Introduction

This package contains the Resilient plugin to the Data Feed extension. The Data Feed Extension allows you to maintain "replica" data for Resilient incidents artifacts, tasks, notes, and so on, in another Resilient organization in the same or different Resilient platform. 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.
- Choice of databases too retain synchronization information: SQLite or PostreSQL

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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 setup and configuration of your Integration server as detailed in our Integration Server Guide.
- Run the following commands to install the package:

```
unzip app-rc_data_feed_plugin_resilientfeed-<version>.zip
[sudo] pip install --upgrade rc_data_feed-plugin_resilientfeed-<version>.tar.gz
```

If adding support for PostreSQL, upgrade the package as:

```
[sudo] pip install --upgrade rc_data_feed-plugin_resilientfeed-<version>.tar.gz[postgres]
```

- 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-resilientfeed]
```

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

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

Note: Perform an export and reimport of these customizations into the target Resilient organization 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=resilient_feed
  reload=True
  # feed_data_resilient is the default queue that will be listened to
  queue=feed_data_resilient

  [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.
  sqlite_sync_file=/path/to/file
  # postgresql db connection if sqlite_sync_file is not used
  postgresql_connect=Driver={PostresSQL Driver};Server=127.0.0.1;DB=<db>;Port=5432;connectTimeout=0
  postgresql_uid=<acct>
  postgresql_pwd=<pwd>
  # optional semicolon separated list of fields to allow incidents to sync. ex. incident_type_ids in ["Phishing", "Malware"];custom_field = a;description ~ malicious
  #matching_incident_fields=
  # when using matching_incident_fields, specify whether 'all' or 'any' field needs to match to accept
  #matching_operator=all
  # optional semicolon 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
  # true|false - specify whether to delete the target incident if the source incident is deleted. Default: false
  delete_incidents=false
```

matching_incident_fields

Use this capability to filter which incidents and it's tasks, notes, artifacts, etc. are sent to the target organization. Below are a few examples for how to use this capability.

- Filter on the incident owner.

> matching_incident_fields=ownerid == user@example.com

- Filter on any incident type phishing or malware.

> matching_incident_fields=incident_type_ids in ['Phishing', 'Malware']

- Filter on the title or description field containing the word 'malicious'.

> matching_incident_fields=name ~ malicious;description ~ malicious matching_operator=any

- Filter on a custom boolean field set to True.

> matching_incident_fields=custom_bool == True

- Filter on open incidents. This is useful when performing a bulk load with as `reload=true` or using the `Data Feeder: Sync Incidents` function.

> matching_incident_fields=plan_status == A

- Filtering on date and datetime fields are a little trickly as the epoch timestamp is needed. Websites such as https://www.epochconverter.com/ can be used to generate a timestamp. Be sure to use the GMT timezone and use a timezone in milliseconds.

> matching_incident_fields=discovered_date >= 1604073642000

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:

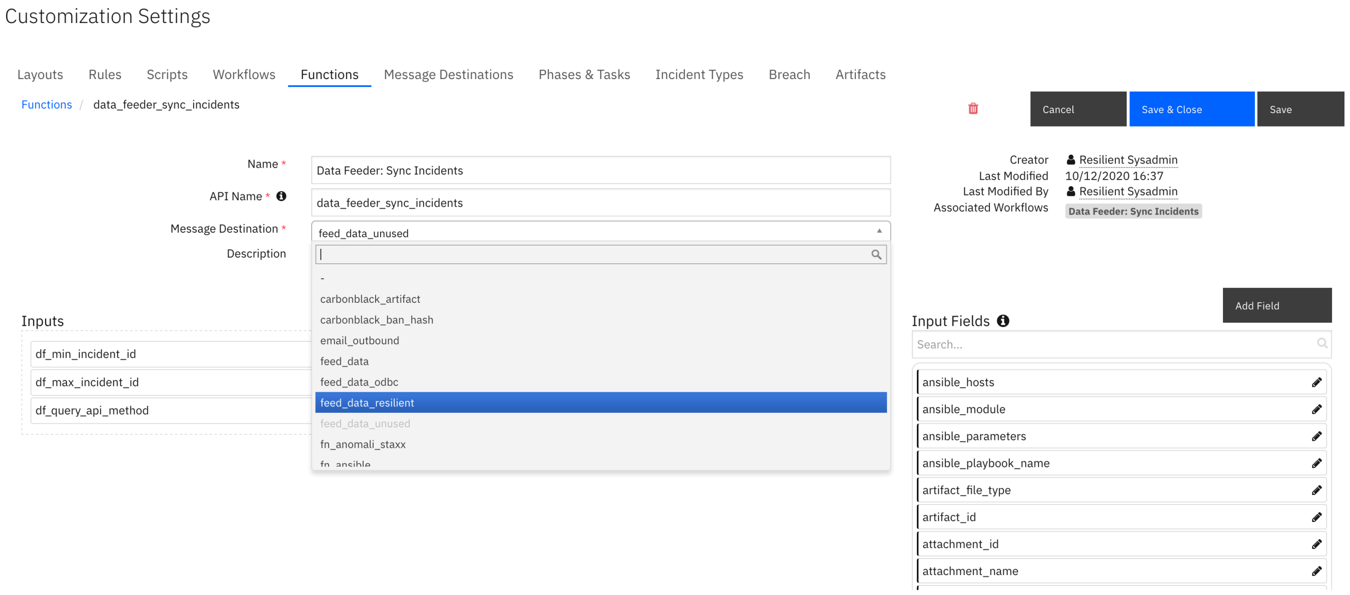
Key	Values	Description
class	ResilientFeed	Indicates that the section is for an Resilient synchronization.
host, #proxy_host, api_key_id, api_key_secret, #email, #password, port, org, cafile		Specify the connection values similar to the `[resilient]` section for connection to the target resilient
sqlite_sync_file	/path/to/file	Absolute path to a file to retain mapping information between the two Resilient instance. Comment out if using PostgreSQL
postgresql_connect	Driver={PostresSQL Driver};Server=127.0.0.1; DB=yourDB;Port=5432; connectTimeout=0	connection string when using PostgreSQL. Comment out otherwise.
postgresql_uid	postgeSQL_Acct	Your PostgreSQL account
postgresql_pwd	postgeSQL_Acct	Your PostgreSQL password
matching_incident_fields	plan_status == 'C'; custom_field > 5	Optional semicolon 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'. Use `~` for `in` when searching richtext fields. `None` 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 `all` fields or `any` field needs to match for incident synchronization. Default: all
exclude_incident_fields	severity_code; date_started; custom_field	Optional semicolon separated list of fields and field sections to exclude when synchronizing an incident.
sync_reference_fields	true|false	Specify `True` to add information to the target incident to maintain the original org id incident id, sync host and incident create date. Fields are `df_org_id`, `df_inc_id`, `df_host` and `df_create_date`, respectively
delete_incidents	true|false	Specify 'True' to delete the target incident and it's data when the source incident is deleted

Requirements

- This functionality has been tested with Resilient instances >= v35. There is presently an issue with v37.0 restricting the live synchronization of a newly deleted artifact. If this capability is critical to your requirements, use Resilient version >=v37.1.
- The target Resilient platform must be at the same version or greater than the source Resilient platform.
- The target Resilient organization 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 organization 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_resilient` 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 organization and importing them to the target Resilient organization.
3. Manually recreate the users and groups needed in the target Resilient organization.
4. Configure the app.config settings with the settings for the target Resilient organization 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 organization, run the `Data Feeder: Sync Incidents` rule to synchronize a small number of incidents. Change the message destination of the `Data Feeder: Sync Incidents` function to `feed_data_resilient` as it may be used by another Data Feeder plugin.


Customization Settings

Name * Data Feeder: Sync Incidents
API Name * data_feeder_sync_incidents
Message Destination * feed_data_unused
Description

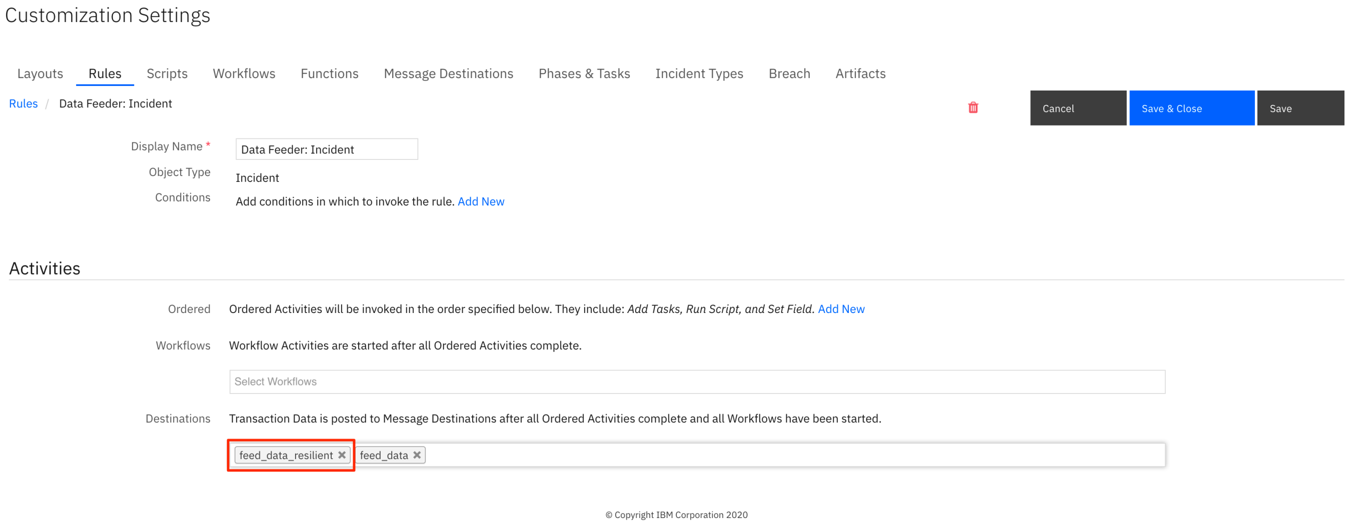
Creator Resilient Sysadmin
Last Modified 10/12/2020 16:37
Last Modified By Resilient Sysadmin
Associated Workflows Data Feeder: Sync Incidents

-
carbonblack_artifact
carbonblack_ban_hash
email_outbound
feed_data
feed_data_odbc
feed_data_resilient
feed_data_unused
fn_anomali_staxx
fn_ansible

Inputs
df_min_incident_id
df_max_incident_id
df_query_api_method

Input Fields
Search...
ansible_hosts
ansible_module
ansible_parameters
ansible_playbook_name
artifact_file_type
artifact_id
attachment_id
attachment_name

7. If using other Data Feeder plugins (ex. odbcfeed), change the Data Feeder rules to include the `feed_data_resilient` message destination. Restart resilient-circuits in order for the message destination change to take effect.


Customization Settings

Display Name * Data Feeder: Incident
Object Type Incident
Conditions Add conditions in which to invoke the rule. Add New

Activities

Ordered Ordered Activities will be invoked in the order specified below. They include: *Add Tasks, Run Script, and Set Field.* Add New

Workflows Workflow Activities are started after all Ordered Activities complete.
Select Workflows

Destinations Transaction Data is posted to Message Destinations after all Ordered Activities complete and all Workflows have been started.
feed_data_resilient ✖ feed_data ✖

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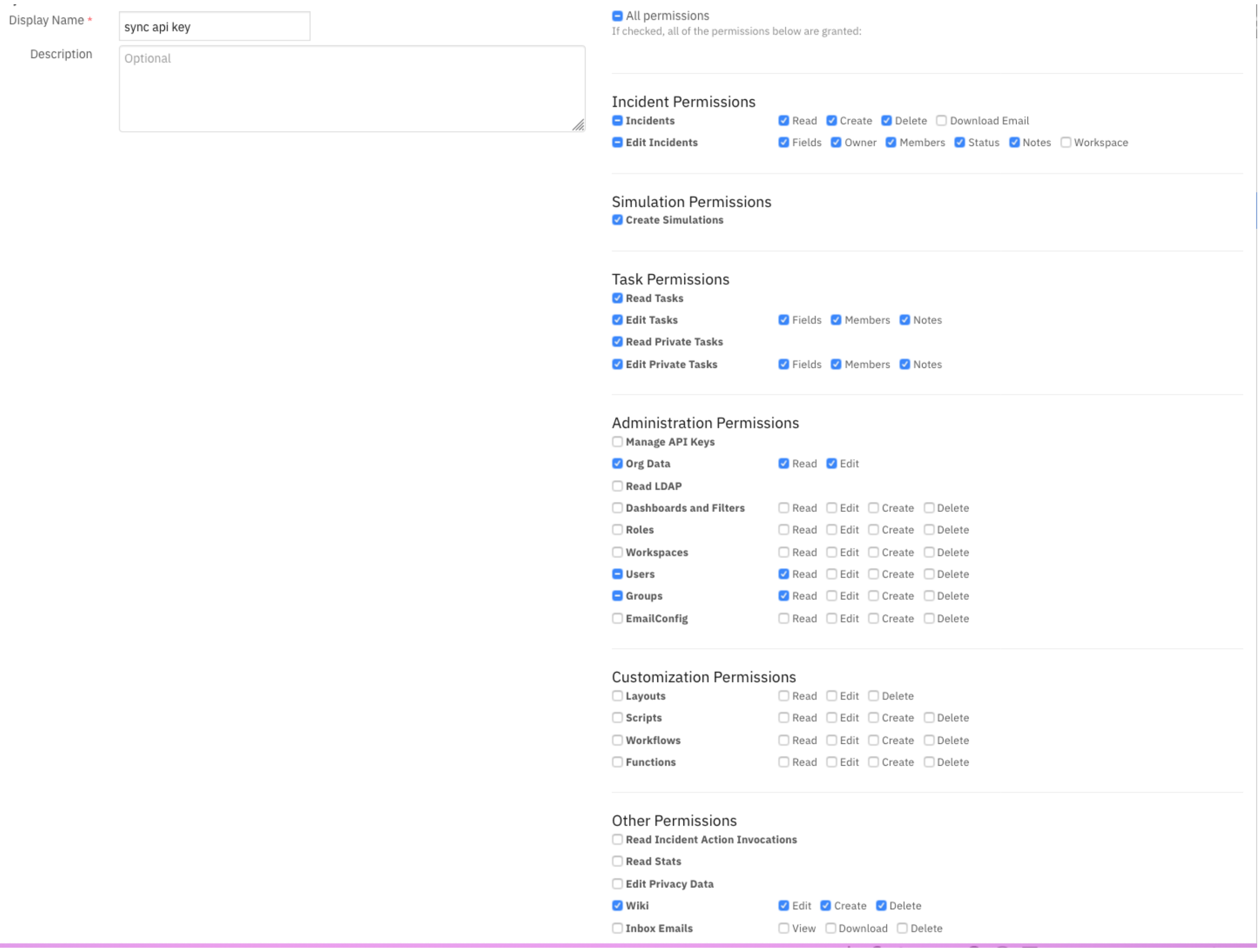
Considerations

- If real-time synchronization remains in place, changes in the source Resilient data will overwrite any changes made in the target Resilient organization 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`.
- Unoffical 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
☑ Edit Tasks ☑ Fields ☑ Members ☑ Notes
☑ Read Private Tasks
☑ 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.
- It's presently not possible to restrict synchronization of incident elements such as tasks, artifacts, notes, etc. when using `reload=all` and the action `Data Feeder: Sync Incidents`.

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 can be 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` or `bypassed`.

- 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:

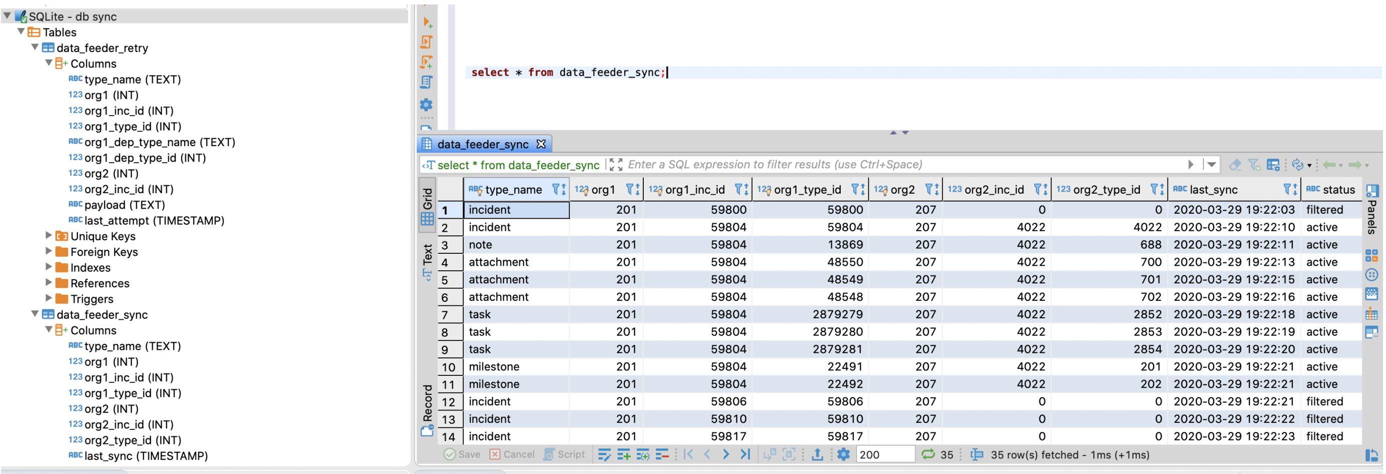
type_name	org1	org1_inc_id	org1_type_id	org1_dep_type_name	org1_dep_type_id	org2	org2_inc_id	payload	last_attempt

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=



SQLite - db sync
- Tables
  - data_feeder_retry
    - Columns
      - 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)
    - Unique Keys
    - Foreign Keys
    - Indexes
    - References
    - Triggers
  - data_feeder_sync
    - Columns
      - 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)

```
select * from data_feeder_sync;
```

data_feeder_sync

select * from data_feeder_sync | Enter a SQL expression to filter results (use Ctrl+Space)

	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

200 | 35 | 35 row(s) fetched - 1ms (+1ms)

PostgreSQL Database

Like the SQLite database, the same table structures are created and maintained in PostgreSQL.

Use the SQLite DB if performing a one-time or limited-timeframe synchronization. Use PostgreSQL for continuously synchronization or when using App Host containers.

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 organization. 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`. If a field is richtext, use the `~` operator to find the value. For example: description ~ warning.
- Change the log level to debug to receive additional troubleshooting information on synchronization issues.
- Changes to tasks, artifacts, notes, etc. before the incident is synchronized.
  - If the log displays a message such as: `Incident not found. Queued to retry task:xxx->xxx to xxx` Run the incident action: `Data Feeder: Sync Incidents` to synchronize the incident and all it's related tasks, artifacts, notes, etc.

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