

A Case for a Well-Integrated EPM Cloud Solution: Oracle Integration Cloud (OIC)



HURON

ODTUG KSCOPE19 SEATTLE, WASHINGTON • JUNE 23-27

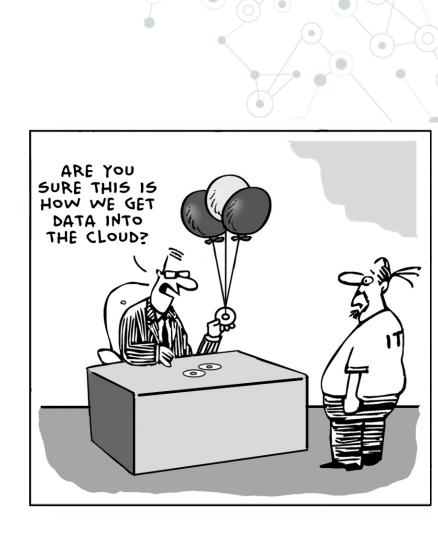
PLEASE FILL OUT YOUR EVALUATIONS

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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

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 EPM Implementation
 Experience
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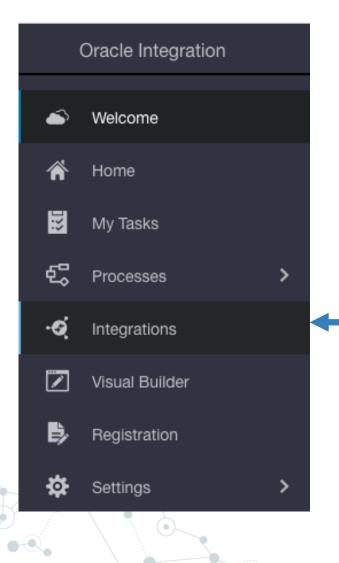


Overview

Oracle Integration Cloud

- O Lightweight integrations
- Onectivity 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
- O Triggered events
- O Visual Builder Cloud
- O Monitoring
- O Libraries
- Message subscription/limits

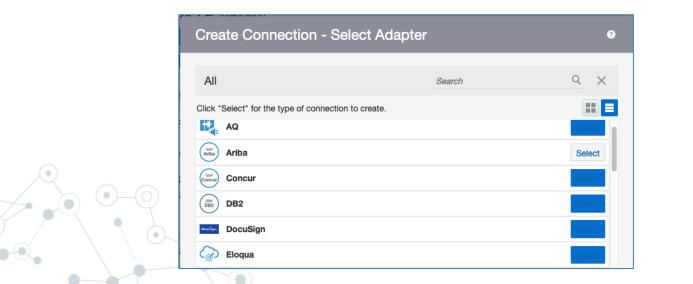


Connectivity

2.

Connections

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



Connections

○ And yes, an EPM Cloud Adapter is available.

 ...But, only supports Tax Provisioning and Financial Close Cloud services currently.

			Create New Connection			
Oracle Enterprise Performance Management Cloud		to	inter information that describes the connection. Use a meaningful name and desc o help others find your connection when they create their own integrations. The lo nust be unique and can be set only when the connection is created.			
		* Name	FCCS_CONNECTION			
		* Identifier	FCCS_CONNECTION			
		Role	Trigger and Invoke			

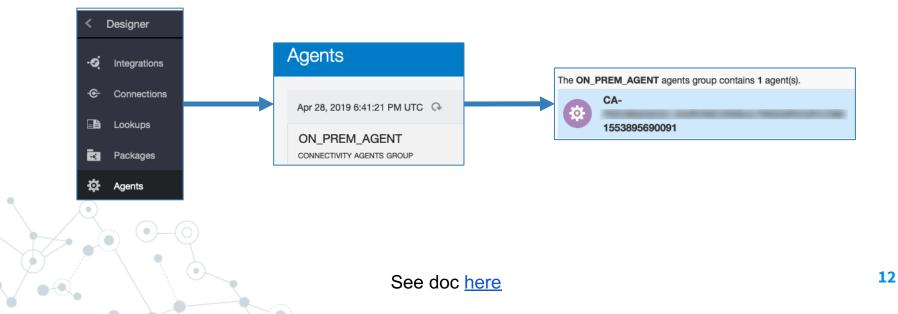
See doc here

On-premises?

○ Set up "on-premises agents".

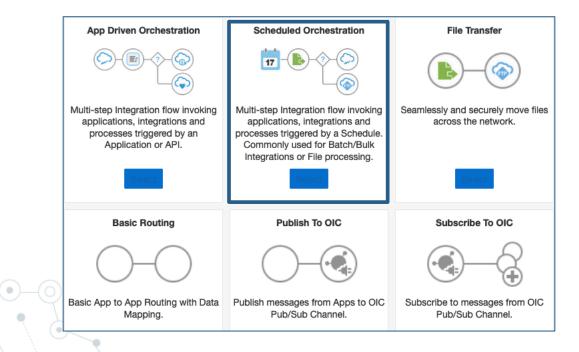
- Files?
- Databases?

◎ Easy to install and set-up.



Integrations

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



Recipe 1

K

Update Substitution Variables: PBCS & Essbase Cloud

Prep: Update Substitution Variables in PBCS & Essbase Cloud

- 1 source to control them all:
 - Table?

• File?

<pre>SELECT [TARGET_SYSTEM] , [APPLICATION] , [VARIABLE] , [VALUE] FROM [UNLK].[dbo].[SUB_VARS] 100 %</pre>					
	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



ON-PREMISES DATABASE

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: <u>https://www.youtube.com/watch?v=1VPNDTU3apc&feature=youtu.be</u>



Ingredient 2: (E)PBCS REST API basics

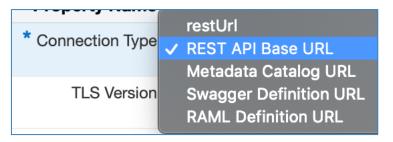
- O Authorization: Basic, like other EPM services.
 - o domain.username
- Base URL:
 - https://Instance Domain.pbcs.us2.oraclecloud.com/HyperionPlanning/rest/(version)
- Ourrent version: v3
- Responses: JSON/XML

```
1 - {
        "isLatest": true.
 2
        "lifecycle": "active",
 3
        "version": "v3",
 4
        "links": [
 5 -
 6 -
                 "href": "https://planning2-a999999.pbcs.us2.oraclecloud.com:443/HyperionPlanning/rest/v3",
 7
                 "rel": "canonical"
 8
            },
10 -
                 "href": "https://planning2-a999999.pbcs.us2.oraclecloud.com:443/HyperionPlanning/rest/v2",
11
12
                 "rel": "predecessor-version"
13
14
```

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

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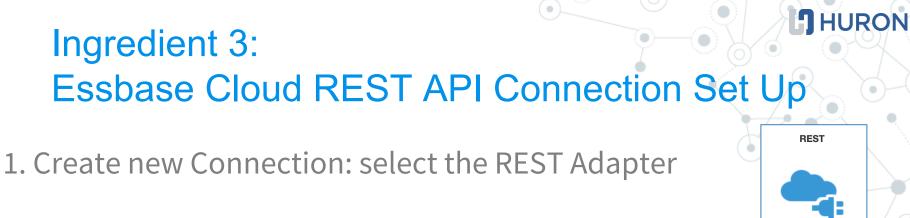
REST

Select

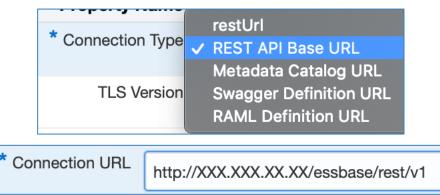
Ingredient 3: Essbase Cloud REST API basics

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





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

Select

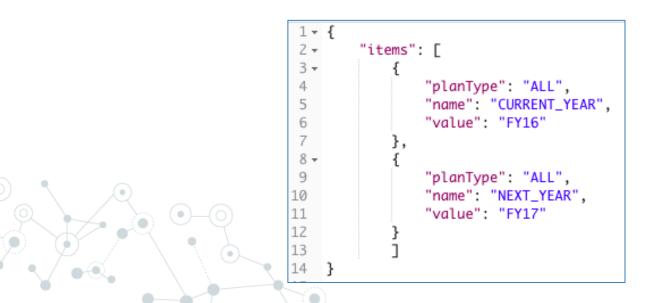
Step 1: Pull PBCS related variables from SQL

¥	Variable		Data Typ	e Description		Value	e	1.7	
(x)	(x) vAppNam	NEEPBCS	string	Name of Target EPI	BCS applic	ation 🗿	"FinPlan"		
EPBCSAppName	(x) vAppNam	eEPBCS_SQL	string	Type a description		0	concat("EF	PBCS-	-", \$vAppNameEPBCS)
	💽 Мар								
_	View Filter	B Some of		A	View 💌	Filter 😽	Detach		
	Source Fir	d	Q	🖨 Mappings	Target	Find	(Q M	lapping
Map to getSubVars	⊿ <> *schedule)			A <	> *getSubVa	rsInput		
	<> *star	tTime			9	<> *vApp	NameEPBCS_S	QL \$	vAppNameEPBCS_SQL
	<> \$vAppNa	meEPBCS_SQL	S						
(Sal)	* SQL Query			ON,VARIABLE,VALU					
getSubVars	•	IANGE1_51	STEW -			TAPPIN		_0.0	Dider by 2
									23

Step 2: Update variables in (E)PBCS

O Use <u>EPBCS REST API</u> to update each variable

- POST action.
- Found at:
 - /applications/{EPBCSApplicationName}/substitutionvariables
- SON Request

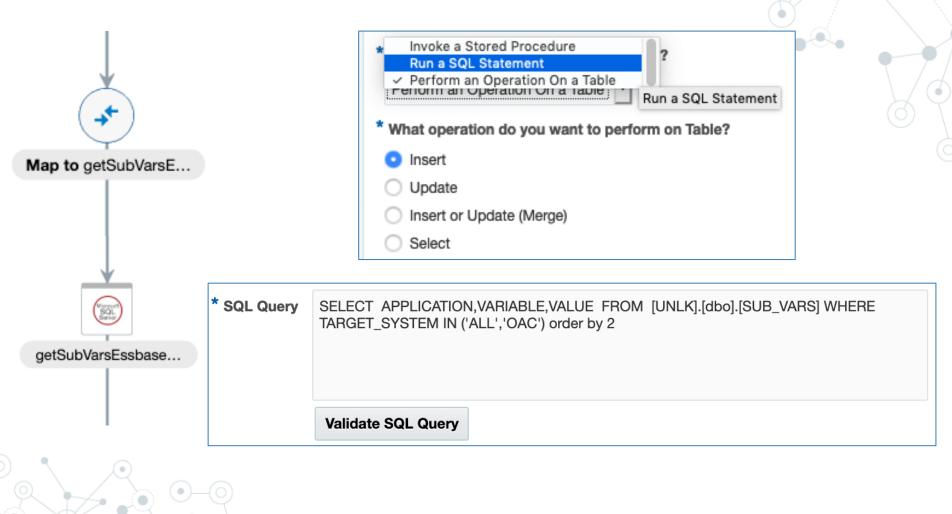


Step 2: Update variables in (E)PBCS

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

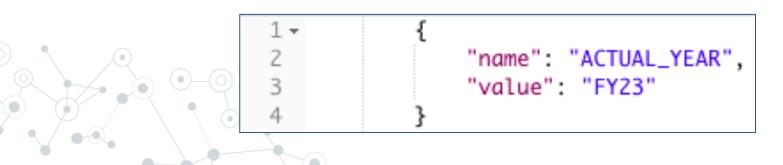


Step 3: Pull Essbase Cloud related variables from SQL



Step 4: Update variables in Essbase Cloud

- Use <u>Essbase REST API</u> to update each variable
 PUT action
- O Found at:
 - Database Variable update: /applications/{appName}/databases/{dbName}/variables/{var Name}
 - Application Variable Update: /applications/{appName}/variables/{varName}
 - Server Variable update: /variables/{varName}
- SON Request



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: <u>https://www.youtube.com/watch?v=m_h5jSc3R00&feature=youtu.be</u>





Look and Feel





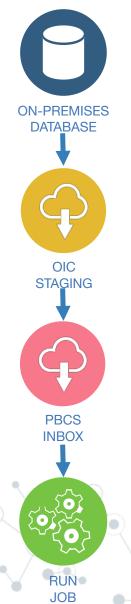
Video can be found on the unlocked cube Youtube channel Video Name: OIC Integration - Update variables in PBCS and Essbase Cloud Video Link: <u>https://www.youtube.com/watch?v=CbmFLNjkfkU&feature=youtu.be</u>



Recipe 2

On-premises > PBCS

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



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

Load query results to OIC staging area

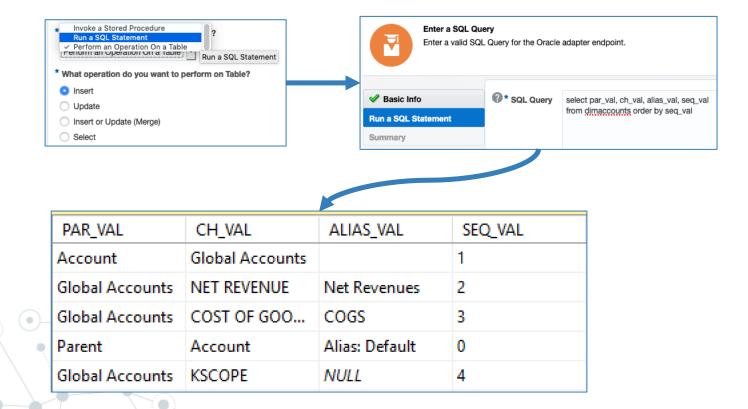
Use PBCS REST to upload to Inbox.

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

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Ingredient 1: SQL Server Connection

Allows running queries, procedures, table operations



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: <u>https://www.youtube.com/watch?v=YjnDXYCn234&feature=youtu.be</u>



Ingredient 2: OIC Stage File

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

Sun

Configure the Stage File Action Parameters for the Selected Operation Define the parameters for Stage File Operation						
✓ Basic Info	* Choose Stage File Operation	Write File				
Configure Operation	* Specify the File Name	\$vFileName				
Schema Options Format Definition Summary						
	* Specify the Output Directory	\$vOICDir				
	Append to Existing File	•				

Basic Info Configure Operation Schema Options	Select a New Delimited Data File Selected File Name	Browse No file selected. Dim.csv				
nat Definition	* Enter the Record Name	accountRec				
mary	* Enter the Recordset Name					
	Select the Field Delimiter					
	Character Set					
	Optionally Enclosed By					
	Detach Use First Row	as Column Headers 🛛 🔽	Mark All As Optional			
	Parent	Account	Alias			
	String Mandatory	String Mandatory	String Optional			
	Account	Global Accounts				
	Global Accounts	NET REVENUE	Net Revenues			
	Global Accounts	COST OF GOODS SOLD	COGS			
	NET REVENUE	Global Accounts	Net Revenues			

Ingredient 2: OIC Stage File

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



Ingredient 3: PBCS Inbox Upload

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

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Ingredient 3: REST Adapter Setup

EPBCS_INTEROP

REST Used by 5 Integrations

EPBCS Migration REST APIs

blication/endpoint and process requests.		
Property Value		
REST API Base URL		•
< Please select an item from the list >		•
https://unlock.pbcs.us2.oraclecloud.com/interop/rest/11.1.2.3.600		
< Please select an item from the list >		•
Name of alias to use for establishing identity during two way SSL communication		
	ок	Cance
	< Please select an item from the list > https://unlock.pbcs.us2.oraclecloud.com/interop/rest/11.1.2.3.600 < Please select an item from the list >	Property Value REST API Base URL < Please select an item from the list > https://unlock.pbcs.us2.oraclecloud.com/interop/rest/11.1.2.3.600 < Please select an item from the list >

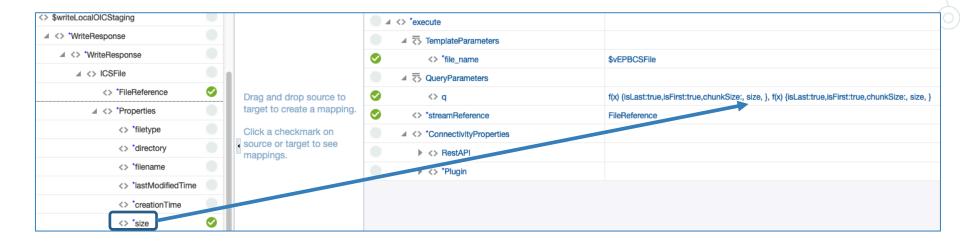
You can configure the Security Policy for this connection. Please select the Security Policy.
Security Policy
Basic Authentication

Your application/endpoint requires that users and services provide security credentials for acc

Property Name	Property Value					
* Username	unlk.william@andreelli.com					
* Password	•••••					
* Confirm Password	•••••					

Secret Sauce: Mapping & Streaming

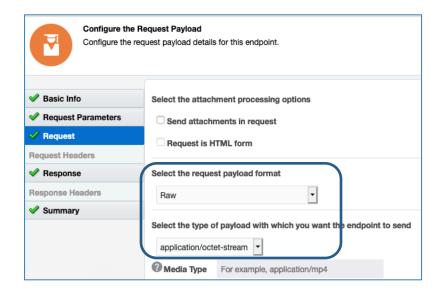
○ OIC mapping capabilities for file size.



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

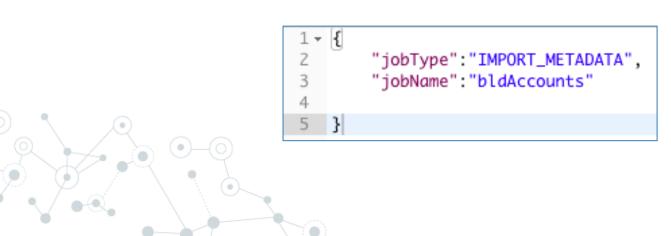
Video can be found on the unlocked cube Youtube channel Video Name: OIC - update dimensions in PBCS using OIC and the PBCS REST API - REST API Setup Video Link: <u>https://www.youtube.com/watch?v=DXLw1luBYiE&feature=youtu.be</u>



Ingredient 4: PBCS Run Import Metadata job

○ Set up a job on PBCS.

- Use <u>REST</u> to run the job. upload/download.
 - POST action.
 - JobType: IMPORT_METADATA
- Found at:
 - https://EPBCSURL/HyperionPlanning/rest/{api_version}/a pplications/{application}/jobs



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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: <u>https://www.youtube.com/watch?v=DHxo1OomYkk&feature=youtu.be</u>





Running the job





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

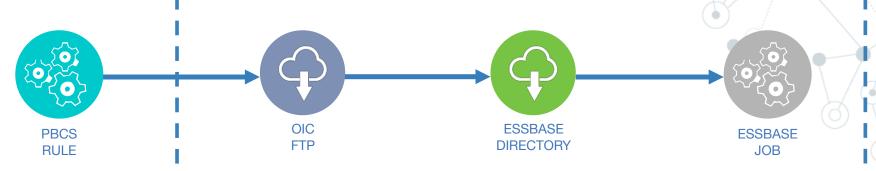


Recipe 3

6.

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("Product", 0),
    @RELATIVE("Account", 0),
    "Inp",
    "Local_Currency")
DATAEXPORT "File" "," "/u03/lcm/export.txt" "";
ENDFIX
```

○ PBCS REST to execute rule.

	POST									
C	Params	Authori	zation	Headers (11)	Body 🔵	Pre-r	equest Script	Tests		
	none	form	-data	x-www-form-ur	lencoded	🖲 raw	binary	JSON (application/json)		
	1 {"jobType":"RULES","jobName":"Export"}									

Prep: Load file to FTP

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

▶ GET Content Read Examples (0) ▼							
GET • https://unlockpbcs/interop/rest/11.1.2.3.600/appl	icationsnapshots/export.txt/contents	Send T Save T					
Params Authorization • Headers (10) Body Pre-req	uest Script Tests	Cookies Code Comments (0)					
Query Params							
KEY	VALUE	DESCRIPTION ••• Bulk Edit					
Кеу	Value	Description					
Body Cookies (5) Headers (15) Test Results	Status: 20	0 OK Time: 285 ms Size: 12.09 KB Save Download					
Pretty Raw Preview Auto 🔻 🚍		■ Q					
1 "Jan","Feb","Mar","Apr","May","Jun","Jul","Aug"," 2 "FY19","AOP","Current","CO200","CC0000","CYRISK", ,888.0000,55.0000	Sep","Oct","Nov","Dec" "Local_Currency","CU000","LI00","0000000","AC60120",#M	1i,#Mi,50.0000,10.0000,555.0000,10.0000,10.0000,#Mi					
3 "FY19", "AOP", "Current", "CO200", "CC0000", "CYRISK", .0000,100.0000,60.0000, #Mi, 3.0000	"Local_Currency","CU000","LI00","000000","AC61020",#M	li,#Mi,30.0000,40.0000,10.0000,50.0000,20.0000,60					
	"Local_Currency","CU000","LI00","200000","AC60120",#M	li,#Mi,14641.0000,#Mi,#Mi,16105.1000,#Mi,#Mi,17715					
	"Local_Currency","CU000","LI00","200000","AC61000",#M	li,#Mi,14626.3590,#Mi,#Mi,16088.9949,#Mi,#Mi,17697					

Ingredient 1: OIC FTP Adapter

○ Upload and download files.

Connection Properties								
Enter information so we can connect to your application/endpoint and process requests.								
Property Name	Upload File	Property Value						
* FTP Server Host Address		ftp.theunlockedcube.com						
* FTP Server Port		21						
SFTP Connection		Yes						

Complex file handling.
 Why FTP? Oracle A-team <u>document</u>.

Ingredient 1: OIC FTP Adapter

Video can be found on the unlocked cube Youtube channel Video Name: OIC - Read FTP File Video Link: <u>https://www.youtube.com/watch?v=D8HIIJBbJFI&feature=youtu.be</u>



Ingredient 2: Essbase REST API

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

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○ OIC REST endpoint setup.

* What do you want to call your endpoint?	
putForecastFile	
What does this endpoint do?	Select the request payload format
PUT forecast file into Essbase Cloud directory	Raw
* What is the endpoint's relative resource URI?	Select the type of payload with which you want the endpoint to send
/files/applications/{appname}/{dbname}/{filename}	application/octet-stream
* What action do you want to perform on the endpoint?	52

Secret Sauce: Mapping

◎ Map from FTP to Essbase Cloud.

🗲 Мар									
View 🔻 Filter 🔄 🔄 Detach	Map 📩		View 🔻	Filter 🔄	Detach				
Source Find	٩	👉 Mappings	Target		Find		Q	Mapping	
✓ <> *schedule			> *execute						
<> *startTime		Drag and drop source to target to create a mapping.	TemplateParameters						
▲ <> \$readFTP			S <> *filename					\$vFileName	
SyncReadFileResponse			✓ <> *appname					\$vAppName	
FileReadResponse			S <> *dbname					\$vDBName	
► <> *FTPResponseHeader			QueryParameters						
⊿ <> ICSFile		Click a checkmark on	1	<> ov	verwrite			"true"	
<> *FileReference	0	source or target to see mappings.	0	<> *strear	nReference			FileReference	
*Properties		•		⊿ <> *Conne	ectivityProperties				
<> \$vAppName				▶ <> Re	estAPI				
<> \$vDBName)⊧ <> *P	lugin				
<> \$vFileName	0								

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

Ingredient 3: Essbase REST API

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

POST	Ŧ	{{URL	}}/{{VERSION}}/job	5/				
Params	Author	ization	Headers (1)	Body 鱼	Pre-re	quest Script	Tests 🔵	
none	form	n-data	x-www-form-u	rlencoded	🖲 raw	binary	JSON (application/json)	*
1 - { 2 3 4 5 6 - 7 8 9 10 }	"db": "jobty "param { "r	"FinRp pe": " eters" ule":	dataload",					

Secret Sauce: REST endpoint setup

◎ Payload.

💜 Basic Info	Select the attachment processing options		K Y
Request Parameters	□ Send attachments in request		
🔗 Request	Request is HTML form		
Request Headers		-	5
Response	Select the request payload format		"application": " <u>FinRpt</u> ",
Response Headers	JSON Sample		"db": "FinRpt", "jobtype": "dataload",
💞 Summary	Schema Location Browse No file selected. OR enter sample JSON <<< inline >>>		"parameters": {
	* Element request-wrapper	_	"rule": "l <u>d_</u> fcst5.r <u>u</u> l", "file": "export. <mark>txt</mark> " } }
	Select the type of payload with which you want the endpoint to send		
	○ XML		
	◯ XML(text)		
	• JSON		



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: <u>https://www.youtube.com/watch?v=4EAejusXsLg&feature=youtu.be</u>





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: <u>https://www.youtube.com/watch?v=SpHb8Bd15cc&feature=youtu.be</u>



Summary

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

Thanks!

Any questions?

You can find us at: <u>@theunlockedcube</u> <u>www.theunlockedcube.com</u> <u>vkurian@huronconsultinggroup.com</u> <u>wandreelli@huronconsultinggroup.com</u>



PLEASE FILL OUT YOUR EVALUATIONS

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