WebSphere Application Server PotPourri

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USS process Tag Data

• USS has an API to specify 'tag' data for a process
• WAS Version 8 calls this API in all regions
• Visible with the 'ps' command or 'DISPLAY OMVS,PID='
• Example strings:

WAS: WAS00/NDN1/BBOC001/BBOS001 - CTL-AS - HH110309
WAS: WAS00/WAS00/BBOMGR/BBOMGR - CTL-DM - HH110309
WAS: WAS00/NDN1/BBON001/BBON001 - CTL-NA - HH110309
WAS: WAS00/WAS00/BBOMGR/BBOMGR - SR - HH110309
WAS: WAS00/NDN1/WAS00/ZWASAXXX - DAEMON - HH110309
Form Feed Controls

• JES2 spins output based on SEGMENT
• SEGMENT defined by page count
• Pages delimited by Form Feeds

• WebSphere issues Form Feeds automatically
  • By time
    • ras_stdout_ff_interval
    • ras_stderr_ff_interval
  • Or by volume
    • ras_stdout_ff_line_interval
    • ras_stderr_ff_line_interval

• Or, in Version 8, on command:
  • MODIFY server,FORMFEED
John Hutchinson

- Configuring “stack_products”
- ICH408I error message suppression
- Fixing shell scripts in the wrong code-page (ascii)
The WebSphere Customization Toolkit (WCT) Version 8 consists of a “Profile Management Tool” (PMT) Version 8 and the “Migration Management Tool” (MMT). There are some new features in the PMT V8.0 to enable you to create and augment a WebSphere Application Server cell with multiple Feature Packs and “Stacked Products” with a simplified set of job-streams.

In this example, WebSphere Application Server Version 8 is configured on a Deployment Manager and Managed nodes with a minimum number of panels, and a reduced set of generated customization jobs.
Stacked Jobs example for WASv8 & WCGv8

**Stacked jobs:**
- Create DMgr w/ WCGv8: BBODHFSA & BBOWWPFD
- Create EmptyNode w/ WCGv8: BBOMHFSA & BBOWWPFM
- Federate: BBOWNHAN

**Non-Stacked jobs:**
- Create Deployment Mgr: BBODHFSA & BBOWWPFD
- Create Empty (Managed) Node: BBOMHFSA & BBOWWPFM
- Federate: BBOWNHAN
- Augment DMgr & Empty Node: EJCJAUGM & EJCJAUGN

Notice how the “Augment” jobs for Compute Grid are run separately from the Create jobs.

(In the case of Compute Grid, they can be done before or after federation.)
Deployment Manager Configuration Jobs

– BBOSBRAK – Define RACF Users & Groups
– BBOSBRAM – Create Home Directories
– BBODBRAK – Create RACF Profiles & Permissions
– BBODCPY1 – Copy Proclib members
– BBODCFS – Create zFS
– BBODHFSA – Populate zFS
– BBOWWPFD – Create Profiles
  BPZAUGD – Augment profiles with SCA, SML, SDO & WPS

Custom Node Configuration Jobs

– BBOSBRAK – Define RACF Users & Groups
– BBOSBRAM – Create Home Directories
– BBOMBRAK – Define RACF Profiles
– BBOMCPY1 – Copy Procs
– BBOMCFS – Create zFS
– BBOMHFSA – Populate zFS
– BBOWWPFD – Create Profiles
– BPZAUIGN – Augment with SCA, XML, SDO & WP
– BBOWMNAN – Federate Empty Node
Mount-points for “stack_products”

**WAS V7 & WCG V6.1.1 Product HFSes**

/ shared  /zWebSphere /V7R0  <was7_smpe_install_root>
/zWebSphereXD /V6R1M1  <wcgv6_smpe_install_root>

**WCG V8 Product HFS for use w/ WAS V7**

/ shared  /zWebSphereCG /V8R0  stack_products/WCG  <wcgv8_smpe_install_root>

**WAS V8 with WCG V8 Product HFS (combined)**

/ shared  /zWebSphere /V8R0/

/stack_products/WCG  <was8_smpe_install_root>

**WAS V8 Configuration HFS with WCGv8**

/wasv8config  <or /wasv7config>

/cell

/node  <symlinks_to_was8_smpe>

/AppServer  <cell_home or root>

//stack_products/WCG

With WebSphere Application Server Version 7 and earlier, the Add-On or “Stacked” products such as Compute Grid and Process Server had their own SMPE-maintained HFS, and their own mount points.

The mount points for “stack products” in WAS V8, such as WCG V8, now use a “stack_products” sub-directory and reside in the same SMP/E HFS. (WCGV8 is also supported on WAS V7, so it can be ordered/installed separately in its own HFS.)

For WAS V8 & WCGV8 in the same Configuration file systems use a single symbolic link to point to the SMPE-maintained product files.
ICH408I error message suppression

EJBROLES for Compute Grid: lradmin, lrsubmitter, lrmonitor. If you are in the lradmin EJBROLE, you are not necessarily in lrmonitor EJBROLE even though users in the lradmin role have all the privileges of lrmonitor.

• Users with READ access to lradmin, but not lrmonitor will receive ICH408I error messages if that role is active.

Suppress it by setting the “Suppress authorization failed messages from the z/OS security product” in Global security > External authorization providers > Configure > SAF authorization options

These roles are checked to see what a user can and cannot do and set flags accordingly.

Even though a user in the lradmin role has all the privileges of lrmonitor, the above call to check the lrmonitor role will generate an ICH408I msg.

```java
boolean isAdmin = true;
if (request.isSecure() && !request.isUserInRole("lradmin"))
    isAdmin = false;

boolean isMonitor = true;
if (request.isSecure() && !request.isUserInRole("lrmonitor"))
    isMonitor = false;
```
Fixing shell scripts w/ code page problems

Sometimes shell scripts (or other files) are in the wrong code-page.

- (Maybe they were copied from a non-z/OS environment?)

The Notes page of this foil contains a sample shell script to:

- Search for all .sh files in the designated directory,
- Test to see if they are in the wrong code-page (ascii)
- Converts them to EBCDIC,
- Sets the permission bits to 755.

```
#!/bin/sh
# This shell script will convert all .sh shell scripts in a directory and all
# sub-directories from ascii to ebcDIC.
# THIS TOOL IS PROVIDED "AS IS" WITHOUT ANY SUPPORT OR WARRANTY OF ANY KIND,
# EXPRESS OR IMPLIED. BY USING THESE SCRIPTS YOU EXPRESSLY ACKNOWLEDGE
# AND AGREE THAT THE USE OF THESE SCRIPTS IS AT YOUR SOLE RISK.
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if [[ -z $1 ]]
then
  echo "Usage is fixsh.sh directory_name"
  exit 1
fi
directory=$1
if [[ ! -d $directory ]]
then
  echo "Directory $directory is not valid"
  exit 1
fi
flag="23"
for script in `find $directory -name ".sh"`
do
  echo $script
  od -An -tx1 $script | grep "23" >/dev/null
  if [ $? -ne 0 ]; then
echo "Converting "$script
  iconv -f ISO8859-1 -t IBM-1047 "$script" /tmp/tmp_xlate & &
  cp /tmp/tmp_xlate $script
  chmod 755 $script
else
  echo "Not ASCII: " $script
fi
done
exit 0
```
IBM Product Information Centers

Do you have difficulty finding InfoCenters for various (WebSphere) Products? Here are a couple of suggestions:

1) Keep your own set of Bookmarks in a document on your desktop:

2) Use the “IBM Support Portal” at
   ibm.com/support/entry/portal/Overview

3) Use the “IBM Product Information Center” at
   ibm.com/support/publications/us/library/#software
Mike Loos
Changing MQ_INSTALL_ROOT

- A change to variable MQ_INSTALL_ROOT or
- A change to the path pointed to by it.
  - Causes requirement to start server twice.
- To avoid the second server restart...
  - APAR PK57900 (7.0.0.1)
  - New variable: MQ_CLEAR_MQ_FROM_OSGI_CACHE_ON_SHUTDOWN
  - Set to True.

ERROR DESCRIPTION: (from APAR PK57900)
If an external WebSphere MQ installation pointed to by MQ_INSTALL_ROOT is updated while application servers are stopped, and that update contains a change to the number of Java or native libraries included in the WebSphere MQ JMS client (or the MQ_INSTALL_ROOT itself is changed), application servers may log WMSG1612E or WMSG1614E messages during startup. When an application attempts to lookup a WebSphere MQ JNDI resource it is thrown an exception with message WMSG2002E or WMSG2003E.
A second restart of the application servers is required in order for applications to be able to lookup WebSphere MQ messaging provider JNDI resources and perform messaging.

LOCAL FIX:
Manually run osgiCfgInit between shutdown and startup of the application server.
FRCA Caching from the Control Region

- Two methodologies:
  - By application.
    - Each application sets up a cachespec.xml file and includes it in its WEB-INF directory.
  - Globally.
    - One cachespec.xml file included in the /wasv8config/s8cell/s8nodea/AppServer/profiles/default/properties directory.
    - Set up for the server is the same in either case.
FRCA Caching Server Setup

A single external cache that WebSphere Application Server controls.

Select Address  

Home

Total 0
FRCA Caching Server Setup

Click OK. Save and Synchronize.
FRCA Caching, cachespec.xml

This cache-entry in the cachespec.xml will cache ALL static content in FRCA

<?xml version="1.0" ?>
<!DOCTYPE cache SYSTEM "cachespec.dtd">
<cache>
<!-- Cache Entry for the File Serving Servlet
Will cache all static content in the web application -->
<cache-entry>
<class>static</class>
<name>com.ibm.ws.webcontainer.servlet.SimpleFileServlet.class</name>
<cache-id>
  <component id="" type="pathinfo">
    <required>true</required>
  </component>
  <timeout>300</timeout>
</cache-id>
<property name="ExternalCache">FRCA</property>
</cache-entry>
</cache>

This entry must match the External Cache Group name.
Speaking of FRCA

APAR PM43864

OOM UNDER HEAVY LOAD WITH SERVLET CACHING ENABLED AND FRCA DISABLED

If servlet caching is enabled but FRCA is disabled or misconfigured, the controller region may abend under heavy load with an OOM. An examination of the JVM heap will show many leaked byte arrays which are filled with HTTP response text.

Fix expected in 7.0.0.21 and 8.0.0.2 (January, 2012)
Versions, Dates, and Service Levels...

<table>
<thead>
<tr>
<th>Version</th>
<th>GA</th>
<th>End of Marketing</th>
<th>End of Support</th>
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<tr>
<td>Version 7</td>
<td>9/26/2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version 8</td>
<td>6/17/2011</td>
<td></td>
<td></td>
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</tbody>
</table>

- End of Service announced for V6.1
- GA of Version 8
- Service level naming convention change:
  - V6.1 and V7 – even numbers z/OS only, odd numbers common
  - V8 – all levels are common (no more z/OS only levels)
Wrapup
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<tr>
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<th>Title</th>
<th>Speaker</th>
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<tr>
<td>Wednesday</td>
<td>3:00</td>
<td>9483</td>
<td>Using IBM's New Cross-Platform Installer on z/OS</td>
<td>Mierzejewski</td>
<td>Oceanic 5</td>
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<td>Thursday</td>
<td>8:00</td>
<td>9482</td>
<td>WAS Version 8 – Overview</td>
<td>Follis</td>
<td>Europe 2</td>
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<td>9486</td>
<td>WAS Version 8 – Batch Update</td>
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<td>WAS - Back to Basics Part 1</td>
<td>Loos</td>
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<td>Europe 2</td>
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<td>Friday</td>
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<td>WAS for z/OS - Level 2 Update</td>
<td>Stephen</td>
<td>Europe 2</td>
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<td>Friday</td>
<td>9:30</td>
<td>9487</td>
<td>WAS for z/OS – PotPourri</td>
<td>Follis, Hutchinson, Loos, Mierzejewski, Stephen, etc.</td>
<td>Europe 2</td>
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</table>
Comments? Suggestions?

• Was this a good set of sessions?
• What did you like?
• What did you not like?
• Should we repeat these next time or consolidate?
• Should we keep the 'back to basics' sessions?
• Any sessions you would like to see?
• Any suggestions for the lab?
• Anyone else care to share any WAS on z/OS experiences?

• Any questions about anything?

• Any final suggestions/complaints/comments?

• Anything? Anybody?