QRadar Integration

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Release Notes

Version	Publication	Notes
2.2.4	July. 2022	Update SOAR required version
2.2.3	June. 2022	Bug fix for using with MSSP
2.2.2	May. 2022	Add more documentation and bug fix
2.2.1	March 2022	Cancel QRadar queries which have timed out
2.2.0	March 2022	Allow multiple QRadar instances
2.1.1	July 2021	Fixed selftest failing when using cafile
2.1.0	Feb. 2021	Additional functions for reference table mapping.
2.0.9	Feb. 2021	Bug fixes associated with require input field validation.

Version	Publication	Notes
2.0.8	Nov. 2020	Fixed a bug failing search function when used with token.
2.0.7	July 2020	Correct typos and describe optional Search activity field Update SOAR version.
2.0.6	May 2020	Add option to return all results from Search.
2.0.4	April 2020	Additional configuration notes.
2.0	March 2019	Supports the 2.0 release.
1.0	July 2018	Initial publication.

- For customers upgrading from a previous release to 2.2.0 or greater, the app.config file must be manually edited to add new settings required to each server configuration. See 2.2.0 Changes

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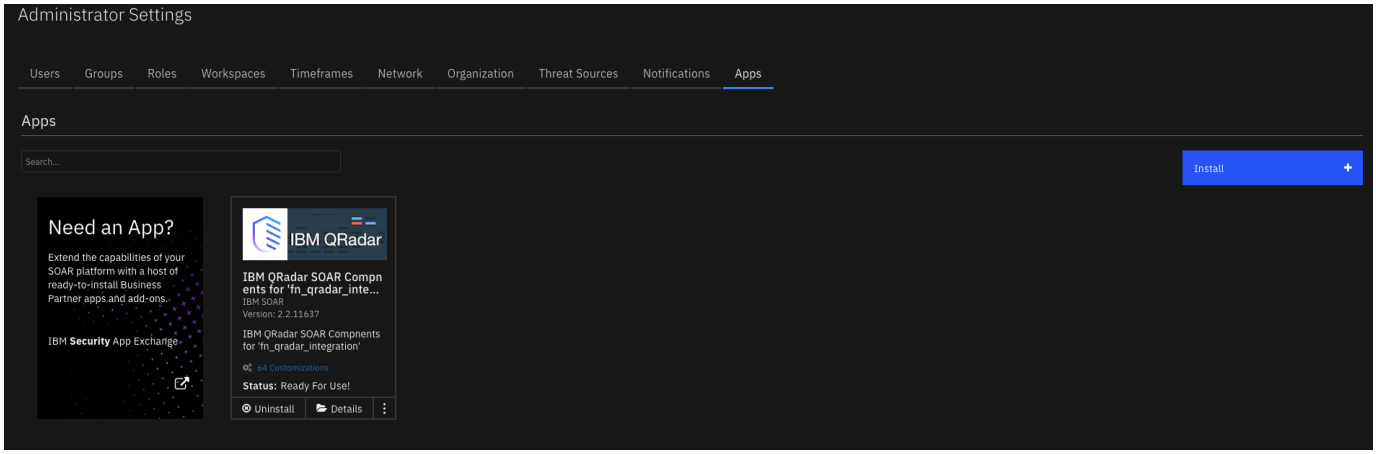
Overview

IBM QRadar SOAR Compnents for 'fn_qradar_integration'



This guide describes the QRadar Function integrations.. The QRadar app with the SOAR platform package provides the following:

- Search function to perform a QRadar Ariel query
- Search function to query an item in a QRadar reference set
- Search function to find all the reference sets that contain an item
- Add function to insert a new item in a QRadar reference set
- Delete function to remove an item from a QRadar reference set
- List all reference tables
- View all items associated with a given reference table
- Add/Update/Delete items to a QRadar reference table

With the above functions, this package includes example workflows that demonstrate how to call the functions, rules that start the example workflows, and custom data tables updated by the example workflows.

Requirements

This app supports the IBM QRadar SOAR Platform and the IBM Cloud Pak for Security.

SOAR platform

The SOAR platform supports two app deployment mechanisms, App Host and integration server.

If deploying to a SOAR platform with an App Host, the requirements are:

- SOAR platform >= `42.0.0`.
- The app is in a container-based format (available from the AppExchange as a `zip` file).

If deploying to a SOAR platform with an integration server, the requirements are:

- SOAR platform >= `42.0.0`.
- The app is in the older integration format (available from the AppExchange as a `zip` file which contains a `tar.gz` file).
- Integration server is running `resilient_circuits>=39.0.0`.
- If using an API key account, make sure the account provides the following minimum permissions:

Name	Permissions
Org Data	Read, edit
Function	Read

The following SOAR platform guides provide additional information:

- *App Host Deployment Guide*: provides installation, configuration, and troubleshooting information, including proxy server settings.
- *Integration Server Guide*: provides installation, configuration, and troubleshooting information, including proxy server settings.
- *System Administrator Guide*: provides the procedure to install, configure and deploy apps.

The above guides are available on the IBM Knowledge Center at ibm.biz/soar-docs. On this web page, select your SOAR platform version. On the follow-on page, you can find the *App Host Deployment Guide* or *Integration Server Guide* by expanding **SOAR Apps** in the Table of Contents pane. The System Administrator Guide is available by expanding **System Administrator**.

Cloud Pak for Security

If you are deploying to IBM Cloud Pak for Security, the requirements are:

- IBM Cloud Pak for Security >= 1.4.
- Cloud Pak is configured with an App Host.
- The app is in a container-based format (available from the AppExchange as a `zip` file).

The following Cloud Pak guides provide additional information:

- *App Host Deployment Guide*: provides installation, configuration, and troubleshooting information, including proxy server settings. From the Table of Contents, select Case Management and Orchestration & Automation > **Orchestration and Automation Apps**.
- *System Administrator Guide*: provides information to install, configure, and deploy apps. From the IBM Cloud Pak for Security Knowledge Center table of contents, select Case Management and Orchestration & Automation > **System administrator**.

These guides are available on the IBM Knowledge Center at ibm.biz/cp4s-docs. From this web page, select your IBM Cloud Pak for Security version. From the version-specific Knowledge Center page, select Case Management and Orchestration & Automation.

Proxy Server

The app **does/does not** support a proxy server.

Package Dependencies

- resilient_circuits version 39 or later
- python version 3.6 or later

Installation

Install

- To install or uninstall an App or Integration on the *SOAR platform*, see the documentation at ibm.biz/soar-docs.
- To install or uninstall an App on *IBM Cloud Pak for Security*, see the documentation at ibm.biz/cp4s-docs and follow the instructions above to navigate to Orchestration and Automation.

App Configuration

The following table provides the settings you need to configure the app. These settings are made in the app.config file. See the documentation discussed in the Requirements section for the procedure.

Config	Required	Example	Description
host	Yes	`localhost`	*QRadar host name or IP Address *
username	Yes	`admin`	*Username for QRadar authentication*
qradarpassword	Yes	`changeme`	*username password for QRadar authentication*
qradartoken	Yes	`changeme`	*QRadar token to use rather than password*
verify_cert	Yes	`false|/path/to/cert`	*Path to the certificate file*

2.2.0 Changes

Starting in version 2.2.0, more than one QRadar instance can be configured for SOAR case data synchronization. For enterprises with only one QRadar instance, your app.config file will continue to define the QRadar instance under the `[fn_qradar_integration]` section header.

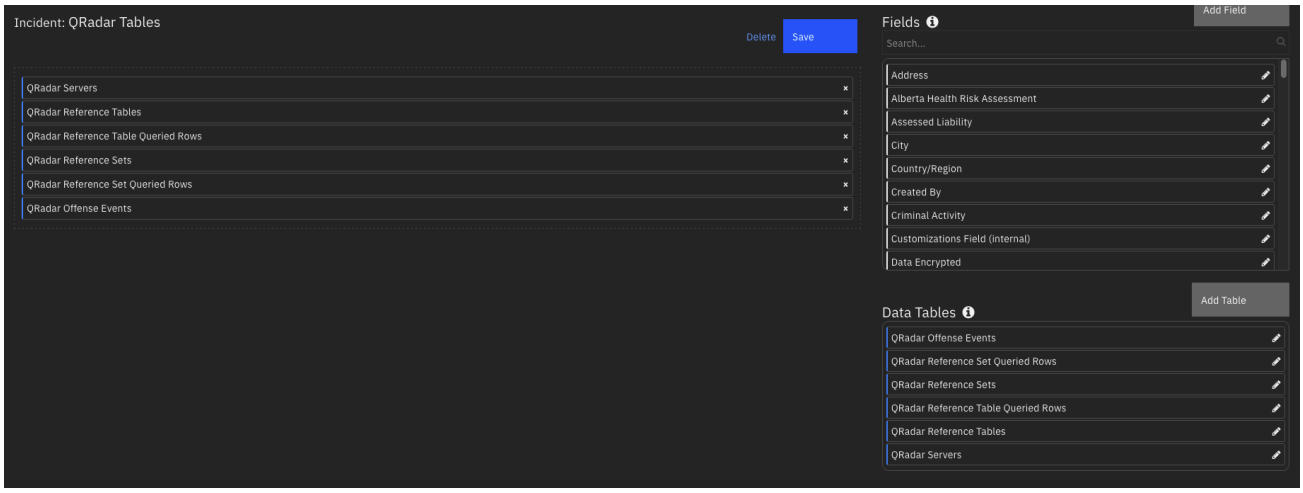
For enterprises with more than one QRadar instance, each instance will have it's own section header, such as `[fn_qradar_integration:qradar_instance_label]` where `qradar_instance_label` represents any label helpful to define you QRadar environment.

Be aware that modifications to the workflows will be needed to correctly pass this label through the `qradar_label` function input field if the QRadar server/servers in the app.config have labels.

If you have existing custom workflows, see Creating workflows when server/servers in app.config are labeled for more information about changing them to reference the `qradar_label` function input field.

Custom Layouts

- Import the Data Tables and Custom Fields like the screenshot below, creating a new tab or using an existing one for the datatables used:



Function - QRadar Add Reference Set Item

Add an item to a given QRadar reference set

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_set_item_value	text	No	–	Value of a QRadar reference set item
qradar_reference_set_name	text	No	–	Name of a QRadar reference set

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.

```
results = {
  "content": {
    "collection_id": 13,
    "creation_time": 1440703748272,
    "element_type": "IP",
    "name": "FTP Servers",
    "namespace": "SHARED",
    "number_of_elements": 1,
    "timeout_type": "FIRST_SEEN"
  },
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_set_item_value": "1.1.1.1",
    "qradar_reference_set_name": "FTP Servers"
  },
  "status_code": 200
}
```

▶ Example Pre-Process Script:

```
inputs.qradar_reference_set_item_value = artifact.value
inputs.qradar_reference_set_name  = rule.properties.qradar_reference_set_name
```

```
inputs.qradar_label = rule.properties.qradar_server
```

▶ Example Post-Process Script:

```
if results["status_code"] == 200:
  incident.addNote(u"IP: {} added to reference set: {} on QRadar server:
{}".format(artifact.value, results.inputs["qradar_reference_set_name"],
results.inputs["qradar_label"]))
else:
  incident.addNote(u"Failed to add IP: {} to reference set on QRadar server: {}.
Status Code: {}, message: {}".format(artifact.value,
results.inputs["qradar_label"], str(results["status_code"]),
results.inputs["qradar_reference_set_name"]))
```

Function - QRadar Delete Reference Set Item

Delete an item from a given QRadar reference set

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_set_item_value	text	No	–	Value of a QRadar reference set item
qradar_reference_set_name	text	No	–	Name of a QRadar reference set

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.

```
results = {
  "content": {
    "content": {
      "collection_id": 17,
      "creation_time": 1440703811218,
      "element_type": "IP",
      "name": "SSH Servers",
      "namespace": "SHARED",
      "number_of_elements": 1,
      "timeout_type": "FIRST_SEEN"
    },
    "status_code": 200
  },
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_set_item_value": "1.1.1.1",
    "qradar_reference_set_name": "SSH Servers"
  },
  "metrics": {
    "execution_time_ms": 496,
    "package": "fn-qradar-integration",
    "package_version": "2.2.0",
```

```
    "timestamp": "2022-01-28 13:25:05",
    "version": "1.0"
  },
  "raw": "{\"status_code\": 200, \"content\": {\"timeout_type\": \"FIRST_SEEN\",
\"number_of_elements\": 1, \"creation_time\": 1440703811218, \"name\": \"SSH
Servers\", \"namespace\": \"SHARED\", \"element_type\": \"IP\", \"collection_id\":
17}}",
  "reason": null,
  "success": true,
  "version": "1.0"
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_reference_set_item_value = artifact.value
inputs.qradar_reference_set_name = rule.properties.qradar_reference_set_name
inputs.qradar_label = rule.properties.qradar_server
```

▶ Example Post-Process Script:

```
if results.content.get("status_code") == 200:
  incident.addNote("IP {} removed successfully from {} on QRadar server:
{}".format(artifact.value, rule.properties.qradar_reference_set_name, "test"))
else:
  incident.addNote(u"Failed to remove {} from {} on QRadar Server: {}, message:
{}".format(artifact.value, rule.properties.qradar_reference_set_name,
results.inputs["qradar_label"], results.content.get("message")))
```

Function - QRadar Find Reference Set Item

Find an item in a given QRadar reference set

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	-	Enter name of QRadar server to use from the app.config
qradar_reference_set_item_value	text	No	-	Value of a QRadar reference set item
qradar_reference_set_name	text	No	-	Name of a QRadar reference set

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.


```
results = {
  "content": {
    "collection_id": 17,
    "creation_time": 1440703811218,
    "data": [
      {
```

```
        "domain_id": null,
        "first_seen": 1643389092070,
        "last_seen": 1643389092070,
        "source": "reference data api",
        "value": "1.1.1.1"
      }
    ],
    "element_type": "IP",
    "name": "SSH Servers",
    "namespace": "SHARED",
    "number_of_elements": 1,
    "timeout_type": "FIRST_SEEN"
  },
  "found": "True",
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_set_item_value": "1.1.1.1",
    "qradar_reference_set_name": "SSH Servers"
  },
  "status_code": 200
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_reference_set_item_value = artifact.value
inputs.qradar_reference_set_name = rule.properties.qradar_reference_set_name
inputs.qradar_label = rule.properties.qradar_server
```

▶ Example Post-Process Script:

```
if results.found == "True":
  incident.addNote(u"Found IP: {} in list: {} on QRadar server:
{}.".format(artifact.value, results.inputs["qradar_reference_set_name"],
results.inputs["qradar_label"]))
else:
  incident.addNote("IP:{} not found in list: {} on QRadar server:
{}.".format(artifact.value, results.inputs["qradar_reference_set_name"],
results.inputs["qradar_label"]))
```

Function - QRadar Find Reference Sets

Find reference sets that contain a given item value, together with information about this item in those reference sets. Information includes whether this item is added to the reference set manually or by a rule.

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_set_item_value	text	No	–	Value of a QRadar reference set item

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.


```
results = {
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_set_item_value": "1.1.1.1"
  },
  "reference_items": [
    {
      "collection_id": 17,
      "creation_time": 1440703811218,
      "data": [
        {
          "domain_id": null,
          "first_seen": 1643389092070,
          "last_seen": 1643389092070,
          "source": "reference data api",
          "value": "1.1.1.1"
        }
      ],
      "element_type": "IP",
      "name": "SSH Servers",
      "namespace": "SHARED",
      "number_of_elements": 1,
      "timeout_type": "FIRST_SEEN"
    }
  ]
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_reference_set_item_value = artifact.value
inputs.qradar_label = rule.properties.qradar_server
```

▶ Example Post-Process Script:

```
if results.reference_items:
  for item in results.reference_items:
    item_row = incident.addRow("qradar_reference_set")
    item_row["qradar_server"] = results.inputs["qradar_label"]
    item_row["reference_set"] = item["name"]
    item_row["item_value"] = item["data"][0]["value"]
    item_row["source"] = item["data"][0]["source"]
else:
  incident.addNote("No reference sets contain artifact: {} on QRadar server:
{}".format(artifact.value, results.inputs["qradar_label"]))
```

Function - QRadar Reference Table Add Item

Add an item to a given QRadar reference table

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_table_item_inner_key	text	No	–	The inner key for a QRadar Reference Table
qradar_reference_table_item_outer_key	text	No	–	The outer key for a QRadar Reference Table
qradar_reference_table_item_value	text	No	–	Value of a QRadar reference table item
qradar_reference_table_name	text	No	–	Value of a QRadar reference table item

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.


```
results = {
  "content": {
    "content": {
      "collection_id": 51,
      "creation_time": 1637336107774,
      "element_type": "ALN",
      "key_label": "offense_id",
      "name": "Generated_Cases",
      "namespace": "SHARED",
      "number_of_elements": 6,
      "time_to_live": "0 years 1 mons 0 days 0 hours 0 mins 0.0 secs",
      "timeout_type": "LAST_SEEN"
    },
    "status_code": 200
  },
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_table_item_inner_key": "09",
    "qradar_reference_table_item_outer_key": "785",
    "qradar_reference_table_item_value": "1.1.1.1",
    "qradar_reference_table_name": "Generated_Cases"
  },
  "metrics": {
    "execution_time_ms": 829,
    "package": "fn-qradar-integration",
    "package_version": "2.2.0",
    "timestamp": "2022-01-28 13:24:01",
    "version": "1.0"
  },
  "raw": "{\"status_code\": 200, \"content\": {\"time_to_live\": \"0 years 1 mons 0
days 0 hours 0 mins 0.0 secs\", \"timeout_type\": \"LAST_SEEN\",
\"number_of_elements\": 6, \"creation_time\": 1637336107774, \"name\":
\"Generated_Cases\", \"namespace\": \"SHARED\", \"element_type\": \"ALN\",
\"collection_id\": 51, \"key_label\": \"offense_id\"}}",
  "reason": null,
  "success": true,
```

```
  "version": "1.0"
}
```

▶ Example Pre-Process Script:

```
inputs.qradar_reference_table_item_value = artifact.value
inputs.qradar_reference_table_item_inner_key =
rule.properties.qradar_ref_table_inner_key
inputs.qradar_reference_table_item_outer_key =
rule.properties.qradar_ref_table_outer_key
inputs.qradar_reference_table_name = rule.properties.qradar_reference_table_name
inputs.qradar_label = rule.properties.qradar_server
```

▶ Example Post-Process Script:

```
note = u"""Outer key: {}
Inner key: {}
Entry: {}
Reference table: {}
QRadar Server: {}""".format(results.inputs.qradar_reference_table_item_outer_key,
                            results.inputs.qradar_reference_table_item_inner_key,
                            results.inputs.qradar_reference_table_item_value,
                            results.inputs.qradar_reference_table_name,
                            results.inputs["qradar_label"])
if results.success:
    incident.addNote(u"Successful add\n{}".format(note))
else:
    incident.addNote(u"Failure to add item: {}\n{}".format(results['reason'],
note))
```

Function - QRadar Reference Table Delete Item

Delete an item from a given QRadar reference table

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_table_item_inner_key	text	No	–	The inner key for a QRadar Reference Table
qradar_reference_table_item_outer_key	text	No	–	The outer key for a QRadar Reference Table
qradar_reference_table_item_value	text	No	–	Value of a QRadar reference table item
qradar_reference_table_name	text	No	–	Value of a QRadar reference table item

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.


```
results = {
  "content": {
    "content": {
      "collection_id": 51,
      "creation_time": 1637336107774,
      "element_type": "ALN",
      "key_label": "offense_id",
      "name": "Generated_Cases",
      "namespace": "SHARED",
      "number_of_elements": 5,
      "time_to_live": "0 years 1 mons 0 days 0 hours 0 mins 0.0 secs",
      "timeout_type": "LAST_SEEN"
    },
    "status_code": 200
  },
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_table_item_inner_key": "457",
    "qradar_reference_table_item_outer_key": "463",
    "qradar_reference_table_item_value": "test4",
    "qradar_reference_table_name": "Generated_Cases"
  },
  "metrics": {
    "execution_time_ms": 425,

    "package": "fn-qradar-integration",
    "package_version": "2.2.0",
    "timestamp": "2022-01-28 13:19:18",
    "version": "1.0"
  },
  "raw": "{\"status_code\": 200, \"content\": {\"time_to_live\": \"0 years 1 mons 0
days 0 hours 0 mins 0.0 secs\", \"timeout_type\": \"LAST_SEEN\",
\"number_of_elements\": 5, \"creation_time\": 1637336107774, \"name\":
\"Generated_Cases\", \"namespace\": \"SHARED\", \"element_type\": \"ALN\",
\"collection_id\": 51, \"key_label\": \"offense_id\"}}",
  "reason": null,
  "success": true,
  "version": "1.0"
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_reference_table_name = row.table
inputs.qradar_reference_table_item_outer_key = row.outer_key
inputs.qradar_reference_table_item_inner_key = row.inner_key
inputs.qradar_reference_table_item_value = row.value
inputs.qradar_label = row["qradar_server"]
```

▶ Example Post-Process Script:

```
note = u"""Outer key: {}
Inner key: {}
```

```
Entry: {}
Reference table: {}
QRadar Server: {}""".format(results.inputs.qradar_reference_table_item_outer_key,
                            results.inputs.qradar_reference_table_item_inner_key,
                            results.inputs.qradar_reference_table_item_value,
                            results.inputs.qradar_reference_table_name,
                            row["qradar_server"])
if results.success:
    incident.addNote(u"Successful delete\n{}".format(note))
    row['status'] = "deleted"
else:
    incident.addNote(u"Failure to delete item: {}\n{}".format(results.reason,
note))
```

Function - QRadar Reference Table Get All Tables

Get all reference tables from a QRadar instance

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	-	Enter name of QRadar server to use from the app.config

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.


```
results = {
  "content": [
    {
      "collection_id": 51,
      "creation_time": 1637336107774,
      "element_type": "ALN",
      "key_label": "offense_id",
      "name": "Generated_Cases",
      "namespace": "SHARED",
      "number_of_elements": 5,
      "time_to_live": "0 years 1 mons 0 days 0 hours 0 mins 0.0 secs",
      "timeout_type": "LAST_SEEN"
    },
    {
      "collection_id": 54,
      "creation_time": 1643227767230,
      "element_type": "ALN",
      "key_label": "Outer Key Label",
      "key_name_types": {
        "Inner Key 1": "ALN"
      },
      "name": "Server7",
      "namespace": "SHARED",
      "number_of_elements": 2,
      "timeout_type": "FIRST_SEEN"
    },
    {
      "collection_id": 52,
      "creation_time": 1607452116847,
```

```
      "element_type": "ALN",
      "name": "pulse_imports",
      "namespace": "SHARED",
      "number_of_elements": 6,
      "timeout_type": "UNKNOWN"
    },
    {
      "collection_id": 53,
      "creation_time": 1643055699440,
      "element_type": "ALN",
      "key_label": "Outer Key Label",
      "key_name_types": {
        "Inner Key 1": "ALN"
      },
      "name": "Test reftable",
      "namespace": "SHARED",
      "number_of_elements": 1,
      "timeout_type": "FIRST_SEEN"
    }
  ],
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name"
  },
  "metrics": {
    "execution_time_ms": 397,

    "package": "fn-qradar-integration",
    "package_version": "2.2.0",
    "timestamp": "2022-01-28 13:18:23",
    "version": "1.0"
  },
  "raw": "[{\"time_to_live\": \"0 years 1 mons 0 days 0 hours 0 mins 0.0 secs\",
\"timeout_type\": \"LAST_SEEN\", \"number_of_elements\": 5, \"creation_time\":
1637336107774, \"name\": \"Generated_Cases\", \"namespace\": \"SHARED\",
\"element_type\": \"ALN\", \"collection_id\": 51, \"key_label\": \"offense_id\"},
{\"timeout_type\": \"FIRST_SEEN\", \"number_of_elements\": 2, \"creation_time\":
1643227767230, \"name\": \"Server7\", \"namespace\": \"SHARED\",
\"key_name_types\": {\"Inner Key 1\": \"ALN\"}, \"element_type\": \"ALN\",
\"collection_id\": 54, \"key_label\": \"Outer Key Label\"}, {\"timeout_type\":
\"UNKNOWN\", \"number_of_elements\": 6, \"creation_time\": 1607452116847, \"name\":
\"pulse_imports\", \"namespace\": \"SHARED\", \"element_type\": \"ALN\",
\"collection_id\": 52}, {\"timeout_type\": \"FIRST_SEEN\", \"number_of_elements\":
1, \"creation_time\": 1643055699440, \"name\": \"Test reftable\", \"namespace\":
\"SHARED\", \"key_name_types\": {\"Inner Key 1\": \"ALN\"}, \"element_type\":
\"ALN\", \"collection_id\": 53, \"key_label\": \"Outer Key Label\"}]",
  "reason": null,
  "success": true,
  "version": "1.0"
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_label = rule.properties.qradar_server
```

▶ Example Post-Process Script:

```
if results.success:
  if results.content:
    for item in results.content:
      item_row = incident.addRow("qradar_reference_table")
      item_row["qradar_server"] = results.inputs["qradar_label"]
      item_row["reference_table"] = item["name"]
      item_row["collection_id"] = item["collection_id"]
      item_row["number_of_elements"] = item["number_of_elements"]
      item_row["namespace"] = item["namespace"]
  else:
    incident.addNote("No reference tables found")
else:
  incident.addNote("An error occurred getting the reference tables: {} from QRadar
server: {}".format(results.reason, rule.properties.qradar_label))
```

Function - QRadar Reference Table Get Table Data

Get the elements in the reference table

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_table_name	text	No	–	Value of a QRadar reference table item

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.

```
results = {
  "content": {
    "collection_id": 51,
    "creation_time": 1637336107774,
    "data": {
      "123": {
        "234": {
          "domain_id": null,
          "first_seen": 1643387632118,
          "last_seen": 1643387701324,
          "source": "reference data api",
          "value": "test2"
        }
      },
      "463": {
        "457": {
          "domain_id": null,
          "first_seen": 1643393906668,
          "last_seen": 1643393906668,
          "source": "reference data api",
          "value": "test4"
        }
      },
```

```
      "9": {
        "case_id": {
          "domain_id": null,
          "first_seen": 1643140658221,
          "last_seen": 1643141897308,
          "source": "reference data api",
          "value": "3107"
        },
        "case_time": {
          "domain_id": null,
          "first_seen": 1643140658221,
          "last_seen": 1643141897308,
          "source": "reference data api",
          "value": "1643141900578"
        },
        "domain_id": {
          "domain_id": null,
          "first_seen": 1643140658221,
          "last_seen": 1643141897308,
          "source": "reference data api",
          "value": "0"
        },
        "org_id": {
          "domain_id": null,
          "first_seen": 1643140658221,
          "last_seen": 1643141897308,
          "source": "reference data api",
          "value": "202"
        }
      }
    },
    "element_type": "ALN",
    "key_label": "offense_id",
    "name": "Generated_Cases",
    "namespace": "SHARED",
    "number_of_elements": 6,
    "time_to_live": "0 years 1 mons 0 days 0 hours 0 mins 0.0 secs",
    "timeout_type": "LAST_SEEN"
  },
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_table_name": "Generated_Cases"
  },
  "metrics": {
    "execution_time_ms": 364,

    "package": "fn-qradar-integration",
    "package_version": "2.2.0",
    "timestamp": "2022-01-28 13:18:58",
    "version": "1.0"
  },
  "raw": "{\"time_to_live\": \"0 years 1 mons 0 days 0 hours 0 mins 0.0 secs\",
\"timeout_type\": \"LAST_SEEN\", \"number_of_elements\": 6, \"data\": {\"9\":
{\"case_id\": {\"last_seen\": 1643141897308, \"first_seen\": 1643140658221,
\"source\": \"reference data api\", \"value\": \"3107\", \"domain_id\": null},
\"case_time\": {\"last_seen\": 1643141897308, \"first_seen\": 1643140658221,
\"source\": \"reference data api\", \"value\": \"1643141900578\", \"domain_id\":
null}, \"domain_id\": {\"last_seen\": 1643141897308, \"first_seen\": 1643140658221,
\"source\": \"reference data api\", \"value\": \"0\", \"domain_id\": null},
```

```
\"org_id\": {\"last_seen\": 1643141897308, \"first_seen\": 1643140658221,
\"source\": \"reference data api\", \"value\": \"202\", \"domain_id\": null}},
\"123\": {\"234\": {\"last_seen\": 1643387701324, \"first_seen\": 1643387632118,
\"source\": \"reference data api\", \"value\": \"test2\", \"domain_id\": null}},
\"463\": {\"457\": {\"last_seen\": 1643393906668, \"first_seen\": 1643393906668,
\"source\": \"reference data api\", \"value\": \"test4\", \"domain_id\": null}}},
\"creation_time\": 1637336107774, \"name\": \"Generated_Cases\", \"namespace\":
\"SHARED\", \"element_type\": \"ALN\", \"collection_id\": 51, \"key_label\":
\"offense_id\"}",
  "reason": null,
  "success": true,
  "version": "1.0"
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_reference_table_name = row['reference_table']
inputs.qradar_label = row["qradar_server"]
```

▶ Example Post-Process Script:

```
if results.success:
  for outer_key, item in results.content.get('data',[]).items():
    for inner_key, inner_item in item.items():
      table_row = incident.addRow('qradar_reference_table_queried_rows')
      table_row['qradar_server'] = row["qradar_server"]
      table_row['table'] = results.inputs.qradar_reference_table_name
      table_row['outer_key'] = outer_key
      table_row['inner_key'] = inner_key

      table_row['value'] = inner_item['value']
      table_row['status'] = 'active'
else:
  incident.addNote("An error occurred getting the reference table data:
{}".format(results.reason))
```

Function - QRadar Reference Table Update Item

Update an item in a given QRadar reference table

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_reference_table_item_inner_key	text	No	–	The inner key for a QRadar Reference Table
qradar_reference_table_item_outer_key	text	No	–	The outer key for a QRadar Reference Table

Name	Type	Required	Example	Tooltip
qradar_reference_table_item_value	text	No	-	Value of a QRadar reference table item
qradar_reference_table_name	text	No	-	Value of a QRadar reference table item

▶ Outputs:

NOTE: This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.


```
results = {
  "content": {
    "content": {
      "collection_id": 51,
      "creation_time": 1637336107774,
      "element_type": "ALN",
      "key_label": "offense_id",
      "name": "Generated_Cases",
      "namespace": "SHARED",
      "number_of_elements": 5,
      "time_to_live": "0 years 1 mons 0 days 0 hours 0 mins 0.0 secs",
      "timeout_type": "LAST_SEEN"
    },
    "status_code": 200
  },
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_reference_table_item_inner_key": "234",
    "qradar_reference_table_item_outer_key": "123",
    "qradar_reference_table_item_value": "test1",
    "qradar_reference_table_name": "Generated_Cases"
  },
  "metrics": {
    "execution_time_ms": 424,

    "package": "fn-qradar-integration",
    "package_version": "2.2.0",
    "timestamp": "2022-01-28 13:19:42",
    "version": "1.0"
  },
  "raw": "{\"status_code\": 200, \"content\": {\"time_to_live\": \"0 years 1 mons 0
days 0 hours 0 mins 0.0 secs\", \"timeout_type\": \"LAST_SEEN\",
\"number_of_elements\": 5, \"creation_time\": 1637336107774, \"name\":
\"Generated_Cases\", \"namespace\": \"SHARED\", \"element_type\": \"ALN\",
\"collection_id\": 51, \"key_label\": \"offense_id\"}}",
  "reason": null,
  "success": true,
  "version": "1.0"
}
```


▶ Example Pre-Process Script:

```
inputs.qradar_label = row["qradar_server"]
inputs.qradar_reference_table_name = row.table
```

```
inputs.qradar_reference_table_item_outer_key = row.outer_key
inputs.qradar_reference_table_item_inner_key = row.inner_key

if rule.properties.qradar_ref_table_update:
  inputs.qradar_reference_table_item_value =
rule.properties.qradar_ref_table_update
else:
  inputs.qradar_reference_table_item_value = "This is an example"
```

▶ Example Post-Process Script:

```
note = u"""Outer key: {}
Inner key: {}
Entry: {}
Reference table: {}
QRadar Server: {}""".format(results.inputs.qradar_reference_table_item_outer_key,
                            results.inputs.qradar_reference_table_item_inner_key,
                            results.inputs.qradar_reference_table_item_value,
                            results.inputs.qradar_reference_table_name,
                            row["qradar_server"])
if results.success:
    incident.addNote(u"Successful updated\n{}".format(note))
    row['status'] = 'updated'
    row['value'] = results.inputs.qradar_reference_table_item_value
else:
    incident.addNote(u"Failure to updated item: {}\n{}".format(results['reason'],
note))
```

Function - QRadar Search

Search QRadar for events

▶ Inputs:

Name	Type	Required	Example	Tooltip
qradar_label	text	No	–	Enter name of QRadar server to use from the app.config
qradar_query	textarea	No	–	A qradar query string with parameters
qradar_query_all_results	select	No	–	Display all results from search. By default, a range for the number of returned results is set.
qradar_query_range_end	number	No	–	-
qradar_query_range_start	number	No	–	-
qradar_search_param1	text	No	–	-
qradar_search_param2	text	No	–	-
qradar_search_param3	text	No	–	-
qradar_search_param4	text	No	–	-

Name	Type	Required	Example	Tooltip
qradar_search_param5	text	No	–	-

▶ Outputs:

> **NOTE:** This example might be in JSON format, but `results` is a Python Dictionary on the SOAR platform.

```
results = {
  "events": [],
  "inputs": {
    "qradar_label": "SOAR_Plugin_Destination_Name",
    "qradar_query": "SELECT %param1% FROM events WHERE INOFFENSE(%param2%) LAST
%param3% Days",
    "qradar_query_all_results": false,
    "qradar_search_param1": "DATEFORMAT(starttime, \u0027YYYY-MM-dd HH:mm\u0027) as
StartTime, CATEGORYNAME(category), LOGSOURCENAME(logsourceid),
PROTOCOLNAME(protocolid), RULENAME(creeventlist)",
    "qradar_search_param2": "8",
    "qradar_search_param3": "7",
    "qradar_search_param4": null,
    "qradar_search_param5": null
  }
}
```

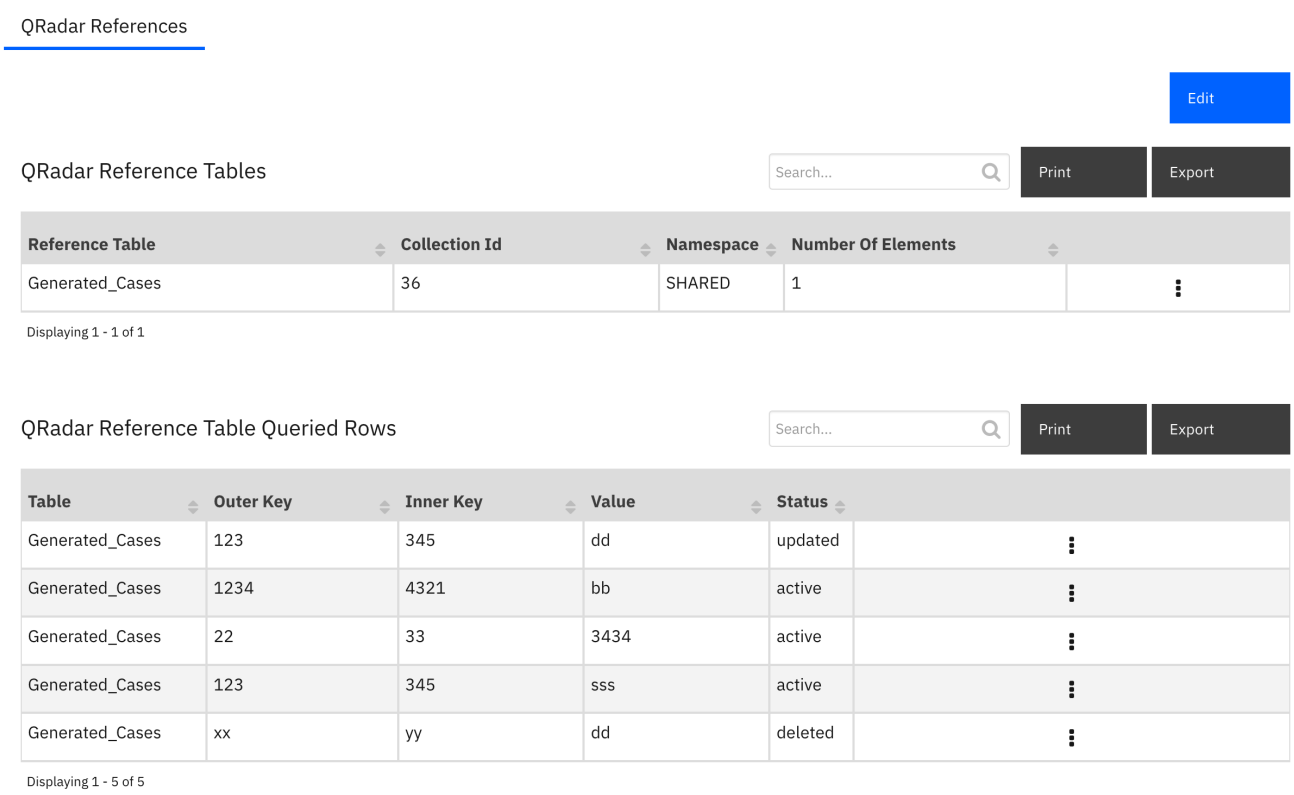
▶ Example Pre-Process Script:

```
inputs.qradar_search_param2 = incident.properties.qradar_id

inputs.qradar_label = rule.properties.qradar_server

if rule.properties.qradar_query_all_results:
  inputs.qradar_query_all_results = rule.properties.qradar_query_all_results
```

▶ Example Post-Process Script:

```
for event in results["events"]:
  qradar_event = incident.addRow("qradar_offense_event")
  qradar_event.qradar_server = results.inputs.get("qradar_label")
  qradar_event.start_time = event["StartTime"]
  qradar_event.category = event["categoryname_category"]
  qradar_event.log_source = event["logsourcename_logsourceid"]
  qradar_event.protocol = event["protocolname_protocolid"]
  qradar_event.rule = event["rulename_creeventlist"]
```

Data Table - QRadar Reference Table Queried Rows



API Name:

qradar_reference_table_queried_rows

Columns:

Column Name	API Access Name	Type	Tooltip
Inner Key	`inner_key`	`text`	-
Outer Key	`outer_key`	`text`	-
Table	`table`	`text`	-
Value	`value`	`text`	-
Status	`status`	`text`	-

Function - QRadar Reference Table Delete Item

Delete an item from a given QRadar reference table

▶ Inputs:

Name	Type	Required	Example	Tooltip
`qradar_reference_table_item_inner_key`	`text`	No	–	The inner key for a QRadar Reference Table
`qradar_reference_table_item_outer_key`	`text`	No	–	The outer key for a QRadar Reference Table
`qradar_reference_table_item_value`	`text`	No	–	Value of a QRadar reference table item

Name	Type	Required	Example	Tooltip
qradar_reference_table_name	text	No	-	Value of a QRadar reference table item

▶ Outputs:

```
results = {
    # TODO: Copy and paste an example of the Function Output within this code
block.
    # To view the output of a Function, run resilient-circuits in DEBUG mode and
invoke the Function.
    # The Function results will be printed in the logs: "resilient-circuits run --
loglevel=DEBUG"
}
```

▶ Example Pre-Process Script:

```
inputs.qradar_reference_table_name = row.table
inputs.qradar_reference_table_item_outer_key = row.outer_key
inputs.qradar_reference_table_item_inner_key = row.inner_key
inputs.qradar_reference_table_item_value = row.value
```

▶ Example Post-Process Script:

```
note = u"""Outer key: {}
Inner key: {}
Entry: {}
Reference table: {}""".format(results.inputs.qradar_reference_table_item_outer_key,
                              results.inputs.qradar_reference_table_item_inner_key,
                              results.inputs.qradar_reference_table_item_value,
                              results.inputs.qradar_reference_table_name)
if results.success:
    incident.addNote(u"Successful delete\n{}".format(note))
    row['status'] = "deleted"
else:
    incident.addNote(u"Failure to delete item: {}\n{}".format(results['reason'],
note))
```

Data Table - QRadar Offense Events

API Name:

qradar_offense_event

Columns:

Column Name	API Access Name	Type	Tooltip
Category	category	text	-

Column Name	API Access Name	Type	Tooltip
Log Source	log_source	text	logsourceid
Protocol	protocol	text	protocolid
QRadar Server	qradar_server	text	-
Rule	rule	text	creeventlist
Start Time	start_time	text	starttime

Data Table - QRadar Reference Sets

API Name:

qradar_reference_set

Columns:

Column Name	API Access Name	Type	Tooltip
Item Value	item_value	text	Item value
QRadar Server	qradar_server	text	-
Reference Set	reference_set	text	Name of reference set
Source	source	text	how this value is added to the reference set

Data Table - QRadar Reference Table Queried Rows

API Name:

qradar_reference_table_queried_rows

Columns:

Column Name	API Access Name	Type	Tooltip
Inner Key	inner_key	text	-
Outer Key	outer_key	text	-
QRadar Server	qradar_server	text	-
Status	status	text	-
Table	table	text	-
Value	value	text	-

Data Table - QRadar Reference Tables

API Name:

qradar_reference_table

Columns:

Column Name	API Access Name	Type	Tooltip
Collection Id	`collection_id`	`text`	-
Namespace	`namespace`	`text`	-
Number Of Elements	`number_of_elements`	`text`	-
QRadar Server	`qradar_server`	`text`	-
Reference Table	`reference_table`	`text`	-

Rules

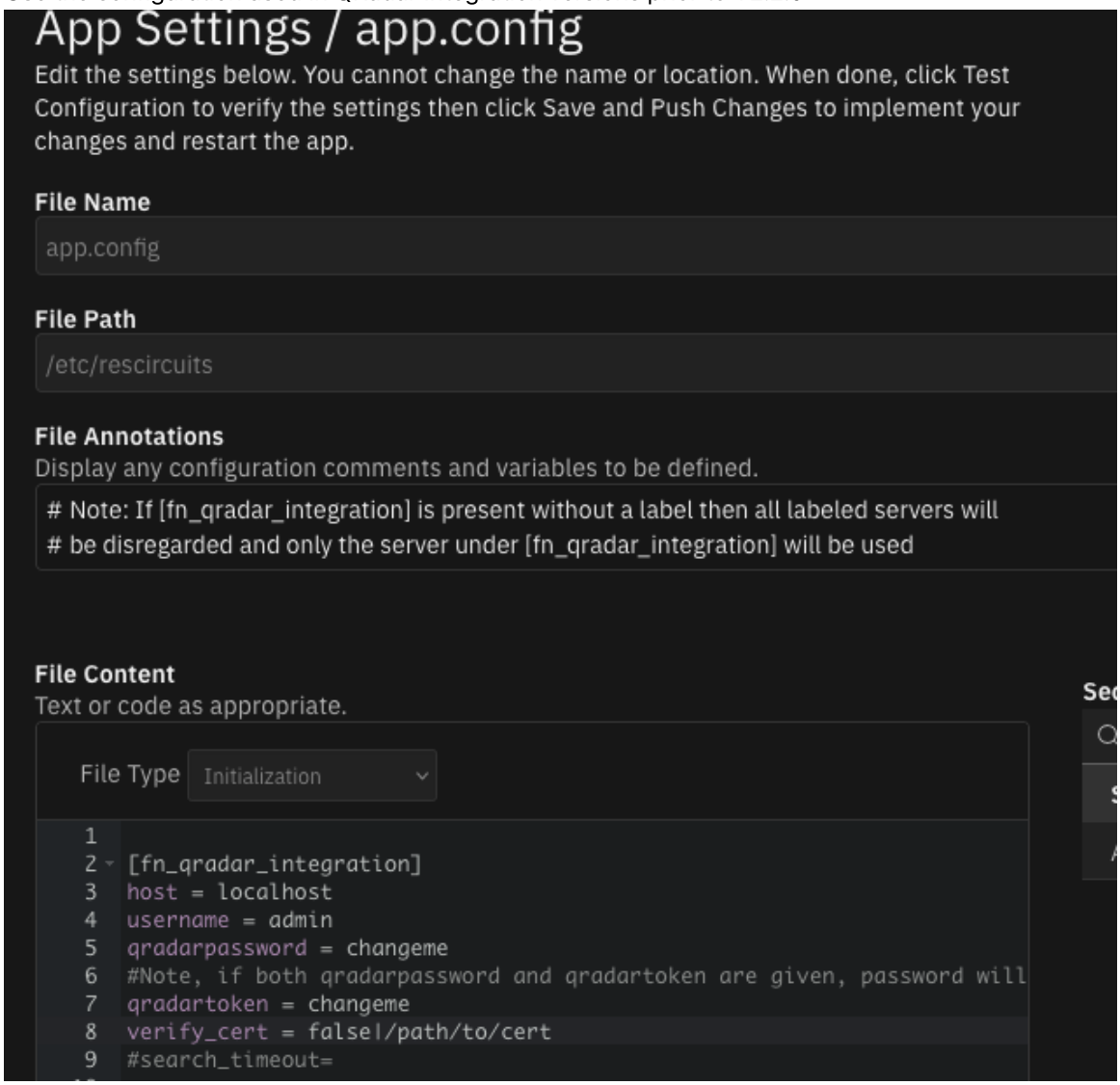
Rule Name	Object	Workflow Triggered
Example: QRadar - Add Item to this Reference Table	qradar_reference_table	`example_qradar__add_reference_table_item_dt`
Example: QRadar - Delete this Reference Table Item	qradar_reference_table_queried_rows	`example_qradar__delete_reference_table_item_dt`
Example: QRadar - Gather Reference Table Data	qradar_reference_table	`qradar_get_reference_table_data`
Example: QRadar - Get all Reference Tables	incident	`example_qradar__get_all_reference_tables`
Example: QRadar - Update this Reference Table Item	qradar_reference_table_queried_rows	`example_qradar__update_this_reference_table_item`
Find All QRadar Reference Sets	artifact	`qradar_find_reference_sets_artifact`

Rule Name	Object	Workflow Triggered
Find in QRadar Reference Set	artifact	`qradar_find_reference_set_item`
QRadar Add to Reference Set	artifact	`qradar_add_reference_set_item`
QRadar Add to Reference Table	artifact	`add_a_reference_table_item`
QRadar Move from Sample Blocked to Sample Suspected	artifact	`qradar_move_item_to_different_ref_set`
Search QRadar for offense id	incident	`qradar_search_event_offense`

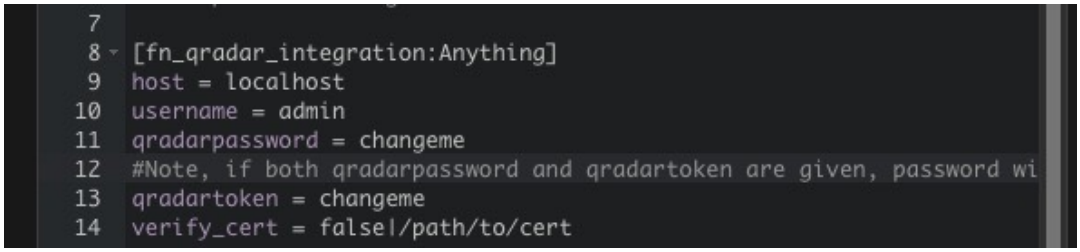
How to configure to use a single QRadar Server

To use only a single server there are two ways this can be configured

1. Use the configuration used in QRadar Integration versions prior to V2.2.0



2. Either keep the label, SOAR_Plugin_Destination_Name1, or change it (The label does not matter when only one server is configured)



Creating workflows when server/servers in app.config are labeled

The function input field `qradar_label` is required when QRadar server/servers in the app.config are labeled. In the example workflows pre-process scripts the input field `qradar_label` is defined the following way,

```
inputs.qradar_label = incident.properties.qradar_destination
```

Example app.config server label: [fn_qradar_integration:qradar_4] `qradar_4` will be set to `inputs.qradar_label` in the above example.

Troubleshooting & Support

Refer to the documentation listed in the Requirements section for troubleshooting information.

For Support

This is a IBM Community provided App. Please search the Community https://ibm.biz/soarcommunity for assistance.