



The Hackett Group

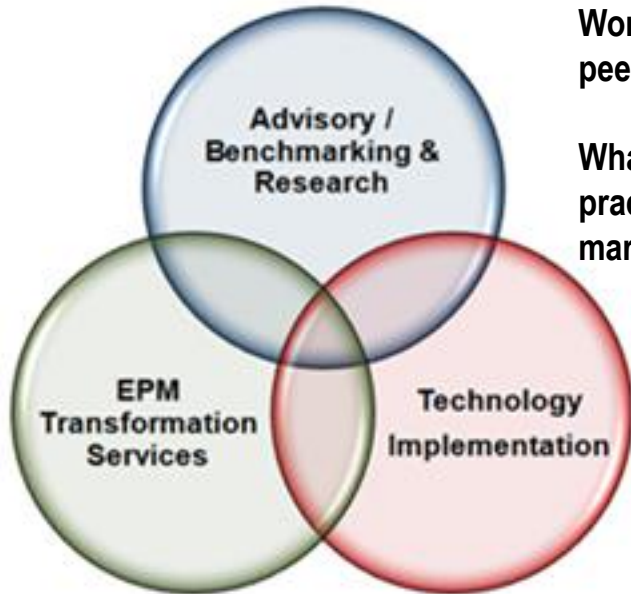
"The Journey to World-Class"

Hyperion Essbase and Planning Automation Work Smarter...Not Harder

Deanna Sunde, Director – EPM Planning & Essbase Practice

The Hackett Group

The ONLY Partner you can go to for “Total EPM”



What do I look like compared to World Class Organizations and peers?

What are the trends and best practices to consider in the marketplace?

How do I utilize best practices within my technology implementation?

How do I successfully implement and phase EPM technology for the broadest success?

What best practices should I consider to be more efficient and effective?

How can I continue to measure efficiency and effectiveness ongoing?



The Hackett Group – EPM Practice

- #1 Oracle EPM / BI Partner
- Oracle EPM Platinum Partner since 1997
 - 400+ successful Hyperion EPM implementations
 - 400+ dedicated EPM consultants with average 10 years experience
 - Majority are Oracle/Hyperion Certified with strong functional and industry knowledge
- Many of our consultants are: CPA's, MBA's, Six Sigma Black Belts, PMP's
- One of the few firms with:
 - Infrastructure team that installs, troubleshoots and provides on-going software support and Hyperion lab environment
 - Managed Services – Infrastructure, Hosting, Application Managed Services
 - Deep EPMA and Master Data Management expertise (DRM)
 - IFRS and tax integration solution specialists
- Online database of Best Practice Assets and Accelerators

Deanna Sunde

- Oracle/Hyperion EPM Background
 - Have implemented Hyperion products for 13 years
 - Certified on Planning and Essbase
- Finance Background
 - Accounting and Financial management at Princess Cruises – 10 yrs
 - MBA in Finance, CPA (Inactive), BS in Economics
- User Group Participation
 - President of ODTUG EPM Community (formerly the Hyperion SIG)
 - Graduate of ODTUG Leadership Program
 - Planning Track Lead for KScope14 Presentation selection
 - Speaker at many ODTUG and OAUG user conferences
 - Member of SROAUG BOD for 6 years

Agenda



Introduction

Scripting Basics

Loading Metadata

Loading Data

Running Calc Scripts

Backups

Defrag

Essbase UserID and Password Encryption

Conclusion

Scripting Basics

DISCLAIMER: USE INCLUDED SCRIPTS AT YOUR OWN RISK

■ Scripts

- Batch scripts used for Windows (.bat)
- Shell scripts used for UNIX (.sh)
 - Be particularly careful when scripting in UNIX as file names are case-sensitive

■ Maxl

- Planning or Essbase
- BSO or ASO (some differences in syntax)
- Can be run from server, client or from EAS (some differences in syntax)
- .mxl if password is not encrypted, .mxls if encrypted

■ More sophisticated – bat calls vbs calls maxl

■ Formatting files

- VB scripting which can be part of the overall batch scripting process
- experts-exchange.com is a good resource. \$29.95 a month for one-on-one assistance.



Scripting Basics - Comments

■ Batch Scripts

- REM This is a comment in a batch script
- Echo 'This is a comment that will appear on screen and in log files'

■ Shell Scripts

- # This is a comment in UNIX shell script
- Echo 'This is a comment that will appear on screen and in log files'

■ Maxl Scripts

- /* This is a comment in a Maxl script */
- Echo 'This is a comment that will appear on screen and in log files'

■ Calc Scripts

- /* This is a comment in an Essbase calc script */



Loading Metadata - Tools

- Essbase options
 - Essbase Dimension Build Rule *
 - EPMA *
 - DRM (to EPMA or direct to Planning) *
 - ODI *
 - Etc.

- Planning options (depending upon architecture)
 - Outline Load Utility (Classic) *
 - EPMA *
 - DRM (to EPMA or direct to Planning) *
 - ODI *
 - Etc.

* Covered in this presentation



Loading Metadata – Dimension Build Rule

- Essbase Only – will not work for Planning
- Windows batch script (metadataload.bat)

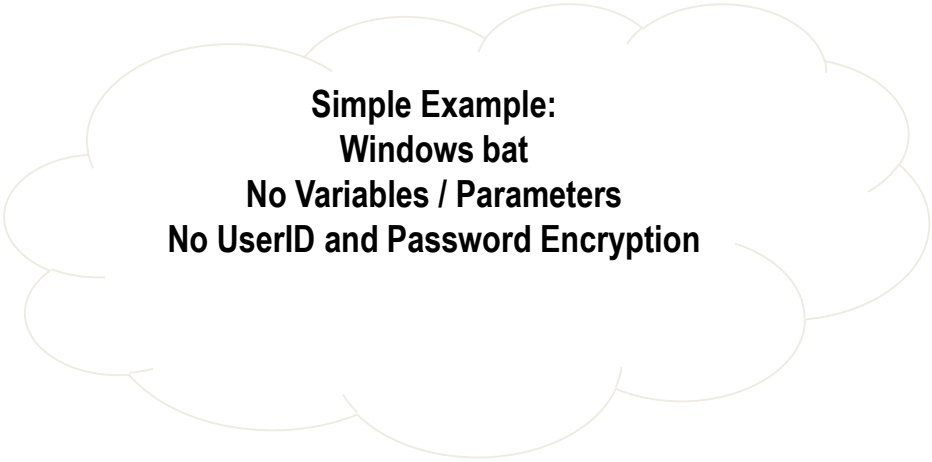
```
C:  
CD C:\hyperion\Scripts  
essmsh metadataload.mxl
```

- Maxl Script (metadataload.mxl)

```
login 'user' identified by 'password' on 'Essbase_Server';
```

```
Import database sample.basic dimensions  
from data_file '/data/calcdat.txt'  
using rules_file '/data_rulesfile.rul'  
on error append to 'logs/dimbuild/log';
```

```
logout;  
exit;
```



**Simple Example:
Windows bat
No Variables / Parameters
No UserID and Password Encryption**

Loading Metadata – Outline Load Utility

- Run from Planning Server
- Imports and Exports Metadata
- Windows batch script (.bat)

E:

```
E:\Oracle\Middleware\user_projects\epmsystem9\Planning\Planning1\OutlineLoad /A:WFP /U:UserID  
/I:E:\Automation\Files\CostCenter.csv /D:CC /L:E:\Automation\Logs\CostCenter.log /X:E:\Automation\Logs\CostCenter.err /H
```

E:

```
E:\Oracle\Middleware\user_projects\epmsystem9\Planning\Planning1\OutlineLoad /A:WFP /U:UserID  
/I:E:\Automation\Files\JobCode.csv /DS:HSP_SMARTLISTS /L:E:\Automation\Logs\JobCode.log  
/X:E:\Automation\Logs\JobCode.err /H
```

E:

```
E:\Oracle\Middleware\user_projects\epmsystem9\Planning\Planning1\OutlineLoad /A:WFP /U:UserID /D:CC  
/E:/Automation/Files/CostCenter_Export.csv
```

**Windows bat
Prompted for Password**

Loading Metadata

Loading Smart Lists

Export Metadata

Loading Metadata - EPMA

- EPMA Batch Client
- Imports metadata using Profiles
- Deploy Applications

```
CALL %EPMABatchPath%epma-batch-client.bat -C%Ess_Script% -R%Ess_Script_Log%
```

Loading Metadata – EPMA (cont.)

```
//-----Set Login Parameter Variables
```

```
Var EPMA_User='EPMABatchUser';
```

```
Var EPMA_Pswd='myNotSoSuperSecurePassword123!';
```

```
set bpmaserverurl=http://myEPMAserver123/hyperion-bpma-server;
```

```
set workspaceurl=http://myworkspaceserver:19000/workspace/;
```

```
//Begin Script
```

```
// Login to Workspace
```

```
LOGIN $EPMA_User,$EPMA_Pswd;
```

```
//Import Members into EPMA using Dimension Profile
```

```
Execute Redeploy
```

```
Parameters(ApplicationName, InstanceName, ApplicationServer, HubProject, ClearAll, CheckIntegrity,
```

```
waitforcompletion, purgeTransactions, deployOption,
```

```
datasourceName,CreateOutline,RefreshOutline,CreateSecurityFilters,SharedMembersSecurityFilters,ValidateSecurity  
FilterLimit,Notes)
```

```
Values ($P_ApplicationName, $P_InstanceName, $P_ApplicationServer, $P_HubProject, $P_ClearAll,
```

```
$P_CheckIntegrity, $P_waitforcompletion, $P_purgeTransactions, $P_deployOption,
```

```
$P_datasourceName,$P_CreateOutline,$P_RefreshOutline,$P_CreateSecurityFilters,$P_SharedMembersSecurityFilt  
ers,$P_ValidateSecurityFilterLimit,$P_Notes);
```

```
LOGOUT;
```

```
QUIT;
```

Loading Metadata - DRM

- DRM Batch Client
- Automates Imports, Exports, Blending, Action Scripts

```
%DRM_BATCH_PATH%drm-batch-client.exe
/op=%OPERATION%
/u=%DRM_USER%
/pw=%DRM_PSWD%
/url=%DRM_URL%
/log=%DRMlogfile%
/outfile=%errorFile%
/xname=%exportName%
/cver=%currVer%
/pver=%prevVer%
/xtype=%exportType%
/objectaccess=%DRM_OBJ_ACCESS%>>%logfile%
SET myError1=%errorlevel%
IF %myError1%==0 goto NormalExit
```



Loading Data - Tools

- Essbase options
 - Essbase Data Load Rule *
 - ODI *
 - Etc.

- Planning options (depending upon architecture)
 - Essbase Data Load Rule *
 - ODI *
 - Etc.

* Covered in this presentation



Loading Data – Essbase Data Load Rule

- Essbase and Planning
- Windows batch script (dataload.bat)

```
C:  
CD C:\hyperion\Scripts  
essmsh dataload.mxl
```

- Maxl Script (dataload.mxl)

```
set CubeSvr = 'ESSBASE_SERVERNAME';  
set CubeUser = 'login';  
set CubePwd = 'password';  
login $CubeUser identified by $CubePwd on $CubeSvr;
```

```
Import database sample.basic  
data from data_file '/folder/data.txt'  
using rules_file '/folder/loaddata.rul'  
on error write to 'folder/error/loaddata.err';
```

```
logout;  
exit;
```

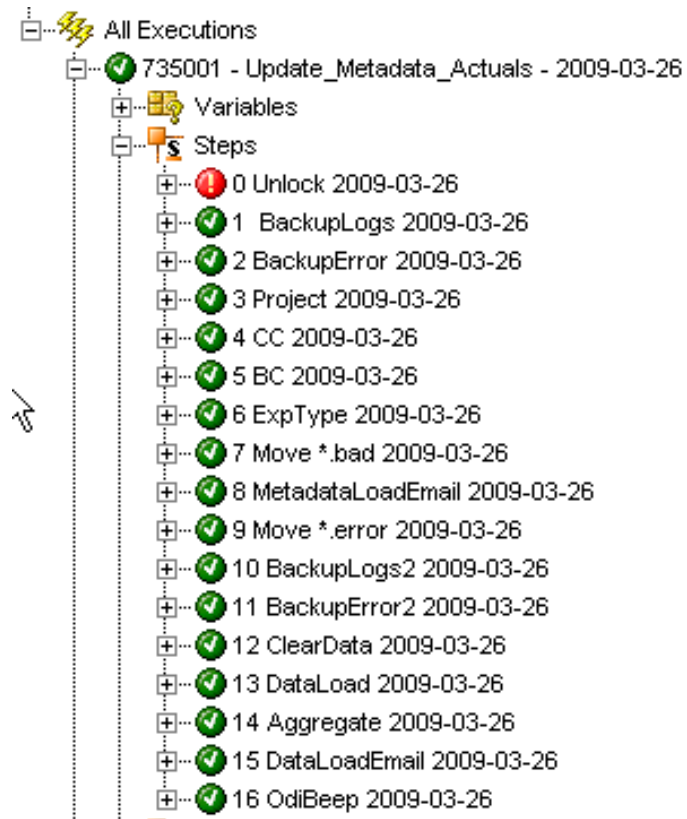
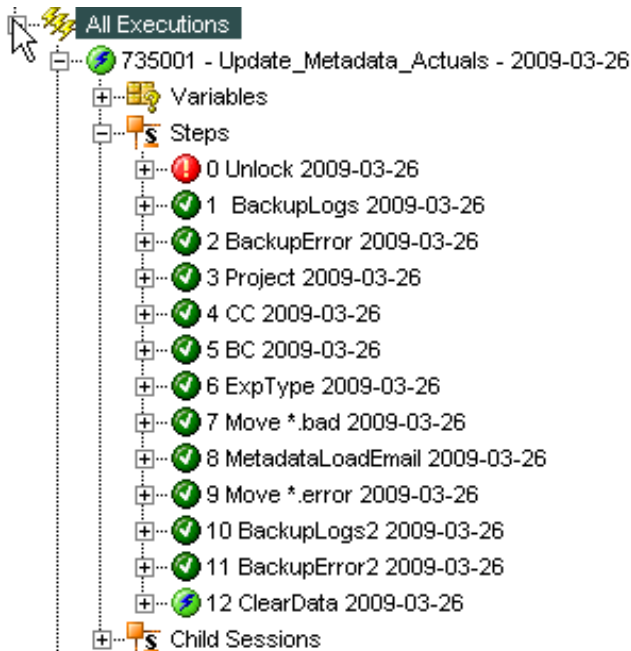


**Windows bat
Uses Variables
No UserID and Password Encryption**

ODI (Oracle Data Integrator)

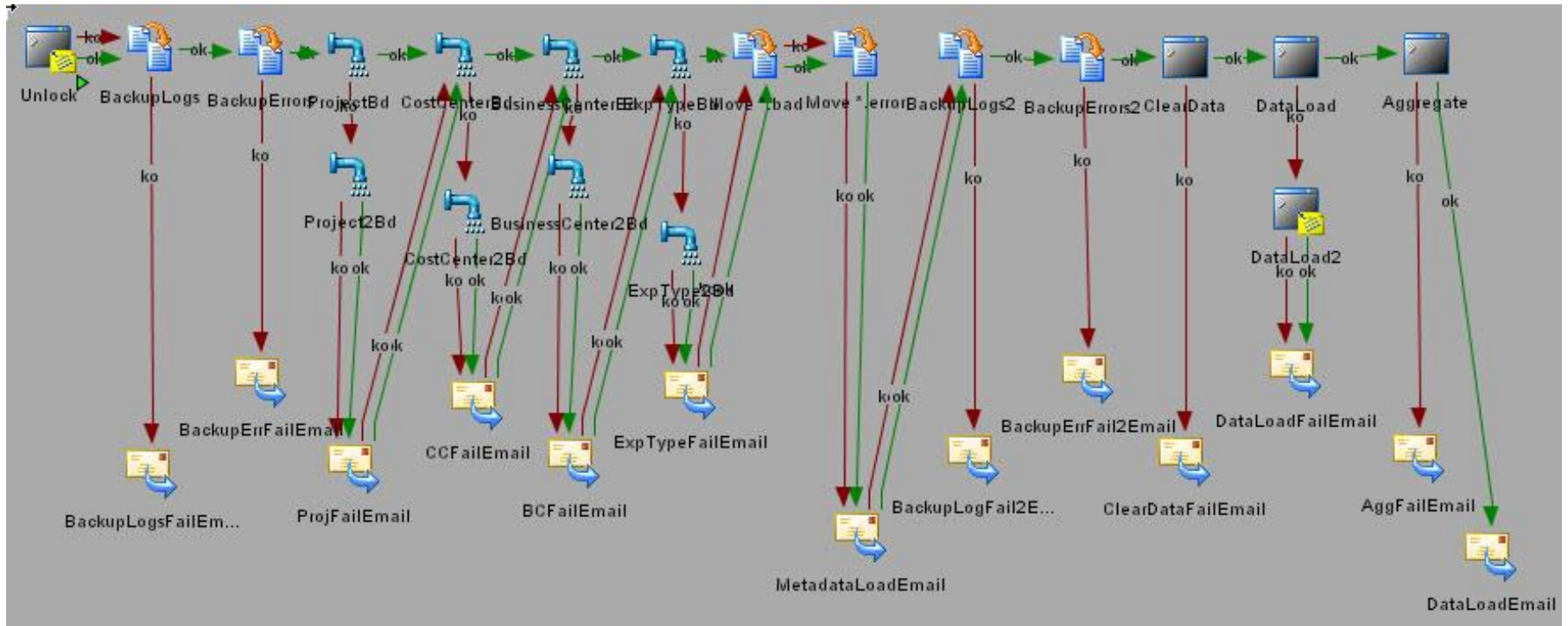
- Create “interfaces” for Metadata and other objects
- Build project
 - “Trigger” step can look for file to start the process automatically
 - What to do on success/failure
 - Easy to build email notification at any step
- Create a “Scenario” for the project
- Setup a scheduled task to run the “Scenario” (or execute the project or scenario manually)
- To view the status open the Operator
 - Green lightning bolt: shows that the process is running and the steps that are in process.
 - Green checkmark: steps that completed successfully
 - Red exclamation mark: steps that resulted in errors.

ODI – Execution Examples



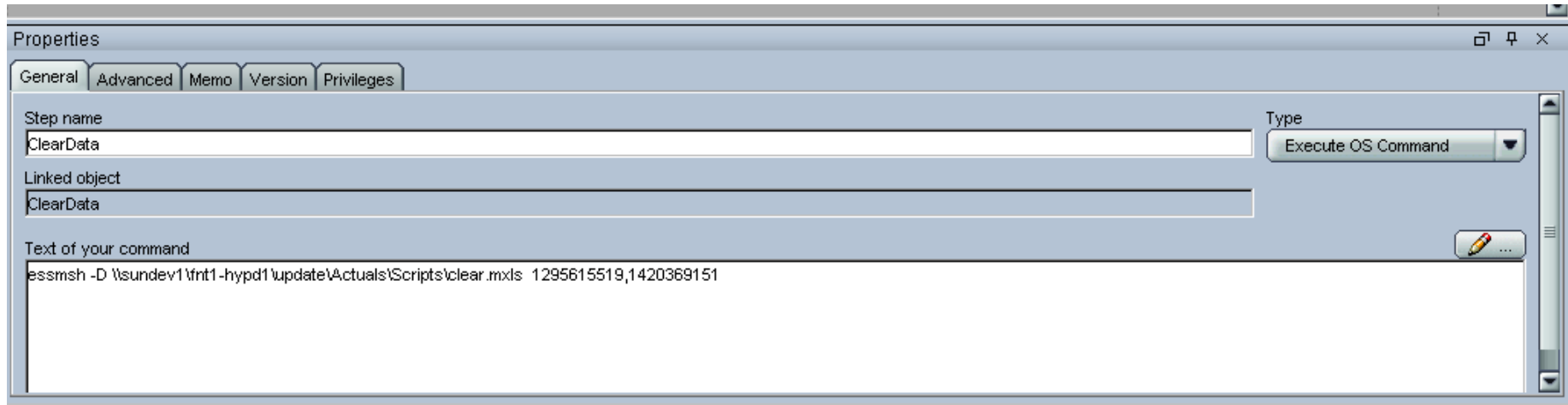
Note: Step 0 is not really an error as the outline was not locked to begin with.

ODI Example – Update Metadata and Load Actuals



1. Unlocks the outlines (if they are locked) in the 5 databases (O&M, Wrkforce, Capex, Plan2 and Plan3)
2. Backups the metadata log and error files
3. Runs metadata updates
4. Backups the data log and error files
5. Clears the data for the month and year specified in the Essbase substitution variables
6. Loads the data for the month and year specified in the Essbase substitution variables
7. Runs an aggregation for the month and year specified in the Essbase substitution variables
8. Emails for success or failure throughout the process (an ODI variable is used for the email list)

ODI – Object Properties



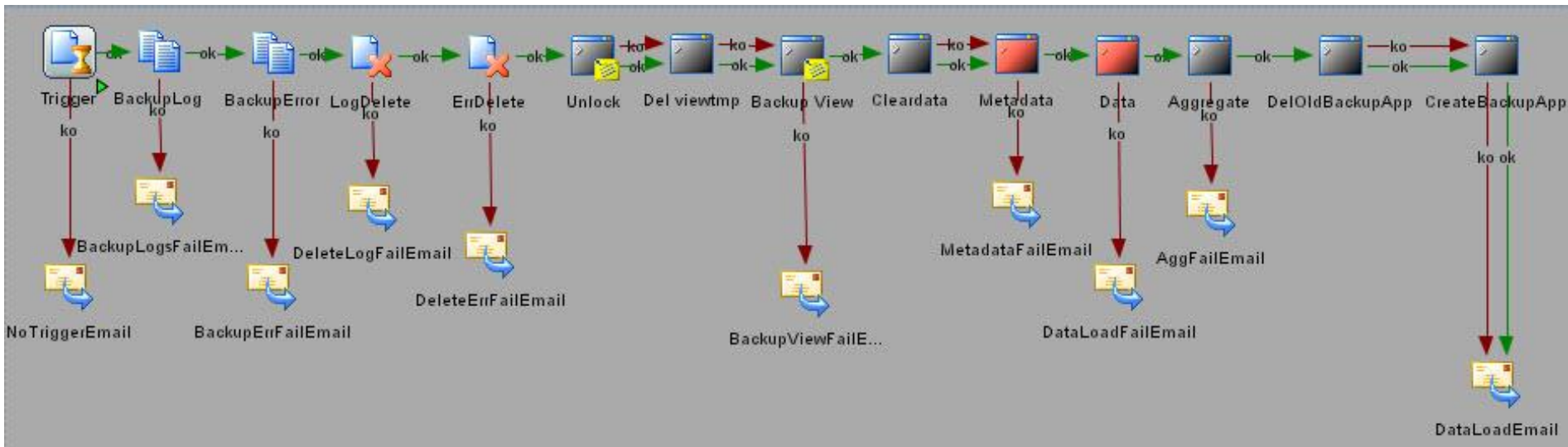
The screenshot shows a 'Properties' dialog box with the following fields and controls:

- Step name:** ClearData
- Type:** Execute OS Command
- Linked object:** ClearData
- Text of your command:** `essmsh -D \sundev1\frnt1-hypd1\update\Actuals\Scripts\clear.mxl: 1295615519,1420369151`

Click on the icon in the project to view details for the object. For example, clicking on the “ClearData” icon will show the Properties above. This example runs a maxl script that uses an encrypted login and password.

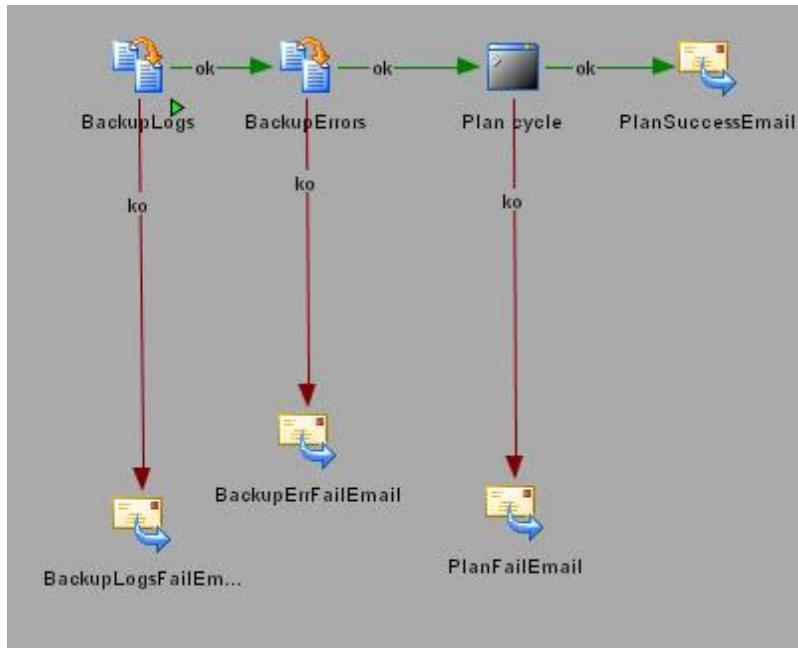
The folder above is a Samba share as ODI was on Windows and Essbase on UNIX.

ODI Example – Nightly Refresh of EIS Application



1. Looks for the trigger file produced by the refresh of the GL_DETAIL program
2. Backs up the log and error files
3. Unlocks the outline (if it is locked)
4. Deletes the viewtmp application
5. Creates a backup of the View application named viewtmp
6. Clears data and outline from the View application
7. Loads the metadata for the View application using the EIS maxl script
8. Loads the data for the View application using the EIS maxl script
9. Aggregates the data for the View application
10. Deletes the View0 backup application (created by the previous run)
11. Creates a backup of the viewtmp application named View0
12. Emails for success or failure throughout the process

ODI Example – Planning Process



Three similar packages created for Plan cycle, Budget cycle and Re-Projection Cycle.
For example, the “Plan cycle” step above runs a series of calculations, data exports and data loads.

ODI Example – Planning Process Steps

Step		Database	Calc Script	File	Load Rule	Corresponding Bus Rule
1	FTE calc - TEP	Wrkforce	PIncFTET			PLN_WKF: PIncFTET
2	FTE calc - UNSG	Wrkforce	PIncFTEG			PLN_WKF: PIncFTEG
3	FTE calc - UNSE	Wrkforce	PIncFTEE			PLN_WKF: PIncFTEE
4	Capital Blanket project request	Capex	PBlkt			PLN_CAP: Capital Labor Request - Blanket Projects
5	Capital Specific project request	Capex	PSpec			PLN_CAP: Capital Labor Request - Specific Projects
6	Capital equipment request	Capex	PEquip			PLN_CAP: Capital Equip Request
7	General roll-up	Capex	PAGg			
8	Calculates Variance by Cost Driver (% x var to PY Bud)	Capex	PDrvVar			
9	Calc for exception report for labor	Capex	PRatExp			
	<u>Copy data from Capex to O&M</u>					
10	Export level 0 data	Capex		Capex.txt		
11	Clear prior data	O&M	PClrCpx			
12	Load level 0 data	O&M		Capex.txt	PCPX	
13	Xref from workforce - TEP	O&M	PWkfxrT			PLN_OM: WrkfrC Xref TEP
14	Managed Operating Budget - TEP	O&M	PTotMOBT			PLN_OM: Total MOB - TEP
15	Xref from workforce - UNSG	O&M	PWkfxrG			PLN_OM: WrkfrC Xref UNSG
16	Managed Operating Budget - UNSG	O&M	PTotMOBG			PLN_OM: Total MOB - UNSG
17	Xref from workforce - UNSE	O&M	PWkfxrE			PLN_OM: WrkfrC Xref UNSE
18	Managed Operating Budget - UNSE	O&M	PTotMOBE			PLN_OM: Total MOB - UNSE
19	Directs - TEP	O&M	PMv2PrjT			PLN_OM: PMv2PrjT
20	Directs - TEP	O&M	PDirTEP			PLN_OM: Directs-TEP
21	Directs - UNSG	O&M	PMv2PrjG			PLN_OM: PMv2PrjG
22	Directs - UNSG	O&M	PDirUNG			PLN_OM: Directs-UNSG
23	Directs - UNSE	O&M	PMv2PrjE			PLN_OM: PMv2PrjE
24	Directs - UNSE	O&M	PDirUNE			PLN_OM: Directs-UNSE
25	Copy periods (from Year 1/Year 2, etc.)	O&M	PCpy2Pds			
26	General roll-up	O&M	PAGg			
27	Vacancy	O&M	PVacancy			
28	Pension & Benefits	O&M	PP&B			
29	Payroll Tax	O&M	PPayTax			
30	Capitalized Paid Absences	O&M	PPdAbs			
31	Capital Loads-Overhead Fixed Amounts	O&M	POHAll			
32	Worker's Comp	O&M	PWksCmp			
33	Transportation	O&M	PTransp			
34	Unisource	O&M	PUniSrc			
35	Indirects	O&M	PIndAll			PLN_OM: Plan Indirect Allocs
36	Building-Affiliates	O&M	PBlIdAllc			PLN_OM: Building-Affiliates
37	Stores Load	O&M	PStrLd			
38	Small Tools	O&M	PSmlTol			
39	General roll-up	O&M	PAGg			

Running Calc Scripts

■ Maxl

```
set CubeSvr = 'servername';
set LogPath = "\\servername\d$\Hyperion\scripts\Logs\NightlyCycle.log";
set ErrPath = "\\servername\d$\Hyperion\scripts\Logs\NightlyCycle.err";
set CubeUser = 'login';
set CubePwd = 'password';
set AppName = 'AppName';
set CubeName1 = 'DatabaseName';
```

```
spool stdout on to $LogPath;
spool stderr on to $ErrPath;
```

```
echo 'Nightly Cycle Starting ...';
login $CubeUser identified by $CubePwd on $CubeSvr;
set message level error;
set timestamp on;
iferror 'Failed';
```

```
/*Execute Revenue Calc Scripts*/
echo 'starting Revenue Calc Scripts ...'
execute calculation "$AppName"."$CubeName1".RGLAdj;
```








```
echo 'Done with Revenue Calc Scripts ...';
iferror 'Failed';
echo 'Process completed';
define label 'Failed';
spool off;
logout;
exit;
```

LCM (Lifecycle Management)

- Exports objects onto Foundation server (Shared Services server)
- Exports under a folder with the ID that created the export
- Exports many Planning objects
 - Forms
 - Business Rules
 - Calc scripts and Load Rules
 - Menus and Smart Lists
 - Task Lists
 - Configuration
 - Relational data and Security (be careful – do not import admin security)
- Import can be used to load into applications on the same server or a different server (example: migrate from Dev to Prod). If a different server, the folder needs to be copied over first.

LCM Backup (part of a DR process)

- Batch file takes nightly LCM exports of Production. It runs the migration definitions (xml files) seen in the screen shot below to backup Essbase, Foundation, HFM, Planning, and Reporting components. The migration definitions are split into different sections so that if one part fails, it doesn't stop the entire process.

 backup.bat	1/16/2012 4:58 PM	Windows Ba
 ProdMigrDef_Essbase.xml	1/30/2012 1:10 PM	XML Docume
 ProdMigrDef_Foundation.xml	1/30/2012 1:11 PM	XML Docume
 ProdMigrDef_OXYHFM.xml	1/30/2012 1:20 PM	XML Docume
 ProdMigrDef_OXYPCC.xml	1/10/2012 7:34 PM	XML Docume
 ProdMigrDef_OXYPLN.xml	1/30/2012 1:15 PM	XML Docume
 ProdMigrDef_Reports.xml	1/30/2012 1:18 PM	XML Docume

- LCM exports are stored on the Foundation Server. The batch script zips the exports and copies the zip file nightly to the DR Foundation server. In addition to this, the HFM data exports are zipped into a file.
- Disclaimer: Use code at your own risk



C:\Users\dsunde\
top\Automation P

Essbase Data Backup

- Windows batch script (run_export.bat)

```
C:  
CD C:\hyperion\Scripts  
essmsh export.mxl
```

- Maxl Script (export.mlx - password encryption used)

```
set CubeSvr = 'ESSBASEQA1';  
set CubeUser = 'login';  
set CubePwd = 'password';  
login $CubeUser identified by $CubePwd on $CubeSvr;  
export database "Plan"."Wrkforce" level0 data to data_file 'Exports/Export0_Wrkforce.txt';  
export database "Plan"."Capex" level0 data to data_file 'Exports/Export0_Capex.txt';  
export database "Plan"."O&M" level0 data to data_file 'Exports/Export0_OM.txt';  
logout;  
exit;
```

**Windows bat
Uses Variables
No UserID and Password Encryption**

Essbase Data Backup

- UNIX shell script (run_export.sh)

```
#!/bin/ksh
# commands
su - hyperion -c 'cd /hyperion/Scripts;essmsh -D export.mxls 1295615519,1420369151'
```

- Maxl Script (export.mxls - password encryption used)

```
set CubeSvr = 'ESSBASEQA1';
set CubeUser = '$key 6732824101552824526034233099314402233901';
set CubePwd = '$key 8162956031261887390108152703801650107220';
login $CubeUser identified by $CubePwd on $CubeSvr;
export database "Plan"."Wrkforce" level0 data to data_file 'Exports/Export0_Wrkforce.txt';
export database "Plan"."Capex" level0 data to data_file 'Exports/Export0_Capex.txt';
export database "Plan"."O&M" level0 data to data_file 'Exports/Export0_OM.txt';
logout;
exit;
```



**UNIX .sh
Uses Variables
UserID and Password Encryption**

Defrag

■ Steps

- Backup data
- Clear database (using reset or a calc script)
- Import data
- Aggregate with a calc script
- Note: ensure no calc scripts are running

■ Maxi

```
spool on to 'D:\Database\Log.txt';  
login 'admin' 'password' on 'ESSBASE_SERVER';  
alter system load application 'WFP';  
alter application 'WFP' disable connects;  
export database 'WFP'.Wrkforce level0 data to data_file 'D:\Database\WFP.txt';  
alter database reset data;  
import database 'WFP'.Wrkforce data from data_file 'D:\Dataase\WFP.txt' on error write to 'D:\Database\Error.txt';  
execute calculation 'WFP'.Wrkforce.'Agg';  
alter application 'WFP' enable connects;
```

Essbase UserID and Password Encryption

Follow the below easy steps to encrypt and decrypt the MaxL script:

Step 1: Create a simple MaxL script (Loginscript.mxl) to login into Essbase server using MaxL commands login on ; logout;

Step 2: Run essmsh -gk command to generate Encryption and Decryption code

```
D:\oracle\Middleware\EPMSys11R1\common\EssbaseRTC\11.1.2.0\bin>essmsh -gk  
Essbase MaxL Shell - Release 11.1.2 (ESB11.1.2.1.0B347) Copyright (c) 2000, 2011, Oracle  
and/or its affiliates. All rights reserved.
```

```
Public Key for Encryption: 13005,692804953  
Private Key for Decryption: 565324885,692804953
```

MaxL Shell completed

Step 3: Encrypt Loginscript.mxl by issuing the below command along with Encryption Code generated above. This would create an encrypted MaxL script with extension Loginscript.mxls

```
D:\oracle\Middleware\EPMSys11R1\common\EssbaseRTC\11.1.2.0\bin>essmsh -Em D:\  
Scripts\Loginscript.mxl 13005,692804953
```

```
Essbase MaxL Shell - Release 11.1.2 (ESB11.1.2.1.0B347) Copyright (c) 2000, 2011, Oracle  
and/or its affiliates. All rights reserved.
```

Essbase UserID and Password Encryption (cont.)

Step 4: Open the file Loginscript.xmls to check whether the userID and Password got encrypted or not.

```
login $key 225460064724436062164017310 $key 137249360634406684332940616180146296;  
logout;
```

Step 5: If you want to execute encrypted file, run the below command with decryption code

```
D:\oracle\Middleware\EPMSysstem11R1\common\EssbaseRTC\11.1.2.0\bin>essmsh -D D:\S  
cripts\Loginscript.msh.txts 565324885,692804953
```

Essbase MaxL Shell - Release 11.1.2 (ESB11.1.2.1.0B347) Copyright (c) 2000, 2011, Oracle
and/or its affiliates. All rights reserved.

```
MAXL> login $key 225460064724436062164017310 $key 37249360634406684332940616180  
146296;
```

```
OK/INFO - 1051034 - Logging in user [admin@Native Directory].  
OK/INFO - 1241001 - Logged in to Essbase.
```

```
MAXL> logout;
```

```
User admin is logged out  
MaxL Shell completed
```

Resources

- Oracle EPM Documentation – Essbase Technical Reference includes maxl
 - <http://www.oracle.com/technetwork/middleware/performance-management/documentation/index.html>
- Encrypting MaxL Passwords Using an Environment File
 - <http://scottoracleblog.blogspot.com/2013/02/encrypting-maxl-passwords-using.html>
- Essbase backups
 - <http://camerons-blog-for-essbase-hackers.blogspot.com/2012/02/lightweight-modular-and-better-essbase-5219.html>
- Assistance with Essbase and Planning
 - https://community.oracle.com/community/business_intelligence/performance_management_applications/planning_and_budgeting
 - https://community.oracle.com/community/business_intelligence/business_intelligence_foundation/essbase
 - <http://www.network54.com/Forum>
- Assistance with VB, SQL, etc.
 - experts-exchange.com
 - toolbox.com

Q&A

The image features the letters 'Q&A' in a bold, three-dimensional, red font. The characters are thick and have a glossy finish, casting soft shadows on the light gray surface below. The ampersand is smaller and positioned between the 'Q' and the 'A'. The overall style is clean and modern.

Contact Information



The Hackett Group
World Class Defined and Enabled

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Miami | New York | Paris | Philadelphia | San Francisco | Sydney



Oracle Open World 2014

- Location: San Francisco, CA
- September 28th - October 2nd
- Exelixis: Rapid Implementation of Driver-Based Rolling Forecasts with Oracle Hyperion Planning
 - Deanna Sunde, The Hackett Group and Dinh Le, Exelixis

