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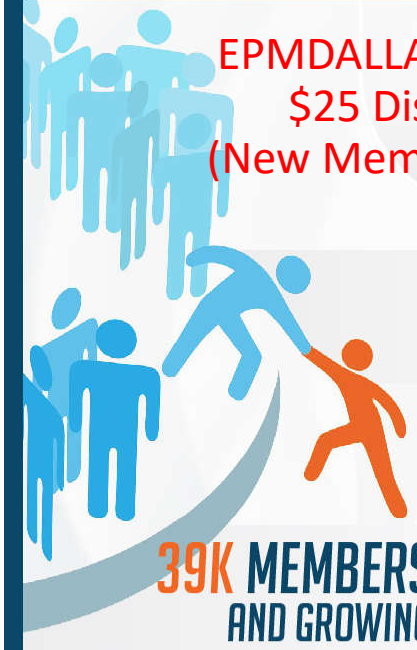

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GameStop

POWER TO THE PLAYERS®

That's Not In the Documentation…

Gotcha's During PBCS Implementation at GameStop

Presented by Trey Daniel, FP&A Sr. Manger and Global Hyperion Administrator

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About Me

GameStop
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- Over 12 years working with Hyperion as both Consultant/Oracle Partner & Customer
  - PricewaterhouseCoopers, LLP (PwC) – 2004 to 2010
  - Accenture – 2010 to 2014 (with 2 years as US Hyperion Data Integration Lead)
  - GameStop – FP&A Senior Manager and Global Hyperion Administrator, 2014 to Current
- Oracle Certified Implementation Specialist
  - HFM 11 (obtained in 2012)
  - Essbase (obtained in 2013)
- B.S., Management Information Systems & MBA, Louisiana State University (LSU)
- http://www.linkedin.com/treydaniel

Trey's Safe Harbors

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- Oracle Cloud applications are changing monthly; "Monthly Update" cloud services email
- I may have misread / skipped over / forgot a part in the documentation ☺
- Many ways to achieve the same outcome in Hyperion apps
- Check Oracle By Example (OBE), blogs, YouTube, books, etc. on building & using PBCS

GameStop Company Overview

A lobal family of specialty retail brands that makes the most popular technologies affordable & simple

GameStop PBCS Project Overview

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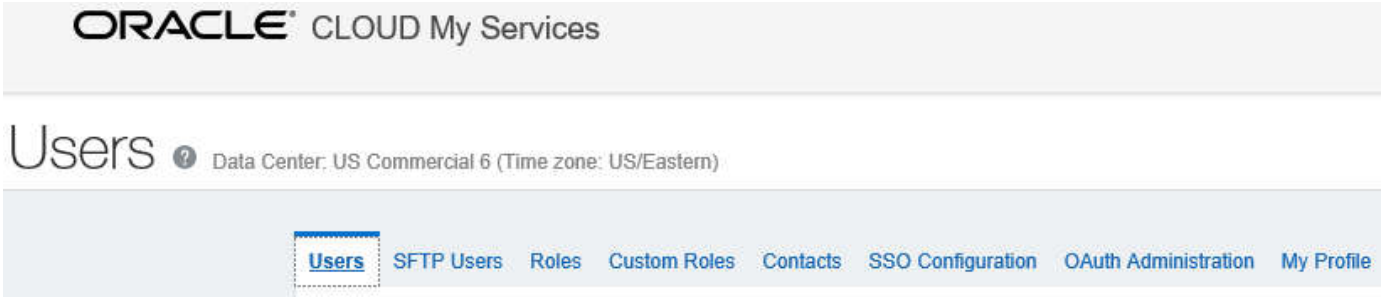
- Combined one Essbase cube + one Planning application into a single PBCS application
- 4 Plan Types (Balance Sheet, Income Statement, Product/Statistics, and Consolidated)
- Migrated Hyperion users from Windows 7 32-bit / Office 2010 32-bit / Essbase Add-In to Windows 10 64-bit / Office 2016 64-bit / Smart View
- User-driven conversion from historical Essbase Add-In to Smart View retrieves
- Migrated legacy SQL-based mapping solutions to Data Management within PBCS
- Enabled integration with existing Salt Lake City PBCS cube via Data Management
- Implemented Single Sign On (SSO) with GameStop MSAD credentials

✓ Went live for Oct FY17 Actuals close & Forecast creation on Sep 28, 2017

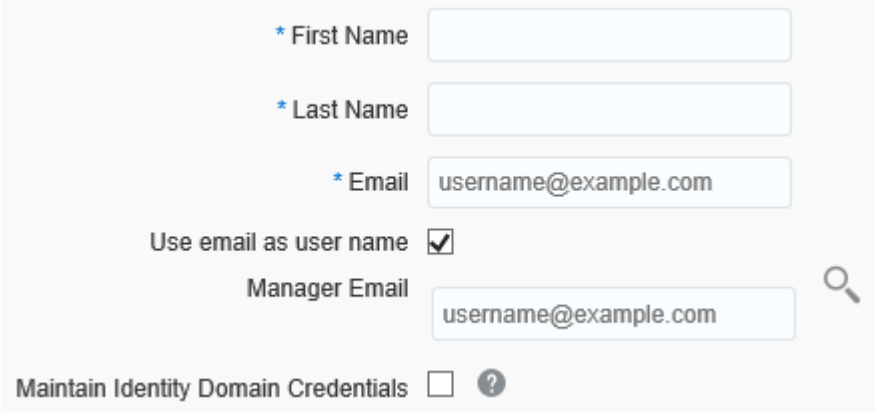
Oracle Cloud My Services

- Replaces Shared Services for user, security group role creation, security group provisioning, and MSAD/SSO Connections
- Shared Services Native Directory User = Oracle Cloud Identity Domain User
- Shared Services External Authentication User = SSO Identity Provider User



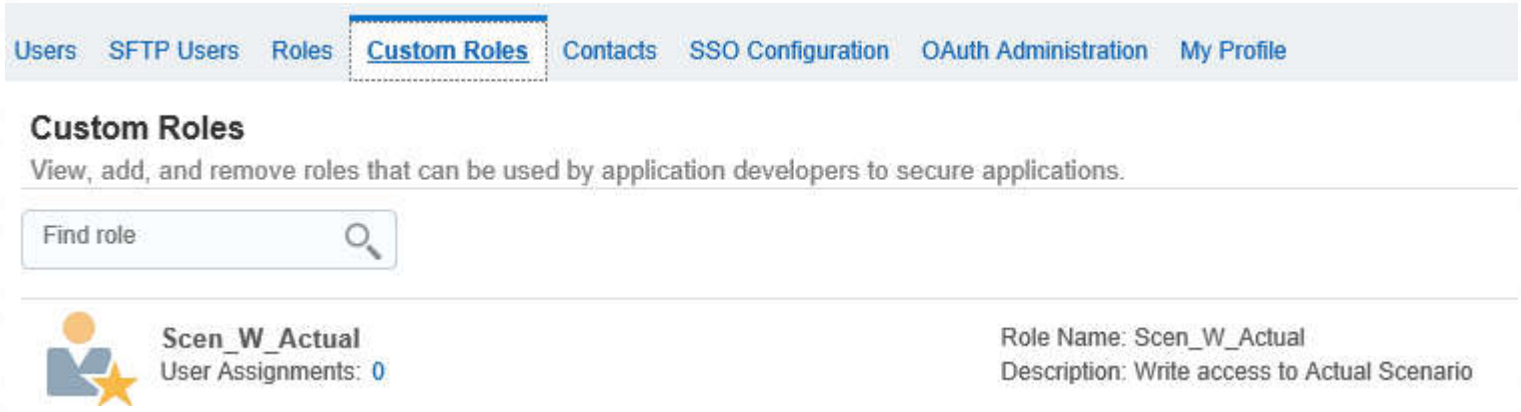
Adding Oracle Cloud Identity Domain Users

- Each user must have a unique email address, which causes issues for creating test users
- However, Jake created a clever Gmail hack for this: http://turrellconsulting.com/blog/?p=769
- Check “Maintain Identity Domain Credentials” for any admins using EPM Automate (more on this later…)



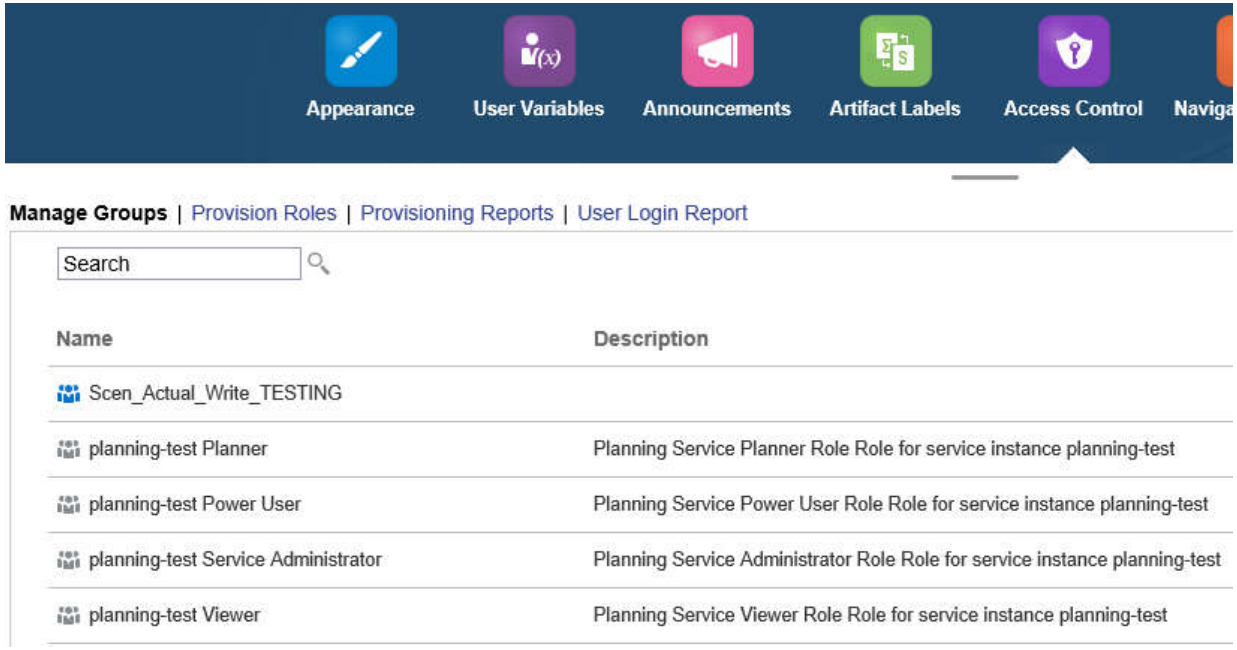
Custom Roles…What Do You Say You Do Here?

- Per Oracle's documentation, "Users must be assigned to predefined roles that grant them access to business functions and associated data"
- While you can create them and assign users to them, they can't be used for Security Role Groups / don't show up in Security for dimension members
- Maybe more functionality added later?



Access Control Groups Though…

- Create Access Control Groups for Member Security (Read/Write access to member data)
- Assign users to Access Control Groups, assign Access Control Groups to Member Security



Security – Predefined Task Roles

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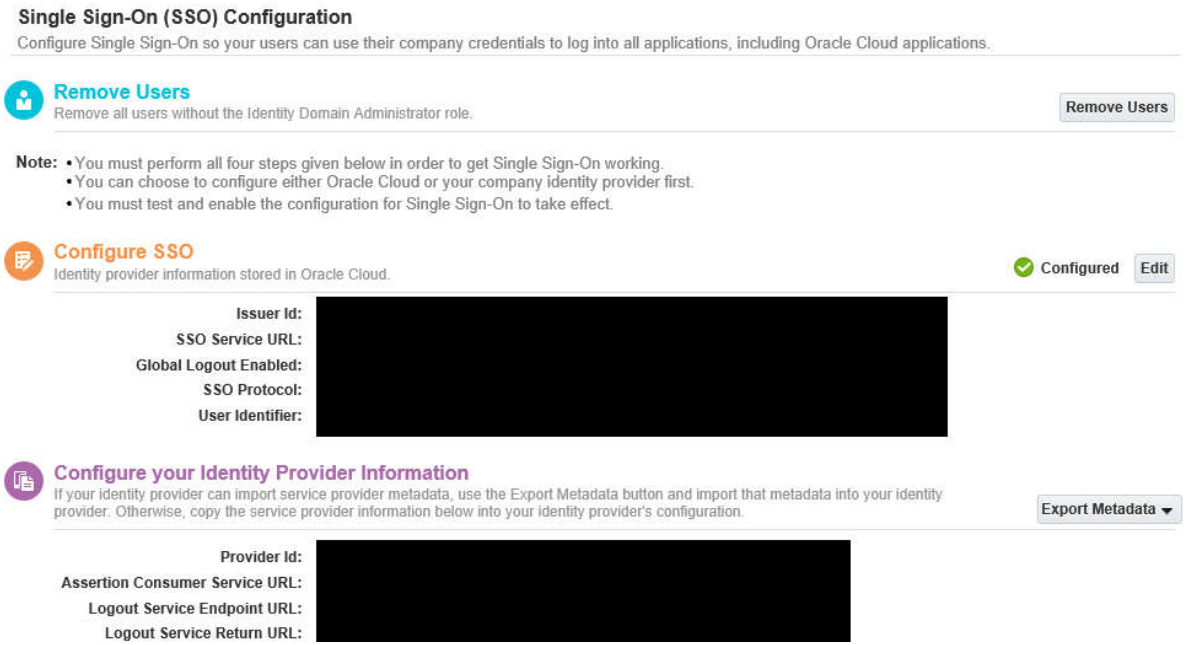
- PBCS has 4 pre-packaged PBCS Task Roles (“what you can do”)
  - Planning Viewer
  - Planning User
  - Planning Power User
  - Planning Service Administrator
- Additionally, the users receiving the initial Oracle Cloud setup email will be setup as the Identity Domain Administrator, (aka “Provisioning Manager” in Shared Services) and can provision users to the above 4 groups + gets Oracle Cloud emails
- Can add additional Ad Hoc Grid, Approvals, Calc Manager, Mass Allocate, and Task Manager to individual users, but not to 4 pre-packaged PBCS Task Roles

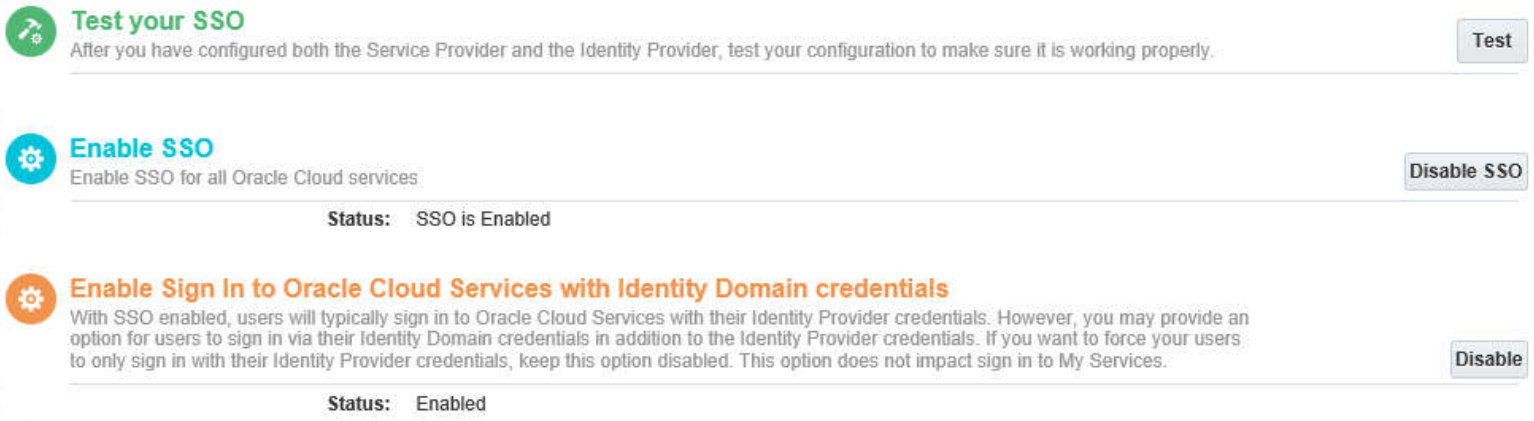
SSO Configuration from My Services

- I'm not an SSO or Network Security guy, so GameStop IT setup this part
- Okta and other SSO providers have pre-configured PBCS configurations to ease setup



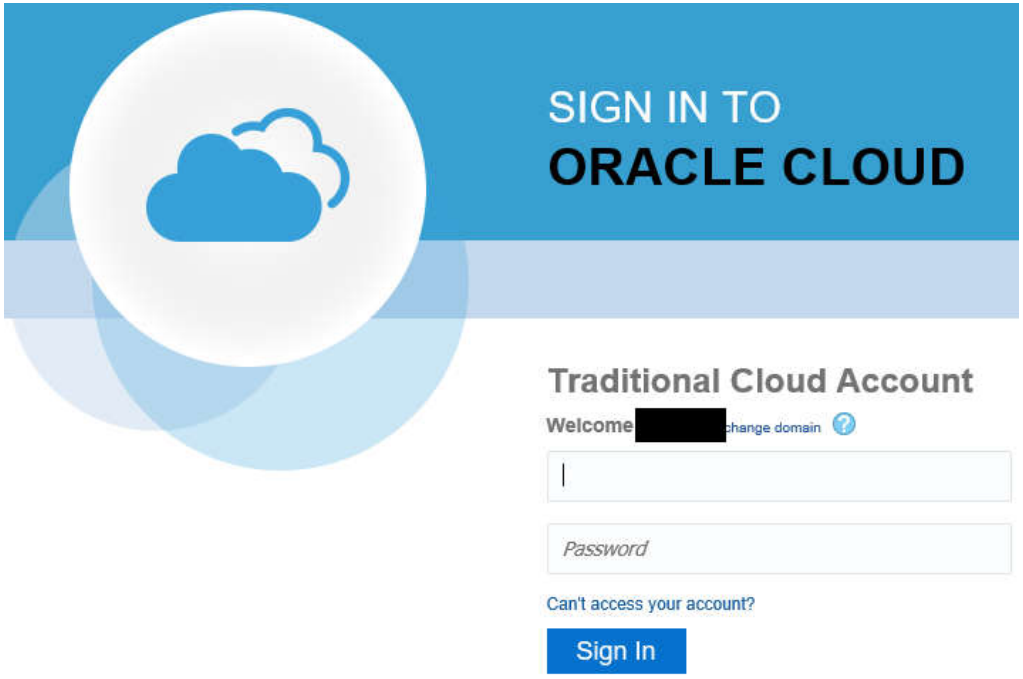
SSO Configuration from My Services

- Once the above 3 steps are configured, click “Test” to ensure the connection works
- If the SSO Test is successful, click “Enable SSO” to enable the PBCS app with SSO
- Enable “Sign in to Oracle Cloud Services with Identity Domain Credentials” to ensure admin’s with the previous “Maintain Identity Domain Credentials” in their user profile can 1) utilize EPM Automate with SSO enabled & 2) access the PBCS app should the SSO connection or configuration ever fail/change



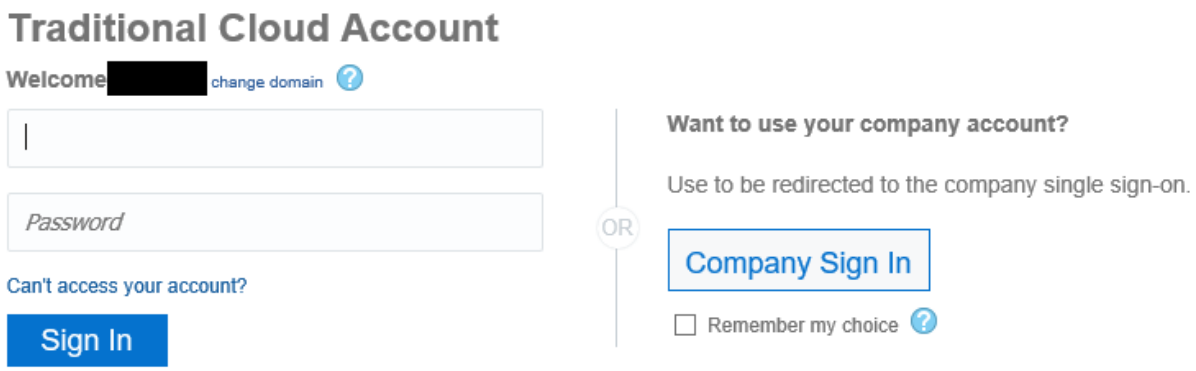
SSO Not Enabled – Sign in With Oracle Cloud ID

- Users sign in with their Oracle Cloud Identity Domain User ID and password



SSO Enabled – “Company Sign In” appears

- For Web Interface or Smart View, users simply click “Company Sign In” and are logged in via SSO application for their company
- Additionally, check the “Remember my choice” to bypass this screen for non-admin users
- For admin users, keep unchecked so they can still get into PBCS if SSO goes down



Security – Provisioning Bulk Users

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- While you can bulk Add users, there is no built-in bulk Provisioning users
- Alternatives I have read about include:
  - Downloading the PBCS Security artifacts, editing the XML file, and re-uploading
  - Potentially using REST API to cobble something together
- As I had a limited number of users, I manually added the users to My Services & GameStop IT manually added to the SSO group on their end
- Applications with larger user counts may need to analyze one of the above 2 options until bulk provisioning is included in PBCS

Security – All Plan Types or None

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- Provisioning users to Task Roles or dimension member security goes across all Plan Types (cubes) in the PBCS application
- In our design, we originally only had FP&A users writing to the Income Statement cube since only a small group performed a high level Balance Sheet budget
- However, in building the security, we had to pivot and update the security design to account for those FP&A users having write access to specific members in all cubes

EPM Automate

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- Replaces the Essbase Client & MAXL for automation of application tasks
- Uses a .bat file calling an EPM Automate command & its parameters
- Download simple .exe from *Reporting – Explore Repository – Tools – Install – EPM Automate*

- I did not have to mess with Windows System or User Path Variables unlike installing the Essbase Client, which was a giant improvement since I couldn't terminal into the server
- Include "> \\server\folder\logfilename.txt" to capture the log output somewhere

EPM Automate & SSO

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- EPM Automates works great with non-SSO-enabled PBCS apps (hooray!)
- EPM Automate originally did not work with SSO-enabled PBCS apps (big problem!)

- PBCS now works with SSO-enabled PBCS apps using the following configurations:
  1. Enable “Sign in to Oracle Cloud Services with Identity Domain Credentials” in SSO Configuration
  2. Check “Maintain Identity Domain Credentials” in Users profile for any admins or system accounts
  3. In the EPM Automate .bat file, login via the Oracle Cloud Identity Domain password for the admin or system account user, not the SSO / Provider Domain password

Encrypting Password in EPM Automate

- Since EPM Automate is used via a .bat file likely sitting on a network folder or server + is likely tied to a powerful admin or system account, ensure the password used is encrypted

- call epmautomate encrypt *password privatekey* \\server\folder*passwordfile*.epw
  - Call epmautoamte encrypt: EPM Automate encryption command
  - *password*: the password you are going to encrypt
  - *privatekey:* you choose the name of the Private Key that stores the encrypted password
  - \\server\folder*passwordfile*.epw: Output location of the encrypted password (.epw) file

- The October 2017 PBCS update on Oct 20 will "now accept internet proxy server domain, user name, and password as optional parameters"

EPM Automate with Multiple Cubes

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- We have 2 separate PBCS apps (HQ in Grapevine & subsidiary in Salt Lake City)
- For jobs moving Actuals, Forecast, and Budget between them, I needed to login and run jobs on both PBCS apps in a single process
- When running multiple EPM Automate Login/Logout commands in a single .bat file, EPM Automate would stop running after the first encountered Logout

- Therefore, I needed to create multiple .bat files, called by a master .bat file:
  1. Login to HQ PBCS, run clear current Forecast data, logout of HQ PBCS
  2. Login to SLC PBCS, copy Forecast to HQ PBCS via Data Management, logout of SLC PBCS
  3. Login to HQ PBCS, run agg on updated Forecast data, logout of HQ PBCS

EPM Automate Server Location

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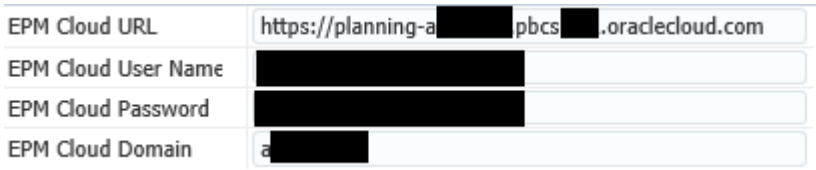
- By default, epmautomate.exe will install to C:\Oracle\EPMAutomate\bin
- When manually kicking off an EPM Automate .bat file outside this location, you are fine
- When trying to schedule an EPM Automate via Windows Task Scheduler or other task automation software, I had to put the EPM Automate .bat file in the C:\Oracle \EPMAutomate\bin folder
- Additionally, you need to include “C:\Oracle\EPMAutomate\bin” in the “Start In” box of the “Task” tab of your Windows Task Scheduler job
- Is there an easier way to point Java to somewhere outside this C: drive…maybe?

Data Management – PBCS to PBCS Integration

- Out-of-the-box support from integration data from one PBCS cube to another
- OK if they are on different PBCS domains

1. Add new Target application
2. Select “Cloud”
3. Enter PBCS application details ->



4. “Refresh Metadata” to establish connection and update Dimension Details
5. “Refresh Members” to import members for Target Mapping selection
6. Create Import Format, Location, etc. with other PBCS as the Target Application

Data Management – SQL Mapping Scripts

- SQL Mapping Scripts ARE supported in Data Management! Previous PBCS documentation had said otherwise (still no Jython scripting or custom events like on-prem FDMEE)

Data Management – Clear Fail on Export Replace

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- Data Management clears Years, Period, Version, Entity, and Scenario using Replace in an Open Batch definition (or “Store Data” when running manually)
- Since custom scripting is not supported in PBCS Data Management, we can’t implement solutions like FDMEE on-prem or in previous FDM application where we scan the Import step data to ensure it exists in PBCS
- Therefore, we ran into the issue of members in the Import data that weren’t setup in PBCS, and are causing a fail on the clear script portion of Replace in the Export step, not the load portion
- Therefore, when exporting the Process Details log for the failed Export step, we ended up with a giant Clear Script string of 100’s of Entity members it was trying to clear, instead of the real Entity that was missing from PBCS

Data Management – Clear Fail on Export Replace

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- To get around this problem, we did the following as part of EPM Automate jobs:
  1. Wrote a Business Rule (for BSO cubes) or Clear Cube job (for ASO cubes) to clear all data for the Companies being loaded to from the specific GL
  2. Ran the normal “Replace” Import step in the Open Batch definition
  3. Ran a “Add” Export step in the Open Batch definition

- While new Entity members may be in the imported GL data but not PBCS, the individual Entity members were now called out clearly in the Export load errors & prevented use from trying to hunt down the missing member in a giant Clear script or VLOOKUP against PBCS metadata

- Yes, ideally our business partners would tell us of all new GL members added ☺

Data Maps – Length of Clear Script Error

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- Data Maps are a nice, no-code required way to clear target & move source data from one PBCS Plan Type to another

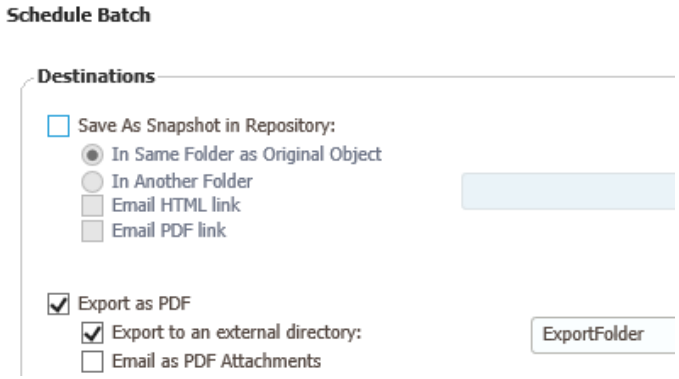
- However, when clearing data in my Target Plan Type before loading from my Source Plan Type (an option in Data Maps), I got an error that my PBCS-generated clear script was something along the lines of "longer than 1000 KB". Keep in mind this length of the clear script, not the amount of data attempted to be cleared!

- Since I can't reduce the number of entities I'm trying to clear and load to , I created a Clear Cube job that performs the same clear script in the Target Plan Type, and am running that via EPM Automate before performing the Data Map

Hyperion Financial [Web] Reporting (HFR)

- Only available via HFR Web Studio, no more desktop HFR Studio

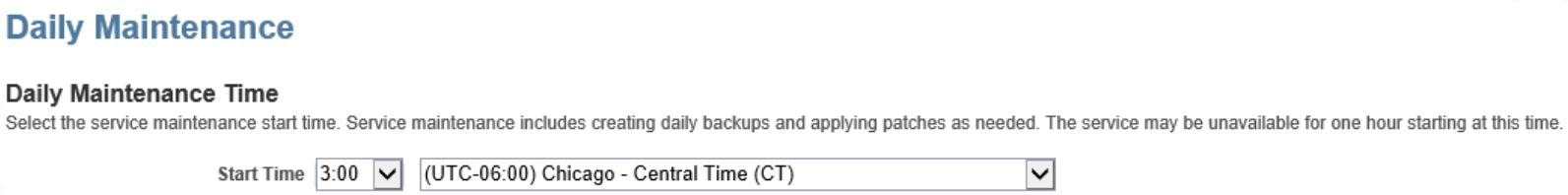
- For bursting via HFR Batches:
  - Logon Credentials actually validate in real-time instead of after clicking through 16 steps & finding out in the “On Failure” email
  - No configuration of the Export Directory in Java files, automatically defaults to PBCS Inbox/Outbox



Backup/Disaster Recovery – Set Timing

- Since PBCS is a SaaS solution, Oracle provides a nightly backup and maintenance window for your application, which is stored in an Application Snapshot on their servers

- Be sure to set the Daily Maintenance Time that you want Oracle to perform this up-to-an-hour backup and patching, assumingly when no users will be online



- Oracle previously required you to have the cubes refreshed before this step took place, so I still have a “Refresh Database” job set an hour before Daily Maintenance starts

Backup/Disaster Recovery – Local Copy

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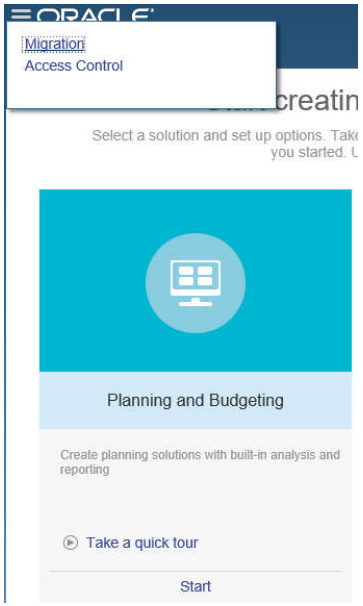
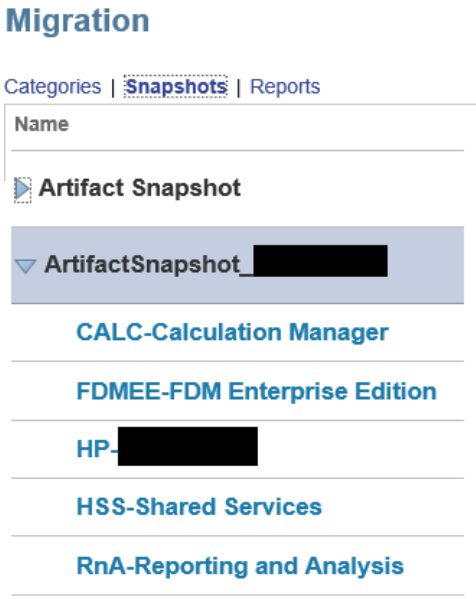
- Your Application Snapshot is updated daily, so no rolling backups kept by Oracle
- Download your Application Snapshot to your own local servers in the highly unlikely event of a catastrophic and unrecoverable server event at Oracle + use to refresh QA
- "Essbase Data" in Application Snapshot data is saved as .ind/.pag (BSO) or .dat (ASO) files

- I setup a 7-day-rolling, local PBCS application backup via the following:
  1. Windows Task Scheduler runs my Nightly Backup .bat file 1 hour after the Daily Maintenance
  2. The .bat file clears out the data in last week's weekday folder
  3. EPM Automate runs an "exportsnapshot" job to the PBCS Inbox/Outbox
  4. EPM Automate runs a series of "exportdata" jobs to save Essbase data as delimited text files
  5. EPM Automate runs a "downloadfile" job to download the Artifact Snapshot onto our servers
  6. The .bat file moves the Artifact Snapshot into the empty weekday folder

Backup/Disaster Recovery - QA Refresh

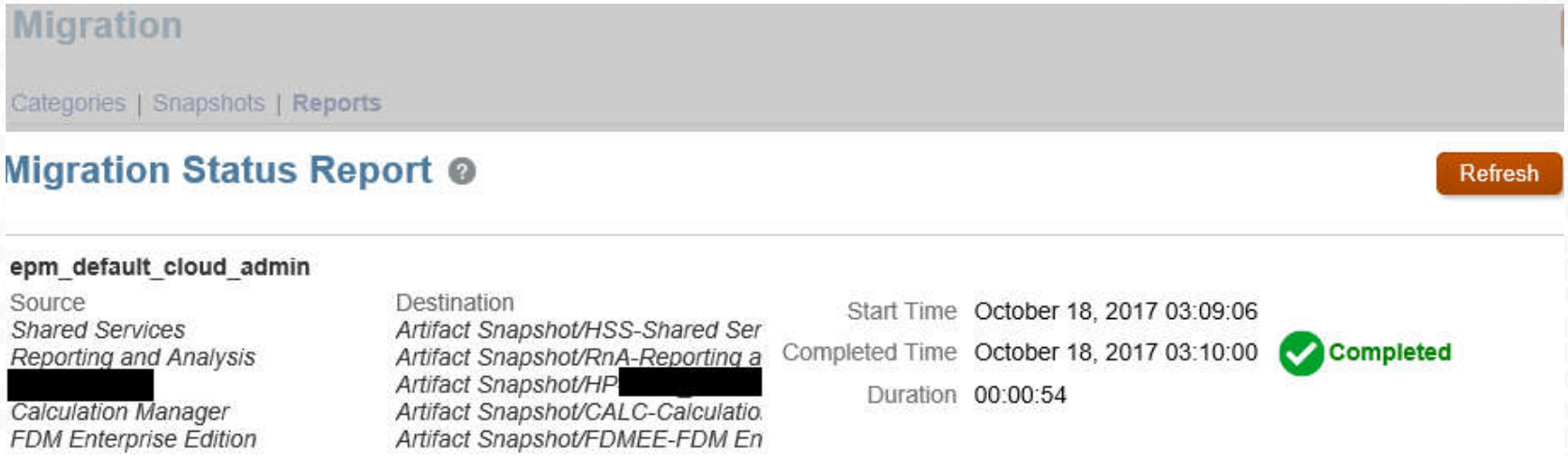
- Upload PRD Snapshot to QA's "Migration" module before deleting old QA application
- Refresh blank QA with PRD Snapshot via "Migration" option; select minimum-needed artifacts for QA refresh





Backup/Disaster Recovery - QA Refresh

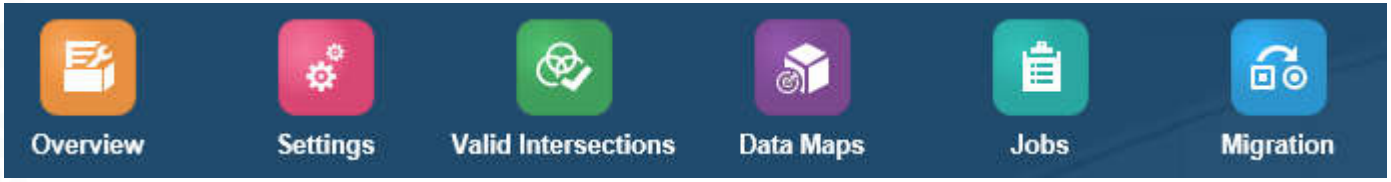
- Monitor the QA Refresh with the Migration Status Report
- Investigate anything that fails



PRD vs QA Background Colors

- Change the background color between PRD and QA to distinguish between environments
- Careful as not ALL backgrounds in QA will change to a different color

Production (Dark Blue, default)



QA (Crisp Green)

Where Are My EAS Sessions?

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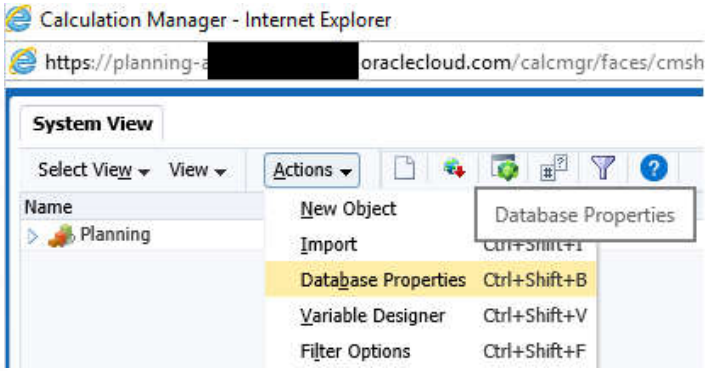
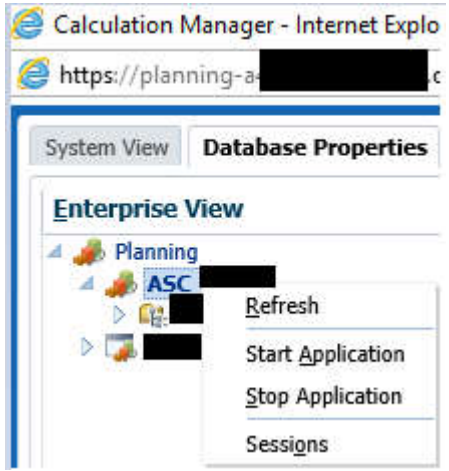
- Tucked away in the “Rules” module, obviously
- PBCS Menu – “Create and Manage” – “Rules” – “Actions” – “Database Properties”





Where Are My EAS Sessions?

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- Same Action and Request Type filters to kill just like EAS, now prettier

Options

Action: Kill | Entity: selected request | Source: only

View

Data load time (in ms): 130 Total Rows : 57

Session	User Name	Login Time	Application	Database	Db Connect Time	Request	Request Time	Request State
3019898877	[redacted]	00:32:13	[redacted]	[redacted]	00:04:10	none	00:00:00	
1786773493		06:20:44			06:20:44	none	00:00:00	
3775922113		00:05:17			00:05:17	none	00:00:00	
2109734535		00:00:02			00:00:02	AsoClearRegion	00:00:02	in_progress

Where Are My EAS Cube Properties?

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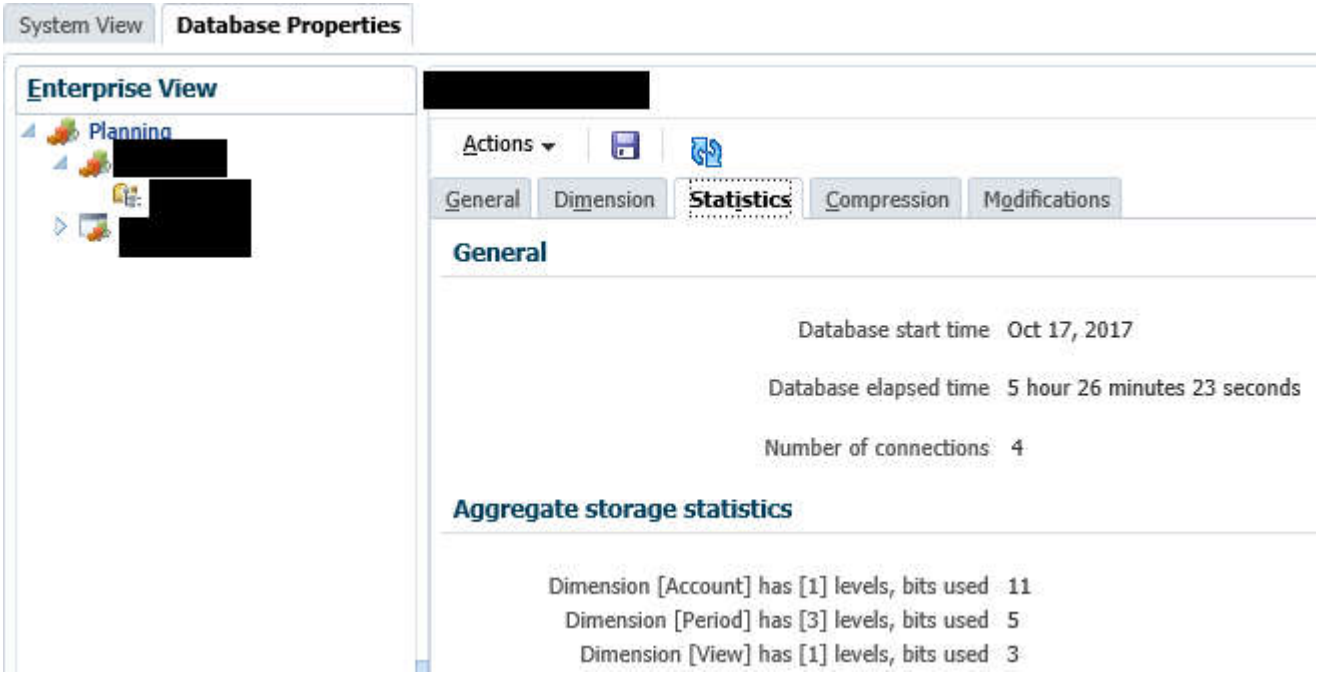
- Same area, but left click on the specific Plan Type



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