A Case for a

- Well-Integrated EPM Cloud Solution: Oracle Integration Cloud (OIC)

HURON

ODTUG Kscope19

SEATTLE, WASHINGTON • JUNE 23-27

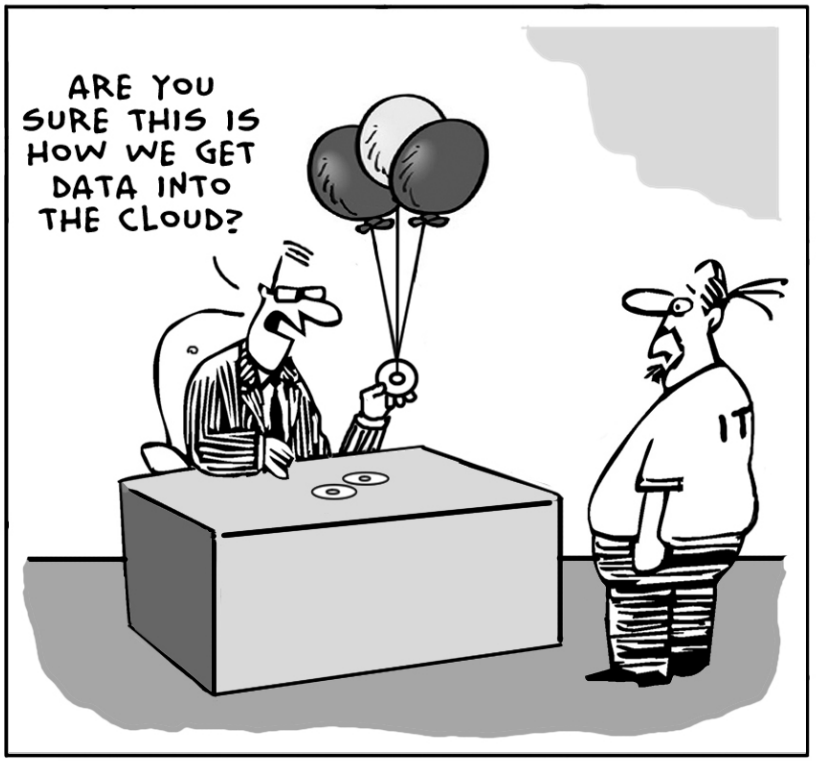
PLEASE FILL OUT YOUR EVALUATIONS

SEATTLE

Washington State Convention Center

Agenda

- Introductions
- Overview
- Connectivity
- Rec. 1: Substitution Variables
- Rec. 2: On-Premises > PBCS
- Rec. 3: PBCS > Essbase Cloud



Check out our session on the Essbase Cloud REST API
@11:45 today, Room 609, Level 6

Vijay Kurian

- Huron Consulting Group
- 15+ years EPM Implementation Experience
- Certified in DRM, Planning, Essbase and ODI
- Co-author of theunlockedcube.com blog
- Pour over coffee enthusiast
- IPA snob

Will Andreelli

- Huron Consulting Group
- 8+ years EPM Implementation Experience
- Certified in Planning, Essbase and PBCS
- Co-author of theunlockedcube.com blog
- Football ( ) fanatic
- Newbie restaurant owner

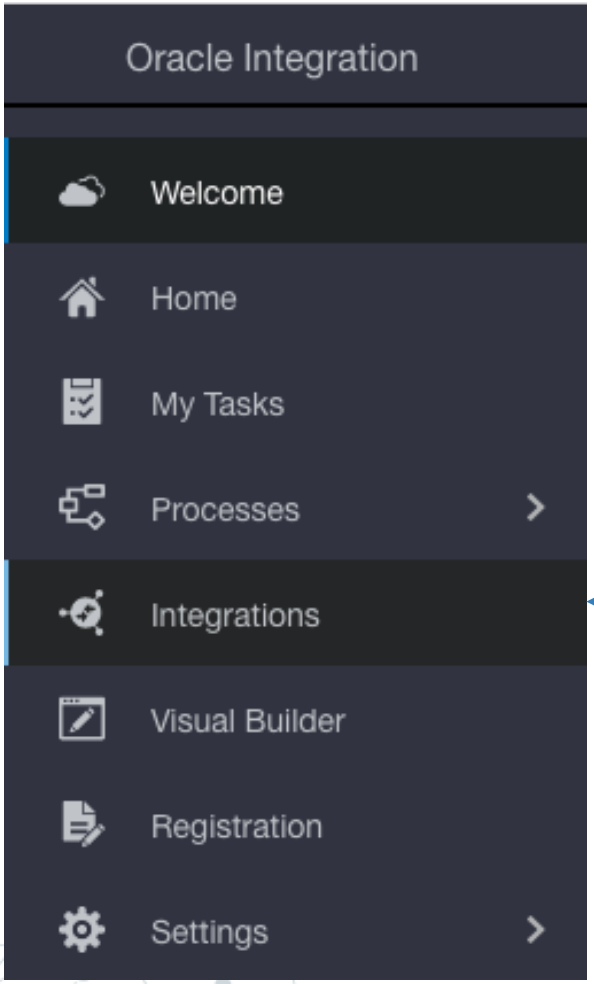
THE UNLOCKED CUBE

1.
Overview

Oracle Integration Cloud

- Lightweight integrations
- Connectivity adapters SaaS/On-premises
- Visual builder capabilities
- Scheduling capabilities
- Full function REST API
- …not to be confused with Integration Cloud Service (ICS)

Oracle Integration Cloud



- Integrations
  - On-premises agent
  - Adapters
  - Connections
  - Integration
  - Process monitoring
  - Lookups

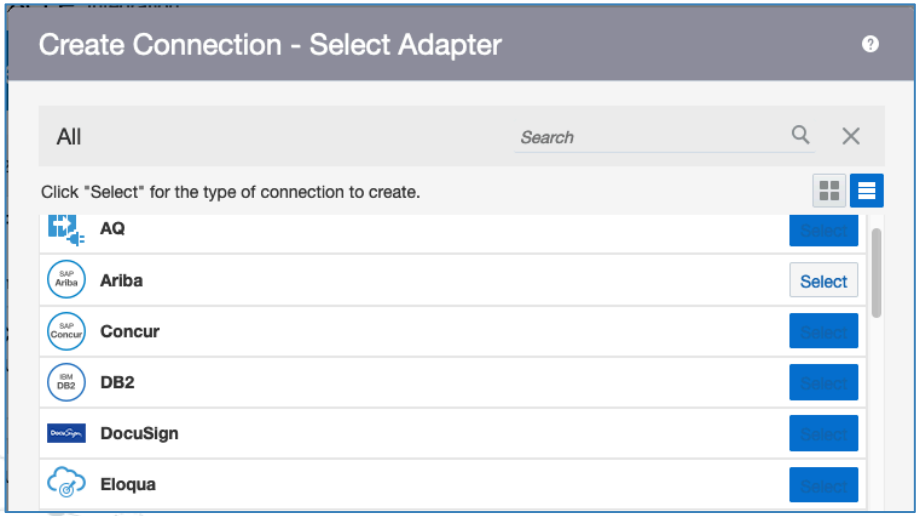
What we are NOT talking about today?

- OIC REST invokes
- Triggered events
- Visual Builder Cloud
- Monitoring
- Libraries
- Message subscription/limits

2.
Connectivity

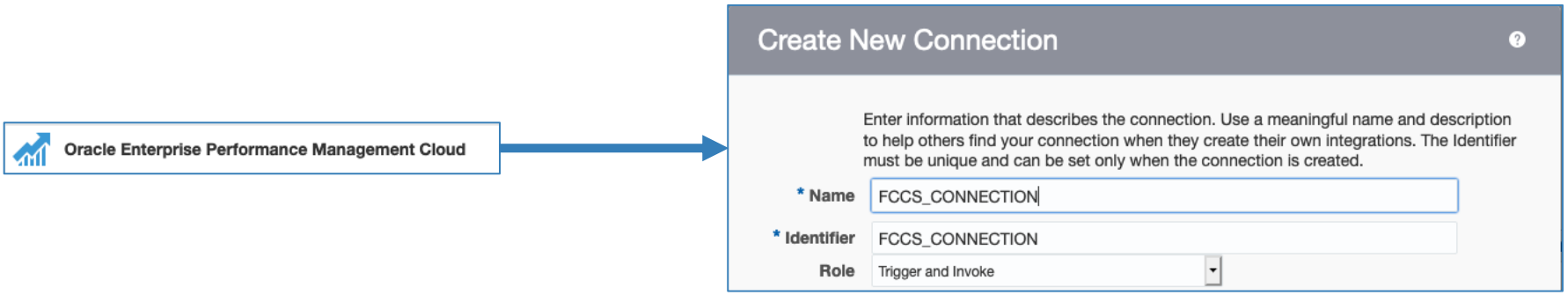
Connections

- How to connect to an instance?
- Predefined adapters
- 50+ adapters available e.g. ERP Cloud, Workday, UiPath - See doc here for the full list



Connections

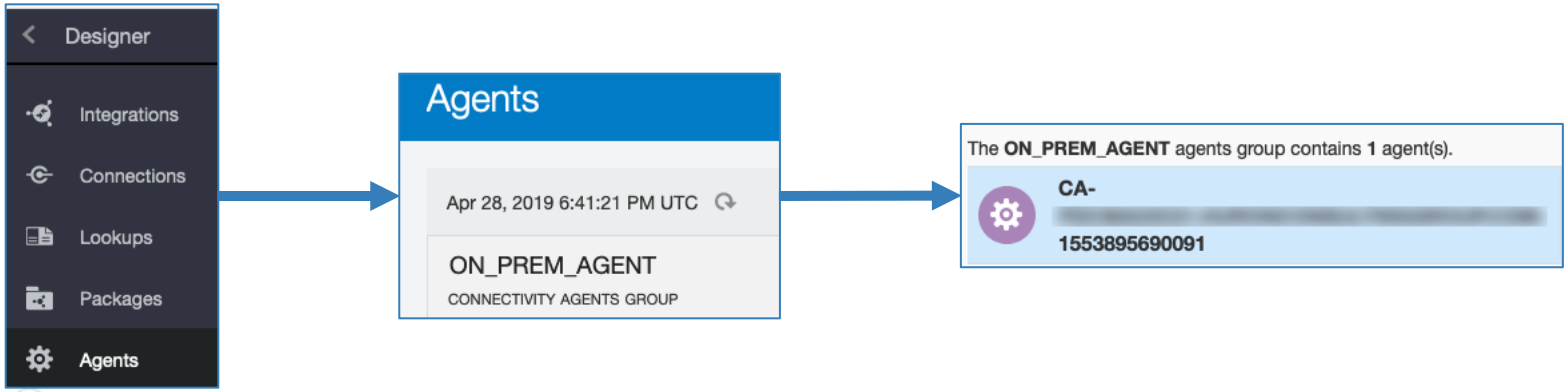
- And yes, an EPM Cloud Adapter is available.
- …But, only supports Tax Provisioning and Financial Close Cloud services currently.



See doc here

On-premises?

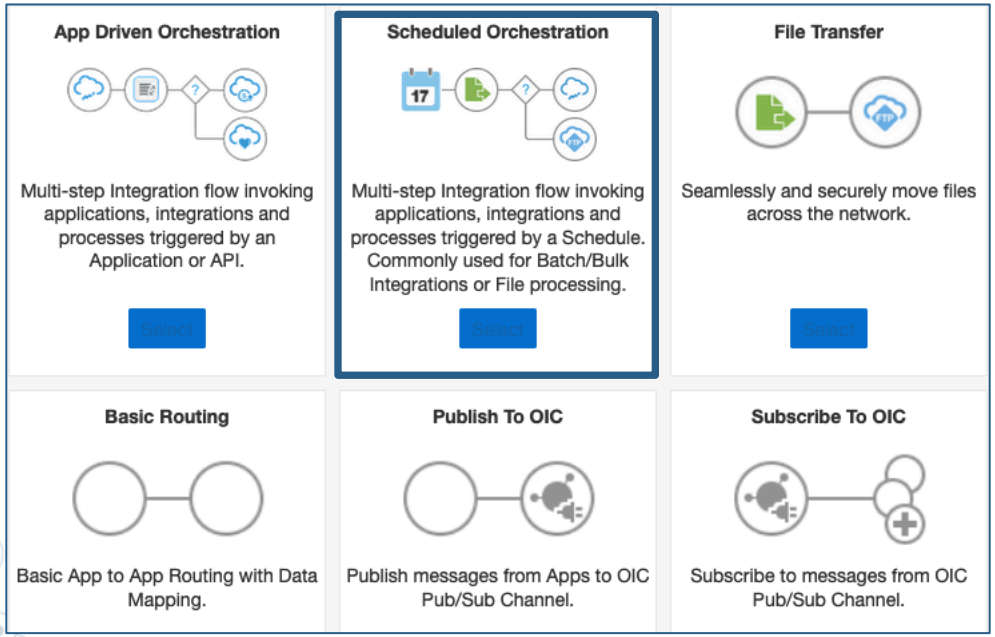
- Set up “on-premises agents”.
  - Files?
  - Databases?
- Easy to install and set-up.



See doc here

Integrations

- Use connections to your applications.
- Trigger = Source
- Invoke = Target



3.

Recipe 1

Update Substitution Variables: PBCS & Essbase Cloud

Prep: Update Substitution Variables in PBCS & Essbase Cloud

- 1 source to control them all:
  - Table?
  - File?

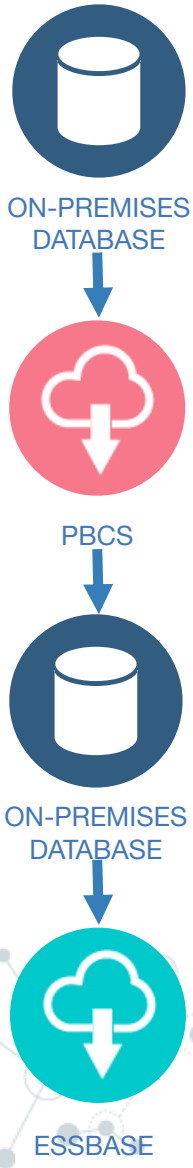
```
SELECT [TARGET_SYSTEM]
      ,[APPLICATION]
      ,[VARIABLE]
      ,[VALUE]
  FROM [UNLK].[dbo].[SUB_VARS]
```

100 %

Results | Messages

	TARGET_SYSTEM	APPLICATION	VARIABLE	VALUE
1	ALL	ALL	CURRENT_YEAR	FY19
2	ALL	ALL	NEXT_YEAR	FY21
3	ALL	ALL	ACTUAL_YEAR	FY19
4	ALL	ALL	ACTUAL_MONTH	APR
5	ALL	ALL	ACTUAL_MONTH_PRIOR	DEC
6	OAC	ALL	SCENARIO_FORECAST	AprFcst
7	EPBCS-FinPlan	ALL	SCENARIO_FORECAST	CurrFcst
8	OAC	ALL	SCENARIO_AOP	AOP
9	EPBCS-FinPlan	ALL	SCENARIO_AOP	AOP

Recipe 1: Update Substitution Variables in PBCS & Essbase Cloud



Run SQL query on on-premises database, using the agent to pull variables to be updated in PBCS

Use the PBCS REST API to update PBCS related substitution variables

Run SQL query on on-premises database, using the agent to pull variables to be updated in Essbase Cloud

Use the Essbase REST API to update related substitution variables

Ingredient 1:
SQL Server Connection Set up

1. Create new Connection

2. Configure Connectivity: define host name, SQL database name

3. Configure Security: Username and password to the SQL database

4. Configure Agents: define which agent to use. In this case, that would be the ON_PREM_AGENT installed on the server where MS SQL database is installed

Ingredient 1:
SQL Server Connection Set up

Video can be found on the unlocked cube Youtube channel
Video Name: Oracle Integration Cloud (OIC) - Create SQL Connection
Video Link: https://www.youtube.com/watch?v=1VPNDTU3apc&feature=youtu.be

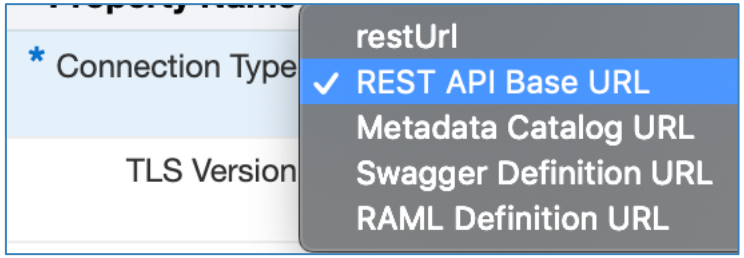
Ingredient 2: (E)PBCS REST API basics

- Authorization: Basic, like other EPM services.
  - domain.username
- Base URL:
  - https://Instance-Domain.pbcs.us2.oraclecloud.com/HyperionPlanning/rest/(version)
- Current version: v3
- Responses: JSON/XML


```
{
    "isLatest": true,
    "lifecycle": "active",
    "version": "v3",
    "links": [
        {
            "href": "https://planning2-a999999.pbcs.us2.oraclecloud.com:443/HyperionPlanning/rest/v3",
            "rel": "canonical"
        },
        {
            "href": "https://planning2-a999999.pbcs.us2.oraclecloud.com:443/HyperionPlanning/rest/v2",
            "rel": "predecessor-version"
        }
    ]
}
```

Ingredient 2:
(E)PBCS REST API Connection Set Up

1. Create new Connection: select the REST Adapter
2. Configure Connectivity: define connection type & URL



3. Configure Security:
   - Security Policy: Basic Authentication
   - Username: domain.username & Password
4. Configure Agents: Not applicable as we are not connecting to an on premise application

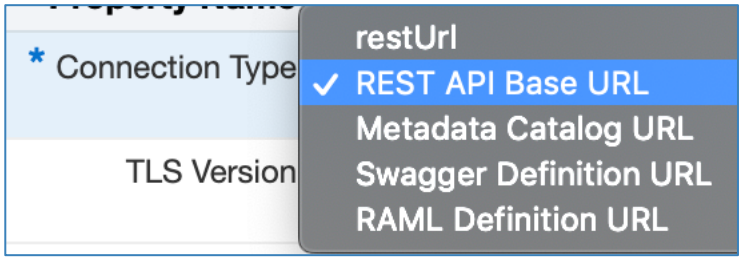
Ingredient 3:
Essbase Cloud REST API basics

- Authorization: Basic, like other EPM services.
  - username@domain.com
- Base URL:
  - http(s)://server/essbase/rest/(version)
- Current version: v1
- Responses: JSON

Ingredient 3:
Essbase Cloud REST API Connection Set Up

1. Create new Connection: select the REST Adapter

2. Configure Connectivity: define connection type & URL



3. Configure Security:

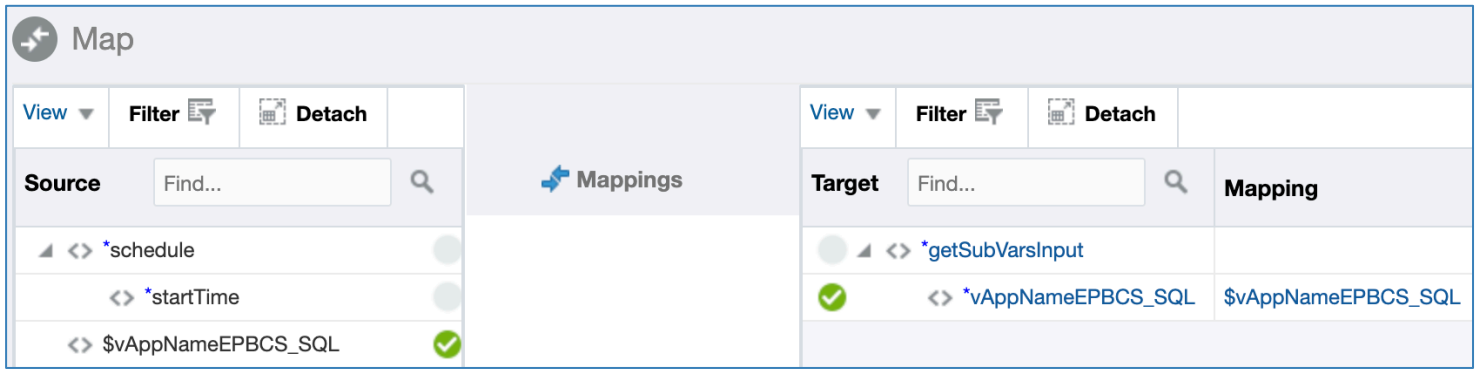
    Security Policy: Basic Authentication

    Username & Password

4. Configure Agents: Not applicable as we are not connecting to an on premise application

Step 1:
Pull PBCS related variables from SQL

Variable	Data Type	Description	Value
(x) vAppNameEPBCS	string	Name of Target EPBCS application	"FinPlan"
(x) vAppNameEPBCS_SQL	string	*Type a description*	concat("EPBCS-", $vAppNameEPBCS)



*** SQL Query**

```
SELECT APPLICATION,VARIABLE,VALUE FROM [UNLKL].[dbo].[SUB_VARS] WHERE
TARGET_SYSTEM = 'ALL' OR TARGET_SYSTEM = #vAppNameEPBCS_SQL order by 2
```

Step 2:
Update variables in (E)PBCS

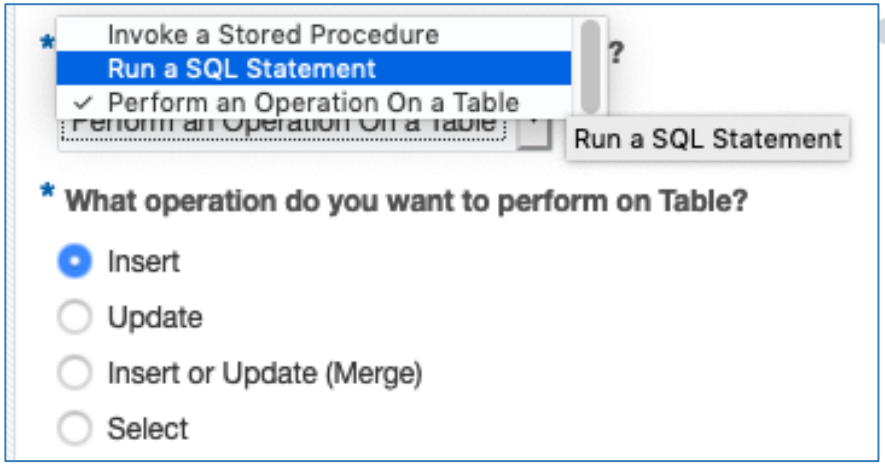
- Use EPBCS REST API to update each variable
  - POST action.
- Found at:
  - /applications/{EPBCSApplicationName}/substitutionvariables
- JSON Request

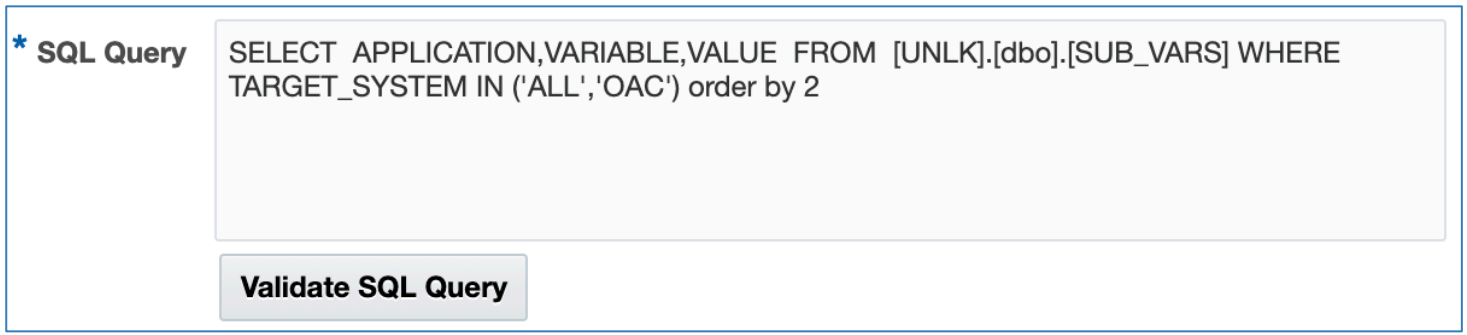
```
{
    "items": [
        {
            "planType": "ALL",
            "name": "CURRENT_YEAR",
            "value": "FY16"
        },
        {
            "planType": "ALL",
            "name": "NEXT_YEAR",
            "value": "FY17"
        }
        ]
}
```

Step 2:
Update variables in (E)PBCS

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Update Variables using PBCS REST API
Video Link: https://www.youtube.com/watch?v=m_h5jSc3R00&feature=youtu.be

Step 3:
Pull Essbase Cloud related variables from SQL





Step 4:
Update variables in Essbase Cloud

- Use Essbase REST API to update each variable
  - PUT action
- Found at:
  - Database Variable update: /applications/{appName}/databases/{dbName}/variables/{varName}
  - Application Variable Update: /applications/{appName}/variables/{varName}
  - Server Variable update: /variables/{varName}
- JSON Request

```
{
    "name": "ACTUAL_YEAR",
    "value": "FY23"
}
```

Step 4:
Update variables in Essbase Cloud

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Update Variables in Essbase Cloud using the REST API
Video Link: https://www.youtube.com/watch?v=m_h5jSc3R00&feature=youtu.be

Demo Time

Look and Feel

Demo

Video can be found on the unlocked cube Youtube channel
Video Name: OIC Integration - Update variables in PBCS and Essbase Cloud
Video Link: https://www.youtube.com/watch?v=CbmFLNjkfkU&feature=youtu.be

4.
Recipe 2

On-premises > PBCS

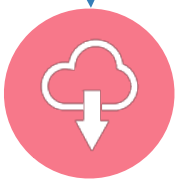
Recipe: On-premises database to PBCS (dimension build)

ON-PREMISES DATABASE

Run query on on-premises database, using the agent.

OIC STAGING

Load query results to OIC staging area



PBCS INBOX

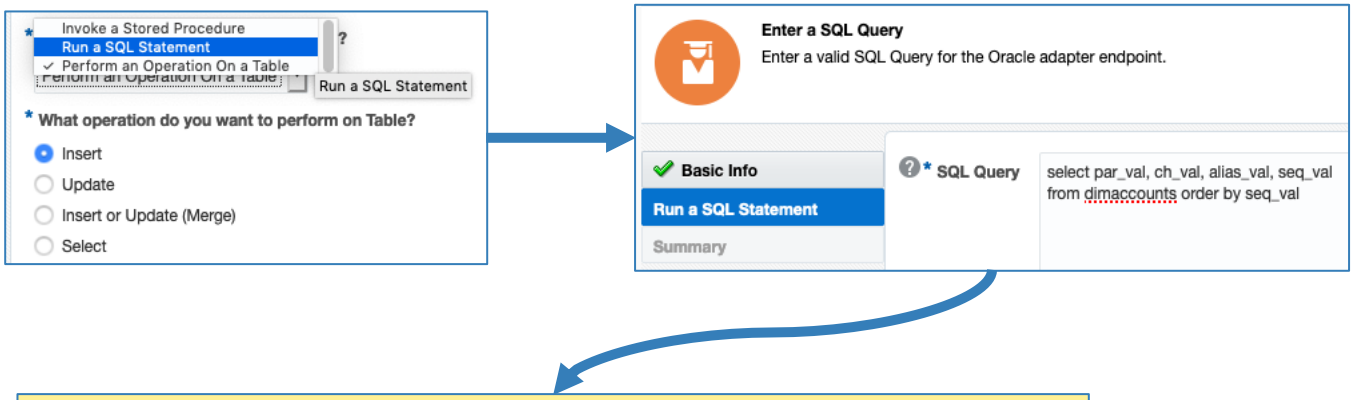
Use PBCS REST to upload to Inbox.

RUN JOB

Run PBCS job to run Import Metadata job using PBCS REST.

Ingredient 1: SQL Server Connection

- Allows running queries, procedures, table operations



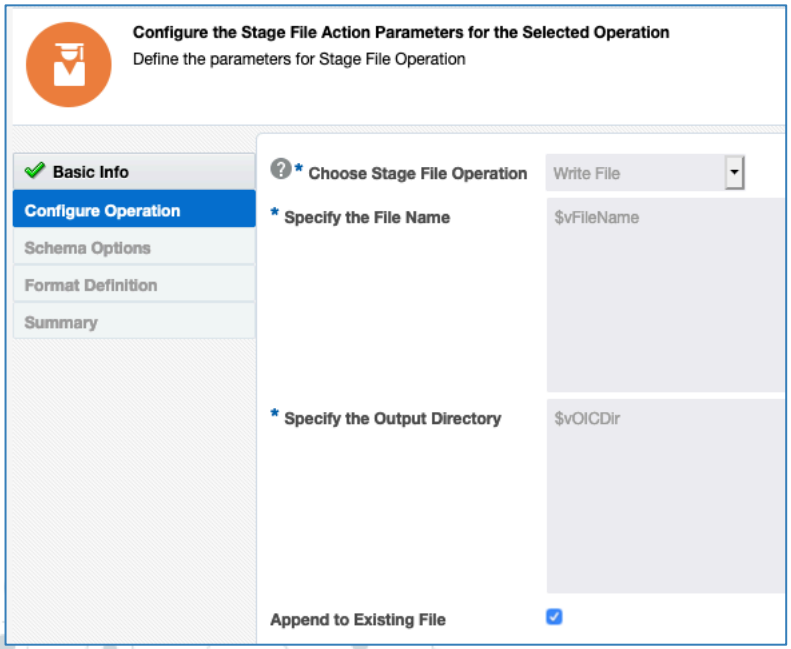
PAR_VAL	CH_VAL	ALIAS_VAL	SEQ_VAL
Account	Global Accounts		1
Global Accounts	NET REVENUE	Net Revenues	2
Global Accounts	COST OF GOO...	COGS	3
Parent	Account	Alias: Default	0
Global Accounts	KSCOPE	*NULL*	4

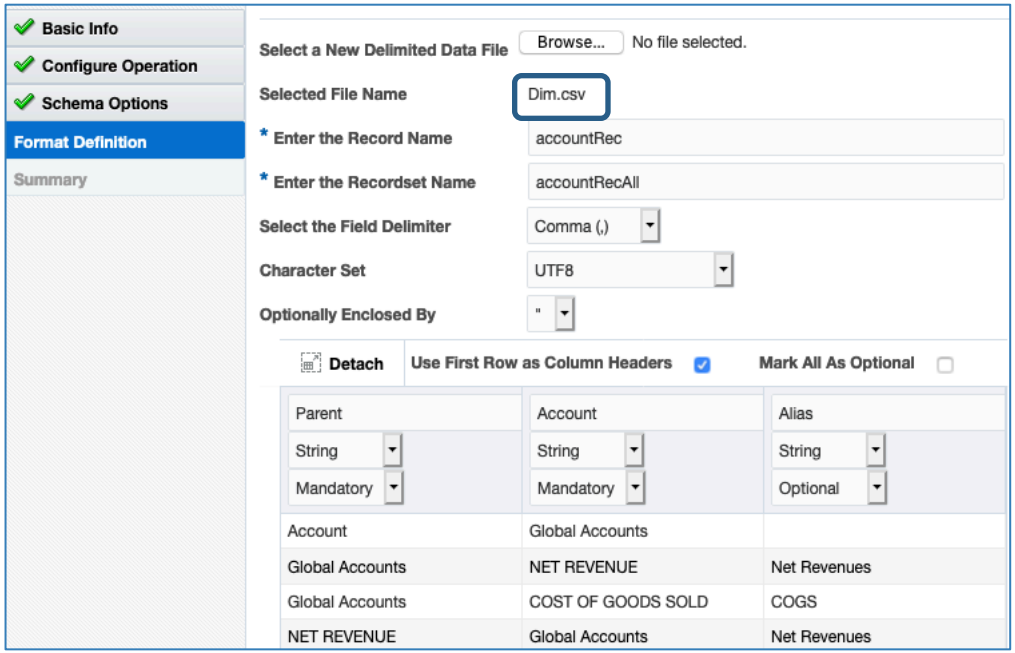
Ingredient 1: SQL Server Connection

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Pull data from SQL on-premise database
Video Link: https://www.youtube.com/watch?v=YjnDXYCn234&feature=youtu.be

Ingredient 2: OIC Stage File

- Abstract OIC file storage area.
- List, read, write, zip (unzip).
- Provide schema (i.e., layout of file)





Ingredient 2: OIC Stage File

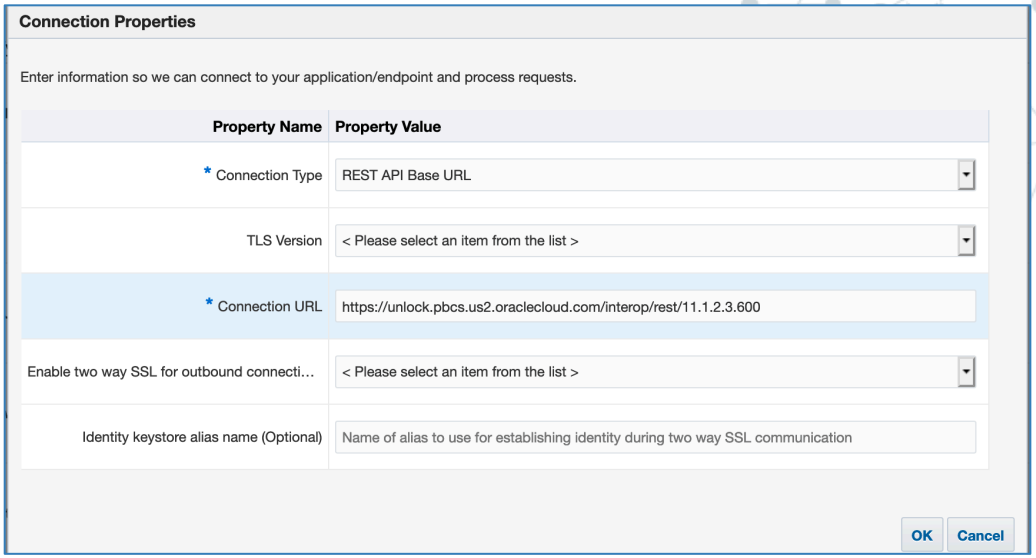
Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Stage File
Video Link: https://www.youtube.com/watch?v=W4EZpRrLdZU&feature=youtu.be

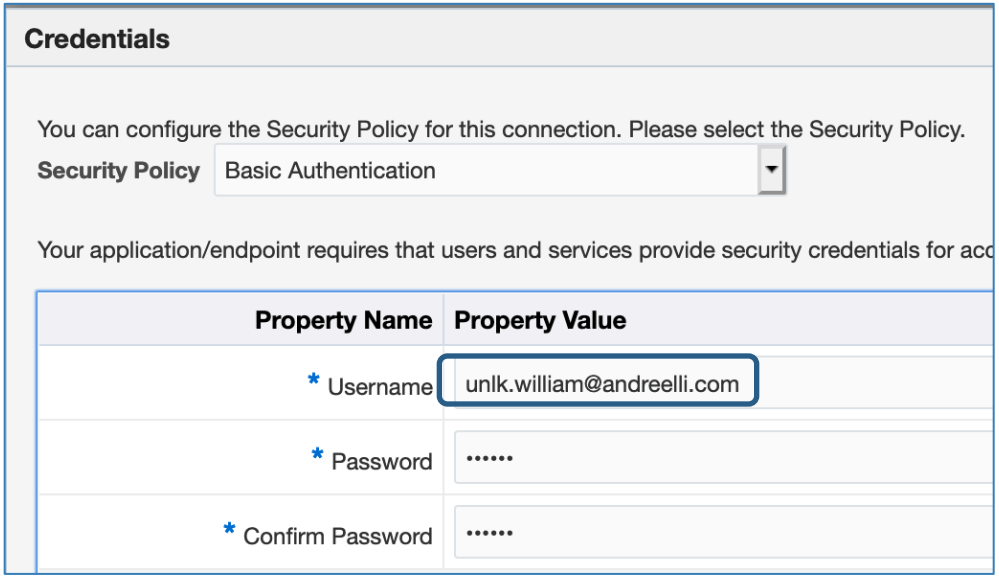
Ingredient 3: PBCS Inbox Upload

- Use the migration REST API.
- Allows file upload/download.
  - POST action.
- Basic authentication.
- Found at:
  - https://EPBCSURL/interop/rest/11.1.2.3.600/applicationsnapshots/filename/contents?q={isLast:true,chunkSize:xxx,isFirst:true}

Shout out to the immense John Goodwin for providing the idea

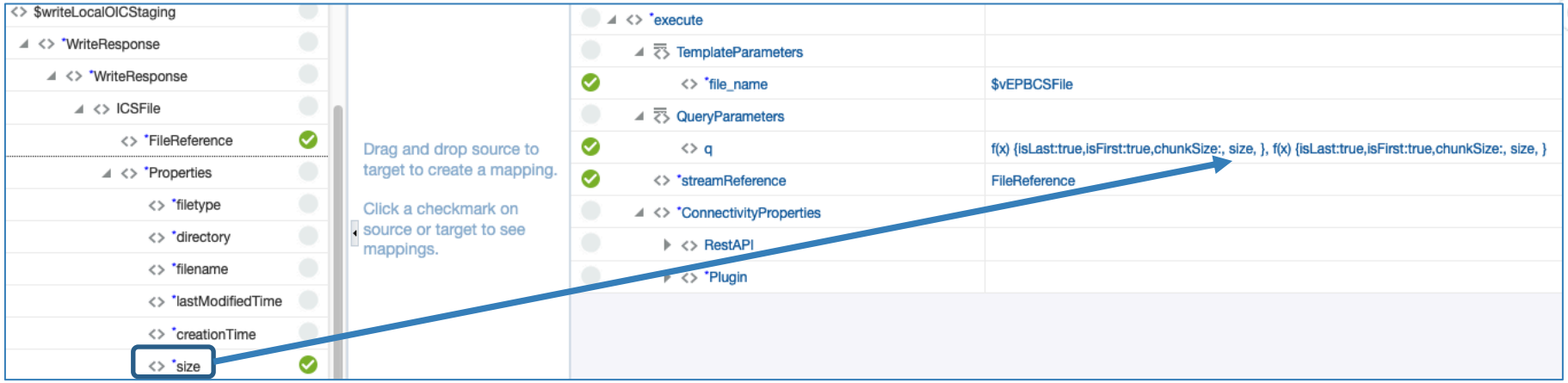
Ingredient 3: REST Adapter Setup





Secret Sauce: Mapping & Streaming

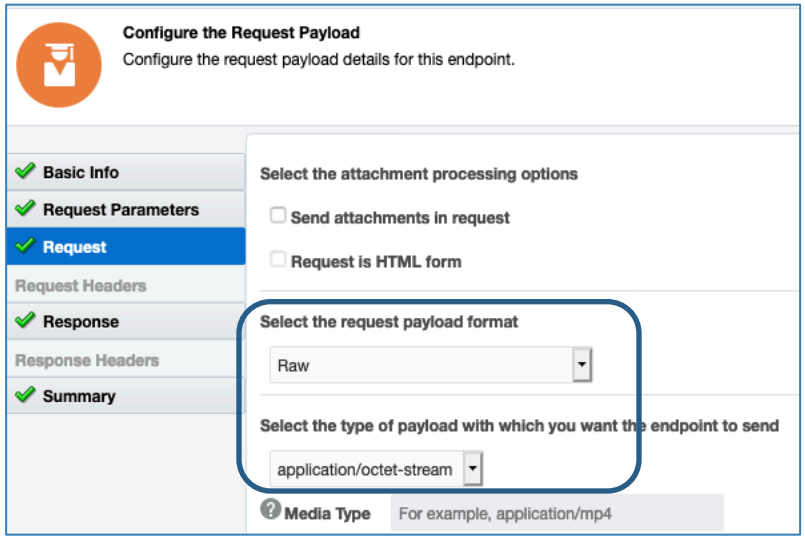
- OIC mapping capabilities for file size.



- Why? Because the PBCS API requires “chunks”.

Secret Sauce: Mapping & Streaming

- Select “Raw” > “application/octet-stream” for OIC REST payload configuration.



Ingredient 3: REST Adapter Setup

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - update dimensions in PBCS using OIC and the PBCS REST API - REST API Setup
Video Link: https://www.youtube.com/watch?v=DXLw1IuBYiE&feature=youtu.be

Ingredient 4: PBCS Run Import Metadata job

- Set up a job on PBCS.
- Use REST to run the job. upload/download.
  - POST action.
  - JobType: IMPORT_METADATA
- Found at:
  - https://EPBCSURL/HyperionPlanning/rest/{api_version}/applications/{application}/jobs

```
{
    "jobType":"IMPORT_METADATA",
    "jobName":"bldAccounts"

}
```

Ingredient 4: PBCS Run Import Metadata job

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - execute Import job in PBCS using OIC and the PBCS REST API
Video Link: https://www.youtube.com/watch?v=DHxo1OomYkk&feature=youtu.be

Demo Time

Running the job

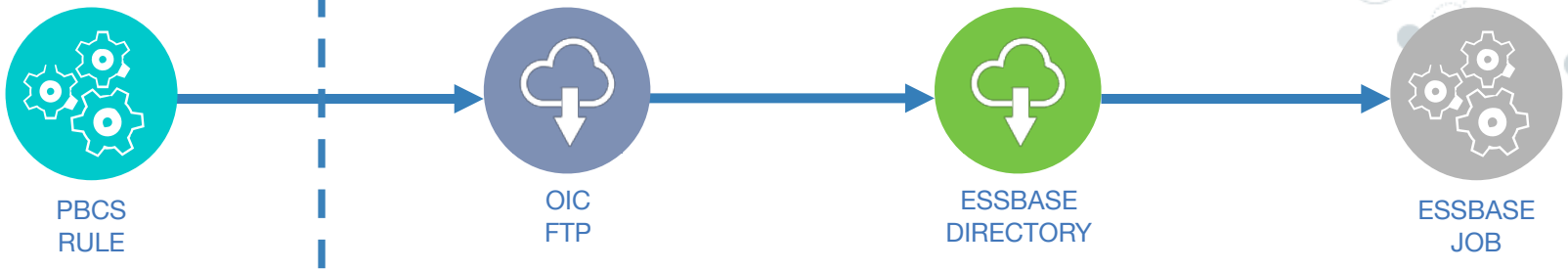
Summary

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Update Dimensions in PBCS using OIC from SQL table
Video Link: https://www.youtube.com/watch?v=PmkgqobtVAk&feature=youtu.be

6.
Recipe 3

PBCS > Essbase Cloud

Recipe: Push PBCS data to Essbase Cloud (OAC)



Run business rule to export forecast to PBCS Inbox.

Write and read export file contents to FTP using OIC FTP adapter.

Push file to Essbase Cloud directory using REST.

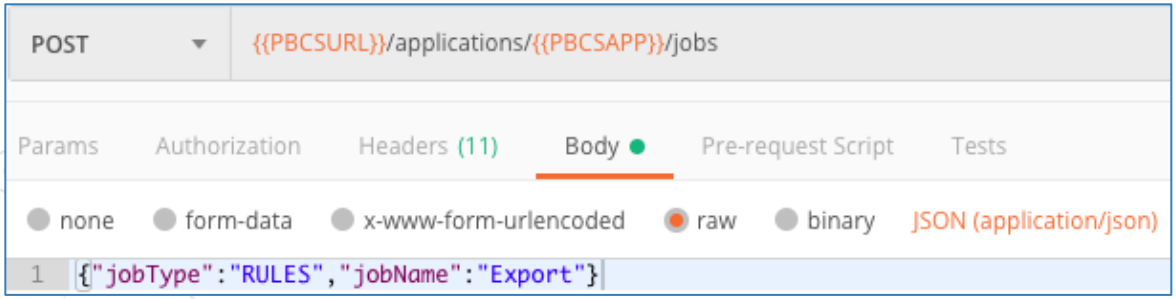
Run Essbase Cloud job load data using REST.

Prep: Run export rule

- Simple rule to export data.

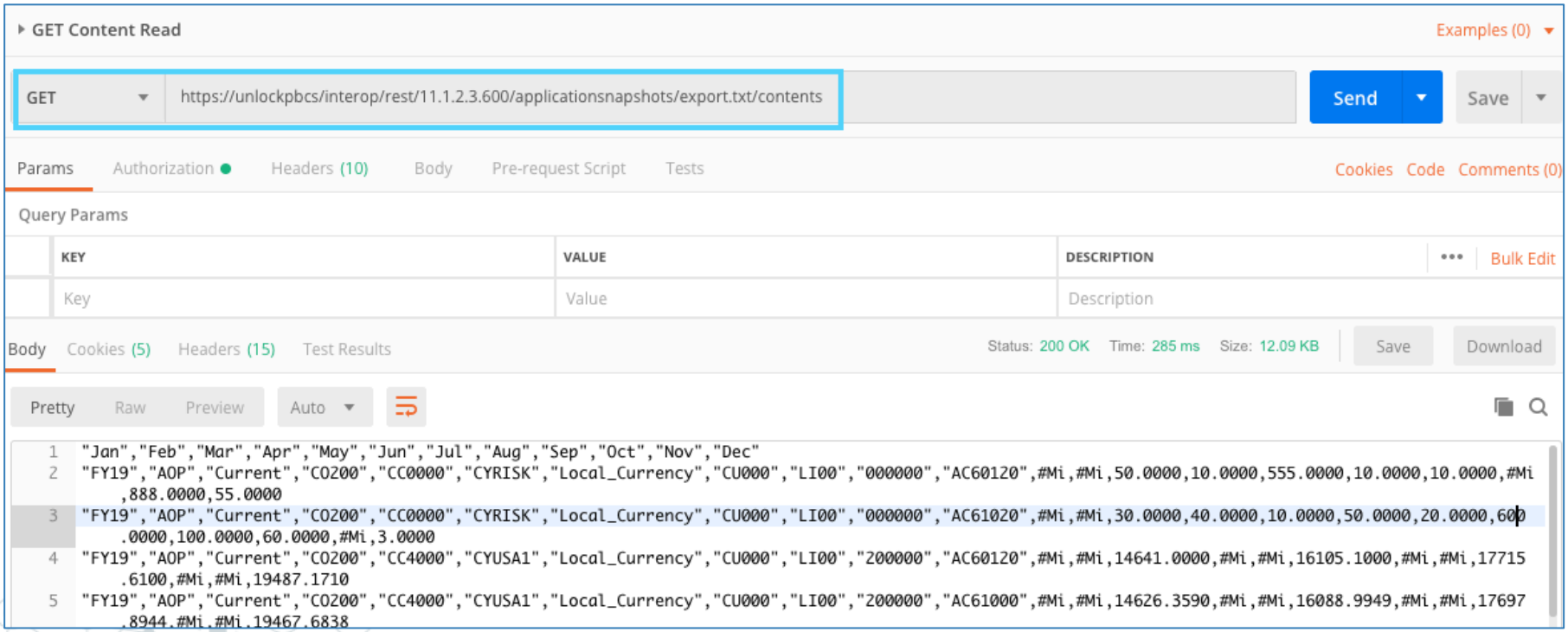
```
FIX(
    "AOP",
    "Current",
    Jan:Dec,
    "FY19",
    @RELATIVE("Company", 0),
    @RELATIVE("Country", 0),
    @RELATIVE("CostCenter", 0),
    @RELATIVE("Product", 0),
    @RELATIVE("Customer", 0),
    @RELATIVE("Account", 0),
    "Inp",
    "Local_Currency")


    DATAEXPORT "File" "," "/u03/lcm/export.txt" "";
ENDFIX
```

- PBCS REST to execute rule.



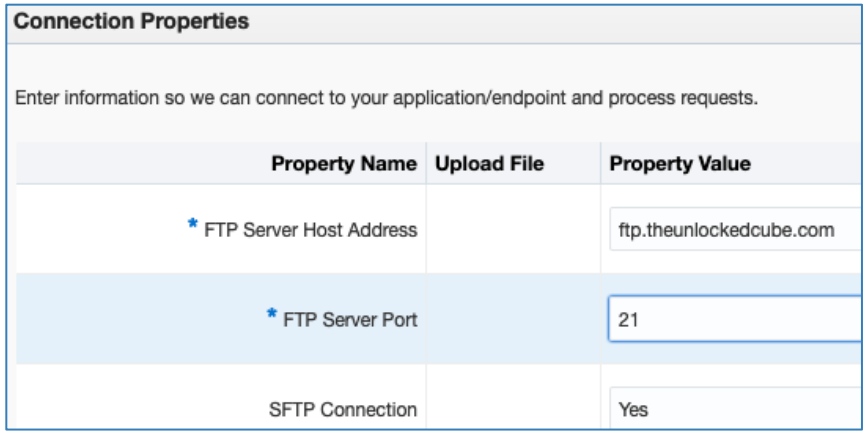
Prep: Load file to FTP

- Use OIC FTP adapter for writing file.
- PBCS REST allows you to read contents from the Inbox.



Ingredient 1: OIC FTP Adapter

- Upload and download files.



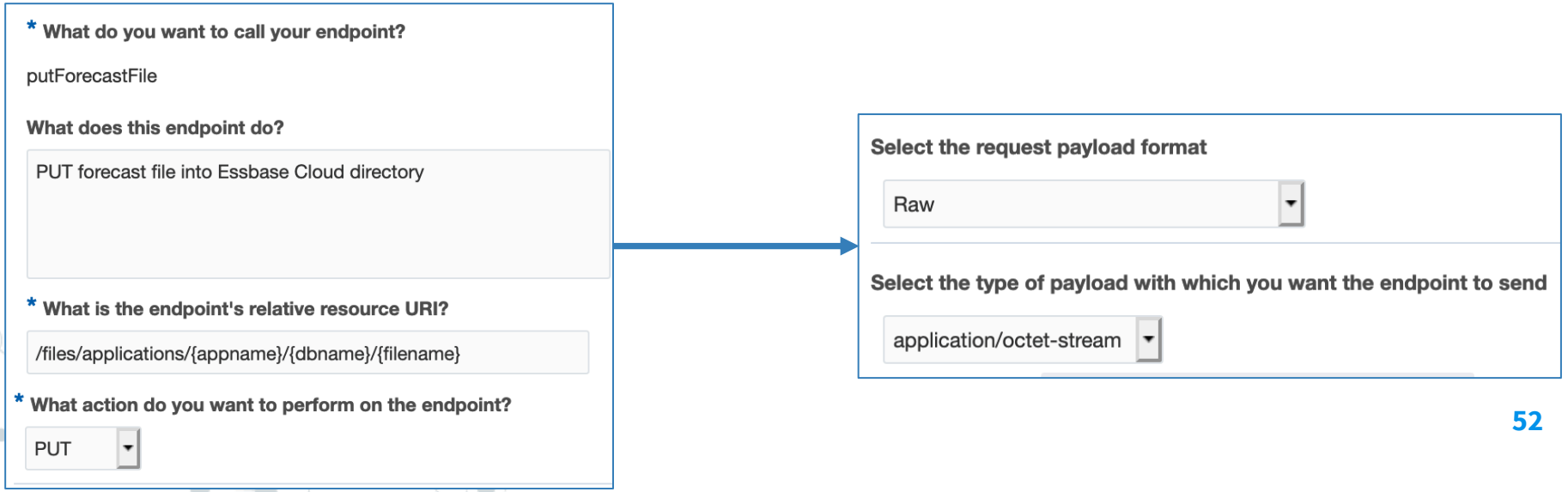
- Complex file handling.
- Why FTP? Oracle A-team document.

Ingredient 1: OIC FTP Adapter

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Read FTP File
Video Link: https://www.youtube.com/watch?v=D8HllJBbJFI&feature=youtu.be

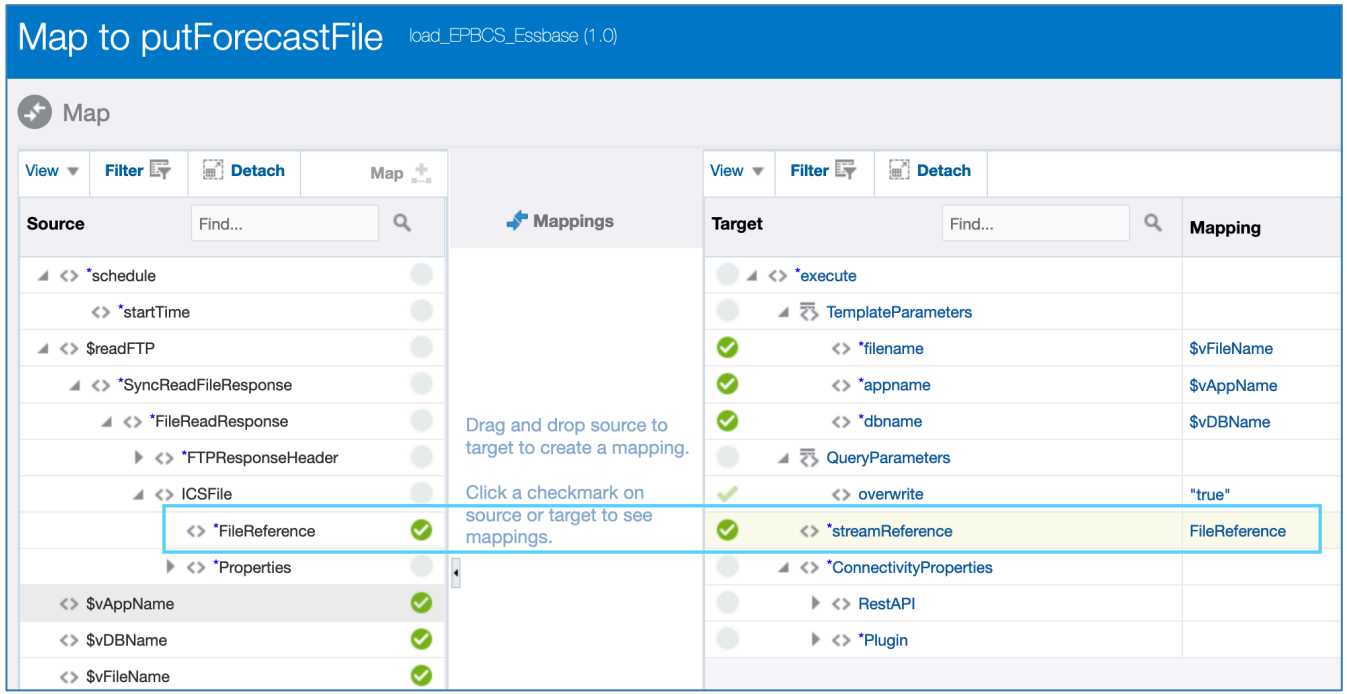
Ingredient 2: Essbase REST API

- PUT action allows you to load a file to Essbase.
  - http(s)://server/essbase/rest/(version) /files/applications/{appname}/{dbname}/{filename}
- OIC REST endpoint setup.



Secret Sauce: Mapping

- Map from FTP to Essbase Cloud.



- Why? This allows the file to be streamed to Essbase Cloud directory.

Ingredient 3: Essbase REST API

- POST action allows you to run a job on Essbase to load the file:
  - http(s)://server/essbase/rest/(version)/jobs
- Payload

POST {{URL}}/{{VERSION}}/jobs/

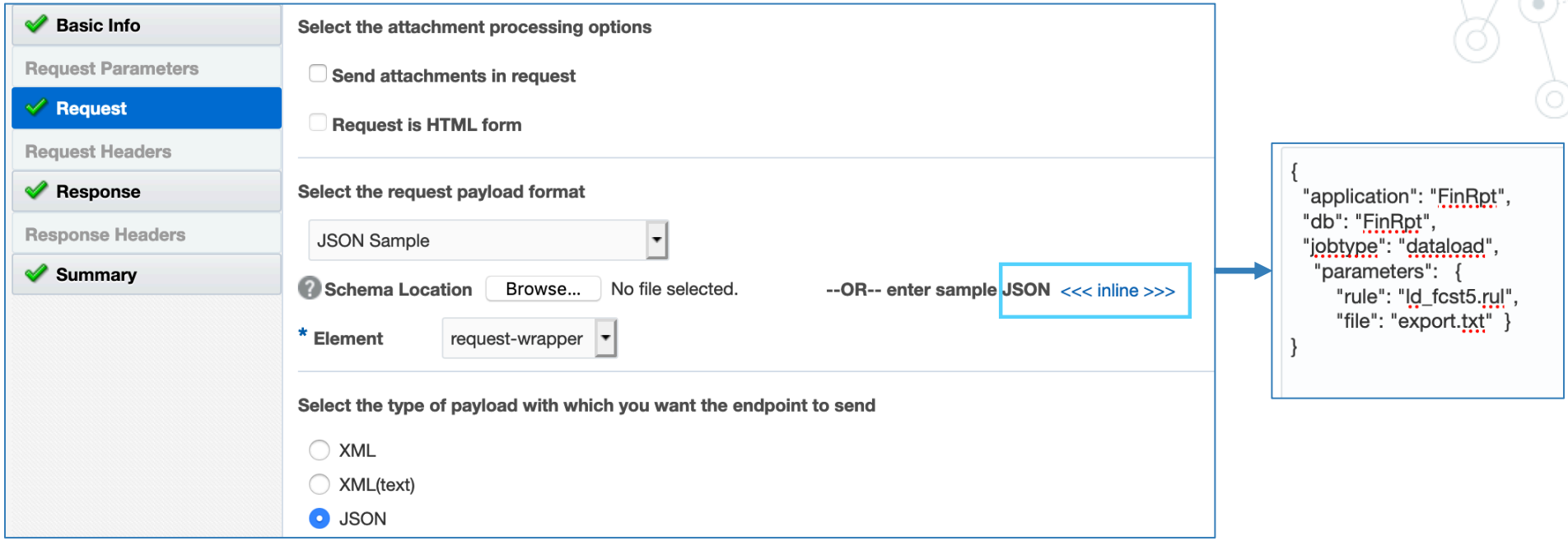
Params Authorization Headers (1) Body Pre-request Script Tests

none form-data x-www-form-urlencoded raw binary JSON (application/json)

```
{
    "application": "FinRpt",
    "db": "FinRpt",
    "jobtype": "dataload",
    "parameters":
    {
        "rule": "ld_fcst5.rul",
        "file": "export.txt"
    }
}
```

Secret Sauce: REST endpoint setup

- Payload.



Ingredients 2 & 3: Essbase REST

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - Push File from PBCS to Essbase Cloud and load file into Essbase Cloud
Video Link: https://www.youtube.com/watch?v=4EAejusXsLg&feature=youtu.be

Demo Time

Running the job

Running the job

Video can be found on the unlocked cube Youtube channel
Video Name: OIC - load PBCS data into Essbase Cloud - end to end
Video Link: https://www.youtube.com/watch?v=SpHb8Bd15cc&feature=youtu.be

Summary

- Many adapters
- Would be nice to have Cloud EPM adapters
- Be aware of different file options
- REST knowledge required

Check out our session on the Essbase Cloud REST API
@11:45 today, Room 609, Level 6

Thanks!

Any questions?

You can find us at:

@theunlockedcube

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wandreelli@huronconsultinggroup.com


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