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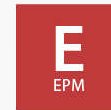
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# That's Not In the Documentation...

## Gotcha's During PBCS Implementation at GameStop

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

We are a family of specialty retail brands that makes the most popular technologies affordable and simple.







# About Me



- 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

- 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 global family of specialty retail brands that makes the most popular technologies affordable & simple

GME | CHANGING GAME

## VIDEO GAMES

No. 1 Market Share  
in 13 Countries

\$13 Billion Addressable  
US Market



**GameStop**  
**POWERUP**  
REWARDS

54 Million Members Worldwide

**gameinformer**

GME | CHANGING GAME

## DIGITAL

\$1 Billion Digital Business

\$8 Billion Addressable  
US Market



Downloadable Content



**GAMETRUST**

GME | CHANGING GAME

## TECHNOLOGY BRANDS

\$200 Billion Addressable  
US Market



AT&T | **cricket**

- The Largest And Fastest Growing AT&T Wireless Retailer
- AT&T National Dealer

---

**simply mac**

Apple Specialist

- Largest Apple Authorized Reseller

GME | CHANGING GAME

## COLLECTIBLES

\$11 Billion Addressable  
US Market



**THINKGEEK**  
JOIN IN. GEEK OUT.



# GameStop PBCS Project Overview

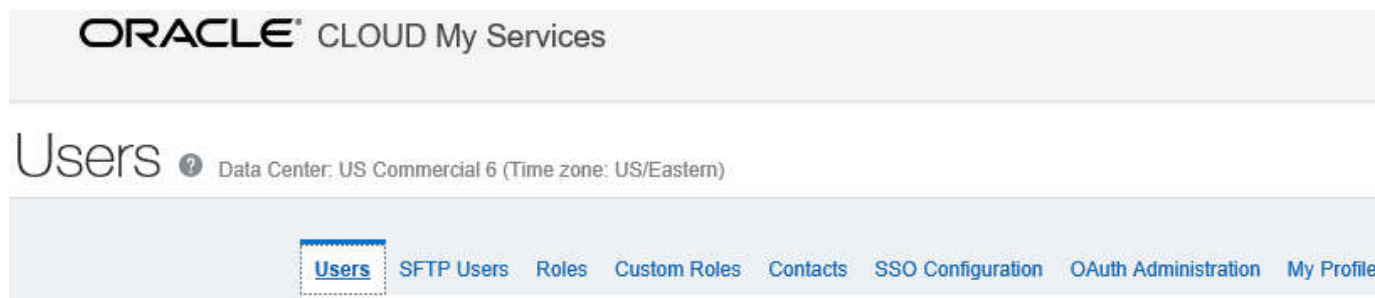


- Combined one Essbase cube + one Planning application into a single PBCS application
- 4 Plan Types (Balance Sheet, Income Statement, Product/Statistics, and Consolidated)
- Migrated Hyperion users from Windows 7 32-bit / Office 2010 32-bit / Essbase Add-In to Windows 10 64-bit / Office 2016 64-bit / 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



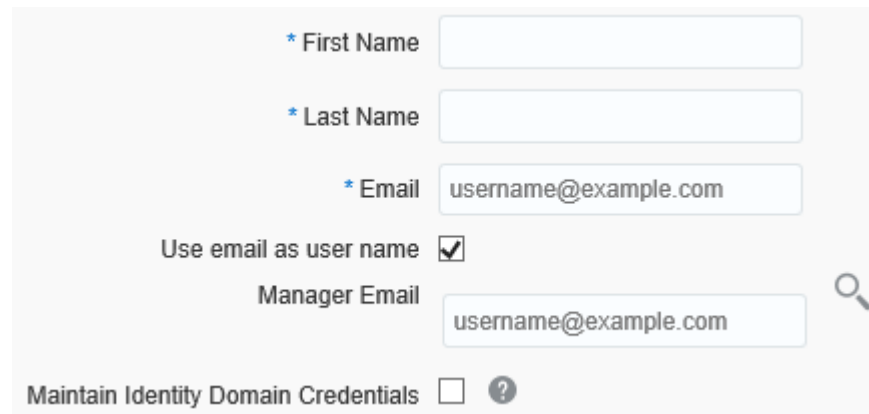
- Replaces Shared Services for user, security group role creation, security group provisioning, and MSAD/SSO Connections
- Shared Services Native Directory User = Oracle Cloud Identity Domain User
- Shared Services External Authentication User = SSO Identity Provider User





# 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...)



A screenshot of a web form for creating a user in Oracle Cloud Identity. The form is light gray with white input fields. It includes fields for First Name, Last Name, and Email. The Email field contains the text 'username@example.com'. Below the Email field is a checkbox labeled 'Use email as user name' which is checked. Below that is a field for 'Manager Email' also containing 'username@example.com'. At the bottom is a checkbox labeled 'Maintain Identity Domain Credentials' which is unchecked. A magnifying glass icon is to the right of the Manager Email field, and a question mark icon is to the right of the bottom checkbox.

\* First Name

\* Last Name

\* Email

Use email as user name ☒

Manager Email

Maintain Identity Domain Credentials ☐

# 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?

[Users](#) [SFTP Users](#) [Roles](#) [Custom Roles](#) [Contacts](#) [SSO Configuration](#) [OAuth Administration](#) [My Profile](#)

## Custom Roles

View, add, and remove roles that can be used by application developers to secure applications.








**Scen\_W\_Actual**  
User Assignments: 0

**Role Name:** Scen\_W\_Actual  
**Description:** Write access to Actual Scenario

# 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

The screenshot displays the GameStop Admin Console interface. At the top, a dark blue navigation bar contains icons and labels for 'Appearance', 'User Variables', 'Announcements', 'Artifact Labels', 'Access Control', and 'Navigation'. The 'Access Control' icon is highlighted with a white arrow. Below the navigation bar, a breadcrumb trail shows 'Manage Groups' as the active section, followed by 'Provision Roles', 'Provisioning Reports', and 'User Login Report'. A search bar is located below the breadcrumbs. The main content area features a table with two columns: 'Name' and 'Description'.

Name	Description
 Scen_Actual_Write_TESTING	
 planning-test Planner	Planning Service Planner Role Role for service instance planning-test
 planning-test Power User	Planning Service Power User Role Role for service instance planning-test
 planning-test Service Administrator	Planning Service Administrator Role Role for service instance planning-test
 planning-test Viewer	Planning Service Viewer Role Role for service instance planning-test

# Security – Predefined Task Roles



- 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

## Single Sign-On (SSO) Configuration

Configure Single Sign-On so your users can use their company credentials to log into all applications, including Oracle Cloud applications.



### Remove Users

Remove all users without the Identity Domain Administrator role.

Remove Users

**Note:**

- You must perform all four steps given below in order to get Single Sign-On working.
- You can choose to configure either Oracle Cloud or your company identity provider first.
- You must test and enable the configuration for Single Sign-On to take effect.



### Configure SSO

Identity provider information stored in Oracle Cloud.

✓ Configured

Edit

Issuer Id:  
SSO Service URL:  
Global Logout Enabled:  
SSO Protocol:  
User Identifier:

[Redacted configuration fields]



### Configure your Identity Provider Information

If your identity provider can import service provider metadata, use the Export Metadata button and import that metadata into your identity provider. Otherwise, copy the service provider information below into your identity provider's configuration.

Export Metadata ▼

Provider Id:  
Assertion Consumer Service URL:  
Logout Service Endpoint URL:  
Logout Service Return URL:

[Redacted configuration fields]



# 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



## Test your SSO

After you have configured both the Service Provider and the Identity Provider, test your configuration to make sure it is working properly.

Test



## Enable SSO

Enable SSO for all Oracle Cloud services

Disable SSO

Status: SSO is Enabled



## Enable Sign In to Oracle Cloud Services with Identity Domain credentials

With SSO enabled, users will typically sign in to Oracle Cloud Services with their Identity Provider credentials. However, you may provide an option for users to sign in via their Identity Domain credentials in addition to the Identity Provider credentials. If you want to force your users to only sign in with their Identity Provider credentials, keep this option disabled. This option does not impact sign in to My Services.

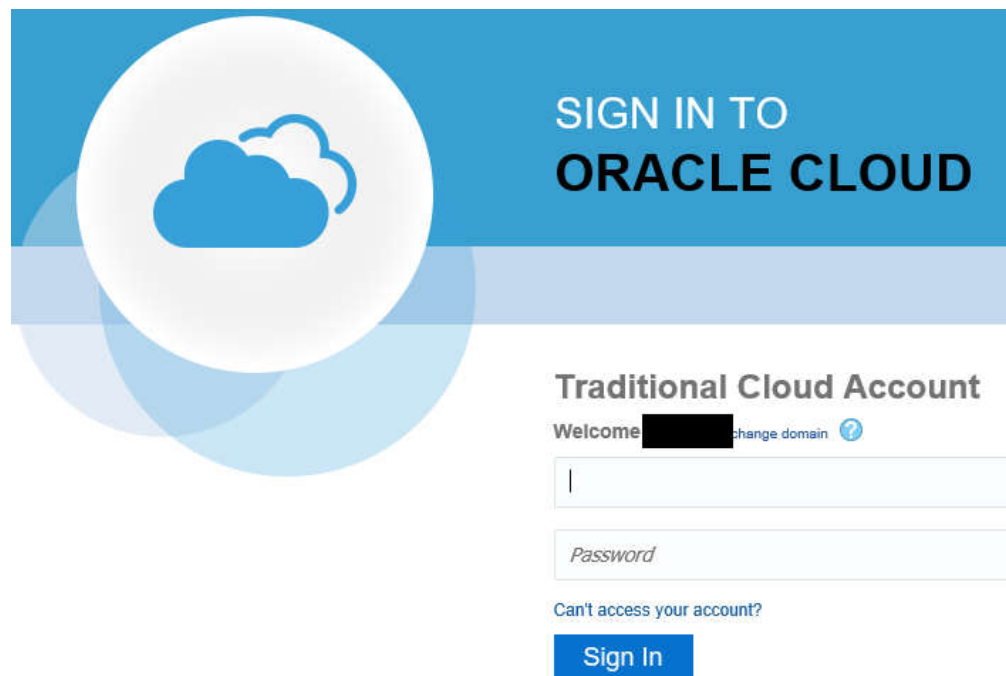
Disable

Status: Enabled

# SSO Not Enabled – Sign in With Oracle Cloud ID



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



The image shows the Oracle Cloud sign-in page. On the left, there is a large circular icon with a blue cloud inside a white circle, set against a blue background. To the right of this icon, the text "SIGN IN TO ORACLE CLOUD" is displayed in white. Below this, the section "Traditional Cloud Account" is visible. It includes a "Welcome" message followed by a redacted user ID and a "change domain" link with a question mark icon. There are two input fields: one for the user ID (containing a single character) and one for the password (labeled "Password"). Below the password field is a link "Can't access your account?". At the bottom is a blue "Sign In" button.

**SIGN IN TO  
ORACLE CLOUD**

**Traditional Cloud Account**

Welcome [redacted] [change domain](#) [?](#)

|

*Password*

[Can't access your account?](#)

**Sign In**

# 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

## Traditional Cloud Account

Welcome [redacted] [change domain](#) [?](#)

[Can't access your account?](#)

**Sign In**

OR

**Want to use your company account?**

Use to be redirected to the company single sign-on.

**Company Sign In**

☐ Remember my choice [?](#)

# Security – Provisioning Bulk Users



- 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



- 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



- 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\logfile.txt" to capture the log output somewhere

# EPM Automate & SSO



- 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



- 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



- 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 ->

EPM Cloud URL	https://planning-a[REDACTED]pbc[REDACTED].oraclecloud.com
EPM Cloud User Name	[REDACTED]
EPM Cloud Password	[REDACTED]
EPM Cloud Domain	a[REDACTED]

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 Load Mapping

Dimensions Account ▾

Data Table Column ACCOUNT

All Mappings	Explicit	Between	In	Multi Dimension	Like	
View ▾	Add	Delete		Detach	Validate	Refresh Values
Source Value	Target Value	Script	Change Sign	Rule Name		
6455*	#SQL		<input checked="" type="checkbox"/>	6455_Scripted		

### Edit Script

Script

```
CASE
WHEN ENTITYX LIKE 'Store%' THEN '4578'
WHEN ENTITYX LIKE 'OH Region%' THEN '5602'
WHEN ENTITYX LIKE 'Dept%' THEN '6602'
ELSE 'ERROR'
END
```

# Data Management – Clear Fail on Export Replace



- 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



- 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



- 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

## Schedule Batch

### Destinations

- ☐ Save As Snapshot in Repository:
- ☒ In Same Folder as Original Object
  - ☐ In Another Folder
  - ☐ Email HTML link
  - ☐ Email PDF link

- ☒ Export as PDF
- ☒ Export to an external directory:
  - ☐ Email as PDF Attachments

ExportFolder

# 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

## Daily Maintenance

### Daily Maintenance Time

Select the service maintenance start time. Service maintenance includes creating daily backups and applying patches as needed. The service may be unavailable for one hour starting at this time.

Start Time 3:00  (UTC-06:00) Chicago - Central Time (CT)

- 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

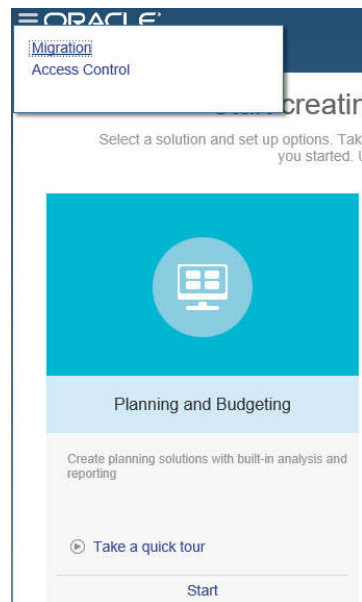
# Backup/Disaster Recovery – Local Copy



- 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



## Migration

Categories | **Snapshots** | Reports

Name

 **Artifact Snapshot**

▼ **ArtifactSnapshot\_** [REDACTED]

**CALC-Calculation Manager**

**FDME-Enterprise Edition**

**HP-** [REDACTED]

**HSS-Shared Services**

**RnA-Reporting and Analysis**

# Backup/Disaster Recovery - QA Refresh



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

## Migration

[Categories](#) | [Snapshots](#) | [Reports](#)

### Migration Status Report ?

Refresh

#### epm\_default\_cloud\_admin

Source  
Shared Services  
Reporting and Analysis  
[REDACTED]  
Calculation Manager  
FDM Enterprise Edition

Destination  
Artifact Snapshot/HSS-Shared Ser  
Artifact Snapshot/RnA-Reporting a  
Artifact Snapshot/HP [REDACTED]  
Artifact Snapshot/CALC-Calculatio  
Artifact Snapshot/FDMEE-FDM En

Start Time October 18, 2017 03:09:06  
Completed Time October 18, 2017 03:10:00  
Duration 00:00:54

✓ Completed

# 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)

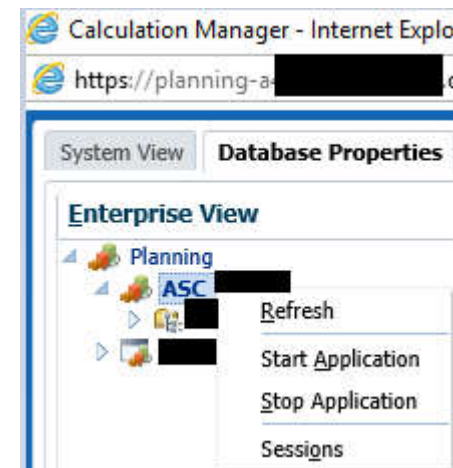
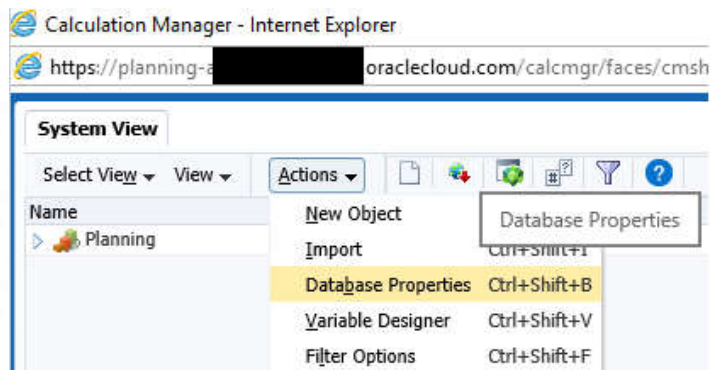


## QA (Crisp Green)



# Where Are My EAS Sessions?

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






# Where Are My EAS Sessions?

- 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		00:32:13			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?

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

The screenshot shows the SAP Enterprise View interface. On the left, the 'Enterprise View' tree is visible with 'Planning' expanded. The main area displays the 'Database Properties' dialog box for a specific plan type. The 'Statistics' tab is selected, showing the following information:

**General**

- Database start time: Oct 17, 2017
- Database elapsed time: 5 hour 26 minutes 23 seconds
- Number of connections: 4

**Aggregate storage statistics**

- Dimension [Account] has [1] levels, bits used 11
- Dimension [Period] has [3] levels, bits used 5
- Dimension [View] has [1] levels, bits used 3



Thank You!

A decorative graphic on the left side of the slide consists of three stacked squares: a black square at the top, a red square in the middle, and a gray square at the bottom.

We are a family of specialty retail brands that makes the most popular technologies affordable and simple.

