.
- Criteria Logic:** [Severity >=] [Minor,] [and no time has elapsed] [since the first occurrence,] [and external ticket IS requested] [and all times are valid].
- Match Logic:** [Text search].
- Match Syntax:** Repeat Time: Every 1 minute until satisfied (highlighted with a red box); Align With: Devices.
- Include events for entities other than devices (organizations, assets, etc.):**
- Trigger on Child Rollup:**
- Available Devices:** List of devices including Bananaquit, AWS: Service: JEM-Virtual, Cardinal, Microsoft: Windows Server 2008 R2 Domain Controller: VPM, NET-SNMP: Linux: sctest, NET-SNMP: Linux: sdttools.sciencelogic.local, Virtual Device: Domain Name: SelfTesting.
- Aligned Devices:** (All devices).
- Available Events:** List of events including [3186] Critical: AKCP: AC Voltage sensor detects no current, [3195] Critical: AKCP: DC Voltage sensor High Critical, [3196] Critical: AKCP: DC Voltage sensor Low Critical, [3185] Critical: AKCP: Dry Contact Sensor Low Critical, [3191] Critical: AKCP: Smoke Detector Alert!, [3189] Critical: AKCP: Water Sensor has detected water, [4231] Critical: ADC: Diagnostic Test Failed.
- Aligned Events:** (All events).
- Available Actions:** List of actions including SNMP Trap [1]: EM7 Event Trap, Snippet [5]: AWS: Disable Instance By Tag, Snippet [5]: AWS: Discover from EC2 IP, Snippet [5]: AWS: Get EC2 Instance Configuration, Snippet [5]: AWS: Merge Physical with Component, Snippet [5]: AWS: Vanish Terminated EC2 Instances, Snippet [5]: AWS: Vanish Terminated EC2 Instances, Snippet [5]: AWS: Vanish Terminated EC2 Instances.
- Aligned Actions:** 1. ServiceNow: Create, Update, Clear Incident [106]: Si (highlighted with a red box).

Buttons at the bottom include 'Save' and 'Save As'. A 'Reset' button is located in the top right corner.

- Update the following fields:
  - Policy State.** Select *Enabled*.
  - 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 the corresponding ServiceNow Run Book Action policy to add it to the **Aligned Actions** field.
- Click **[Save]**.

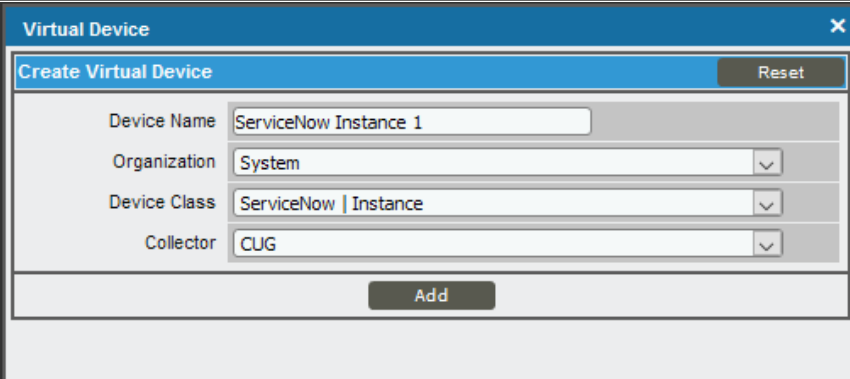
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## Creating a Virtual Device for the ServiceNow Base Pack

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:

- Go to the **Device Manager** page (Registry > Devices > Device Manager).
- Click the **[Actions]** button and select *Create Virtual Device* from the menu. The **Virtual Device** modal page appears:



The screenshot shows a modal window titled "Virtual Device" with a close button (X) in the top right corner. Inside the modal, there is a sub-header "Create Virtual Device" and a "Reset" button. The form contains four fields: "Device Name" with the text "ServiceNow Instance 1", "Organization" with a dropdown menu showing "System", "Device Class" with a dropdown menu showing "ServiceNow | Instance", and "Collector" with a dropdown menu showing "CUG". At the bottom of the form is an "Add" button.

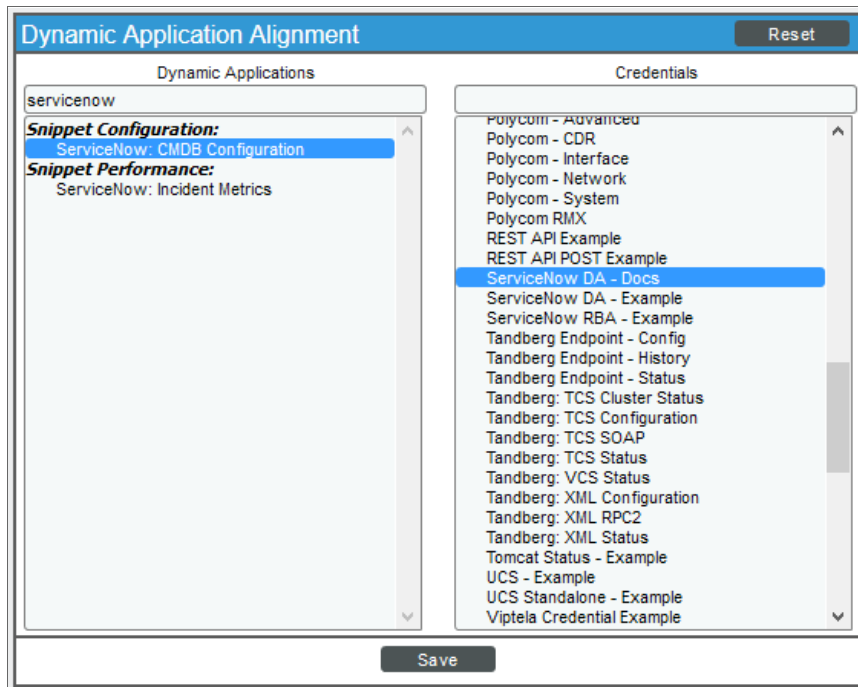
- Complete the following fields:
  - Device Name.** Type a name for the device.
  - Organization.** Select the organization for this device. The organization you associate with the device limits the users that will be able to view and edit the device. Typically, only members of the organization will be able to view and edit the device.
  - Device Class.** Select *ServiceNow | Instance*.
  - Collector.** Select the collector group that will monitor the device.
- 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 (Registry > Devices > Device Manager).
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 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

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### 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:

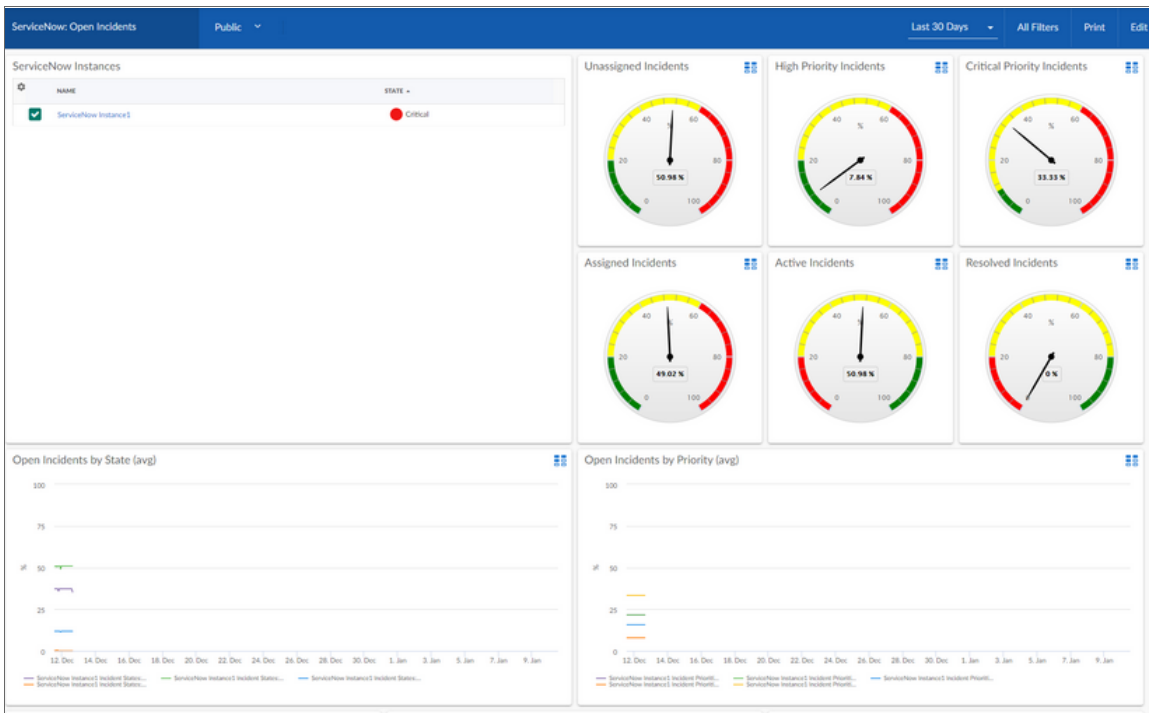
- To view a pop-out list of menu options, click the menu icon ().
- To view a page containing all of the menu options, click the Advanced menu icon (  ).

This chapter covers the following topics:

<a href="#">ServiceNow Open Incidents Dashboard</a> .....	23
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# ServiceNow Open Incidents Dashboard



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

**TIP:** 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 new user interface.

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