S318123 - Reduce TCO with Oracle Application Management Pack for Oracle E-Business Suite

Kenneth Baxter
Product Strategy, Oracle EBS

Don Hankins
Sr. DBA, Flint Hills Resouces (FHR)
THE FOLLOWING IS INTENDED TO OUTLINE OUR GENERAL PRODUCT DIRECTION. IT IS INTENDED FOR INFORMATION PURPOSES ONLY, AND MAY NOT BE INCORPORATED INTO ANY CONTRACT. IT IS NOT A COMMITMENT TO DELIVER ANY MATERIAL, CODE, OR FUNCTIONALITY, AND SHOULD NOT BE RELIED UPON IN MAKING PURCHASING DECISION. THE DEVELOPMENT, RELEASE, AND TIMING OF ANY FEATURES OR FUNCTIONALITY DESCRIBED FOR ORACLE’S PRODUCTS REMAINS AT THE SOLE DISCRETION OF ORACLE.
Application Management Pack

Agenda

• AMP Overview
• Key successes with AMP
• Key enhancements in AMP 3.1
• FHR Case Study, presented by Don Hankins
  – Executive Summary
  – AMP Cloning Solution
  – Project Results
  – Helpful Hints
• Further Information
• Related Sessions
• Q&A
AMP Overview
Application Management Pack Overview

E-Business Suite Management Packs

- **WHAT** – Products that extend Oracle Enterprise Manager Grid Control to lower the cost of managing changes in E-Business Suite.

- **HOW** – Integrates Enterprise Manager Grid Control framework with the embedded features of E-Business Suite to provide end to end change management solutions

- **RESULTS** – Lowers operational cost and improves user productivity by centralizing and automating change management processes across the data center
Application Management Pack

Key Components

- Service Level Management
- SLA Enforcement
- Synthetic User Monitoring
- Component Monitoring
- Configuration Analysis
- End-to-End User Monitoring
- Concurrent Processing Dashboard
- Executive and Operational Reporting
Integrated Application-to-Disk Management
Only Oracle Can Deliver Complete Stack Management

- Complete Lifecycle Management of Physical & Virtual Systems (Ops Center)
- Industry’s Leading Database Self-Management Solution
- Integrated, Deep Middleware Management
- WebLogic, SOA, Portal, Identity Management, BI
- Deep, Out-of-box Management solutions for Oracle Applications
- EBS, Siebel, PSFT, JD Edwards, BRM, Fusion Apps

Complete, Integrated, Application-to-Disk Management
Product Successes
Implementing Application Management Pack for Oracle E-Business Suite has allowed GE Infrastructure to realize $200K annual savings, 84% reduction in clone cycle time, and 75% reduction in resources.

General Electric

Reduced operator (i.e., DBA) time to perform a clone by approximately 90%, from 20 hours per week to 1-2 hours.

Flint Hills Resources

The implementation of the Management Suite resulted in a 66% reduction in error resolution time for E-Business Suite-related issues, and freed up DBA time by approximately 35%.

Oracle GSI
Key Enhancements in AMP 3.1
Key Enhancements in AMP 3.1

Concurrent Processing Dashboard

- Better, more timely, management of Concurrent Managers and Programs

- **Individual** Concurrent Managers and Programs can be represented as targets, allowing:
  - Metric Collection
    - Long running Threshold
    - Long pending request
  - Monitoring
  - Alerting/Notifications
  - Reporting
Key Enhancements in AMP 3.1

End-to-End User Monitoring

- Ability to track, trace, troubleshoot in-flight transactions
- Consolidated view of the entire transaction on each tier
- Facilitates deep root-cause analysis
- Search user activity within EBS System
  - Session from OAF, Forms, and CP details
  - Components used
  - Database Session
Key Enhancements in AMP 3.1

**Cloning Enhancements**

- **Smart clone**
  - Solutions for large databases
  - “Marrying” an existing APPL_TOP with an existing database backup to create a new instance

- **Hot Mode Clone**
  - Ability to Clone a source instance without shutting it down
AMP/ACP Roadmap

AMP 2.0
- Released: February 2007
- First Release of AMP
- Supports EM 10gR5
  - Supports EM 10gR5
  - Support all major OS platforms including windows & EBS environments with logical names

AMP 2.0.2
- Released: August 2008
  - EMGC 10gR4 Certified
  - Advanced Discovery
  - Start/Stop EBS Services
  - Hot and RAC Cloning (R12)
  - Packaging Customization
  - Automated Patch Deployment
  - Migration of functional setups

AMP/ACMP 3.0
- Released: 30th April 2009
  - EMGC 10gR4/R5 Certified
  - Next Generation Cloning
  - Monitor Concurrent Process Performance
  - End to End Tracing
  - Change Approval Framework
  - Register New Custom Applications
  - Prerequisite Patch Checking
  - Offline Transformation

AMP/ACMP 3.1
- Released: January 2010
  - EMGC 10gR5 Certified
  - Next Generation Cloning
  - Monitor Concurrent Process Performance
  - End to End Tracing
  - Change Approval Framework
  - Register New Custom Applications
  - Prerequisite Patch Checking
  - Offline Transformation
Incorporating Custom Cloning Tasks with AMP Clone

**Agenda**

- Executive Summary
- Understanding the components of AMP Cloning
- Project Results
- Helpful Hints
Incorporating Custom Cloning Tasks with AMP Clone

**Executive Summary**

- **Introduction**
  - Flint Hills Resources (FHR) is an independent refining and chemicals company. The company, based in Wichita, Kansas, has expanded its operations through capital projects and acquisitions worth more than $5.1 billion since 2002

- **System Details**
  - Database size/version: 85GB / 10.2.0.4
  - Version of E-Business Suite: 12.0.4
  - Version of Enterprise Manager: 10.2.0.5
  - Version of AMP: 3.0
  - Number of supporting, non-production environments: 6

- **Key Results**
  - Operator (i.e., DBA) time to perform clones has been reduced by more than 90%, from 22 hours/week to approx. 1-2 hours/week
  - Clones are executed in “Hot Mode”, allowing end-users 24/7 access to the Production environment
  - Successfully integrated the AMP Clone into the 3rd party scheduling tool (i.e., Autosys)
Incorporating Custom Cloning Tasks with AMP Clone

Executive Summary

- Drivers in the decision to purchase AMP
  - The ability to retire/remove custom-built scripts and procedures, as well as the associated support/maintenance of the same.
  - The ability to easily incorporate custom steps or procedures into a pre-built infrastructure.
  - The ability to perform a clone without impacting the availability of the source (i.e., Production) instance.
  - The ability to standardize their cloning procedures across multiple E-business Suite environments.
  - FHR had already standardized their system management around Oracle Enterprise Manager, and therefore were predisposed to solutions that leveraged that infrastructure.
FHR Case Study: Solution
Incorporating Custom Cloning Tasks with AMP Clone

Understanding the Moving Parts of AMP Cloning
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – Script Creation

- Determine what processes can be automated via scripts
- Examples: passwords, concurrent manager definitions, stop/start procedures, FND commands, etc.
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – Script Creation

```bash
./.bash_profile
sqlplus /nolog <<EOF
connect apps/<PW>;
/* Internal Monitor: ICT0LXAP004 */
UPDATE applsys.fnd_concurrent_queues
SET    node_name = 'ICT0LXAP004',
       node_name2 = 'ICT0LXAP001'
WHERE  concurrent_queue_name = 'FNDIM_ICT0LXAP004';

/* Internal Manager */
UPDATE applsys.fnd_concurrent_queues
SET    node_name = 'ICT0LXAP001',
       node_name2 = 'ICT0LXAP004'
WHERE  concurrent_queue_name = 'FNDICM';
EOF
```

- If a custom procedure can be captured in a script, it can be automated
- FHR used ksh wrappers around each script.
- Variables assigned at runtime
Incorporating Custom Cloning Tasks with AMP Clone

**Automating the Cloning Process - Directives**

- Scripts can be uploaded and registered into the Enterprise Manager repository.
- Customers can identify run-time variables when creating Directives.
- Directives can be included in, and executed by, Deployment Procedures.
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process - Directives

- Oracle provides seeded Directives. Customers can also create their own Directives.
- Creation/registration of a Directive is a four step guided interview process
- FHR has created approximately 15 custom Directives
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process - Directives

- Configure Step: Identify the runtime variable and bash type. Variables identified during the Interview creation.
- Upload Step: Locate, select, and upload the custom script into the EM Directives Repository.
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process - Directives

- Once registered and activated, the Directive is available to be used in a Deployment Procedure

<table>
<thead>
<tr>
<th>Select Name</th>
<th>Type</th>
<th>Revision</th>
<th>Status</th>
<th>Maturity</th>
<th>Product name/Patch number</th>
<th>Product version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼ Directives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▼ FHR CUSTOM - OCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apps Only - File Cleanup</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Remove All Application Files</td>
</tr>
<tr>
<td>Autoconfig</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Run autocfg on all target nodes</td>
</tr>
<tr>
<td>Bounce CCMgr</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Shutdown / Startup Concurrent Managers</td>
</tr>
<tr>
<td>Configure CCMgr</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Apply configuration changes to concurrent managers</td>
</tr>
<tr>
<td>File Cleanup</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Remove misc files from all target nodes</td>
</tr>
<tr>
<td>FNDPASS</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Change apps password on target</td>
</tr>
<tr>
<td>FNDLOAD</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Run FNDLOAD processes plus SRT scripts</td>
</tr>
<tr>
<td>Kill Apps Processes</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Kills leftover apps processes</td>
</tr>
<tr>
<td>Post-Cloning Database DML</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Modify profile settings, sys &amp; system pw, db links</td>
</tr>
<tr>
<td>✅ Post-Clone Internal Manager</td>
<td>D.2</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Configure internal manager for target application</td>
</tr>
<tr>
<td>Rebuild Context Table</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Rebuilds fnd_com_context_table</td>
</tr>
<tr>
<td>Shutdown Application</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Shutdown application nodes</td>
</tr>
<tr>
<td>Shutdown CCMgrs</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Shutdown concurrent managers for a given SID</td>
</tr>
<tr>
<td>Shutdown Database</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Shutdown Target Database</td>
</tr>
<tr>
<td>Start CCMgrs</td>
<td>D.1</td>
<td>Active</td>
<td>Untested</td>
<td></td>
<td></td>
<td></td>
<td>Startup concurrent managers on target nodes</td>
</tr>
</tbody>
</table>
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – Deployment Procedures

- A Deployment Procedures is a framework of tasks, jobs, or directives that are logically sequenced.

- Deployment Procedures can be created and edited to include custom Directives

- Oracle delivers 6 Deployment Procedures especially for AMP Cloning

- Deployment Procedures execute the AMP Clone
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – Deployment Procedures

AMP 3.0 ships with 6 pre-defined seeded Deployment procedures

FHR has created 3 custom DP that utilize custom Directives to execute AMP Clones
I. Automating the Cloning Process – Deployment Procedures

- **Sample of a FHR customer Deployment Procedure**
- **FHR has created custom Deployment Procedures that combine both Seeded and Custom Directives**

### Set of Custom Directives

<table>
<thead>
<tr>
<th>Select Name</th>
<th>Type</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHR CUSTOM - Hot Mode Clone - Source to Target</td>
<td>Rolling</td>
<td>Hot Mode Clone Source to Target - Full</td>
<td>Step On Error</td>
</tr>
<tr>
<td>FHR CUSTOM - Pre-Clone Steps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Set of Seeded Directives

<table>
<thead>
<tr>
<th>Select Name</th>
<th>Type</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – Deployment Procedures

- Ability to Enable, Disable, Edit, Insert, or Delete any Directive
- Ability to sequence Directives
- Ability to change “Error Handling Mode” for each Directive
Incorporating Custom Cloning Tasks with AMP Clone
Automating the Cloning Process – Deployment Procedures

- Select the Directive that was created earlier
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – Deployment Procedures

- Ability to prompt for runtime constants, variables at runtime
- FHR leverages this capability to automatically pass the “Target SID” variable from the AMP Clone Interview
Once the interview is complete, the Directive is placed into the Deployment Procedure.

Once the Deployment Procedure is saved, it can be used by the AMP Clone Interview process.
The Interview process gathers information from the customer about the Clone (e.g., source system, target system name, mount points, credentials, etc)

Each AMP Clone Interview uses one Deployment Procedure

Interviews/Definitions can be run $n$ times, thereby standardizing the Clone process
• The AMP Clone interview process uses Deployment Procedures to orchestrate and execute different individual tasks
• FHR utilizes 3 different deployment procedures in 6 different AMP Cloning definitions (e.g., PROD to TEST, _FULL, PROD to TEST_DBONLY)
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – AMP Clone Interview

- Multi-step interview process
- Identify Source system, Destination target (a variable that is used at runtime), and the different components of the EBS instance
- FHR performs full stack clone and a database-only clone
Incorporating Custom Cloning Tasks with AMP Clone
Automating the Cloning Process – AMP Clone Interview

- Verify Database and Application node details (captured via Autoconfig)
- FHR clones PROD into different environments, each of which might have different mount points/paths. This step allows FHR to define and capture those different mount points for future reuse.
Incorporating Custom Cloning Tasks with AMP Clone

Automating the Cloning Process – AMP Clone Interview

- Multiple choices for staging areas and transfer options
- NFS mount is a more efficient mode than multiple file copies and storage
Once the Cloning run has been defined/created, it is eligible to be executed multiple times.
Most customers will execute the AMP Clone via the UI, either immediately or at a pre-determined date/time.

FHR created an executable to launch the AMP Clone from the command line.

The command execution permits FHR to incorporate the AMP Clone into a larger nightly refresh process – managed by a 3rd party scheduling tool (Autosys).
Incorporating Custom Cloning Tasks with AMP Clone

Understanding the Moving Parts of AMP Cloning

Clone Execution

Clone Interview

Deployment Procedures

Directives

Scripts
FHR Case Study: Project Results
Incorporating Custom Cloning Tasks with AMP Clone

**Project Results**

- The benefits associated with AMP Cloning are:
  - Operator (i.e., DBA) time to perform clones has been reduced by more than 90%, from 22 hours/week to approx. 1-2 hours/week
  - Clones are executed in “Hot Mode”, allowing end-users 24/7 access to the Production environment
  - Creating cloning executables has given non-DBAs the ability to schedule and execute clones without involving the DBA group.
  - Successfully integrated the AMP Clone into the 3rd party scheduling tool (i.e., Autosys)

- **Project Details**
  - Total Project Duration (elapsed time): 6 months
  - Total Person Hours: 2.5 person months
FHR Case Study: Helpful Hints
Helpful Hints

- Create a wrapper surrounding each directive created so that the directive only has to call the wrapper thus allowing all code changes to occur dynamically underneath.
- Use same apps password on both source and target until after clone process has completed.
- Watch out for remaining “reviver” processes when shutting down and deleting target application nodes – They need to be “killed” before refresh process will complete successfully.
- Will probably have to manually copy E-Bus Suite custom code and forms as the cloning process skips over them.
- Remove existing monitoring of target E-Bus Suite, including database from OEM before starting clone process (Process issues a “shutdown normal” rather than “shutdown immediate”).
- AMP’s unzip process does not overwrite files already present. Therefore, you will need to delete all files from application and database nodes pertaining to target environment.
Application Management Pack

Further Information

• Collateral
  – Location: Oracle Technology Network -> Enterprise Management -> Applications Management
  – Best Practices (Whitepapers):
    • Case Study – Optimizing E-Business Suite Management Using Oracle Application Management Suite for Oracle E-Business Suite
    • Case Study - FHR Cloning (as of October 2010)
  – Datasheets:
    • Application Management Suite for Oracle E-Business Suite Data Sheet
  – Understanding
    • Installation Guide for the Application Management Suite for E-Business Suite
    • User’s Guide for the Application Management Suite for E-Business Suite
• Contacts: kenneth.baxter@oracle.com, angelo.rosado@oracle.com
Related Sessions

Monday (20th September)

- S317039: Oracle@Oracle: How Oracle IT Achieves High Application Service Levels
  Time: 11.00 – 12.00
  Venue: Moscone West L2 (RM 2020)
  Time: 12.30 – 13.30

Tuesday (21st September)

- S318132: Quick Wins That Will Make You a Hero: Oracle E-Business Suite Technology
  Time: 12.30 – 13.30
  Venue: Moscone West L2 (RM 2024)
- S318134: Oracle E-Business Suite DBA Techniques: Minimizing Maintenance Downtimes
  Time: 14.00 – 15.00
  Venue: Moscone West L2 (RM 2024)
Related Sessions

Tuesday (21\textsuperscript{st} September)

- S318124: Latest on Oracle Application Change Management Pack for Oracle E-Business Suite – Customer Case Study (JHUAPL)
  Time: 15.30 – 16.30
  Venue: Moscone West L2 (RM 2024)

Wednesday (22\textsuperscript{nd} September)

- S318119: Oracle E-Business Suite Technology Certification Primer and Roadmap
  Time: 10.00 – 11.00
  Venue: Moscone West L2 (RM 2024)
- S318125: Upgrading Your Customizations to Oracle E-Business Suite Release 12
  Time: 11.30 – 12.30
  Venue: Moscone West L2 (RM 2024)
  Time: 16.45 – 17.45
  Venue: Moscone West L3 (RM 3002 / 3004)
Related Sessions…………..contd.

Thursday (23rd September)

- **S318123: Reduce TCO with Oracle Application Management Pack for Oracle E-Business Suite – Customer Case Study (FHR)**
  Time: 9.00 – 10.00
  Venue: Moscone West L2 (RM 2024)

- **S318120: Oracle E-Business Suite Architectures: Oracle RAC, Clouds, Oracle VM, and More**
  Time: 12.00 – 13.00
  Venue: Moscone West L2 (RM 2024)

  Time: 13.30 – 14.30
  Venue: Moscone West L2 (RM 2024)
Related Hands on Labs

**Application Management Pack**

- **S318765: Oracle Application Management Pack for Oracle E-Business Suite: Monitor/Clone**
  - Date: Monday (20th September)
  - Time: 17.00 – 18.00
  - Venue: Marriott Marquis Nob Hill C&D

**Application Change Management Pack**

- **S318766: Using Oracle Application Change Management Pack for Oracle E-Business Suite**
  - Date: Tuesday (21st September)
  - Time: 11.00 – 12.00
  - **Repeat** Date: Wednesday (22nd September)
  - Time: 16.45 – 17.45
  - Venue: Marriott Marquis Nob Hill C&D
THE PRECEDEING IS INTENDED TO OUTLINE OUR GENERAL PRODUCT DIRECTION. IT IS INTENDED FOR INFORMATION PURPOSES ONLY, AND MAY NOT BE INCORPORATED INTO ANY CONTRACT. IT IS NOT A COMMITMENT TO DELIVER ANY MATERIAL, CODE, OR FUNCTIONALITY, AND SHOULD NOT BE RELIED UPON IN MAKING PURCHASING DECISION. THE DEVELOPMENT, RELEASE, AND TIMING OF ANY FEATURES OR FUNCTIONALITY DESCRIBED FOR ORACLE’S PRODUCTS REMAINS AT THE SOLE DISCRETION OF ORACLE.
SOFTWARE. HARDWARE. COMPLETE.