

# Introduction

---

This package contains the Resilient Plugin to the Data Feed extension. This Data Feed extension allows one to maintain "replica" data for Resilient incidents, artifacts, tasks, notes, etc. in another instance of Resilient or another Organization in the same instance of Resilient. The updates are performed in near real-time.

Refer to the documentation on the Data Feed extension for use cases supported and configuration options. Also refer to the other Data Feed plugins which can be used in combination.

## Features

- Transfer incident data between two instances of Resilient
- Transfer incident data between two Organizations within the same Resilient instance
- Transfer incident data to more than one Resilient instance at the same time.
- Synchronized incident data objects include: Artifacts, Attachments, Notes, Milestones, Tasks and Datatables.

## License

---

Unless otherwise specified, contents of this repository are published under the MIT open-source [LICENSE](#).

## Installation

---

The integration package contains Python components that are called by the Resilient platform. These components run in the Resilient Circuits integration framework. The package also includes Resilient customizations that will be imported into the platform later. You perform these installation procedures at the Resilient integration server.

### Install the Python Components

Complete the following steps to install the Python components:

- Ensure that the environment is up-to-date, as follows:

```
sudo pip install --upgrade pip
sudo pip install --upgrade setuptools
sudo pip install --upgrade resilient-circuits
```

- Run the following commands to install the package:

```
unzip rc_data_feed_plugin_resilient-<version>.zip
[sudo] pip install --upgrade rc_data_feed-plugin_resilient-<version>.tar.gz
```

- Configure Resilient-circuits

The Resilient Circuits process runs as an unprivileged user, typically named **integration**. If you do not already have an integration user configured on your appliance, create it now. Complete the following steps to configure and run the integration:

- Using sudo, switch to the integration user, as follows:

```
sudo su - integration
```

- Use one of the following commands to create or update the resilient-circuits configuration file. Use `-c` for new environments or `-u` for existing environments.

```
resilient-circuits config -c
or
resilient-circuits config -u [-l rc-data-feed-plugin-resilient]
```

- Import custom fields to retain source organization and incident ids:

```
resilient-circuits customize -l rc-data-feed-plugin-resilient
```

Note: Perform an export and reimport of these customizatons into the target Resilient instance in order to use them. See `app.config` parameter: **sync\_reference\_fields**.

- Edit the resilient-circuits configuration file, as follows:

- In the **[resilient]** section, ensure that you provide all the information required to connect to the Resilient platform.
- In the **[feeds]** section, define the feed(s) you intend to use and create separate sections for each feed. For example:  
**feed\_names=resilient\_feed**
- In the **[resilient\_feed]** section, configure the settings for your Resilient environment.

```
[feeds]
feed_names=elastic_feed
reload=True
# feed_data is the default queue that will be listened to
queue=feed_data

[resilient_feed]
class=ResilientFeed
# provide configuration information to the target Resilient and Organization
host=localhost
#proxy_host=
api_key_id=
api_key_secret=
#email=
#password=
port=443
org=
cafile=false
# identify a sqlite db file to retain mapping between resilient instances.
db_sync_file=/path/to/file
# optional comma separated list of fields to allow incidents to sync. ex. incident_type_ids in
['Phishing']
matching_incident_fields=
# when using matching_incident_fields, specify whether 'all' or 'any' field needs to match to accept
matching_operator=all
# optional comma separated list of fields to exclude from an incident. Sections of fields can be
used: pii,gdpr,hipaa,cm
exclude_incident_fields=
# optionally include references within the incident to source org_id and incident_id. Values
True/False
sync_reference_fields=True
```

## ResilientFeed Class

This class allows you to write all incoming data to another Resilient Organization. Incidents, Artifacts, Attachments, Datatables, Notes, Milestones and Tasks (including task notes, and attachments) are copied. The following configuration items are supported:

Key	Values	Description
class	ResilientFeed	Indicates that the section is for an Resilient synchronization.
host, #proxy_host, api_key_id, api_key_secret, #email, #password, port, org, cafile		Specify the connection values similar to the <b>[resilient]</b> section for connection to the target resilient
db_sync_file	/path/to/file	Absolute path to a file to retain mapping information between the two Resilient instances
matching_incident_fields	plan_status == 'C', custom_field > 5	Optional comma separated list of comparison tuples to determine the criteria for synchronizing an incident and it's tasks, artifacts, etc. Use the syntax: <field> <operator> <value>. Operator may be one of: ==, >=, <=, <, >, in, 'not in', is, and 'is not'. <b>None</b> can be used for <value>. Make sure to separate each <field> <operator> <value> with spaces.
matching_operator	any all	When using matching_incident_fields, either <b>all</b> fields or <b>any</b> field needs to match for incident synchronization
exclude_incident_fields	severity_code, date_started, custom_field, etc.	Optional comma separated list of fields and field sections to exclude when synchronizing an incident.
sync_reference_fields	True False	Specify <b>True</b> to add information to the target incident to maintain the original org id and incident id. Fields are <b>df_org_id</b> and <b>df_inc_id</b> , respectively

## Requirements

- This functionality has been tested with Resilient instances >= v30

- The target Resilient instance must be at the same version or greater than the source Resilient instance
- The target Resilient instance must have the same set of custom fields, incident types, playbooks (tasks and phases) in order to synchronize incident data. Use the export/import functionality under **Administrator Settings**.
- The target Resilient instance should have the same users and groups defined. For any user or group not found, incident and task ownership as well as member lists will be left empty.
- To synchronize datatables in real time, create rules specifying the **feed\_data** message destination in order to changes.

## Setup Steps

1. Ensure Resilient version requirements are met for both the source and destination instances
2. Perform the manual duplication of custom fields, incident types, phases and tasks, etc. by exporting these configurations from the Resilient source instance and importing them to the target Resilient instance.
3. Manually recreate the users and groups needed in the target Resilient instance.
4. Configure the app.config settings with the settings for the target Resilient instance and, optionally, the criteria for the types of incidents to synchronize and fields to exclude.
5. Run **resilient-circuits run** to confirm connectivity to both instances of Resilient (with **reload=False**).
6. The best way to test is to set **reload=False** under **[feeds]** in your app.config file, and in the source Resilient instance, run the **Data Feeder: Sync Incidents** rule to synchronize a small number of incidents.

## Considerations

- If real-time synchronization remains in place, changes in the source Resilient data will overwrite any changes made in the target Resilient instance data.
- Deleting a source incident, task, artifact, etc. will also delete the matching target information.
- Synchronization of incidents may fail if newer required fields were created that were not present on these older incidents. Same is true for newer 'on close' created fields. This can be overcome by changing the fields from **required** to **optional**.
- Unofficial timing tests shows creating incident data can take .3-.5 seconds each data type. Consider the time it will take for all your incident data to synchronize when using **reload=True**.
- Review the permissions given to target resilient user or api\_key. They must have the appropriate values to read and write incidents, artifacts, attachments, comments, milestones, tasks, and datatables. In addition, some incidents have wiki entries associated with them. Finally, older versions of Resilient also intermix simulation incidents. Provide the permission to create those as necessary.

Display Name \*

sync api key

Description

Optional

☒ All permissions  
If checked, all of the permissions below are granted:

Incident Permissions

☒ Incidents
☒ Read
☒ Create
☒ Delete
☐ Download Email

☒ Edit Incidents
☒ Fields
☒ Owner
☒ Members
☒ Status
☒ Notes
☐ Workspace

Simulation Permissions

☒ Create Simulations

Task Permissions

☒ Read Tasks
☒ Fields
☒ Members
☒ Notes

☒ Edit Tasks
☒ Fields
☒ Members
☒ Notes

☒ Read Private Tasks
☒ Fields
☒ Members
☒ Notes

☒ Edit Private Tasks
☒ Fields
☒ Members
☒ Notes

Administration Permissions

☐ Manage API Keys
☒ Org Data
☒ Read
☒ Edit

☐ Read LDAP
☐ Dashboards and Filters
☐ Read
☐ Edit
☐ Create
☐ Delete

☐ Roles
☐ Read
☐ Edit
☐ Create
☐ Delete

☐ Workspaces
☐ Read
☐ Edit
☐ Create
☐ Delete

☒ Users
☒ Read
☐ Edit
☐ Create
☐ Delete

☒ Groups
☒ Read
☐ Edit
☐ Create
☐ Delete

☐ EmailConfig
☐ Read
☐ Edit
☐ Create
☐ Delete

Customization Permissions

☐ Layouts
☐ Read
☐ Edit
☐ Delete

☐ Scripts
☐ Read
☐ Edit
☐ Create
☐ Delete

☐ Workflows
☐ Read
☐ Edit
☐ Create
☐ Delete

☐ Functions
☐ Read
☐ Edit
☐ Create
☐ Delete

Other Permissions

☐ Read Incident Action Invocations
☐ Read Stats
☐ Edit Privacy Data
☒ Wiki
☒ Edit
☒ Create
☒ Delete

☐ Inbox Emails
☐ View
☐ Download
☐ Delete

## Limitations

- This solution is not intended for bidirectional synchronization.
- Unfortunately, the create date of the original incident is lost when the target incident is synchronized.
- Timer data cannot be synchronized

- Presently, artifacts with custom artifact types cannot synchronize.
- Deleting a source incident task attachment presently doesn't synchronize.
- Incident email messages (via the built-in Inbound Email Connectors) do not synchronize.

## Synchronization Methods

Three methods exist for synchronizing incident data:

- reload=True - This app.config setting will synchronize all incidents (including those closed) each time resilient-circuits is run. Review performance considerations above in [Considerations].
- real-time changes - If the automatic rules for incident, artifact, tasks, etc. are enabled, then any change to a object will perform the synchronization to the target organization. Note: Datatable rules need to be created in order to synchronize them in real-time.
- Data Feeder: Sync Incidents function - This function allows one to specify the range of incident data to synchronize. This is useful to limit the range of incidents to transmit.

## Behavior

Unexpected behaviors can occur and are detailed here.

- If an incident is originally filtered via the `matching_incident_fields` setting, all incident data are filtered. If in the future that incident changes so that the matching criteria passes, at the time the incident is changed, only the incident is synchronized. To include all the other data elements such as tasks, artifact, attachments, etc., use the **Data Feeder: Sync Incidents** function.
- Attachments cannot be updated

## SQLite Database

A sqlite database is used to maintain a mapping of incident data between the source and target Resilient instances. Two tables are maintained for this purpose:

- data\_feeder\_sync - contains specific ids for source and target instances and status. The fields are as follows:

type_name	org1	org1_inc_id	org1_type_id	org2	org2_inc_id	org2_type_id	last_sync	status
-----------	------	-------------	--------------	------	-------------	--------------	-----------	--------

Status can be one of `active`, `filtered`, `deleted`.

- data\_feeder\_retry - failures to create a data element are retried when the parent element is synchronized. For example, this is needed when tasks appear for synchronization before the incident. Once the incident is synchronized, all the dependent elements will be retried. The schema is as follows:

type_name	org1	org1_inc_id	org1_type_id	org1_dep_type_name	org1_dep_type_id	org2	org2_inc_id	payload	last_attempt
-----------	------	-------------	--------------	--------------------	------------------	------	-------------	---------	--------------

## Troubleshooting SQLite DB

There are many tools to view the db tables, including open-source solutions. DBeaver is one open-source application supporting many different database types including sqlite.

Use the following SQL statements for problem diagnostics:

- `select * from data_feeder_sync where org2=`
- `select * from data_feeder_retry where org2=`

The screenshot shows the DBeaver interface with the SQLite database schema on the left and a query result for the `data_feeder_sync` table on the right.

**Schema (Left Panel):**

- `data_feeder_retry` (Table)
  - `type_name` (TEXT)
  - `org1` (INT)
  - `org1_inc_id` (INT)
  - `org1_type_id` (INT)
  - `org1_dep_type_name` (TEXT)
  - `org1_dep_type_id` (INT)
  - `org2` (INT)
  - `org2_inc_id` (INT)
  - `payload` (TEXT)
  - `last_attempt` (TIMESTAMP)
- `data_feeder_sync` (Table)
  - `type_name` (TEXT)
  - `org1` (INT)
  - `org1_inc_id` (INT)
  - `org1_type_id` (INT)
  - `org2` (INT)
  - `org2_inc_id` (INT)
  - `org2_type_id` (INT)
  - `last_sync` (TIMESTAMP)
  - `status` (TEXT)

**Query Result (Right Panel):**

```
select * from data_feeder_sync;
```

	type_name	org1	org1_inc_id	org1_type_id	org2	org2_inc_id	org2_type_id	last_sync	status
1	Incident	201	59800	59800	207	0	0	2020-03-29 19:22:03	filtered
2	Incident	201	59804	59804	207	4022	4022	2020-03-29 19:22:10	active
3	note	201	59804	13869	207	4022	688	2020-03-29 19:22:11	active
4	attachment	201	59804	48550	207	4022	700	2020-03-29 19:22:13	active
5	attachment	201	59804	48549	207	4022	701	2020-03-29 19:22:15	active
6	attachment	201	59804	48548	207	4022	702	2020-03-29 19:22:16	active
7	task	201	59804	2879279	207	4022	2852	2020-03-29 19:22:18	active
8	task	201	59804	2879280	207	4022	2853	2020-03-29 19:22:19	active
9	task	201	59804	2879281	207	4022	2854	2020-03-29 19:22:20	active
10	milestone	201	59804	22491	207	4022	201	2020-03-29 19:22:21	active
11	milestone	201	59804	22492	207	4022	202	2020-03-29 19:22:21	active
12	Incident	201	59806	59806	207	0	0	2020-03-29 19:22:21	filtered
13	Incident	201	59810	59810	207	0	0	2020-03-29 19:22:22	filtered
14	Incident	201	59817	59817	207	0	0	2020-03-29 19:22:23	filtered

## Troubleshooting Tips

Synchronization could fail for the following reasons:

- Missing custom fields, custom incident\_types, phases, etc. Ensure you have exported and re-imported these customizations into the target Resilient instance. Also check the permissions set on your target Resilient user account or api token associated with incident, artifact, task, etc. creation, including creating wiki pages.
- Artifacts with custom artifact types cannot be synchronized at this time.
- Older incident fields missing required fields defined at a later point in time. The only remedy is to modify the definition of the fields from **required** to **optional** and then resync the field using the rule **Data Feed: Sync Incidents**.
- Matching criteria filtered the incident. Review the values specified in **matching\_incident\_fields** and the value specified in **matching\_operator**
- Change the log level to debug to receive additional troubleshooting information on synchronization issues

```
[resilient]  
loglevel = DEBUG
```