WebSphere Application Server PotPourri

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IBM

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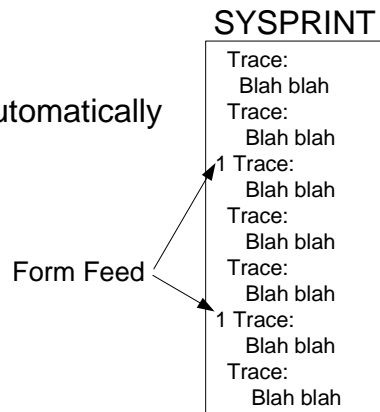
David Follis

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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/BBODMGR/BBODMGR - CTL-DM – HH110309

WAS: WAS00/NDN1/BBON001/BBON001 - CTL-NA – HH110309

WAS: WAS00/WAS00/BBODMGR/BBODMGR - SR – HH110309

WAS: WAS00/NDN1/WAS00/ZWASAXXX - DAEMON - HH110309
```

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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

SYSPRINT

```
Trace:
  Blah blah
Trace:
  Blah blah
1 Trace:
  Blah blah
Trace:
  Blah blah
Trace:
  Blah blah
1 Trace:
  Blah blah
Trace:
  Blah blah
```

Form Feed

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John Hutchinson

- Configuring "stack_products"
- ICH408I error message suppression
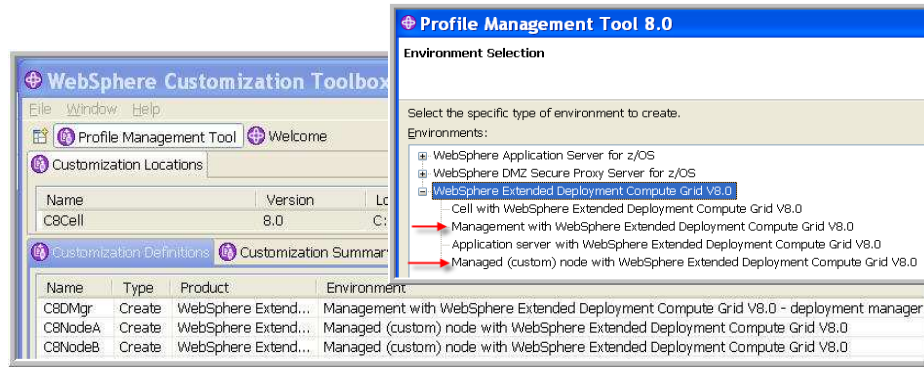- Fixing shell scripts in the wrong code-page (ascii)

"Stack Product" Configuration Example

WebSphere Customization Toolkit (WCT) V8

Profile Management Tool (PMT or z/PMT) V8
Configuring:
- **WebSphere AppServer V 8** with
- **WebSphere Compute Grid V 8**

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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.
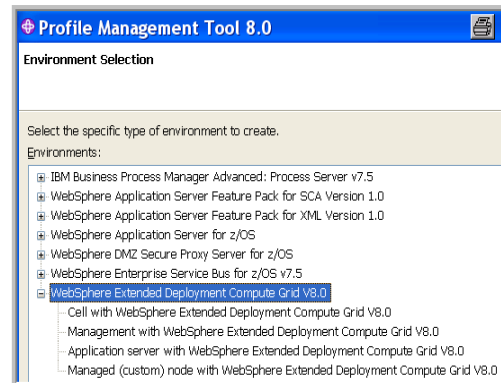
Stacked Jobs example for WASv8 & WCGv8

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Stacked jobs:

• Create DMgr w/ WCGv8:
  BBODHFSA & **BBOWWPFD**

• Create EmptyNode w/ WCGv8:
  BBOMHFSA & **BBOWWPFM**

• Federate: **BBOWMNAN**

Non-Stacked jobs:

• Create Deployment Mgr:
  BBODHFSA & **BBOWWPFD**

• Create Empty (Managed) Node:
  BBOMHFSA & **BBOWWPFM**

• Federate: **BBOWMNAN**

• **Augment DMgr & Empty Node:**
  EJCJAUGM & **EJCJAUGN**

Profile Management Tool 8.0

Environment Selection

Select the specific type of environment to create.

Environments:

⊞ IBM Business Process Manager Advanced: Process Server v7.5
⊞ WebSphere Application Server Feature Pack for SCA Version 1.0
⊞ WebSphere Application Server Feature Pack for XML Version 1.0
⊞ WebSphere Application Server for z/OS
⊞ WebSphere DMZ Secure Proxy Server for z/OS
⊞ WebSphere Enterprise Service Bus for z/OS v7.5
⊟ WebSphere Extended Deployment Compute Grid V8.0
    · Cell with WebSphere Extended Deployment Compute Grid V8.0
    · Management with WebSphere Extended Deployment Compute Grid V8.0
    · Application server with WebSphere Extended Deployment Compute Grid V8.0
    · Managed (custom) node with WebSphere Extended Deployment Compute Grid V8.0

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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.)

WCT V8 Stack Products Example: BPM

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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

– BBOWWPFM – Create Profiles

– BPZAUGN – Augment with SCA, XML, SDO & WP

– BBOWMNAN – Federate Empty Node

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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/   *<was8_smpe_install_root>*
                      /stack_products/WCG

WAS V8 Configuration HFS with WCGv8
/wasv8config   <or /wasv7config>
            /cell
                  /node *<symlinks_to_was8_smpe>*
                        /AppServer *<cell_home or root>*
                        /stack_products
                                  /WCG

Symbolic Links

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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.
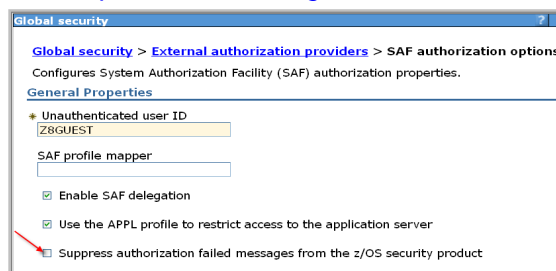
ICH408I error message suppression

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*

Global security

Global security > External authorization providers > SAF authorization options
Configures System Authorization Facility (SAF) authorization properties.
General Properties

✱ Unauthenticated user ID
`Z8GUEST`

SAF profile mapper

☑ Enable SAF delegation

☑ Use the APPL profile to restrict access to the application server

☐ Suppress authorization failed messages from the z/OS security product

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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.

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

boolean isMonitor = true;
if (request.isSecure() && !request.isUserInRole("lrmonitor"))
    isMonitor = false;
```

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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.

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```
#!/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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# OR OTHER CONDITIONS OF ANY KIND WHICH MIGHT ARISE FROM THE USAGE OR THE OUTPUT
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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 [ $? -eq 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
```

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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

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Mike Loos

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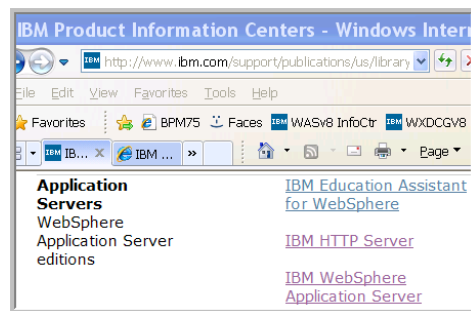
Changing MQ_INSTALL_ROOT

- 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.

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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.

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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.

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FRCA Caching Server Setup

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FRCA Caching Server Setup

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FRCA Caching Server Setup

A single external cache that WebSphere Application Server controls.

Configura...

Click this first...

General Properties

○ Advanced Fast Path Architecture (AFPA)

New port. Could be 0 to use an ephemeral port or you can specify one from within the server's port range.

Adapter bean name

com.ibm.ws.cache.servlet.Afpa

∗ Port

50077

Fast Response Cache Accelerator

☑ Enable fast response cache accelerator

Make sure you check this box.

Cache size

102400000 bytes

Max entry size

1000000 bytes

If you have more than one TCPIP stack, you'll need to specify this...

Stack name

Transaction class

⚠ Disk offload caching not enabled. When fast response cache accelerator is enabled, it is highly recommended you also enable disk caching offload. You can enable it by selecting the 'Enable disk offload' option on the Dynamic cache service panel.

Click OK. Save and Synchronize.

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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.

Mike Stephen

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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...

	GA	End of Marketing	End of Support
Version 6.0	3/25/2005	2/23/2009	9/30/2010
Version 6.1	6/30/2006	7/25/2011	**9/30/2012**
Version 7	9/26/2008		
Version 8	6/17/2011		

- 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

WebSphere Application Server Sessions

Day	Time	#	Title	Speaker	Room
Wednesday	3:00	9483	Using IBM's New Cross-Platform Installer on z/OS	Mierzejewski	Oceanic 5
Thursday	8:00	9482	WAS Version 8 – Overview	Follis	Europe 2
Thursday	9:30	9486	WAS Version 8 – Batch Update	Hutchinson	Europe 2
Thursday	11:00	9485	WAS Version 8 – New z/OS Exploitation/Differentiation Features	Follis	Europe 2
Thursday	1:30	9484	WAS Version 8 – High Availability Enhancements	Follis	Europe 2
Thursday	3:00	9488	WAS - Back to Basics Part 1	Loos	Europe 2
Thursday	4:30	9489	WAS - Back to Basics Part 2	Stephen	Europe 2
Friday	8:00	9490	WAS for z/OS - Level 2 Update	Stephen	Europe 2
Friday	9:30	9487	WAS for z/OS – PotPourri	Follis, Hutchinson, Loos, Mierzejewski, Stephen, etc.	Europe 2

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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?

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