FABRIC V7.1.0 RELEASE NOTES

These Release Notes describe the new features in Fabric release V7.1.0 and list bugs that have been fixed since the V7.0.1 release.

Certification of this Fabric release is based on:

- Cassandra version 4.0.3
- SQLite version 3.39.2
- Open JDK version jdk-17.0.3.1
- Kafka version 3.2.0
- Confluent Kafka version 7.2.1
- OrientDB - 3.1.3-tp3 and 3.2.4-tp3
- Elasticsearch - 7.16+ and 8.5.3
- AWS OpenSearch - 1.3.4

MAIN FEATURES AND IMPROVEMENTS

1. MTable

- An MTable is an object created in the Fabric memory upon the deployment, from a CSV file. The purpose of an MTable is to keep reference data as part of the Fabric project and to enable a **fast in-memory** data lookup at run-time. It is recommended to use MTables for small static lists of reference data.
- The data lookup can be performed by one or several MTable keys. The output is the whole MTable row. On top of it, individual result fields can be returned as well.
- The search index is created on-the-fly during the first selection, based on the search keys.
- MTables can be used by:
  - New Broadway actors (described further in this document).
  - Various Java methods, to be invoked from Web Services, LU functions, etc.
  - Graphit via a *function* node, by using JavaScript methods (same as Java methods).
- **LIST MTABLE** is a new LIST command, for listing deployed MTables.

https://support.k2view.com/Academy/articles/09_translations/06_mtables_overview.html

2. Data Generators

- Fabric now separates data generation from the hashing and caching capabilities (masking). New Broadway actors that support this feature are described further in this document.

https://support.k2view.com/Academy/articles/26_fabric_security/06_data_masking.html

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3. Broadway

General

- You can now create a **folder** under Broadway, to better organize your flows. A flow name must be unique across all folders in the same LU.

- You can tag a flow and add a flow description.
  - A flow, created in a folder, is automatically tagged with a folder name. A tag can be updated. Multiple tags per flow are supported.

https://support.k2view.com/Academy/articles/19_Broadway/33_flow_properties.html

- Flow/Actor unification has been introduced, providing the following capabilities:
  - An actor can now invoke either an inner flow or another actor. An example of that is the **InneFlow** actor or a new **Masking** actor which is described further in this document. To support that, the drop-down list that contains the flows is replaced by a pop-up window, which opens by clicking on the Expand icon:
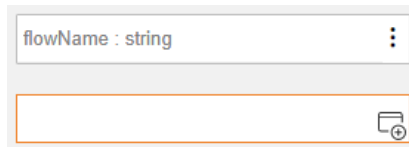
  - An inner flow can now be added to a flow from the **Add Actor** pop-up window by switching the radio button from **Actor** to **Flow** (top-right corner).
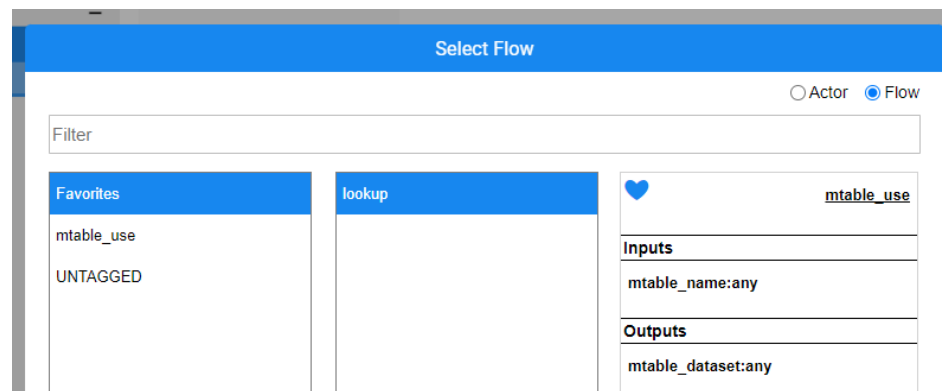
http://support.k2view.com/Academy/articles/19_Broadway/22_broadway_flow_inner_flows.html

- The Link Editor has been enhanced with the ability to set the **Link Type**:

| Origin Actor	Target Actor	Origin Parameter	Origin Schema Field	Target Parameter	Link Type
DbCommand1	JsonStringify1	result	Origin Schema Field	object	Value

- You can now update the Actor's input argument type from the default editor to another one, by selecting **Set Editor** action on the Actor's input parameter:
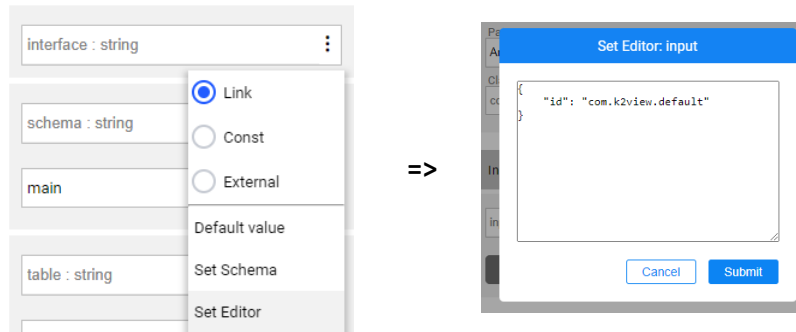
- The link can now be dragged from one Actor's input parameter to another, which is indicated by a blue dot at the end of the link:
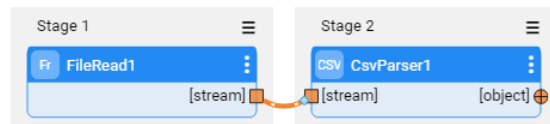
Modified Actors

- **MaskingSSN** actor continues to receive an input to the 'value' field. It recognizes the non-numeric characters and turns them to the delimiter, keeping the same format as in the original value. If there are no non-numeric characters in the input, no delimiter will be included in the masked value. For example:
  - The input value = '123456789' will be masked into 987654321
  - The input value = '123-45-6789' will be masked into 987-65-4321
  - The input value = '123&45&6789' will be masked into 987&65&4321
- **SourceDbQuery** actor has a new input *rowsGeneratorDistribution*, used to randomize the number of rows per parent row. This input is applicable only for data generation of synthetic entities.

New Actors

- The following actors are provided for MTables:
  - **MTableLookup, MTableRandom** – for fetching data from an MTable by a given key(s) or without any key.
  - **MTableLoad** – for either creating a new MTable dataset or replacing an existing one in the Fabric memory.

https://support.k2view.com/Academy/articles/19_Broadway/actors/09_MTable_actors.html

- The following actors are provided for Data Generation and Masking:
  - The new **Generators** category (tag) includes a list of actors for generating various types of fake but valid values such as: SSN, email, credit card number. For instance, **RandomDistribution** actor generates random values according to a given distribution. The supported distributions are: Normal, Uniform and Weighted. **RandomSSN** actor generates a valid SSN.

- o **RowsGenerator** – a new actor for generating random rows given a set of parent rows, a distribution and an inner flow. It relies on the inner flow for generating the actual data rows.
- o **Masking** – a new actor for generating random/token data and keeping them mapped to the original value input. This actor can wrap any data generation actor and add the hashing and caching capabilities on the top of it.
- o Broadway keeps the existing masking actors for backward compatibility.

https://support.k2view.com/Academy/articles/19_Broadway/actors/07a_data_generators_actors.html

- **InnerFlowDynamic** actor extends an **InnerFlow** actor. The actor can receive a flow name and a map of input arguments with their values **at run-time**. The output is a map of an inner flow's output arguments and their respective values.
- **SysEnv** actor reads an environment variable, either from the Java properties (-D) or from the system environment. If a variable name is not provided, the actor returns a map of all Java and system properties.
- **PopulationCount** actor handles the population count and statistics in a population flow that doesn't use the **SourceDbQuery** actor (but rather the DbCommand actor), by populating the **_k2_objects_info** table.

Broadway Command

- The **BROADWAY** command has been enhanced with the new result structure – CURSOR.
  - o When **RESULT_STRUCTURE = CURSOR**, the first flow's output is transformed into a one-column table. Other outputs are being disregarded.

https://support.k2view.com/Academy/articles/02_fabric_architecture/04_fabric_commands.html

4. Reference Tables – Backing up and Restoring

- It is now possible to back up reference tables by schemas or 'ALL' (i.e., defining all schemas for a backup). This capability enables fast synchronization of the reference tables data to a newly joined node by an automatic download of a previously created backup. In addition, if the node reference tables data get out of sync, restoring it can be performed manually. The following commands are available:
  - o **REF_BACKUP** is a new command, for backing up a snapshot of the specified CommonDB schema and placing it into the configured storage.
  - o **REF_BACKUP_DELETE** is a new command, for deleting a backup of the specified CommonDB schema from the configured storage.
  - o **REF_BACKUP_DOWNLOAD** is a new command, for downloading a snapshot of the specified CommonDB schema from the configured storage into the specified path.
  - o **LIST REF_BACKUPS** is a new command, for listing the ref schema backups.

https://support.k2view.com/Academy/articles/22_reference(commonDB)_tables/03_fabric_commonDB_runtime.html

5. Graphit

- The Graphit editor offers a quick and efficient way to find a text within the currently opened file, including closed nodes. To do so, you can type the keywords into the search box located in the top toolbar. Once entered, the search box expands into a search result widget, displaying all the occurrences of the searched text.

https://support.k2view.com/Academy/articles/15_web_services_and_graphit/17_Graphit/02_graphit_basic_editing.html#search

6. Miscellaneous

- **Secret Manager Integration** – Fabric now supports integration with Secret Manager services, so that secrets - like passwords, used in interfaces and environments - will not be stored in Fabric itself, but rather their reference IDs. Integration with various external Secret Management providers is supported:
  - AWS Secret Manager
  - HashiCorp Vault
  - Azure Key Vault

https://support.k2view.com/Academy/articles/26_fabric_security/04a_secret_manager.html

- The following **new non-DB interface types** are now supported by Fabric and can be used by the Interface Listener as well as all file actors (such as FileRead) to detect new files added to the storage:
  - Amazon S3 Storage
  - Azure Blob Storage
  - Google Cloud Storage

https://support.k2view.com/Academy/articles/24_non_DB_interfaces/01_nondb_interfaces_overview.html

- **SET CLUSTER_DISTRIBUTE_AFFINITY = <AFFINITY>** is a new command, for distributing the subsequent command to the specified affinity. Use **ALL** to distribute the subsequent command to all live nodes.

- **SET INSTANCE_TTL** command has been enhanced with the option to avoid saving the LUI in Fabric (instead of saving and deleting) if the TTL is set to zero. Note that when the TTL is set to zero, Fabric does not clean an older version of the LUI if exists. The TTL must be bigger than zero to schedule an LUI cleanup from Fabric.

- **LIST BROADWAY_FLOWS/BF** command can now present not only the flows but also the actors. The command has been enhanced with the following flags and capabilities:
  - The population flows are now excluded from LIST BF command's results.

- o [SHOW=FLOW/ACTOR/CORE_ACTOR/ALL] – when specified, the result includes only the selected type. Default is FLOW. When SHOW=ACTOR, only the project actors are displayed. When SHOW=CORE_ACTOR, only the core actors are displayed. When SHOW=ALL, both the project's flows and actors (but not the core actors) are displayed.
  - o [TAG=NAME] – when specified, the result is filtered by a given tag.
  - o [FILTER=<REGEX>] – when specified, the result is filtered by a given expression.
- A new **BATCH_READ** permission has been added. It grants a **read-only** permission on batches (the existing BATCH permission grants 'read and write' permissions). The user with BATCH_READ permission:
  - o Can view and monitor all batches (e.g., via the Batch Monitor screen).
  - o Cannot start or retry a batch, cancel batch, change number of workers.
- **BATCH** command has been enhanced with the ability to define a subset, which is based on a Broadway command result set. The syntax is as follows:
  - o BATCH <LUT> from fabric using (<BROADWAY>)
  - o The Broadway command, executed within the 'using' clause, will run as if the RESULT_STRUCTURE is set to CURSOR.
- **Web Services improvement** – Fabric now adopts the "Agent–driven Negotiation" methodology. When a web-service is called, it examines the request accept header and responses accordingly.
  - o For example, when using a browser to call to API, Fabric responds with an XML format because it sends XML as accept header and not JSON.
  - o Note that if the accept header is not sent, the default response is a JSON, to date.
  - o In addition, Fabric now constantly sends a response type header, hinting at what the request caller would get back.

RESOLVED ISSUES

- When a message includes the change in a non-CDC column, the CDC sends the message while it shouldn't because the CDC columns haven't changed. The problem has been resolved.

- Ticket 33009 – Customize a message in RejectInstance. The problem has been resolved.

- Ticket 33087 – Broadway FileWrite actor gets stuck on large files. The problem has been resolved.

- Ticket 33240 – The Batch monitor shows 100% completion although there is an instance in sync (status is in process). The problem has been resolved.

- Ticket 33247 – LU Table population is failing on Child tables with sources such as Cassandra and is having multiple values coming from Parent table. The problem has been resolved.

- Ticket 33394 – The column delimiter does not support recurring characters. The problem has been resolved.

- Ticket 33445 – Broadway Population (w/o SourceDbQuery) doesn't update the number_of_records entry in _k2_objects_info. The problem has been resolved.

- Ticket 33855 – The Broadway FileWrite actor does not write files bigger than 1KiB to S3 bucket. The problem has been resolved.

- Ticket 33863 – Partition keys are identified as clustering keys in DbCreateTable actor. The problem has been resolved.

- Ticket 34808 – Broadway Subscribing to broker:memory does not stop subscription when Broadway is stopped. The problem has been resolved.

- Ticket 34445 – The WS framework throws a "required parameter missing" error for GET request if Content-Type: application/json. The problem has been resolved.

- Ticket 34441 – Fabric packaging - long path. The problem has been resolved.

- Ticket 33944 - Graphit Actor not showing inputs automatically. The problem has been resolved.

- Ticket 34241 – Graphit - Permission on <name>.<version>.<verb> (e.g. GetCustomer.v1.GET) fails in Admin Web (Free Trial). The problem has been resolved.