WebSphere Application Server V61 for z/OS Exit Plan

Sridhar Talluri (stalluri@us.ibm.com)
WebSphere Application Server z/OS L2
Sep 13th, 2012
Agenda

- Installation and configuration of IBM Installation Manager for z/OS
- Updating Installation Manager for z/OS
- Installation of WebSphere Application Server for z/OS V8.0.0
- Applying fixpack to the WebSphere Application Server for z/OS V8.0
- Install Installation Manager on local machine
- Install WCT using IM on local machine
- Generate V8 Migration jobs using WCT/zMMT
- Review Migration Instructions
- Perform Manual steps
- Run Migration jobs
- Start server/s on V8
- References
Installation Manager for z/OS

- IBM Installation Manager provides the capability to install and maintain your software packages
- On z/OS, the IBM Installation Manager
  - Runs as a Unix System Services application
  - Can be invoked from the Unix System Services shell or MVS batch jobs
- The IBM Installation Manager allows you to simplify installation and maintenance and achieve faster value through
  - Simplified product installation
  - Update, un-installation with integrated prerequisite and interdependency checking
- The Installation Manager is a single installation program that loads and installs product components from a structured collection of files or repositories
Installation Manager for z/OS

- Installation Manager allows you to determine
  - Available product and maintenance packages
  - Install selected packages after prerequisite and interdependency checking
  - Un-install and roll back previously installed packages

- Use remote or local repositories to install, modify, or update WebSphere Application Server, Version 8.0 products and related components such as: IBM HTTP Server Version 8.0

- IBM Installation Manager for z/OS V1.4
  - Program Number: 5655-W65
  - FMID: HGIN140
  - COMPID: 5698RTLIM
  - Component Name: IBM Installation Manager for z/OS V1.4
Installation Manager for z/OS

- Program Directory for IBM Installation Manager for z/OS
  - This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of IBM Installation Manager for z/OS Version 1.4.3.
  - The below publication refers to IBM Installation Manager for z/OS Version 1.4.3 for z/OS and explains installation procedures.

Installation Manager for z/OS

- IBM Installation Manager for z/OS is available via CBPDO, SystemPac or ServerPac & FixCentral

- The distribution medium for this program is magnetic tape or downloadable files
  - This program is in SMP/E RELFILE format and is installed by using SMP/E.
    - IBM.HGIN140.F1

- Preventive Service Planning
  - The PSP Buckets maintain current lists (which have been identified since the package was created) of any recommended or required service for the installation of this package. This service includes software PSP information that contains HIPER and required PTFs against the base release
Installation Manager for z/OS

- Hardware & Software requirements
  - The driving/target systems can run in any hardware environment that supports the required software

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name</th>
<th>Minimum VRM</th>
<th>Minimum Service Level will satisfy these APARs</th>
<th>Included in this product's shipment?</th>
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<tbody>
<tr>
<td>5694-A01</td>
<td>z/OS</td>
<td>V01.10.00</td>
<td>N/A</td>
<td>No</td>
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<td>5655-G44</td>
<td>IBM SMP/E for z/OS</td>
<td>V03.5</td>
<td>N/A</td>
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<td><strong>ONE of the following:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5655-N98</td>
<td>IBM 31-bit SDK for z/OS, JAVA 2 Technology Edition, Version 5</td>
<td>V05.0</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td><strong>-- OR --</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5655-N99</td>
<td>IBM 64-bit SDK for z/OS, JAVA 2 Technology Edition, Version 5</td>
<td>V05.0</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Program Number</th>
<th>Product Name and Minimum VRM/Service Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5694-A01</td>
<td>z/OS V1.10.00 or higher with APAR OA34228</td>
</tr>
</tbody>
</table>
Installation Manager for z/OS

- Hardware & Software requirements (cont'd)
  - The driving/target systems can run in any hardware environment that supports the required software

<table>
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<th>Library Type</th>
<th>Total Space Required in 3390 Trks</th>
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</tr>
<tr>
<td>Distribution</td>
<td>2525 tracks</td>
</tr>
<tr>
<td>File System</td>
<td>8250 tracks</td>
</tr>
</tbody>
</table>
Installation Manager for z/OS

- After SMP/E install, work with the below to configure Installation Manager
  - *.SGINKIT (HFS)
  - *.SGINJCL (Install jobs)

- Decide whether the Installation Manager will be used by
  - single superuser (uid=0)
  - a single non-superuser
  - number of user IDs connected to a single SAF group

- Run the below jobs in sequence from *.SGINJCL
  
  **GIN2ADMN**
  To create the "owning" user ID and group for the Installation Manager and add the required SAF permissions

  **GIN2CFS**
  To allocate and mount a file system to contain the Installation Manager's binaries, run-time data, and shared data

  **GIN2INST**
  To create the Installation Manager
Installation Manager for z/OS

- Mount the Installation Manager installation kit (SGINKIT) on your z/OS system as R/O
  - The default path is `/usr/lpp/InstallationManager/V1R4/IBM`

```
/installationManager/V1R4>ls
IBM  files  native
   toolkit.unzip.sh
Offerings  groupinstc  plugins  toolkit.zip
            groupinstc.ini  post-install.xml  tools
configuration  install.xml  readme_1.4.3.html  userinstc
consoleinst.sh  installc  repository.config  userinstc.ini
documentation  installc.ini  repository.xml
features  jre_6.0.0.20100720  set-ext-attr.sh
/installationManager/V1R4/Offerings>ls
com.ibm.cic.agent_1.4.3000.20110303_1846.jar  toc.xml
com.ibm.cic.agent_1.4.3000.20110303_1846_SE.jar
```
Installation Manager for z/OS

GIN2ADMN

- This job creates a SAF group and user ID for an Installation Manager
- The following SAF profiles must already exist before this job is run
  - Class: FACILITY
    - Profiles
      - BPX.FILEATTR.APF
      - BPX.FILEATTR.PROGCTL
      - BPX.FILEATTR.SHARELIB
  - Class: UNIXPRIV
    - Profiles
      - SUPERUSER.FILESYS.CHOWN
      - SUPERUSER.FILESYS.CHANGEPERMS
- The job must run under a user ID with RACF Special authority
Installation Manager for z/OS

- Copy this job to a separate data set to make changes respective to your system
  - Add the job parameters to meet your system requirements
  - Change 'gid' to an unused SAF numeric group ID
  - Change 'uid' to an unused SAF numeric user ID
  - Change '/u/imadmin' to an appropriate home directory path for the InstallationManager user ID. This directory must be read/write

- Submit the job
  - Examine the output for any error messages. When the job has run successfully, issue the below RACF command to set the password for the Installation Manager user ID
    - ALTUSER IMADMIN PASSWORD(password) NOEXPIRE
Installation Manager for z/OS

//RACF EXEC PGM=IKJEFT01,DYNAMNBR=20,REGION=0M
//SYSTSPRT DD SYSOUT=* 
//SYSTSIN DD * 
ADDGROUP IMGROUP OMVS(GID(500))
ADDUSER IMADMIN DFLTGRP(IMGROUP) OMVS(UID(501) HOME('/u/imadmin') +
    PROGRAM('/bin/sh')) NOPASSWORD
PERMIT BPX.FILEATTR.APF CL(FACILITY) ID(IMADMIN) ACCESS(READ)
PERMIT BPX.FILEATTR.PROGCTL CL(FACILITY) ID(IMADMIN) ACCESS(READ)
PERMIT BPX.FILEATTR.SHARELIB CL(FACILITY) ID(IMADMIN) ACCESS(READ)
PERMIT SUPERUSER.FILESYS.CHOWN CL(UNIXPRIV) +
    ID(IMADMIN) ACCESS(READ)
PERMIT SUPERUSER.FILESYS.CHANGEPERMS CL(UNIXPRIV) +
    ID(IMADMIN) ACCESS(READ)
SETR RACLIST(FACILITY) REFRESH
SETR RACLIST(UNIXPRIV) REFRESH
/

To allow another user ID to invoke the Installation Manager instance, connect it to the group ID for the instance

> CONNECT another_userid GROUP(IMGROUP)

> These user IDs must be given the same permissions granted above to the default Installation Manager user ID
Installation Manager for z/OS

- Found out that the below CLASS and PROFILES were NOT setup on the system, reviewing the GIN1ADMN job output

  PERMIT SUPERUSER.FILESYS.CHOWN CL(UNIXPRIV) ID(IMADMIN) ACCESS(READ)
  ICH06004I SUPERUSER.FILESYS.CHOWN NOT DEFINED TO RACF
  READY
  PERMIT SUPERUSER.FILESYS.CHANGEPERMS CL(UNIXPRIV) ID(IMADMIN) ACCESS(READ)
  ICH06004I SUPERUSER.FILESYS.CHANGEPERMS NOT DEFINED TO RACF
  READY
  SETR RACLIST(UNIXPRIV) REFRESH
  ICH14041I RACLIST REFRESH of class UNIXPRIV ignored. The class is not active yet.

- Had to issue the below RACF commands to DEFINE the above { TSO userid needs RACF SPECIAL & UID=0 }

  RDEFINE UNIXPRIV SUPERUSER.FILESYS.CHOWN UACC(NONE)
  RDEFINE UNIXPRIV SUPERUSER.FILESYS.CHANGEPERMS UACC(NONE)
  SETR RACLIST(UNIXPRIV) REFRESH
  PERMIT SUPERUSER.FILESYS.CHANGEPERMS CL(UNIXPRIV) ID(IMADMIN) ACCESS(READ)
  PERMIT SUPERUSER.FILESYS.CHOWN CL(UNIXPRIV) ID(IMADMIN) ACCESS(READ)
  SETR RACLIST(UNIXPRIV) REFRESH
Installation Manager for z/OS

GIN2CFS

- This job allocates and mounts an HFS or zFS filesystem for an Installation Manager
- This filesystem should be owned by an Installation Manager user ID and group such as those created with the GIN2ADMN job
- This job creates a single filesystem large enough to hold all binaries and data for a single Installation Manager
- This job must be run under a userid with UID=0, or which has READ access to the FACILITY profile BPX.SUPERUSER
- The default mountpoint for the filesystem is /InstallationManager, which corresponds to the default Installation Manager values for:
  - installationDirectory (Installation Manager binaries)
    /InstallationManager/bin
  - dataLocation (Installation Manager agent data)
    /InstallationManager/appdata
  - sharedResourcesDirectory (Installation Manager shared data and cache)
    /InstallationManager/sharedResources
Installation Manager for z/OS

The following step allocates a filesystem for an Installation Manager.

CREATE EXEC PGM=IKJEFT01,REGION=0M
SYSTSPRT DD SYSOUT=*  
BPXOUT DD SYSOUT=*  
STDOUT DD SYSOUT=*  
SYSTSIN DD *

BPXBATCH SH +   
/usr/lpp/InstallationManager/V1R4/tools/zCreateFileSystem.sh +
   -name prefix.GINHFS + (IBMUSER.BOSS.IM14.GINHFS)  
   -type HFS +  
   -volume hhhhh + (CBUS0A)  
   -cylinders 2500 250 +  
   -mountpoint /InstallationManager +  
   -owner IMADMIN +  
   -group IMGROUP +  

READY
END
CWLCS9004I Allocating file system data set IBMUSER.BOSS.IM14.GINHFS.
ALLOCATE DSNAME('IBMUSER.BOSS.IM14.GINHFS') DSORG(PO) RECFM(U) DSNTYPE(HFS) NEW SPACE(2500,250) CYLINDERS
VOLUME(CBUS0A) CATALOG
CWLCS9005I File system data set IBMUSER.BOSS.IM14.GINHFS successfully allocated.
CWLCS9012I Creating mount point directory /InstallationManager.
CWLCS9013I Mount point directory /InstallationManager successfully created.
CWLCS9006I Mounting data set IBMUSER.BOSS.IM14.GINHFS at mount point /InstallationManager.
CWLCS9007I IBMUSER.BOSS.IM14.GINHFS successfully mounted at mount point /InstallationManager.
CWLCS9017I Setting owner and group for directory /InstallationManager.
CWLCS9018I Owner and group successfully set for directory /InstallationManager.
CWLCS9019I Setting permissions for directory /InstallationManager.
CWLCS9020I Permissions successfully set for directory /InstallationManager.
Installation Manager for z/OS

GIN2INST

- This job creates an Installation Manager
- Before running this job, create a SAF group and user ID for the Installation Manager instance (sample job GIN2ADMN), and create a filesystem for the Installation Manager binaries and run-time data (sample job GIN2CFS)
- This job must be run under the user ID that will own the Installation Manager
- Submit the job, and examine the output to make sure that the creation of the Installation Manager instance was successful
- Logs for the Installation Manager creation can be found in the logs subdirectory of the Installation Manager run-time data:
  /InstallationManager/appdata/logs
- If the installation fails, correct the problem that caused the failure, and clear the Installation Manager binaries and appdata directories before re-running this job
  rm -R /InstallationManager/*
Installation Manager for z/OS

```
/* The following step creates an Installation Manager. */
//BUILDIM EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=* 
//BPXOUT DD SYSOUT=* 
//STDOUT DD SYSOUT=* 
//SYSTSIN DD *
BPXBATCH SH +
   /usr/lpp/InstallationManager/V1R4/installc +
      -installationDirectory /InstallationManager/bin +
      -dataLocation /InstallationManager/appdata +
      -acceptLicense
/*

- GIN2INST job output had the below but the IM installation appeared to have been successful

BPXBATCH SH /IM14REP/usr/lpp/InstallationManager/V1R4/installc -installationDirectory
/InstallationManager/bin
-dataLocation /InstallationManager/appdata -acceptLicense
READY
END

An exception occurred while writing to the platform log:
java.io.IOException: EDC5133I No space left on device.
at java.io.FileOutputStream.write(FileOutputStream.java:266)
```
Installation Manager for z/OS

- Found out that the Install process (GIN2INST) writes out to the below dirpath on the root HFS
  - `.eclipse/550169153/configuration`
- For future runs of GIN2INST, made sure I cleared the dirpath
  - `rm -r /.eclipse/*`
- After the jobs execution, checking the installed IM
  - `/InstallationManager/bin/eclipse/tools`
    - `# imcl -version`
      - Version 1.4.3
      - Internal Version 1.4.3000.20110303_
Installation Manager for z/OS

- Updating an Installation Manager kit
  - The IBM Installation Manager installation kit is updated through normal service processes
  - Applying PTFs or APAR fixes for FMID HGIN140, updates the installation kit, but results in no changes to any Installation Managers that have already been created

- To update an Installation Manager
  - Mount the IBM Installation Manager installation kit at the desired level. This file system should be mounted read-only
  - Re-run *.SGINJCL(GIN2INST)
    - This will update the Installation Manager's binaries to the new level.
    - Issue the imcl -version command to verify that the Installation Manager has been updated
Installation Manager for z/OS

https://www.ibm.com/support/docview.wss?uid=swg24029226#install

IBM Installation Manager, Version 1.4.4

Downloadable files

Abstract
This document describes how to download and install IBM® Installation Manager, Version 1.4.4.

Download Description

Installation Manager versions are released as both fix packs and installer packages. Use the installer packages when you are installing Installation Manager for the first time. Use the fix pack or the installer packages when you are updating Installation Manager.

Installation and Update Files:

<table>
<thead>
<tr>
<th>Package</th>
<th>File Name</th>
<th>Action</th>
<th>Operating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installer</td>
<td>agentinstaller.platform.zip</td>
<td>Install or update Installation Manager</td>
<td>The zip file is specific to a platform. In the file name, platform indicates the operating system.</td>
</tr>
<tr>
<td>Fix Pack</td>
<td>com.ibm.cic.agent.offering_version.zip</td>
<td>Update Installation Manager</td>
<td>All supported platforms. In the file name, version indicates the version of Installation Manager.</td>
</tr>
</tbody>
</table>

With the installer package, you can install Installation Manager by running the install command.

The fix pack package is significantly larger than the platform specific installer packages. You can add the fix pack as a repository to update Installation Manager. You cannot install Installation Manager with the fix pack.
Installation Manager for z/OS

http://www.ibm.com/support/fixcentral/options

Fix Central

Fix Central provides fixes and updates for your system's software, hardware, and operating system.

For additional information, click on the following link.

Getting started with Fix Central
Installation Manager for z/OS
Installation Manager for z/OS

Select fixes
Rational, IBM Installation Manager (All releases, z/OS)

Download options
- Download method: HTTP
- Include requisites: Yes

Select fixes
The following results match your request. Select the fixes you want to download.
- To try a different query, go to the Identify fixes page.

1-12 of 12 results

1. refresh pack: 1.5.3.0-Rational-IBMIM.ZOS.20120531_1954 ➔ IBM Installation Manager 1.5.3 Install Kit for z/OS
   Jun 14, 2012

2. refresh pack: 1.5.3.0-Rational-IBMIM.Multiplatform_Update-20120531_1954 ➔ IBM Installation Manager 1.5.3
   Jun 14, 2012

3. refresh pack: 1.5.2.0-Rational-IBMIM.ZOS.20120223_0907 ➔ IBM Installation Manager 1.5.2 Install Kit for z/OS
   Mar 15, 2012

4. refresh pack: 1.5.2.0-Rational-IBMIM.Multiplatform_Update-20120223_0907 ➔ IBM Installation Manager 1.5.2
   Mar 15, 2012

5. refresh pack: 1.5.4.0-Rational-IBMIM.ZOS.20111128_0824 ➔ IBM Installation Manager 1.5.1 Install Kit for z/OS
   Dec 9, 2011

6. refresh pack: 1.5.1.0-Rational-IBMIM.Multiplatform_Update-20111128_0824 ➔ IBM Installation Manager 1.5.1
   Dec 8, 2011

7. refresh pack: 1.5.0.0-Rational-IBMIM.ZOS.20110909_1200 ➔ IBM Installation Manager 1.5.0
   Sep 23, 2011

8. refresh pack: 1.5.0.0-Rational-IBMIM.Multiplatform_Update-20110909_1200 ➔ IBM Installation Manager 1.5.0
   Sep 22, 2011

9. refresh pack: 1.4.4.0-Rational-IBMIM.ZOS.20110525_1264 ➔ IBM Installation Manager 1.4.4 Install Kit for z/OS
   Jun 3, 2011

10. refresh pack: 1.4.4.0-Rational-IBMIM.Multiplatform_Update-20110525_1264 ➔ IBM Installation Manager 1.4.4
    Jun 3, 2011

11. refresh pack: 1.4.3.0-Rational-IBMIM.ZOS.20110303_1846 ➔ IBM Installation Manager 1.4.3 Install Kit for z/OS
    Mar 18, 2011

12. refresh pack: 1.4.3.0-Rational-IBMIM.Multiplatform_Update-20110303_1846 ➔ IBM Installation Manager 1.4.3
    Mar 18, 2011

1-12 of 12 results
Results per page: 10 | All

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Download files using HTTP
Rational, IBM Installation Manager (All releases, z/OS)

Download files using your web browser
Click the download link next to each file to download it.
Order number: 85468326
Total size: 805.7 MB
refresh pack: 1.5.3.0.Rational-IBMIM-Multiplatform-Update-20120531_1954
IBM Installation Manager 1.5.3
The following files implement this fix:
com.ibm.ce.agent.offering_1.5.3000.20120531_1954.zip (805.7 MB)

View terms and conditions

Terms and conditions for fixes:
1.5.3.0.Rational-IBMIM-Multiplatform-Update-20120531_1954
IBM Installation Manager 1.5.3

Agree to terms and conditions
By clicking I agree you agree that you have had the opportunity to review the terms and conditions and that such terms and conditions govern this transaction. If you disagree, click Back and you will be returned to the previous page.

I agree
I decline
Installation Manager for z/OS

Download options
Rational, IBM Installation Manager (All releases, z/OS)

Select download options
Select the download method to be used to download fixes.

- Download using Download Director (requires Java enabled browser)
  - What is this?
- Download using bulk FTP
  - What is this?
- Download using your browser (HTTP)

 CAUTION: Do not assume that Fix Central will show you all the prerequisites you need. Be sure to always click the More information link for additional prerequisite and other important fix information. Click here for an explanation of what prerequisites you can expect Fix Central to provide.

- Include prerequisites and co-requisite fixes (you can de-select the ones you do not need later)

Continue  Back
**Installation Manager for z/OS**

- Use `*.SGINJCL(GIN3CFS)` to create a HFS (repository) to download the IM fix packs or installer packages to the Target system.

```bash
//CREATE EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=*  
//BXPXOUT DD SYSOUT=*   
//STDOUT DD SYSOUT=*       
//SYSTSIN DD *            
BPXBATCH SH + 
   /usr/lpp/InstallationManager/V1R4/tools/zCreateFileSystem.sh + 
      -name target.dsn + (IBMUSER.Boss.IMREP) 
      -type HFS + 
      -volume hhhhh + (CBUS0A) 
      -cylinders 2200 220 + 
      -mountpoint target.path + (/IMREP) 
      -owner IMADMIN + 
      -group IMGROUP + 
/* 
CWLCS9006I Mounting data set IBMUSER.Boss.IMREP at mount point /IMREP. 
CWLCS9007I IBMUSER.Boss.IMREP successfully mounted at mount point /IMREP. 
CWLCS9017I Setting owner and group for directory /IMREP. 
CWLCS9018I Owner and group successfully set for directory /IMREP. 
CWLCS9019I Setting permissions for directory /IMREP. 
CWLCS9020I Permissions successfully set for directory /IMREP. 
```
Installation Manager for z/OS

- Copy the IM153 fixpack to the above created repository

/IMREPFP:> ls -lart
  drwxr-xr-x  19 IBMUSER  OMVS  1248 Jun 18 11:34 ..
drwxrwxr-x   2 IMADMIN  IMGROUP 8192 Jun 18 11:37 .
-rw-r-----   1 IMADMIN  IMGROUP 844842011 Jun 18 13:31 com.ibm.cic.agent.offering_1.5.3000.20120531_1954.zip

/InstallationManager/bin/eclipse/tools:> imcl listAvailablePackages -repositories
/IMREPFP/com.ibm.cic.agent.offering_1.5.3000.20120531_1954.zip
com.ibm.cic.agent_1.5.3000.20120531_1954

- Unzip the IM153 fixpack in the repository

/IMREPFP:> #unzip com.ibm.cic.agent.offering_1.5.3000.20120531_1954.zip
/IMREPFP:> #ls
  Offerings plugins
  atoc repository.config
  repository.xml
  com.ibm.cic.agent.offering_1.5.3000.20120531_1954.zip
  com.ibm.cic.agent_1.5.3000.20120531_1954_SE.jar

/IMREPFP/Offerings:> ls
  com.ibm.cic.agent_1.5.3000.20120531_1954.jar
toc.xml
  com.ibm.cic.agent_1.5.3000.20120531_1954_SE.jar
Installation Manager for z/OS

- Run *.SGINJCL(GIN3INST) to update the existing Installation Manager 1.4.3 to the latest 1.5.3

bppbatch sh +
/InstallationManager/bin/eclipse/tools/imcl +
    install com.ibm.cic.agent +
    -installationDirectory /InstallationManager/bin +
    -sharedResourcesDirectory /InstallationManager/sharedResources +
    -repositories /IMREPPF/repository.config +
    -acceptLicense

- Verify Installation Manager version

/installationManager/bin/eclipse/tools:>imcl -version
Installation Managor (installed)
Version: 1.5.3
Internal Version: 1.5.3000.20120531_1954
/installationManager/bin/eclipse/tools:>imcl listInstalledPackages
com.ibm.cic.agent_1.5.3000.20120531_1954
Installation of WebSphere Application Server for z/OS V8.0.0

- Program Directory for WebSphere Application Server for z/OS V8.0.0
  - This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of WebSphere Application Server for z/OS V8.0.
  - This publication refers to WebSphere Application Server for z/OS V8.0 and explains installation procedures

- WebSphere Application Server for z/OS is distributed via CBPDO, SystemPac or ServerPac

- The distribution medium for this program is magnetic tape or downloadable files
Installation of WebSphere Application Server for z/OS V8.0.0

- The distribution medium for this program is magnetic tape or downloadable files.
  - This program is in SMP/E RELFILE format and is installed by using SMP/E
    - IBM.HBBO800.F1

- Preventive Service Planning
  - The PSP Buckets maintain current lists (which have been identified since the package was created) of any recommended or required service for the installation of this package. This service includes software PSP information that contains HIPER and required PTFs against the base release

- WebSphere Application Server for z/OS V8.0
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  - FMID: HBBO800
  - COMPID: 5655I3500
  - Component Name: WebSphere Application Server for z/OS V8.0
Installation of WebSphere Application Server for z/OS V8.0.0

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  - The driving/target systems can run in any hardware environment that supports the required software

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<th>Minimum Service Level will satisfy these APARs</th>
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<td>z/OS</td>
<td>V01.10.00</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>APAR OA34228 must be applied to the z/OS driving system</td>
<td></td>
</tr>
<tr>
<td>5655-G44</td>
<td>IBM SMP/E for z/OS</td>
<td>V03.5</td>
<td>N/A</td>
<td>No</td>
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<tr>
<td></td>
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<td>Any one of the following:</td>
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<td>5655-N98</td>
<td>IBM 31-bit SDK for z/OS, JAVA 2 Technology Edition, Version 5</td>
<td>V05.0</td>
<td>N/A</td>
<td>No</td>
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<td>-- OR --</td>
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<tr>
<td>5655-N99</td>
<td>IBM 64-bit SDK for z/OS, JAVA 2 Technology Edition, V5</td>
<td>V05.0</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>
### Hardware & Software requirements

- The driving/target systems can run in any hardware environment that supports the required software.

#### Table: Target System Mandatory Installation Requisites

<table>
<thead>
<tr>
<th>Program Number</th>
<th>Product Name</th>
<th>Minimum VRM</th>
<th>Minimum Service Level will satisfy these APARs</th>
<th>Included in this product's shipment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>5694-A01</td>
<td>z/OS</td>
<td>V01.10.00</td>
<td>N/A</td>
<td>No</td>
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<tr>
<td>APAR OA34228</td>
<td>must be applied to the z/OS target system</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5655-G44</td>
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<td>V03.5.0</td>
<td>N/A</td>
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<tr>
<td>5655-W65</td>
<td>IBM Installation Manager or above</td>
<td>V1.4</td>
<td>N/A</td>
<td>No</td>
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Any one of the following:

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<th>Minimum VRM</th>
<th>Minimum Service Level will satisfy these APARs</th>
<th>Included in this product's shipment?</th>
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<tbody>
<tr>
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<td>V05.0.0</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>

-- OR --

<table>
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<th>Program Number</th>
<th>Product Name</th>
<th>Minimum VRM</th>
<th>Minimum Service Level will satisfy these APARs</th>
<th>Included in this product's shipment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>5655-N99</td>
<td>IBM 64-bit SDK for z/OS, JAVA 2 Technology Edition, V5</td>
<td>V05.0.0</td>
<td>N/A</td>
<td>No</td>
</tr>
</tbody>
</table>
Installation of WebSphere Application Server for z/OS V8.0.0

5.2.3 DASD Storage Requirements

WebSphere Application Server for z/OS V8.0 libraries can reside on all supported DASD types.

Figure 11 lists the total space that is required for each type of library.

---

<table>
<thead>
<tr>
<th>Product</th>
<th>Library Type</th>
<th>Total Space Required (3390 Trks)</th>
<th>File System Requirements</th>
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<tr>
<td>WebSphere Application Server base HBBO800</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Target</td>
<td>20</td>
<td></td>
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<td>Distribution</td>
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<tr>
<td>File Systems</td>
<td>45000</td>
<td></td>
<td>Installation Manager repository</td>
</tr>
<tr>
<td></td>
<td>52000</td>
<td></td>
<td>For each copy of base WebSphere Application Server for z/OS code</td>
</tr>
</tbody>
</table>
Installation of WebSphere Application Server for z/OS V8.0.0

- WebSphere Application Server for z/OS V8.0 base is installed using
  - IBM Installation Manager
  - Repository containing the WebSphere Application Server for z/OS product code. You must first create an Installation Manager on your z/OS system

- After SMP/E install, work with the below to configure WebSphere Application Server for z/OS
  - *.SBBOIMR
    - SBBOIMR file system now contains the repository files for the WebSphere Application Server for z/OS product
  - *.SBBOJCL
    - Sample jobs to install and configure WebSphere Application Server for z/OS
Installation of WebSphere Application Server for z/OS V8.0.0

- Mount the WebSphere Application Server for z/OS on your z/OS system repository files as R/O
  - default path /usr/lpp/InstallationManagerRepository/HBBO800/
- Create a file system to install the WebSphere Application Server for z/OS V8.0 base product
  - Edit and submit sample job BBO1CFS to allocate and mount a file system for the WebSphere Application Server for z/OS base product code
- Install the WebSphere Application Server for z/OS V8.0 base
  - Edit and submit sample job BBO1INST to install the WebSphere Application Server for z/OS
Installation of WebSphere Application Server for z/OS V8.0.0

**.*.SBBOJCL(BBO1CFS)**

```
*** The following step allocates a new file system for the WebSphere Application Server V8 base product. ***

CREATE EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=* 
//BPXOUT DD SYSOUT=* 
//STDOUT DD SYSOUT=* 
//SYSTSIN DD *
BPXBATCH SH + /InstallationManager/bin/eclipse/tools/zCreateFileSystem.sh + -name IBMUSER.BOSS.V8R0.SBBOHFS + -type HFS + -volume CBUS0A + -cylinders 3360 336 + -mountpoint /webV80IM/usr/lpp/zWebSphere/V8R0 + -owner IMADMIN + -group IMGROUP

/* CWLCS9004I Allocating file system data set IBMUSER.BOSS.V8R0.SBBOHFS. 
ALLOCATE DSNAMES('IBMUSER.BOSS.V8R0.SBBOHFS') DSORG(PO) RECFM(U) DSNTYPE(HFS) NEW SPACE(3360,336) CYLINDERS VOLUME(CBUS0A) CATALOG 
CWLCS9005I File system data set IBMUSER.BOSS.V8R0.SBBOHFS successfully allocated. 
CWLCS9012I Creating mount point directory /webV80IM/usr/lpp/zWebSphere/V8R0. 
CWLCS9013I Mount point directory /webV80IM/usr/lpp/zWebSphere/V8R0 successfully created. 
CWLCS9006I Mounting data set IBMUSER.BOSS.V8R0.SBBOHFS at mount point /webV80IM/usr/lpp/zWebSphere/V8R0. 
CWLCS9007I IBMUSER.BOSS.V8R0.SBBOHFS successfully mounted at mount point /webV80IM/usr/lpp/zWebSphere/V8R0. 
CWLCS9017I Setting owner and group for directory /webV80IM. 
CWLCS9018I Owner and group successfully set for directory /webV80IM. 
CWLCS9019I Setting permissions for directory /webV80IM. 
CWLCS9020I Permissions successfully set for directory /webV80IM. 
```

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**Installation of WebSphere Application Server for z/OS V8.0.0**

- **.*SBBOJCL(BBO1INST)**

```bash
//**************************************************************************
//*   The following step invokes IBM Installation Manager to                 *
//*   install the WebSphere Application Server V8 base product.             *
**************************************************************************

//INSTALL  EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD  SYSOUT=*  
//BPXOUT   DD  SYSOUT=*  
//STDOUT   DD  SYSOUT=*  
//SYSTSIN  DD  *

BPXBATCH SH +
/InstallationManager/bin/eclipse/tools/imcl +
   install com.ibm.websphere.zOS.v80 +
   -installationDirectory /webV80IM/usr/lpp/zWebSphere/V8R0 +
   -sharedResourcesDirectory /InstallationManager/sharedResources +
   -repositories /WAS80REP/InstallationManagerRepository/BBBO800 +
   -preferences com.ibm.cic.common.core.preferences.preserveDownloaded +
      artifacts=false +
   -acceptLicense

/*
Installed com.ibm.websphere.zOS.v80_8.0.0.20110503_0249 to the
/webV80IM/usr/lpp/zWebSphere/V8R0 directory.
*/
```
Installation of WebSphere Application Server for z/OS V8.0.0

- Check the zWAS800 runtime HFS structure

/webV80IM/usr/lpp/zWebSphere/V8R0:>
ls

Scheduler     dev     java     optionalLibraries
runtimes      util     java64    plugins
UDDIReg       endorsed_apis java64    plugins
sar2war_tool  web      etc      pmi_preprocess.xml
bin           etc      lafiles  preprocess.jar
scriptLibraries zOS-config
configuration  features  lib      preprocess.jar
systemApps    zOS-config
deploytool    installableApps  links  profileTemplates  tivoli
              installedConnectors  logs  properties
universalDriver

- Check installed products via Installation Manager

/InstallationManager/bin/eclipse/tools/:>imcl listInstalledPackages
com.ibm.cic.agent_1.5.3000.20120531_1954
com.ibm.websphere.zOS.v80_8.0.0.20110503_0249
Applying fixpack to the WebSphere Application Server for z/OS V8.0

- Check for the latest zWAS800 fixpack and download
Applying fixpack to the WebSphere Application Server for z/OS V8.0

Select fixes

WebSphere, WebSphere Application Server (8.0.0.0, z/OS)

Select fixes

The following results match your request. Select the fixes you want to download.

• To try a different query, go to the Identify fixes page.

1. interim fix: 8.0.0.0-WS-WASJavaSDK-OS390-IFPM63541
   8.0.0.0-WS-WASJavaSDK-OS390-IFPM63541
   More Information

2. fix pack: 8.0.0-WS-WAS-OS390-FP0000003
   IBM WebSphere Application Server Fix Pack 8.0.0.3 for z/OS platform.
   View cross product recommendations for this fix
   More Information

3. fix pack: 8.0.0-WS-PLG-OS390-FP0000003
   Web Server Plug-ins Fix Pack 8.0.0.3 for z/OS platform.
   View cross product recommendations for this fix
   More Information

4. fix pack: 8.0.0-WS-IHS-OS390-FP0000003
   IBM HTTP Server Fix Pack 8.0.0.3 for z/OS platform.
   View cross product recommendations for this fix
   More Information

5. fix pack: 8.0.0-WS-WAS-OS390-FP0000002
   IBM WebSphere Application Server Fix Pack 8.0.0.2 for z/OS platform
   View cross product recommendations for this fix
   More Information
Applying fixpack to the WebSphere Application Server for z/OS V8.0

- Use *.SGINJCL(GIN3CFS) to create a HFS (repository) to download the zWAS800 fixpack

```
//CREATE   EXEC PGM=IKJEFT01,REGION=0M
//SYSTSPRT DD SYSOUT=*  
//BPXOUT   DD SYSOUT=*  
//STDOUT   DD SYSOUT=*  
//SYSTSIN  DD *  
BPXBATCH SH +  
/usr/lpp/InstallationManager/V1R4/tools/zCreateFileSystem.sh  +  
   -name target.dsn  +  
(IBMUSER.BOSS.WAS80REP)  
   -type HFS  +  
   -volume hhhhhh  +  (CBUS0A)  
   -cylinders 3500 10  +  
   -mountpoint target.path  +  (/WAS80FP)  
   -owner IMADMIN  +  
   -group IMGROUP  +  
/*  
CWLCS9004I Allocating file system data set IBMUSER.BOSS.WAS80REP.  
ALLOCATE DSNAME('IBMUSER.BOSS.WAS80REP') DSORG(PO) RECFM(U) DSNTYPE(HFS) NEW SPACE(3500,10) CYLINDERS VOLUME(CBUS0A) CATALOG  
CWLCS9005I File system data set IBMUSER.BOSS.WAS80REP successfully allocated.  
CWLCS9012I Creating mount point directory /WAS80FP.  
CWLCS9013I Mount point directory /WAS80FP successfully created.  
CWLCS9006I Mounting data set IBMUSER.BOSS.WAS80REP at mount point /WAS80FP.  
CWLCS9007I IBMUSER.BOSS.WAS80REP successfully mounted at mount point /WAS80FP.  
CWLCS9017I Setting owner and group for directory /WAS80FP.  
CWLCS9018I Owner and group successfully set for directory /WAS80FP.  
CWLCS9019I Setting permissions for directory /WAS80FP.  
CWLCS9020I Permissions successfully set for directory /WAS80FP.  
```
Applying fixpack to the WebSphere Application Server for z/OS V8.0

- Copy the zWAS800 FP3 to the above created HFS (repository)

```
/WAS80FP:> ls -lart
drwxr-xr-x  20 IBMUSER OMVS 1280 Jun 18 16:13 ..
drwxrwxr-x   2 IMADMIN EMPLOYEE 8192 Jun 18 16:16 .
-rwxr-xr-x   1 IMADMIN IMGROUP 1406028642 Jun 18 19:25 8.0.0-WS-WAS-OS390-FP0000003.zip

/InstallationManager/bin/eclipse/tools:> imcl listAvailablePackages
-repositories /WAS80FP/8.0.0-WS-WAS-OS390-FP0000003.zip
com.ibm.websphere.NDDMZ.zOS.v80_8.0.3.20120320_0544
com.ibm.websphere.zOS.v80_8.0.3.20120320_0544
```
Applying fixpack to the WebSphere Application Server for z/OS V8.0

- Use *.SGINJCL(GIN3INST) to install zWAS800 FP3

```csh
//*   The following step invokes the IBM Installation Manager command line tool to install a software product.*

INSTALL EXEC PGM=IKJEFT01,REGION=0M
SYSTSPRT DD SYSOUT=* 
BPXOUT DD SYSOUT=* 
STDOUT DD SYSOUT=* 
SYSTSIN DD *
BPXBATCH SH +
 /InstallationManager/bin/eclipse/tools/imcl +
   install package.id +
 (com.ibm.websphere.zOS.v80) +
   -installationDirectory target.path +
 (webV80IM/usr/lpp/zWebSphere/V8R0) +
   -sharedResourcesDirectory /InstallationManager/sharedResources +
   -repositories repository.url +
 (WAS80FP/8.0.0-WS-WAS-OS390-FP0000003.zip) +
   -acceptLicense
/
```

- Check the installed packages on the system

```
/InstallationManager/bin/eclipse/tools:/imcl listInstalledPackages
com.ibm.cic.agent_1.5.3000.20120531_1954
com.ibm.websphere.zOS.v80_8.0.3.20120320_0544
```
Migration from zWAS61 to zWAS80

- Overall Process
  - Install the SMP/E code for WebSphere Application Server for z/OS Version 8.0
  - Migration involves creating a V8 profile and copying of your configuration from a previous release of a WebSphere® Application Server into a new release
  - Install Installation Manager on local machine
  - Install and use the WebSphere Customization Toolbox using Installation Manager on local machine
  - Use the 'z/OS Migration Management Tool' or the 'zmmt' command migration utilities that you need to perform the migration.
    - z/OS® Migration Management Tool
    - zmmt command
  - Review Migration Instructions
  - Perform Manual steps
  - Run the jobs generated by the above tools
  - A new Version 8.0 configuration is created separate from your existing Version 6.1.x configuration that is based on the Version 6.1.x configuration information
  - Start server/s on V8
Pre-migration considerations

- Migration support requires that both the source and target WebSphere Application Server systems be on the LPAR.
- Migrating cells that span Sysplex environments or operating systems should not present any unique migration issues.
- WebSphere Application Server on the z/OS does not support the below command-line tools:
  - WASPreUpgrade
  - WASPostUpgrade
  - Manageprofiles
- The amount of storage that your system requires during migration to Version 8.0 depends on your environment that is being migrated:
  - Primary/secondary cyls defined by the migration jobs for the target file systems
  - /tmp - typically 1.5 times of the config file system.
Pre-migration considerations

- Mixed version cell
  - DMGR migrated to V8.0 can manage a 7.x or V6.x node as back as to V6.0.2.12

- If a pre V6.1.x server will be interacting with a Version 8.0 server on the same logical partition (LPAR), the daemon proc for the Version 8.0 daemon must include the earlier release's libraries in its STEPLIB
  - SBBOLD2
  - SBBOLPA

- WebSphere Application Server Version 8.0 does not support the DB2® for zOS Local JDBC Provider (RRS)
  - Manually change your configuration to use the DB2 Universal JDBC Driver Provider
  - JDBC Migration Utility for DB2 on z/OS
Pre-migration considerations

- WebSphere Application Server Version 8.0 does not include the WebSphere Connect JDBC driver for SQL Server.
  - WebSphereConnectJDBCDriverConversion tool is provided to convert data sources from the WebSphere Connect JDBC driver to the DataDirect Connect JDBC driver or the Microsoft® SQL Server JDBC driver

- Backup WAS_HOME/java/lib/security/java.security
  - Modifications to the java.security file are lost during migration. If the java.security file is modified in the previous version of WebSphere Application Server, make a backup copy and replace after migration

- Backup WAS_HOME/java/lib/security/local_policy.jar
  - If the current WebSphere Application Server 6.1.x is using the unrestricted jurisdiction policy files, backup the existing local_policy.jar file and replace into the migrated configuration
Pre-migration considerations

- Migrating applications
  - The Application Migration Toolkit for WebSphere Application Server provides support for migrating applications from previous versions of WebSphere Application Server to the latest product version.
    - IBM WebSphere Application Server Migration Toolkit
    - WebSphere Application Server V8.5: Competitive Migration Guide
Migration checklist

- Migrate the deployment manager node before any other nodes in the cell
- Migrate each node independently
- Ensure that the administrative console for the deployment manager is not running when the migration process is in progress.
- Backup the nodes using either the 'backupConfig' utility or the HFS itself
- Verify for any region constraints (such as IEFUSI limits)
- Various zWAS cells at different versions can exist on the same lpar
- Migration does not uninstall the previous version
Rollback

- Revert back to the earlier version after migration success/failure is possible.
- backupConfig, restoreConfig
- migrationDisablementReversal.jacl (If the dmgr node is disabled) default
- HFS backup of the node/s before migration
**Installation Manager on Windows**

- Download the latest IM 153 from the below link to your local machine
  - Installation Manager, Version 1.5.3

<table>
<thead>
<tr>
<th>Download</th>
<th>RELEASE DATE</th>
<th>LANGUAGE</th>
<th>SIZE(Bytes)</th>
<th>Download Options</th>
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Installation Manager on Windows

Sign in

Please enter your IBM ID and Password in the sign in area below. If you are not currently registered with our site please register now.

Tip: To easily return to your destination, bookmark the page after this page. Do not bookmark the sign in page.

IBM ID: stalluri@us.ibm.com
Password: **********

Submit
Installation Manager on Windows

Download options

Select download options

- Download using Download Director (requires Java enabled browser)
- Download using bulk FTP
- Download using your browser (HTTP)

CAUTION: Do not assume that Fix Central will show you all the prerequisites you need. Be sure to always click the More information link for additional prerequisite and other important fix information. Click here for an explanation of what prerequisites you can expect Fix Central to provide.

- Include prerequisites and co-requisite fixes (you can de-select the ones you do not need later)

Continue Back

Download files using HTTP

Download files using your web browser

- Order number: 55409437
- Total size: 112.46 MB

refresh pack: 1.5.3.0-Rational-IBMIM-WIN32-20120531_1954
IBM Installation Manager 1.5.3 Install Kit for Windows
The following files implement this fix:

agent.installer.win32.win32.x86_1.5.3.000.20120531_1954.zip (112.46 MB)

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Back
Installation Manager on Windows

IBM Installation Manager

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Install Packages

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3. License Grant

Accept the terms in the license agreement
Installation Manager on Windows
Install WCT using Installation Manager
Install WCT using Installation Manager

Repository:

Install WCT using Installation Manager
Install WCT using Installation Manager
Install WCT using Installation Manager
Install WCT using Installation Manager
Install WCT using Installation Manager

The packages are installed. View Log File

The following package was installed:
- WebSphere Customization Toolbox V8.0
- WebSphere Customization Toolbox 8.0.0.3

Which program do you want to start?
- WebSphere Customization Toolbox
- None

Note: If the packages support rollback, the temporary directory contains rollback files for installed packages. You can delete the files on the Files for rollback preference page.

Finish
WebSphere Customization Toolbox WCT

Welcome to the WebSphere Customization Toolbox

Select a tool in the following list to display the welcome information for that tool. To launch a tool, select a tool in the list, and click Launch Selected Tool. Alternatively, select Window > Open Perspective and select a tool in the list.

List of provided tools:
- Profile Management Tool (z/OS only)
- z/OS Migration Management Tool
- Web Server Plug-ins Configuration Tool

Welcome information for selected tool

The z/OS Migration Management Tool creates migration definitions that are used to migrate a WebSphere Application Server for z/OS node.

Migration definitions that migrate a WebSphere Application Server for z/OS node consist of a set of generated instructions. The generated migration jobs must be uploaded to and run on the target z/OS system.

All migration definitions include a set of generated instructions that document the process required to migrate a WebSphere Application Server for z/OS node.

The information center contains additional information on migrating WebSphere Application Server for z/OS.

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
<th>Location</th>
</tr>
</thead>
</table>

Migration Definitions | Migration Summary | Migration Instructions | Migration Response File

<table>
<thead>
<tr>
<th>Name</th>
<th>Environment</th>
</tr>
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</table>

Launch Selected Tool
WebSphere Customization Toolbox WCT
WebSphere Customization Toolbox WCT

[Image of WebSphere Customization Toolbox]

- **Target Data Sets**
  - z/OS migrate a deployment manager
  - Specify a high-level qualifier for the target z/OS data sets that will contain the generated jobs and instructions.
  - High-level qualifier (HLQ): WAS8.MIG

- **Data Set Names and Product Directory**
  - JCL procedure library data set name: BOSS.CB390.PROCLIB
  - WebSphere Application Server product directory: /webV80IM/usr/iop/zWebSphere/V8R0
  - Intermediate symbolic link
    - Create intermediate symbolic link
    - Path name of intermediate symbolic link:
WebSphere Customization Toolbox WCT
WebSphere Customization Toolbox WCT

Server Customization (Part 2)

z/OS migrate a deployment manager

Specify the following information to customize your migration.

- Migrate to support script compatibility.
- Disable previous deployment manager

Application migration preference

- Migrate applications and use the default application installation directory
- Migrate applications and use the specified application installation directory

Application installation directory:
/ wasv8config/DeploymentManager/profiles/default/installedApps

- Migrate and generate administrative scripts to install applications later
- Migrate applications and use the previous application installation directory
- Do not migrate applications

Administrative console "My Tasks"

- Use the default workspace user root directory ($USER_INSTALL_ROOT)/watsamp
- Specify the workspace user root directory.

Workspace user root directory:
WebSphere Customization Toolbox WCT
WebSphere Customization Toolbox WCT
WebSphere Customization Toolbox WCT

Select Process Type

Select the type of processing to perform on the migration definition:

- Upload to target z/OS system using FTP
  - Create the migration jobs for the selected migration definition and upload them to a z/OS system using FTP. (This option requires an active FTP server on the target z/OS system.)

- Upload to target z/OS system using FTP over SSL
  - Create the migration jobs for the selected migration definition and upload them to a z/OS system using FTP over SSL. (This option requires an active FTP server on the target z/OS system that is configured to use SSL with TLS authentication.)

- Upload to target z/OS system using secure FTP
  - Create the migration jobs for the selected migration definition and upload them to a z/OS system using secure FTP. (This option requires an active SSH server on the target z/OS system.)

- Export to local file system
  - Create the migration jobs for the selected migration definition and export them to the local file system.

Note: If the migration data have been previously exported to the default directories, the migration jobs in these directories will be uploaded to the target z/OS system when any of the upload options are performed.
WebSphere Customization Toolbox WCT

**Upload Migration Definition using FTP**

Specify the following information and then click Finish.

- **Import z/OS system:** 9.57.7.197
- **User ID:** [redacted]
- **Password:** [redacted]
- **FTP server port:** 21
- **Timeout (in seconds):** 20

The migration data will be uploaded to the following partitioned data sets on the target z/OS system:

- WASB.MIG.CNTL
- WASB.MIG.DATA

**Allocate target z/OS data sets**

Optionally, specify both volume and unit for target data sets:

- **Volume:** [redacted]
- **Unit:** [redacted]

**Notes:**
- The customized migration data will be written to the target data sets in codepage 1047, regardless of the default encoding of the target FTP server.
- The z/OS Migration Management Tool response file for this migration definition will be written to the ZMIGXMLGR member of the target "DATA" dataset. This response file can be downloaded and used to create a similar migration definition.

**Progress Information**

Uploading migration definition...

Uploading to WASB.MIG.CNTL(BBOWDPOS)
Migration jobs

- z/OS Migration Management Tool generated jobs
  - *.CNTL
  - *.DATA

- DMGR Instructions are in *.CNTL(BBOMDINS)
  - Perform manual configuration updates
  - Run the migration jobs

- Appsrv node Instructions are in *.CNTL(BBOMMINS)
  - Perform manual configuration updates
  - Run the migration jobs
Manual configuration updates

- Update BPXPRMxx to include the V8 HFS
- Make sure the below are APF authorized and are in the LNKLIST or LPA
  
  | Language Environment       | SCEERUN                |
  |                            | SCEERUN2               |
  | System SSL                 | SIEALNKE (z/OS 1.6 and above) |
  | 64-bit Support Code        | SCLBDLL2               |

- If specified to use new names for the started PROCs, then define the STARTED profiles
  
  - Daemon
    
    RDEFINE STARTED BBO8DMN.*
    STDATA(USER(user) GROUP(group) TRACE(YES))
    SETROPTS RACLIST(STARTED) GENERIC(STARTED) REFRESH
  
  - DMGR
    
    RDEFINE STARTED BBO8DCR.*
    STDATA(USER(user) GROUP(group) TRACE(YES))
    SETROPTS RACLIST(STARTED) GENERIC(STARTED) REFRESH
Manual configuration updates

- Define the below security profile/s that were first required in Version 6.1.x { If migrating from pre V6.1.x}
  
  ▶ Enabling trusted applications
    
    RDEFINE FACILITY BBO.TRUSTEDAPPS.<cell_shortname>.**
    UACC(NONE)
    PERMIT BBO.TRUSTEDAPPS.<cell_shortname>.**
    CLASS(FACILITY) ID(<config_group>) ACCESS(READ)
    SETROPTS RACLIST(FACILITY) REFRESH
  
  ▶ Sync to OS thread allowed
    
    RDEFINE FACILITY BBO.SYNC.cell_shortname.cluster_transition_name
    UACC(NONE)
    PERMIT FACILITY
    BBO.SYNC.cell_shortname.cluster_transition_name
    ID(controller_userid) ACCESS(CONTROL)
    SETROPTS RACLIST(FACILITY) REFRESH
Manual configuration updates

- **Additional EJBROLE/s**
  
  ```
  RDEFINE EJBROLE (optionalSAFProfilePrefix.)deployer UACC(NONE)
  RDEFINE EJBROLE (optionalSAFProfilePrefix.)adminsecuritymanager UACC(NONE)
  SETROPTS RACLIST(EJBROLE) REFRESH
  
  The administrator user ID created during configuration should usually be granted this role
  PERMIT (optionalSAFProfilePrefix.)adminsecuritymanager CLASS(EJBROLE) ID(admin_id) ACCESS(READ)
  SETROPTS RACLIST(EJBROLE) REFRESH
  ```

- **Add the below security profile that were first required in Version 7.0 { If migrating from pre V7.0}**
  
  ```
  RDEFINE EJBROLE (optionalSAFProfilePrefix.)auditor UACC(NONE)
  SETROPTS RACLIST(EJBROLE) REFRESH
  
  The administrator user ID created during configuration should usually be granted this role
  PERMIT (optionalSAFProfilePrefix.)auditor CLASS(EJBROLE) ID(WSADMIN) ACCESS(READ)
  SETROPTS RACLIST(EJBROLE) REFRESH
  ```
Run migration jobs

- Run the jobs in the order listed below using user IDs with the appropriate authority
  - Whenever "file system update authority" is indicated, the user ID used to run the configuration job must have either uid = 0 or the following UNIXPRIV class profile privileges
    - CONTROL access to SUPERUSER.FILESYS
    - UPDATE access to SUPERUSER.FILESYS.MOUNT
    - READ access to SUPERUSER.FILESYS.CHOWN
    - READ access to SUPERUSER.FILESYS.CHANGEPERMS
    - READ access to SUPERUSER.FILESYS.PFSCTL
  - User ID that has control over the file system
    - BBOMDFS / BBOMDZFS
    - BBOMDCP
  - WebSphere Administrator User ID
    - BBOWMG3D
Run migration jobs

- **BBOMDHFS or BBOMDZFS**
  - Allocates and mounts the configuration file system using the hierarchical file system HFS or ZFS

- **BBOMDCP**
  - This job copies the tailored start procedures, parameters for V8 to the runtime libraries
  - If you specified new procedure names, update your RACF® STARTED profiles for the controller and daemon

- **BBOWMG3D**
  - Performs the migration
  - Can be split into the below three jobs
    - **BBOWDPRO** - Creates target profile in the new release
    - **BBOWDPRE** - Creates backup of the source profile.
    - **BBOWDPOS** - Migrates backup profile into the new profile
Deployment Manager V8

- Shut down the application servers and daemon
- Start the deployment manager
  - Use the existing commands, but replace the STARTED procedure name if you have generated new
Manual configuration updates for Node

- If specified new procedure names, update your RACF® STARTED profiles for the controller and daemon
  - Daemon
    - RDEFINE STARTED BBO8DMNA.*
    - STDATA(USER(user) GROUP(group) TRACE(YES))
    - SETROPTS RACLIST(STARTED) GENERIC(STARTED) REFRESH
  - Appsrv
    - RDEFINE STARTED BBO8ACR.*
    - STDATA(USER(user) GROUP(group) TRACE(YES))
    - SETROPTS RACLIST(STARTED) GENERIC(STARTED) REFRESH

- Define the below security profile/s that were first required in Version 6.1.x { If migrating from pre V6.1.x}
  - If 'Sync to OS Thread' Allowed is set for your servers. If it is set, then create the following SAF profile and grant either READ or CONTROL access to the application server control region user ID of each server
    - BBO.SYNC.<cell_shortname>..<cluster_name>
Run migration jobs (AppSrv node)

- Run the jobs in the order listed below using user IDs with the appropriate authority
  - User ID that has control over the file system
    - BBOMMHFS / BBOMMZFS
    - BBOMMCP
  - WebSphere Administrator User ID
    - BBOWMG1F
    - BBOWMG2F
    - BBOWMG3F

- Ensure that the newly migrated deployment manager is up and running
  - For the Appserver node migration, the deployment manager must be up and listening on its SOAP port
- Stop the Version 6.1.x federated node before proceeding
Run migration jobs (AppSrv node)

- **BBOMMHFS or BBOMMZFS**
  - Allocates and mounts the configuration file system using the hierarchical file system HFS or ZFS

- **BBOWMG1F and BBOWMG2F (XA Connectors)**
  - **BBOWMG1F**
    - Enables all servers on the federated application server node being migrated to start in Peer Restart and Recovery (PRR) mode
  - **BBOWMG2F**
    - Disables PRR mode and returns all servers to normal operating state

- **Clear the XA transaction logs**
  - Stop the application server
  - Submit the job BBOWMG1F, and verify a return code of 0
  - Restart the federated application server, and wait for it to perform PRR processing and stop automatically
  - Submit the job BBOWMG2F, and verify a return code of 0
Run migration jobs (AppSrv node)

- **BBOMMCP**
  - This job copies the tailored start procedures, parameters for V8 to the runtime libraries
  - If you specified new procedure names, update your RACF® STARTED profiles for the controller and daemon

- **BBOWMG3F**
  - Performs the migration
  - Can be split into the below three jobs
    - **BBOWMPRO** - Creates target profile in the new release
    - **BBOWMPRE** - Creates backup of the source profile.
    - **BBOWMPOS** - Migrates backup profile into the new profile

- **Authorize servant to WLM**
  
  ```
  PE BPX.WLMSERVER CLASS(FACILITY) ID(<servant_user_id>) ACCESS(READ)
  SETROPTS RACLIST(FACILITY) REFRESH
  ```
AppServer node on V8

- Start the new federated application server node
  - Start the node agent
  - Start the federated application server
    - Use the existing commands, but replace the STARTED procedure name if you have generated new
Troubleshooting

- **DMGR**
  - *.DATA(BBOWMDEV)*

- **AppSrv**
  - *.DATA((BBOWMMEV)*
    
    ```
    tempDir=/tmp/was8
    TraceState=enabled
    preUpGradeTrace=0
    postUpGradeTrace=enabled
    profileTrace=disabled
    preTraceFileName=/tmp/was8/xxyyzz/logs/WASPreUpgradeTrace.dat
    postTraceFileName=/tmp/was8/xxyyzz/logs/WASPostUpgradeTrace.dat
    postSummaryFileName=/tmp/was8/xxyyzz/logs/WASPostUpgradeSummary.log
    preSummaryFileName=/tmp/was8/xxyyzz/logs/WASPreUpgradeSummary.log
    ```

- **Migration joblogs**
  - BBOWMG3D, BBOWMG3F
Troubleshooting

- **Known Issues when Migrating to V8**
  - **PM52520 (8002)**
    After migrating the daemon and deployment manager to V8 the node agent if on pre V8 will not start
  - **PM49078 (8002)**
    When either JCERACF or JCECCARACF keystore is used with mixed case certificate alias name, and either serverKeyAlias or clientKeyAlias attribute are set in SSL configuration, mixed cell environment which consists of V8 Deployment Manager with V6.1.x Nodes might not be functional because of mixed case alias name
  - **PM45193 (8002)**
    When running migration on z/OS, sharing a migration profile across multiple configurations will utilize the same migration file location, so files will overwrite in an uncontrolled manner
  - **PM43080 (8002)**
    The migrated value of the JVM_CACHE variable points to a directory that cannot be written to
Troubleshooting

- Known Issues when Migrating to V8
  - PM45196 (8002)
    - Migration logs and trace become unnecessarily large since the option is either to trace nothing or to trace everything

- WebSphere z/OS Fix Pack 8.0.0.3 recommended
Summary

- Install Installation Manager on z/OS
- Install WAS8 for z/OS using Installation Manager z/OS
- Install Installation Manager on local machine
- Install WCT using IM on local machine
- Generate V8 Migration jobs using WCT/zMMT
- Review Migration Instructions
- Perform Manual steps
- Run Migration jobs
- Start server/s on V8
Good News!!!

- IBM extended the end-of-service date of IBM WebSphere Application Server V6.1.x (WAS V6.1.x)
  - From **September 30, 2012**
  - To **September 30, 2013**
  - Announcement
Additional WebSphere Product Resources

- Program Directory for IBM Installation Manager for z/OS Version 1.4.3

- Program Directory for WebSphere Application Server for z/OS V8.0.0

- Fix Central

- IBM Installation Manager Information Center for versions 1.5 – 1.5.3

- Instructions for installing or updating Installation Manager 1.5.3

- Preventive Service Planning buckets

- WebSphere Application Server, Network Deployment (z/OS), Version 8.0

- IBM WebSphere Application Server Migration Toolkit

- WebSphere Application Server detailed system requirements

- JDBC Migration White Paper and Utility for DB2 on z/OS
Additional WebSphere Product Resources

- Learn about upcoming WebSphere Support Technical Exchange webcasts, and access previously recorded presentations at: http://www.ibm.com/software/websphere/support/supp_tech.html

- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at: http://www.ibm.com/developerworks/websphere/community/

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