



Maintaining and Caring for your EPM Environment

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Introductions

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- 8+ years of EPM experience
- 5+ years as Infrastructure Consultant
- Deep technical background in EPM applications and its required technologies across different platforms
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General

General

- As with all applications, the EPM Suite of products require care and maintenance to ensure optimal condition and minimize downtime for Business users.
- The purpose of this session is to talk about some of the basic, yet important steps to maintain your EPM environment and some of the basic troubleshooting steps.





Log Files

Log Files

- The first step to troubleshoot issues is to review the application logs
- Different type of logs:
 - Installation logs
 - Configuration logs
 - WebLogic Managed Server logs
 - Application Logs



Log Files

- New Log Analysis utility introduced in 11.1.2.3 scans all logs and generates a report based on parameters
- The report can be customized to show entries within the specified number of days, hours and minutes. It could also be generated to display entries by message type (Error, Warning, etc.) and other parameters
- Below is a sample report

Log Analysis Report

- Generated Date: 2014-06-23:10:40:53
- Log Files Scanned: 2204 in 611 Sec
- Total Errors: 205631
- Total Incidents: 377
- Excluded Messages: 2
- Message Type: ERROR, INCIDENT_ERROR

Log Messages

Date	Component	Message Type	Message Details
2013-07-25 10:42:08	EPMPRAF	ERROR	<pre>com/hyperion/interactivereporting/widget/Generator Message Level: 1 Module ID: oracle.EPMPRAF.com.brio.one.services.analyticbridge.impl.AnalyticBridgeServiceImpl User ID: HYPBIS Thread ID: 10 Host ID: HYPBI Host Address: 192.168.31.213 LOG_FILE: C:\Oracle\Middleware\user_projects\epmsystem1\diagnostics\logs\ReportingAnalysis\server_messages_AnalyticBridgeService.log SRC_CLASS: com.brio.one.services.analyticbridge.impl.AnalyticBridgeServiceImpl SRC_METHOD: <init>? originator_name: ABS_00000140167a39af-0001-2df6-c0a81fd5_HYPBI.emergenow.com ECID: 0000K0MV^eD0BxWFLzQLOA1HwKSy000000 RID: 0 Suppl. Detail: java.lang.NoClassDefFoundError: com/hyperion/interactivereporting/widget/Generator at com.brio.one.services.analyticbridge.impl.widget.WidgetImpl.initialize(Unknown Source) at com.brio.one.services.analyticbridge.impl.AnalyticBridgeServiceImpl.<init>(Unknown Source) at com.brio.one.services.analyticbridge.impl.AnalyticBridgeServiceImpl.<init>(Unknown Source) at com.brio.one.services.analyticbridge.impl.AnalyticBridgeServiceImpl.<init>(Unknown Source) at sun.reflect.NativeConstructorAccessorImpl.newInstance(Native Method) at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:39) at java.lang.reflect.Constructor.newInstance(Constructor.java:513) at com.brio.one.system.Server.initializeBusinessService(Unknown Source)</pre>

Log Files

- Component Log location

Log Type	Logs Location
Installation Logs	<DRIVE>:\Oracle\Middleware\EPMSystem11R1\diagnostics\logs\install
EPM System Configurator Logs	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\config
EPM System Diagnostics (also the location for the EPM System Validation Report)	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\validation
Service Startup log for each WebLogic Managed Server (detail level log and error information log)	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\services
WebLogic Activity Logs	<DRIVE>:\Oracle\Middleware\user_projects\domains\EPMSystem\servers\<MANAGED_SERVER>\logs
Essbase Server Logs	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\essbase\essbase_0 (where 0 is the Essbase instance number)
Essbase Application Logs	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\essbase\essbase_0 \<APP>
HFM Logs	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\hfm
Planning Logs	<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\planning

Log Files

- Foundation (Shared Services and Workspace) Logs

Default Log Location	Log File Name and Contents
MIDDLEWARE_HOME/user_projects/domains/EPMSysystem/servers/FoundationServices0/logs	<ul style="list-style-type: none">• FoundationServices0.log–Server and security activity• SharedServices_Admin.log–Applications Groups management activity• SharedServices_Audit.log–Audit server errors while reading/writing audit information to the database or while configuring auditing• SharedServices_Audit_Client.log–Information about the audit client• SharedServices_CMSCClient.log–Metadata Service client activity• SharedServices_Hub.log–Shared Services listener and initialization activity• SharedServices_ImportExport.log–• SharedServices_LCM.log–Lifecycle Management activity when it is run from EPM Workspace• SharedServices_Registry.log–Shared Services Registry activity• SharedServices_Security.log–User management, provisioning, authentication, and single sign-on activity• Workspace.log–EPM Workspace error and informational messages

Log Files

- EPM Application logs

Default Log Location	Log File Name and Contents
<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\planning	<ul style="list-style-type: none">UserProvisionSync.log—Security refresh information, such as provisioning or “user not found” issuesPlanning utility logs—A log for each Planning utilityPlanningAppUpgradeLog_application_name.txt—An upgrade log for each upgraded Planning application
<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\hfm	<ul style="list-style-type: none">EPMWindowsConfig.log—Activity related to Financial Management-specific configuration taskshfm.odl.log—Financial Management core activityHsvEventLog.log—Financial Management activityInteropJava.log—Financial Management interop activity
<DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\diagnostics\logs\essbase\essbase_0, where 0 is an instance number	<ul style="list-style-type: none">ESSBASE.LOG—Essbase Server activities and errorsdataload_ODL.err—Data load and dimension build errorslog0000x.xcp—Errors that result when Essbase Server stops abnormally



Periodic Maintenance Activities-Common Issues

Periodic Maintenance Activities

- Periodic maintenance activities can help prevent issues and minimize performance slowdowns
- The activities below should be performed periodically
- Common:
 - Exclude the installation folder from automatic (<DRIVE>:\Oracle\Middleware) because this impacts performance
 - Virus scan should be scheduled to happen during maintenance period
 - Archive log files: Logs can become very large and may affect performance and may cause disk space shortage
 - Review patches periodically for potential defect resolution
- HFM:
 - HFM Error and Audit Tables can impact performance after 500,000 rows
 - Archive and truncate the following HFM Tables
 - Quarterly: HFM_ERRORLOG
 - Yearly: <HFM_APP>_DATA_AUDIT
 - Yearly: <HFM_APP>_TASK_AUDIT



Common Issues

- The table below provides a list of the most common issues and possible solutions

Issue	Possible Solution
Receive "Page Cannot be Displayed" when trying to access Workspace or Shared Services (HTTP Error 404)	Ensure that the web server (IIS or Oracle HTTP Server) is running. Also, ensure that the services for the web component is also running
External users (Active Directory) cannot login while native users can	Ensure the connection information for Active Directory is correct and the password for the AD account has not changed. Engage AD Administrator
Web application service crashes and log reports out of memory error	Increase the Java Heap Size for the application. This can be done via the Windows Registry or via the startup script in non-Windows environments
Essbase Service starts and stops immediately	Verify that the drive did not run out of space. It is recommended that there is as much free space available as the largest Essbase cube to accommodate database restructures
Essbase does not start	The most common reason for Essbase to not start is a corrupted Security file. This happens if Essbase quit unexpectedly or due to ungraceful shutdown. Restore the Security file from its last backup



Monitoring your Environment

Monitoring your Environment

- Constantly monitoring the environment and resources will help avoid issues with the applications
- Use Enterprise monitoring tools to alert on service failures, memory shortage, disk space, disk performance and CPU utilization. Below is an example on some statistics that can be monitored:

Windows Server Resource Monitoring	Memory: % Committed Bytes In Use Memory: Page Faults/sec PhysicalDisk: Current Disk Queue Length PhysicalDisk: Disk Read Bytes/sec PhysicalDisk: Disk Reads/sec PhysicalDisk: Disk Write Bytes/sec PhysicalDisk: Disk Writes/sec Processor: % Idle Time Processor: Interrupts/sec System: Threads
SAN Monitoring	Storage Area Network (SAN) devices are now a standard infrastructure. They tend to be shared by many servers and can act as a performance bottleneck if not properly configured, low on internal caches, or many servers are using the same SAN port.
Network Monitoring	Network switches and routers link all the servers and a failure or intermittent errors will cause connectivity issues. Automated alerts should be sent on high utilization and/or if key error conditions occur.

Monitoring your Environment - Alerts

- When setting up alerts on server resources, the following can be used as threshold:
 - Available Space on Drive: 25% or less - On Essbase servers, as much space as the largest cube
 - Available Memory: 10% or less – when the server runs out of physical memory, it uses virtual memory which is slower and impacts performance
 - CPU Utilization: 90% - review processes running and “stuck” applications. Review application logs for possible errors
- When receiving alerts of application failures or service crash, archive the logs first, and then restart the service(s). Some logs are deleted during startup.



Monitoring your Environment

- On highly available environments using a load balancer, ensure the load balancer does health checks on the applications so that the load balancer does not route traffic to an unavailable server
- On Virtual Environments, monitor performance statistics on the physical host(s)
- Do not overcommit physical hosts with VMs. This severely impacts the performance and it is the most common reason for poor performance in virtual environments





Backups and Patches

Backups

- Relational Database Backups
 - Incremental backups should occur daily with a full database backup on a weekly basis
 - The Reporting and Analysis Database should be backed up in conjunction with its physical file repository: (Default Location)
<Drive>\Oracle\Middleware\user_projects\epmsystemx\ReportingAnalysis\data\RM1
- Application Server Backup
 - Daily incremental backups of the following with a full weekly backup:
 - System registry
 - Temporary directories
 - User profile directories
 - Application file system



Backups

- Essbase Backups

- It is recommended to backup Essbase on a nightly basis

- Essbase should be shut down prior to backup. If Essbase is running, some files will not be backed up.

- Below are the Essbase files that should be backed up: ARBORPATH = <DRIVE>:\Oracle\Middleware\user_projects\epmsystemx\EssbaseServer\essbaseserver1

File	Description	Location
essxxxxx.ind*	Essbase index file	ARBORPATH/app/appname/dbname/
essxxxxx.pag*	Essbase data file	ARBORPATH/app/appname/dbname/
dbname.esm	Essbase Kernel file that contains control information used for database recovery	ARBORPATH/app/appname/dbname/
dbname.tct	Transaction control table	ARBORPATH/app/appname/dbname/
dbname.ind	Free fragment file for data and index free fragments	ARBORPATH/app/appname/dbname/
dbname.app	Application file containing application settings	ARBORPATH/app/
dbname.db	Database file containing database settings	ARBORPATH/app/appname/dbname/
x.lro	Linked reporting objects	ARBORPATH/app/appname/dbname/
essbase.sec	Essbase security file	ARBORPATH/bin/
essbase.bak	Backup of the Essbase security file	ARBORPATH/bin/
essbase.cfg	Essbase Server configuration file	ARBORPATH/bin/
.otl .csc .rul .rep .eqd .sel	Database artifact files	ARBORPATH/app/appname/dbname/

Patches

- Develop a plan for periodic maintenance and patching
- Search for patches on your licensed products periodically
 - HFM, Planning, Essbase, etc.
 - When searching for patches, include other components in the EPM suite: Foundation (Shared Services and Workspace), Reporting and Analysis, etc.
- Apply patches only applicable to your environment
 - Patches should be applied to non-production environments first
 - Review the patch notes for compatible releases, OS, defect(s) fixed
 - Apply patches to client machines if required by the patch
- Review patches for components such as Oracle HTTP Server and Java. OHS is a web server and it can be vulnerable



Patches

- What to look for in a patch:
 - Look at the list of fixes and ensure the patch applies to your environment
 - Review the prerequisites – the most ignored section yet one of the most important
 - Apply OS Patches or patches to other components in the suite required by the patch you're installing
 - Some patches require post installation activities, make sure to review them in the readme file



Questions





THANK YOU FOR YOUR TIME

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