Data Manager

> ⓘ *... build understanding of data manager - take-on, duplicate detection, enrichment validation*
>
> - *identify actions in each step, and relationships between entities*
> - *retrieved from 6_mgp_dev*

Data Manager

Data Manager is used to facilitate the movement of data within pControl, for use in further internal processing, or as a storage place before exporting in various formats. Key functions are below.

- Data Poller : Detection of data as it becomes available in defined locations
- Take-On : Loading data from external sources into pControl from file or database
    - File name checking, file format checking
    - Create entry in p135_import_register table : once the take-on process starts, the process will be tracked
    - Import data to Buffer
    - Assign unique batch_id
    - Undertake Duplicate Detection (optional)
- Enrichment Validation : Detect duplicates, and validate import data based on specified criteria
    - Field validation (mandatory, type, range etc)
    - Field Enrichment & Lookup Mapping
    - User-defined validations
    - Update entry in p135_import_register table
- Hand-Off : Exporting of data from pControl to a file or another database
    - Create entry in p130_distribution_register table

UI example of data manager key functions

PControl UI	Description

⊟ 🗙 DM_IMPORT_DATA: Import Data
  ⊞ ↗ TO_FL_U365: Cash Balance Take On
  ⊞ ↗ TO_FL_U380: Inflight Transactions Take On
  ⊟ ↻ EV_U100: Investment Holdings Enrichment & Validation
    ⊞ 🧍 EV_U100_POLL: Data Poller U100 Enrichment
    ↗ TO_FL_U100_INTERLINK: U100 File Txt file
  ⊞ ↗ TO_FL_U100: Asset Valuation Take On
  🎁 BK_U100: U100 Duplicate Record Definition
	Data Manager entity has left tree hierarchy

SQL example

```
-- tree hierarchy example for entity 'EV_U100'
select
       t101_parent.node_code as parent_node_code, t101_self.node_code, t101_child.node_code as
child_node_code
from t101_node as t101_self
       inner join t102_relationship as t102_parent on t102_parent.rel_node_id_2 = t101_self.node_id
       inner join t101_node as t101_parent on t101_parent.node_id = t102_parent.rel_node_id_1
       inner join t102_relationship as t102_child on t102_child.rel_node_id_1 = t101_self.node_id
       inner join t101_node as t101_child on t101_child.node_id = t102_child.rel_node_id_2
where t101_self.node_code = 'EV_U100'
```

Data Polling

Code: (*) EV_U100_POLL ☐ Active

Description: (*) Data Poller U100 Enrichment

Setup

Input Destination: (*) DS_U100_EV_IN, Data Sharing - u100 Inbound Enrichment

Output Destination: (*) DS_U100_EV_OUT, Data Sharing - U100 Enrichment Trigger

Internal Processing: (*) NONE

Configuration Parameter:

Error Processing

- Common
  - Scheduling

Data Poller

- Data Poller runs to check for the arrival of new data
- Output data sharing destination used to trigger the take on entity

Data Sharing Destination

Code: (*) DS_U100_EV_OUT ☑ Active

Description: (*) Data Sharing - U100 Enrichment Trigger

Process Flow: PF_PR_DM_VALIDATE, Transfer

Process Type: VD

Entity To run as: EV_U100

Process Priority:

- Common

Take On Data

Code: (*) TO_FL_U100 ☑ Active

Description: (*) Asset Valuation Take On

EITHER pControl Internal File Load

Rules for pControl Internal Load: **Excel Specification:**

OR Import Buffer File Load

Pre-Load Rule File (Optional):

Details:

Pre Ins...	Post Ins...	OR : Work Table	Excel...	R
		U100 : Investment Holdings		

- Common
  - Duplicate Detection
- Take On
  - Set-Up (TO)
  - Follow On (TO)

Take-On

- Take-On executes and data loaded in appropriate buffer
- Import Buffer : U100

Enrich / Validate

- Duplicate Detection
- Initialise Hash Key
- Validate data
  - List Validations (VD)
  - Enrichment (VD)
  - Follow On (VD)

Code: (✱) `EV_U100`   ☑ Active

Description: (✱) `Investment Holdings Enrichment & Validation`

Duplicate Detection

Duplicate Key Definition for Duplicate Detection: `BK_U100, U100 Duplicate Record Definition`

Import Register Configuration

☐ Auto Approve Validation Exceptions

Event Notification

[OK] [Cancel] [Validate]

Duplicate detection entity is defined in enrichment validation entity

- Entity Code : EV_U100
- Duplicate Detection Code : BK_U100
  - Field List Definition :
    1. effective_date
    2. pcontrol_code
    3. price_run_type
    4. run_id
  - Data Set to Apply Duplicate Action : Prior Data / Current Batch
  - Duplicate Action Type : Update Status / Delete Record

Duplicate Detection : Duplicate Key Definition

Common

Code: (✱) `BK_U100`

Description: (✱) `U100 Duplicate Record Definition`

Field List Definition

Field Name | (blank):

Description	Value
effective_date	
pcontrol_code	
price_run_type	
run_id	

Records to be Excluded

SQL Exclusion Clause:

Hash Key Optimisation

☑ Use Hash Key Optimisation

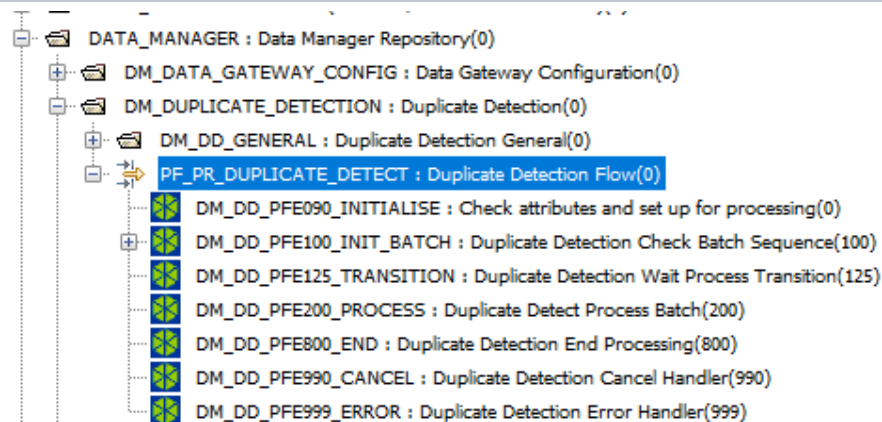**Duplicate Record Selection**

☑ Include Records Awaiting User Interaction

☐ Process Records That Are Manually Modified

Duplicate Action

Data Set to Apply Duplicate Action: (✱) `Prior Data`

Duplicate Action Type: (✱) `Update Status`

- DATA_MANAGER : Data Manager Repository(0)
  - DM_DATA_GATEWAY_CONFIG : Data Gateway Configuration(0)
  - DM_DUPLICATE_DETECTION : Duplicate Detection(0)
    - DM_DD_GENERAL : Duplicate Detection General(0)
    - PF_PR_DUPLICATE_DETECT : Duplicate Detection Flow(0)
      - DM_DD_PFE090_INITIALISE : Check attributes and set up for processing(0)
      - DM_DD_PFE100_INIT_BATCH : Duplicate Detection Check Batch Sequence(100)
      - DM_DD_PFE125_TRANSITION : Duplicate Detection Wait Process Transition(125)
      - DM_DD_PFE200_PROCESS : Duplicate Detect Process Batch(200)
      - DM_DD_PFE800_END : Duplicate Detection End Processing(800)
      - DM_DD_PFE990_CANCEL : Duplicate Detection Cancel Handler(990)
      - DM_DD_PFE999_ERROR : Duplicate Detection Error Handler(999)

Rules for duplicate detection run

Enrichment processes are defined in enrichment validation entity

- Entity Code : EV_U100
- Enrichment Data :
    1. ED_PCONTROL_CODE_UNK NOWN,
    2. ED_U100_HLD_NAV_KEY
    3. ED_U100_INSTRU_MAP_NULL
    4. ...
- Open one of the enrichment data

    - set clause : category_code = cat_code
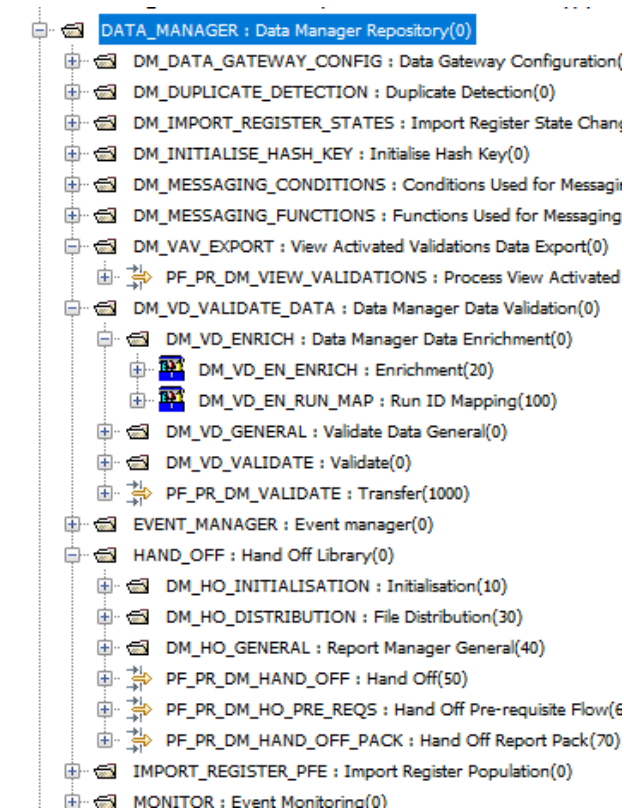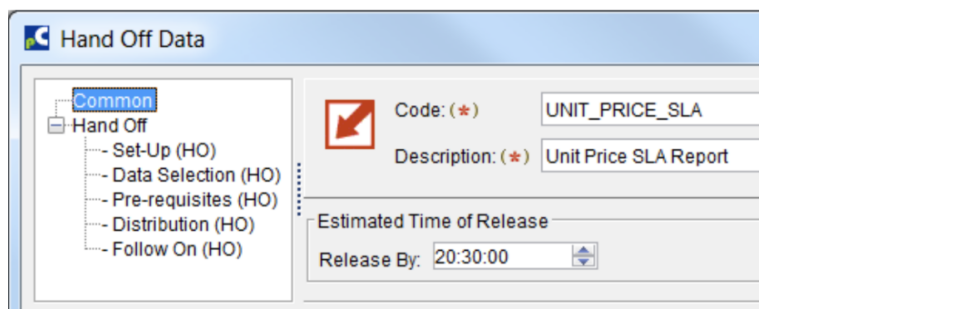   - where clause : (category_code is null OR category_code=")

Rules for enrichment validation run

- checks all dates are valid dates
- checks all prices are in numeric format
- p_status updated to 'S' for records successfully validated
- records failing validation are set to 'G' for in progress error

⊟ ☒ DM_DATA_MANAGER: Data Manager Group (DM)
   ⊞ ☒ DM_DATA_GATEWAY_PROCESS: Data Gateway: Processing Group
   ⊞ ☒ DM_HAND_OFF_REPORTS: Reports (HO)
   ⊟ ☒ DM_HO_FUND_OVERSIGHT: Fund Oversight Hand Off
      ⊞ ☑ DM_HO_NOC_DETAIL: Oversight Detailed Report - FP
      ⊞ ☑ DM_HO_NOC_SUMMARY: Oversight Summary Report
      ☑ DM_HO_MFQS0050: Daily Valuation Message for Mutal Funds
      ☑ DM_HO_OS_BACKUP_NAV_CSV: Backup NAV Pricing CSV Report
      ☑ DM_HO_OS_BACKUP_NAV_EXCEL: Backup NAV Pricing Excel Report
      ☑ DM_HO_SECURITIES_INT_CSV: Securities of Interest Report CSV
      ☑ HO_OVERSIGHT_SIGNOFF_CSV: Fund Oversight Signoff Report CSV
      ☑ HO_OVERSIGHT_SIGNOFF_PDF: Oversight Signoff Report Crystal PDF
      ☑ HO_UP_SLA: Unit Price SLA Report
      ☑ HO_V582_FUND_OVERSIGHT: Fund Oversight Validation Report (V582)
	Hand off entities in Data Manager hierarchy

Hand Off Data
 	
Common
⊟ Hand Off
  - Set-Up (HO)
  - Data Selection (HO)
  - Pre-requisites (HO)
  - Distribution (HO)
  - Follow On (HO)
 	
Code: (∗)   UNIT_PRICE_SLA
Description: (∗)   Unit Price SLA Report
 	
Estimated Time of Release
Release By: 20:30:00
	Hand-Off
	
	• Estimated time of release : defines the time by which this hand off needs to be released

Interacting with data manager

- p135_import_register : The import register is used to log each file loaded or received into pControl, and the current status of that file (validated, ready to validate, rejected). This helps to identify if and when the data was received, and if it is ready for further processing.
- p130_distribution_register : The distribution register is used to record each file generated and distributed, and the status of that distribution (exported, unable to export, no file generated).
- The import and distribution registers appear on the Attention Status Monitor dashboard.

Table: P135 : Import Register

Status	Pcontrol Code	Loaded Datetime	P Batch Id
Validated	TO_FL_U285	07-Apr-2021 07:50:08	54007220
Validated	TO_FL_U175	07-Apr-2021 07:49:56	54007151
Validated	TO_FL_U108	07-Apr-2021 07:49:40	54007009
Validated	TO_FL_L293	07-Apr-2021 07:49:38	54006981
Validated	TO_FL_U100	07-Apr-2021 07:49:34	54006953
Validated	TO_FL_U101	07-Apr-2021 07:49:32	54006925

Help

Table: P130 : Distribution Register

Status	pControl Code	Effective D...
Exported	TST_DM_RP_002	07-Apr-2021
Exported	TST_DM_RP_002_HO_03	07-Apr-2021
Exported	TST_DM_RP_002_HO_02	07-Apr-2021
Exported	TST_DM_RP_002_HO_01	07-Apr-2021
No File Generated Acknowledged	TST_DM_RP_001	07-Apr-2021
No File Generated Acknowledged	TST_DM_RP_001_HO_03	07-Apr-2021
No File Generated Acknowledged	TST_DM_RP_001_HO_01	07-Apr-2021

Stream / Entity	< 1 days	-1 day	-4h	-1h	-30m	30m	1h	2h	3h	4h	6h	8h	12h	1 day	2
Dual Authorisation	27														
Import Register	3308	24													
Unable to Load	1062	1													
Validated With Exceptions	2240	23													
Waiting	5														
Validation Errors Auto Approved	1														
Control Record : Approval	1091	17									20	1	1	3	
Control Record : Interfund Impact															
Control Record : Load Data	690	3					1					3			
Control Record : Pre Calc. Validations	28														
Control Record : Post Calc. Validations	6													1	
Distribution Register	513	6													
No File Generated	505	3													
Awaiting Response															
Response Errors		2													
Response Received		1													
Unable To Export	8														
Data Load Monitor	1012	5										5			

Ref.

Use of database views in pControl