WebSphere Application Server on z/OS Using the New Cross-Platform Installer

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WebSphere Application Server Sessions

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- Why a new installer? And why should I care?
- IBM Installation Manager overview
- Setting up the Installation Manager
- Installing WebSphere Application Server V8
- Maintaining the product repository
- Maintaining your installed products
- Hints, tips, and gotchas
- Etc...
- Q & A?

If there is time…

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Why a new installer?

And why should I care?

Why a new installer?

Previous versions of WebSphere products have used a variety of different install and update tools. With WebSphere Application Server Version 8, Websphere-branded products are moving to a single cross-platform installer: IBM Installation Manager.

Moving to a single installer will:

• Simplify the overall installation and maintenance process for WebSphere products;

• Allow better coordination between base products, stack products, and feature packs;

• Provide direct electronic delivery of products and service in a consistent fashion across platforms.

Installation Manager documentation:

But what about SMP/E?

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Why a new installer? (part 2)

SMP/E is a venerable tool which continues to evolve. But for products such as WebSphere Application Server which run on a wide range of platforms, SMP/E installation provides fewer advantages. This is especially true if the products install entirely into Un*x file systems rather than making use of MVS native data sets.

In this presentation, we will be providing an overview of IBM Installation Manager and how it works on z/OS – and showing how you can take advantage of some of the new opportunities it provides.   We will also go over the WebSphere Application Server V8 install process, with hints, tips, and recommended best practices.

Why should you care? Because the family of WebSphere branded products (on all platforms) will be using this installer in a consistent fashion, and the best way to use it well is to be aware of its capabilities.

Overview of IBM Installation Manager

On Windows and distributed platforms, IBM Installation Manager can run as a GUI application, a command line application, or from response files. Here is the GUI main panel:
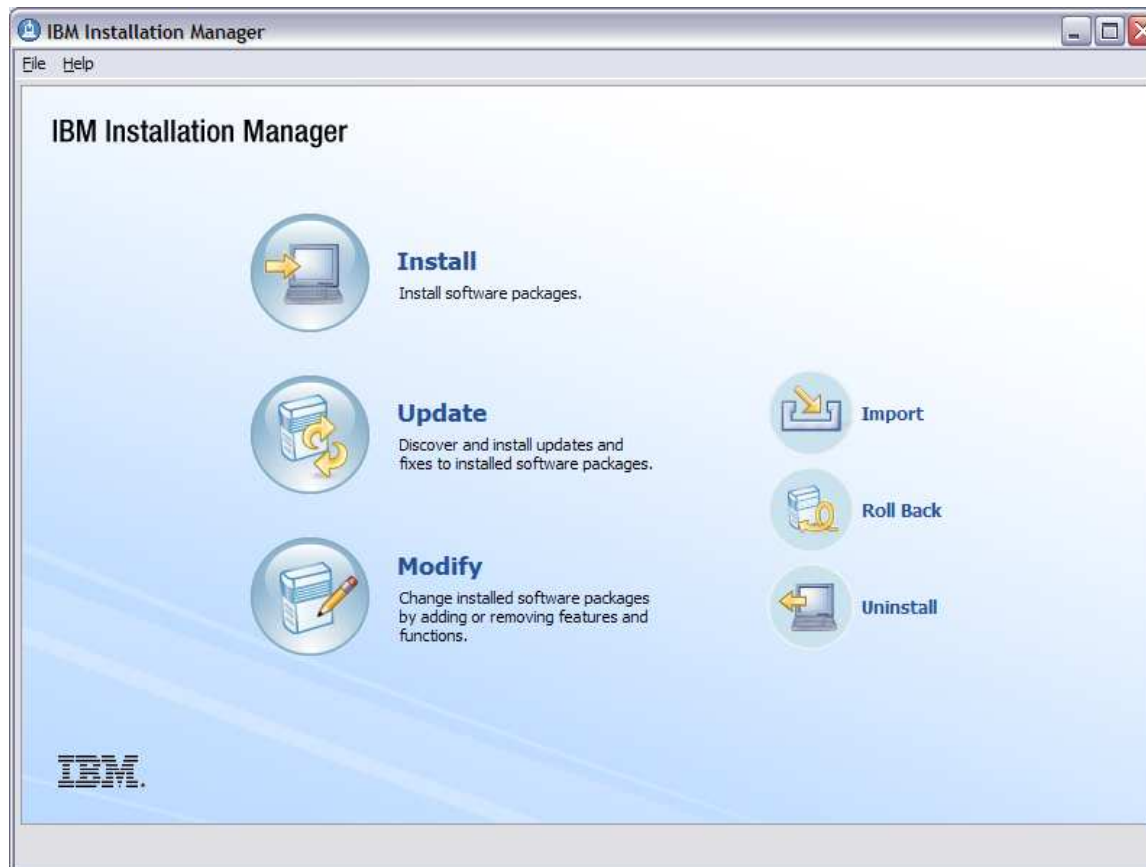
This is what you will probably be using to install the zPMT on Windows or Linux.

These same functions – install, update, modify, roll back, uninstall – are available via the command line.

Why use IBM Installation Manager?

Once Installation Manager and your product repository are set up, here is all it takes to install a copy of WebSphere Application Server V8:

```
$ cd /InstallationManager/bin/eclipse/tools
```
/InstallationManager/bin is where the Installation Manager code resides.

```
$ zCreateFileSystem.sh -name WAS.V80.SBBOHFS
     -type HFS  -volume WAS80V -cylinders 3360 300
     -mountpoint /usr/lpp/zWebSphere/V8R0
     -owner IMADMIN  -group IMGROUP
```
can also be in megabytes

```
$ imcl install com.ibm.websphere.zOS.v80
     -installDirectory /usr/lpp/zWebSphere/V8R0
     -repositories /usr/lpp/InstallationManagerRepository/HBBO800
     -acceptLicense

$
```

And that's it – Installation Manager will create a copy of WAS V8 at the designated location. You can install multiple copies of WAS, at specific product levels, using variations of these same commands.   *Each copy can be separately maintained and updated.*

Why use IBM Installation Manager?

Here's how to install an interim fix or iFix. (The iFix format is the same across platforms – no more waiting for a ++APAR – and you can install any combination of compatible iFixes.)

    $ imcl install 8.0.0.0-WS-WAS-IFPM39074   name of the iFix
        -installDirectory /usr/lpp/zWebSphere/V8R0   copy of WAS to be updated – must be R/W
        -repositories http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v80
        -acceptLicense

Here's how to install a fix pack (such as WAS 8.0.0.5):

    $ imcl install com.ibm.websphere.zOS.v80_8.0.5.20120915_0100
        -installDirectory /usr/lpp/zWebSphere/V8R0
        -repositories http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v80
        -acceptLicense -keyring /u/smith/IM.software.keyring

Both of these examples use an IBM-provided, web based repository from which Installation Manager downloads service as needed. (IM has proxy support.)

If your z/OS system doesn't have direct access to the web, you have a variety of options for a local or enterprise service repository, which we will describe later.

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IBM Installation Manager for z/OS

Structure and Setup

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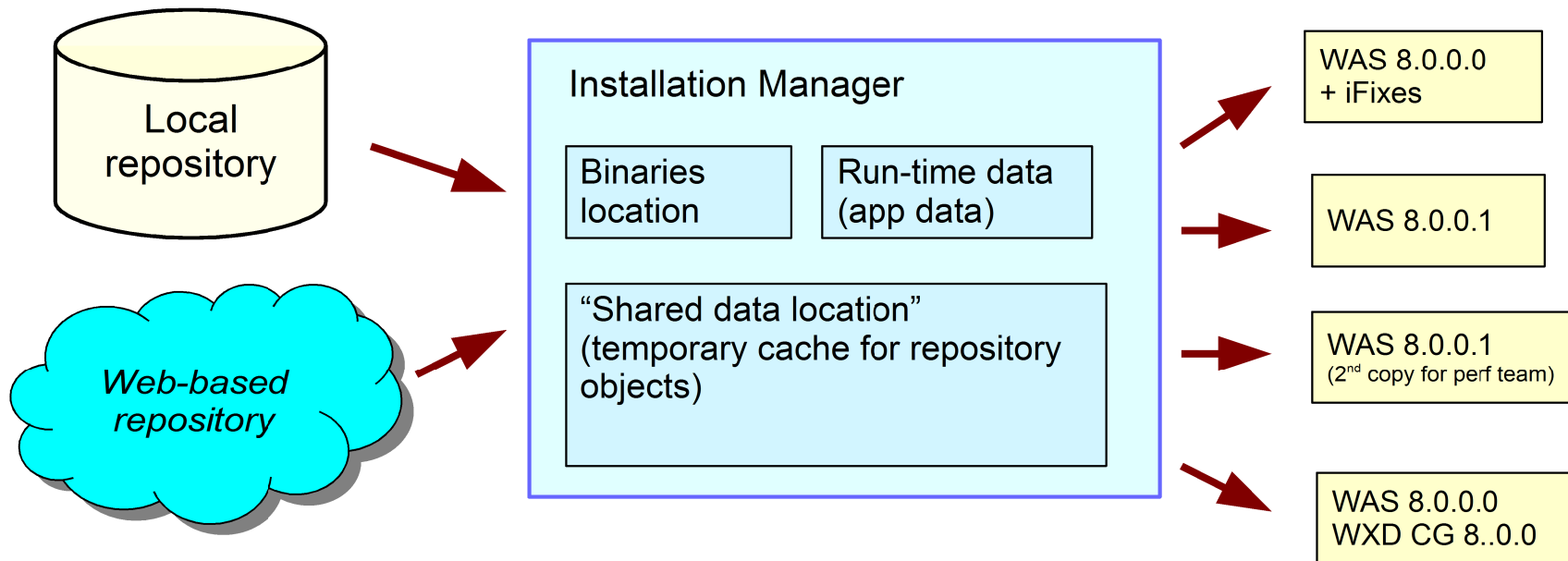
What is an Installation Manager?

On z/OS, IBM Installation Manager runs as a Unix System Services command line application. Commands can be run from the Unix System Service shell or from batch jobs.

Each Installation Manager consists of a copy of the IBM Installation Manager code, a set of run-time data, and a cache location (for downloaded objects).; it can be used to update itself, and any number of products or copies of products. Each installed product has a location directory.

You can have several Installation Managers on a z/OS system, but you will usually need just one.

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Who can use the Installation Manager?

An Installation Manager can set up to run in one of three administrative modes:

• **Admin mode** – must be in **uid 0** to invoke. A file in /etc/.ibm/registry points to the Installation Manager binaries, so there can be one admin-mode Installation Manager per system.

• **User mode** – can only be invoked by the user ID that created the Installation Manager. A file in $HOME/.ibm.registry points to the binaries, so there can be one user-mode IM per user.

• **Group mode** – can be invoked by any user ID that is connected to the USS group that owns the Installation Manager files. There can be any number of group-mode Installation Managers.

Installation Manager user IDs also require access to the following RACF profiles:

FACILITY:	BPX.FILEATTR.APF	UNIXPRIV:	SUPERUSER.FILESYS.CHOWN
	BPX.FILEATTR.PROGCTL		SUPERUSER.FILESYS.CHANGEPERMS
	BPX.FILEATTR.SHARELIB		

See sample job GIN2ADMN in the install kit SGINJCL data set (described next).

You can create a new user ID or use an existing one.

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Setting up an Installation Manager

Setting up an Installation Manager is something you do *once*. The setup instructions can be found in the Installation Manager infoCenter, and in the IM program directory.

Before you start:

- Make sure z/OS APAR fix OA34228 is installed.

- Review IEFUSI and BPXPRMxx for the z/OS system that will run Installation Manager. The user ID(s) that invoke it, and the address spaces it runs in, will require 512M of virtual memory.

- Consider turning off SMF type 92 records.

You will need:

- An installation kit (install kit) for IBM Installation Manager.

- Sufficient DASD for a R/W copy of the Installation Manager binaries (5000 tracks), run-time data (1000 tracks), and cache / work area (varies by product; 30,000 tracks for WAS V8). These directories can reside in a single file system. *Do not use shared HFS.*

- A user ID to run the Installation Manager – can be superuser or non-superuser.

- Basic familiarity with Unix System Services.

You can have several Installation Managers on a z/OS system, but you will usually need just one.

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Setting up an Installation Manager

The IBM Installation Manager install kit consists of a set of initial binaries, a current repository for Installation Manager, and some setup scripts.
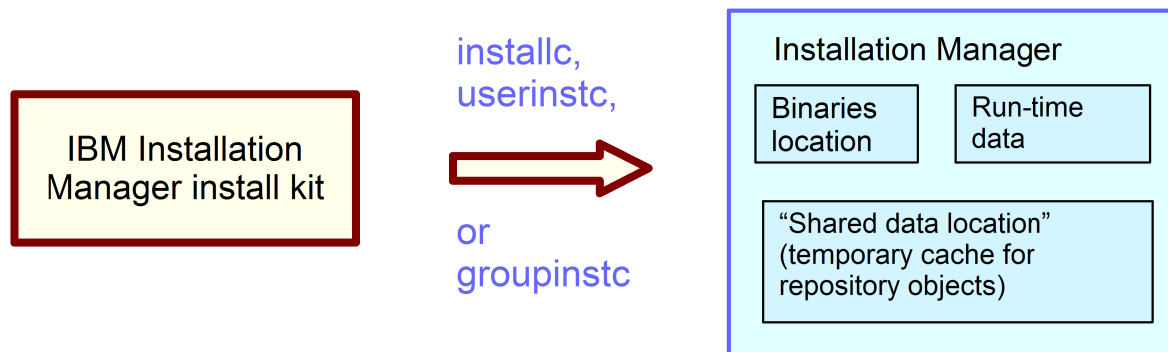
- A copy of the install kit (FMID HGIN140) is included automatically with each z/OS program product that requires Installation Manager. For a CBPDO, follow the instructions in the Program Directory. For a ServerPac, see the Installing Your Order document.

- You can also download the current Installation Manager install kit for z/OS from

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

  Unzip this file into a 5500-track file system and run the set-ext-attr.sh script.

By default, the install kit resides at /usr/lpp/InstallationManager/V1R4.   PTF service to FMID HGIN140 replaces the install kit with the most current version. The install kit is normally mounted read-only.

The install kit is ONLY needed when you create an Installation Manager, or update it to a newer level of the Installation Manager code! The setup scripts create or update the Installation Manager:

IBM Installation Manager install kit

installc, userinstc,

or groupinstc

Installation Manager

Binaries location

Run-time data

"Shared data location" (temporary cache for repository objects)

SHARE in Orlando 2011

Setting up an Installation Manager

So with the install kit in hand:

1) Decide whether you want an admin-mode, user-mode, or group-mode Installation Manager.

2) Set up the user ID. (See job GIN2ADMN in the Installation Manager samples, SGINJCL).

3) Choose locations for:

- Installation Manager binaries (5500 tracks) – the IM code you will actually run

- Installation Manager run-time data (<1000) – records product status

- Shared data location (32000 tracks for WAS V8) – work area (like SMPWRK6)

    The defaults for z/OS are:
    ```
    binaries:          /InstallationManager/bin
    run-time data:     /InstallationManager/appdata
    cache:             /InstallationManager/sharedResources
    ```

    This arrangement allows you to have a single file system at /InstallationManager (or some other location of your choice) that contains all the Installation Manager's files and data.

    See job GIN2CFS for a sample job that creates such a filesystem. (If you create several Installation Managers later one, you will need new locations for all three for each separate Installation Manager.)

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Setting up an Installation Manager

4) Create the Installation Manager:

Using the ID that will own the Installation Manager, run the following command from the Unix System Services shell or from a batch job (BPXBATCH):

installc -installationDirectory <binaries> -dataLocation <data> -acceptLicense

Change "installc" to "userinstc" for a user-mode Installation Manager, or "groupinstc" for a group-mode Installation Manager. You can omit -installationDirectory and -dataLocation if you take the defaults.

See job GIN2INST in the Installation Manager samples, SGINJCL.

To invoke the Installation Manager, log on to the Unix System Services shell and issue the imcl command from the <binaries>/eclipse/tools directory:

```
$ cd /InstallationManager/bin/eclipse/tools
$ imcl -version
Version 1.4.3
Internal Version 1.4.3000.20110303_1846
$
```

If you created a group-mode Installation Manager, you can give other users access to it by connecting them to the default group of the user ID that created the Installation Manager:

CONNECT CAROL GROUP(IMGROUP)

Each additional user ID will also require access to the appropriate RACF profiles (see job GIN2ADMN).

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Installation Manager commands

Here is the basic Installation Manager install command:

```
imcl install  <package>
        -installationDirectory    <targetlocation>
        -repositories  <repository list>
        -sharedDataLocation   <cache location>
        -acceptLicense
        -keyring  <credentials file>
```

<package> identifies the product being installed; each package ID consists of a product identifier (such as com.ibm.websphere.v80.zOS for WAS V8 on z/OS) and a version (three levels plus a date/time stamp – for example, 8.0.1.20110903_0100).   If you omit the version, then Installation Manager will install the product with the highest version number.

In those rare circumstances in which several products are being installed at one location (for exanple, WAS V8 and the WEB 2.0 feature pack), you can specify a list of packages, separated by blanks.

<targetlocation> is the directory into which the product will be installed. It should be R/W to the Installation Manager user ID, and large enough to hold the product (IM does check). **You must choose a *different* target location for each new product install.**

So you can install WAS 8.0.0.0, another copy of WAS 8.0.0.0, and a copy of WAS 8.0.0.1 – but each install must have its own install location. Each install must be mounted at its original install location for maintenance or modification with Installation Manager.

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Installation Manager commands

<repositories> is a list of URLs that tell Installation Manager where to find the program parts and metadata it will need to install the desired products.   You can specify:

       a local repository: -repositories /usr/lpp/InstallationManagerRepository/HBBO800   the file:/ part of the URL is optional

       a Web server URL:
           -repositories http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v80

       an FTP server URL: -repositories ftp://sofiware.acme.com:8085/service_repo

To point Installation Manager to several repositories, separate the URL's with commas (and no white space.)

<cache location> is the shared resources location discussed earlier. It is set during the first product install with an Installation Manager, and cannot be changed – *except*, as we will see later, it may be "unset" if it is cleared. So it is a good idea to specify the (unchanging) shared resources location for the current Installation Manager on each install command.

Specifying **-acceptLicense** means that you accept the license terms, which are typically found in an lafiles directory in the product repository.

<credentials file> is a file created by Installation Manager that includes user ID / password pairs for repositories that require them. Not needed for repositories in local file systems.

      If you use a new target location, Installation Manager will perform a full product install. If the target location already contains the specified product, the Installation Manager will upgrade it or roll it back to the product level you specify.

Installation Manager commands

Other useful commands:

    imcl listAvailablePackages
         -repositories <repository list>
         [-long]

    imcl listAvailableFixes <package with exact version>
         -repositories <repository list>
         [-long]

    imcl listInstalledPackages
         [-long]

    imutilsc saveCredential
         -keyring   <credential file>
         -url   <repository URL>
         -userName <user ID> -userPassword <password>

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Installation Manager updates

Occasionally you will want to update the IBM Installation Manager code – either to make use of new features in the Installation Manager, or because a new product or product level requires a higher level of IBM Installation Manager than you are currently running.

• Apply service to your Installation Manager install kit, via PTFs to FMID HGIN140, to bring the install kit up to the desired level.

• Then re-run the original Installation Manager setup command (installc, userinstc, or groupinstc) from the updated install kit, under the Installation Manager user ID and specifying the same values you did when you created the Installation Manager.

This will update the code in the Installation Manager's binaries location, and update the Installation Manager's run-time data. The next invocation of the Installation Manager will use the new code level.

The Installation Manager team has fairly strict standards for upward compatibility, so it is fairly safe to upgrade to the newest Installation Manager level as you see fit.
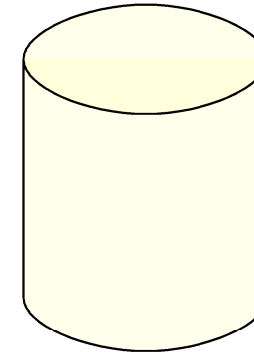
© Copyright IBM Corporation, 2011

Repositories

To install products and apply service to them, you need product repositories, which can be:

Web-based repository
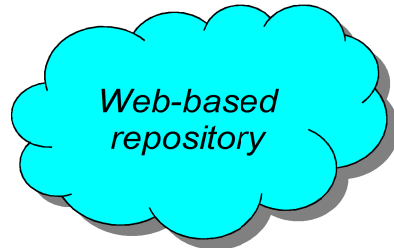
or in a local or NFS file system:

on your own HTTP or FTP server

For non-z/OS WebSphere products, IBM provides a Web-based repository with base product code, fix packs, and iFixes; initial product install requires Passport Advantage. The product and service repositories and also available on media (DVD) and downloadable .zip files.

For z/OS products, the **initial** product repository is provided in SMP/E format:

ServerPac or CBPDO

Fix packs and iFixes for z/OS products are available from the Web-based service repository, and as .zip downloads from Fix Central. These require an IBM Software user ID.

You have a lot of potential choices here, which we will address later on!

Installing WebSphere Application Server V8 on z/OS

When you order WebSphere Application Server V8 for z/OS, you will receive:

- an Installation Manager install kit (described above) as FMID HGIN140

    GIN.SGINHFS, to be mounted at /usr/lpp/InstallationManager/V1R4
    GIN.SGINHJCL, containing Installation Manager sample jobs

- a product repository for WAS V8, as FMID HBBO800

    BBO.SBBOIMR, to be mounted at /usr/lpp/InstallationManagerRepository/HBBO800
    BBO.SBBOJCL, containing WAS V8 sample jobs

- a product repository for ITCAM for WAS V7.2, as FMID HCYE720

    CYE.SCYEIMR, to be mounted at /usr/lpp/InstallationManagerRepository/HCYEIMR
    CYE.SCYEJCL, containing ITCAM 7.2 sample jobs

If you ordered a CBPDO, following the instructions in each Program Directory to set up Installation Manager and the two repositories, and complete product installation.

If you ordered a ServerPac, consult the Installing Your Order guide; the IM install kit and the two repositories will be preinstalled, and you only need to invoke IM to build the product code.

Installing WebSphere Application Server V8 on z/OS

The SBBOJCL data set contains jobs for each of the four components (base, DMZ secure proxy, Web server plugins. and IBM HTTP Server V8):

BBO1CFS   Create a filesystem for base WAS V8
BBO1INST   Install the base code with Installation Manager

BBO2CFS   Create a filesystem for the DMZ secure proxy code
BBO2INST   Install the DMZ secure proxy code with Installation Manager

BBO3CFS   Create a filesystem for the Web server plugin code
BBO3INST   Install the Web server plugin code with Installation Manager

BBO4CFS   Create a filesystem for the IBM HTTP Server V8 code
BBO4INST   Install the IBM HTTP Server V8 code with Installation Manager

All eight jobs are extensively commented, and there are also BBOxUNIN uninstall jobs. The WAS V8 Program Directory provides instructions for running each of them.

If you like, you can use these jobs as models, and run the commands from the Unix System Services shell, or from scripting.

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Installing WebSphere Application Server V8 on z/OS

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Installing WebSphere Application Server V8 on z/OS

```
WITVM                                                                    _ □ ✕
  File   Edit   Edit_Settings   Menu   Utilities   Compilers   Test   Help

EDIT          WAS.V80.SBBOJCL(BBO1INST) - 01.00          Columns 00001 00072
000098 //*   Logs for product installation can be found in the logs       *
000099 //*   subdirectory of the Installation Manager run-time data; e.g.  *
000100 //*                                                                 *
000101 //*       /InstallationManager/appdata/logs                        *
000102 //*                                                                 *
000103 //************************************************************************
000104 //*
000105 //***********************************************************************
000106 //*    The following step invokes IBM Installation Manager to       *
000107 //*    install the WebSphere Application Server V8 base product.     *
000108 //***********************************************************************
000109 //INSTALL   EXEC PGM=IKJEFT01,REGION=0M
000110 //SYSTSPRT DD    SYSOUT=*
000111 //BPXOUT    DD    SYSOUT=*
000112 //STDOUT    DD    SYSOUT=*
000113 //SYSTSIN   DD    *
000114  BPXBATCH SH +
000115    /InstallationManager/bin/eclipse/tools/imcl              +
000116      install com.ibm.websphere.zOS.v80                      +
000117      -installationDirectory /usr/lpp/zWebSphere/V8R0        +
000118      -sharedResourcesDirectory /InstallationManager/sharedResources +
000119      -repositories /usr/lpp/InstallationManagerRepository/HBBO800 +
000120      -preferences com.ibm.cic.common.core.preferences.preserveDownlo+
000121       adedArtifacts=false                                   +
000122      -acceptLicense
000123 /*
Command ===>                                                Scroll ===> CSR
 F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange    F7=Up
 F8=Down      F9=Swap       F10=Left     F11=Right     F12=Cancel
MA     c                                                              30/015
```

Now unmount that filesystem and go configure your servers!

More about repositories

Initial product
repository (SMP/E)

/usr/lpp/InstallationManagerRepository/<fmid>

Online service
repository
(fix packs and *published
iFixes*)

http://www.ibm.com/software/repositorymanager/<package>

Downloaded fix
packs and
iFixes

/IMrepo/WAS/service

Enterprise repository

http://it.mycorp.com/software

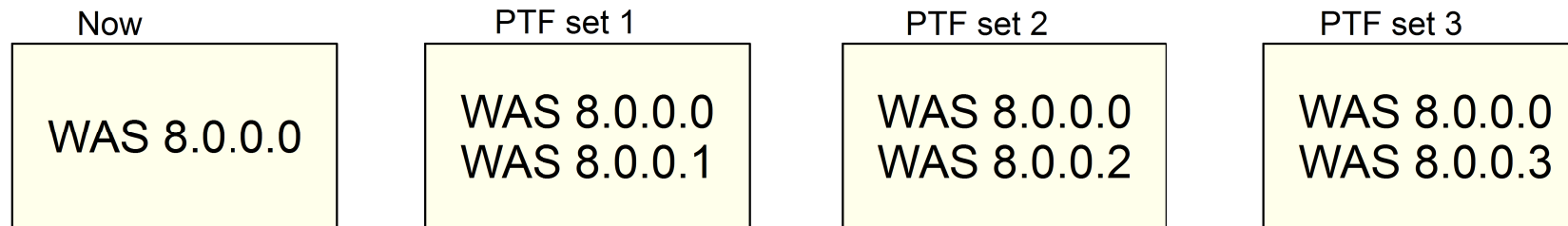# More about repositories

Initial product repository (SMP/E)

On z/OS, initial product repositories are shipped in SMP/E format, via CBPDO or Server Pac.

Follow the Program Directory or ServerPac instructions!

/usr/lpp/InstallationManagerRepository/<fmid>

PTF service to each product's FMID will add the latest fix pack (only), while retaining the base repository. So with current service, you can install either the base product level, or the fix pack corresponding to the PTFs you have installed.

Each PTF set supercedes the previous ones, keeping the total PTF set small.

Now	PTF set 1	PTF set 2	PTF set 3
WAS 8.0.0.0	WAS 8.0.0.0 WAS 8.0.0.1	WAS 8.0.0.0 WAS 8.0.0.2	WAS 8.0.0.0 WAS 8.0.0.3

So if you are using *only* the SMP/E-shipped repositories, you can install the base level, the "latest" level you've chosen. iFixes and any other fix pack levels will come from different source repositories.

Use the imcl listAvailablePackages command to see which packages and levels a given repository contains.

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More about repositories

Online service repository
(fix packs and *published* iFixes)

This repository is available to anyone with an IBM Software user ID and password. It provides the most simple way of keeping your products up to date, if you have Internet access from z/OS.

http://www.ibm.com/software/repositorymanager/<package>

You will need to create a credentials file to access it:

    imutilsc saveCredential -keyring   /u/jsmith/IM.software.keyring
        -url http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v80
        -userName jsmith12 -userPassword sj17ammn

To install a WAS fix pack from the service repository, specify the product level:

imcl install com.ibm.websphere.zOS.v80_8.0.5.20120915_0100 *← value from the WAS service page*
        -installDirectory /usr/lpp/zWebSphere/V8R0
        -repositories http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v80
        -acceptLicense -keyring /u/jsmith/IM.software.keyring

Remember to run these commands from the Installation Manager user ID!

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More about repositories

This repository also contains iFixes, which you can install by specifying the iFix name on an imcl install command.

```
imcl install 8.0.0.0-WS-WAS-IFPM39074
       -installDirectory /usr/lpp/zWebSphere/V8R0
       -repositories http://www.ibm.com/software/repositorymanager/...
       -acceptLicense
```

The WAS V8 InfoCenter has more information on finding, downloading and applying iFixes,

Online service repository
(fix packs and *published iFixes*)
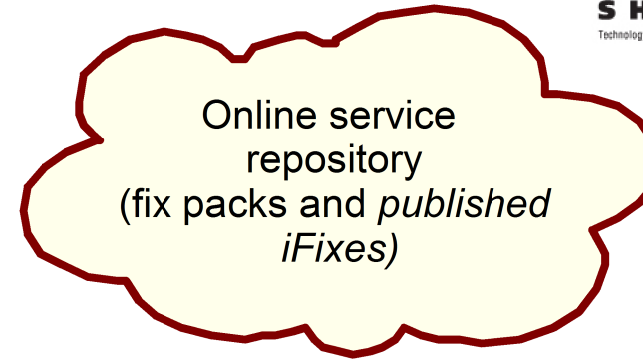
http://www.ibm.com/software/repositorymanager/<package>

The service repository can also be used for an initial product install.
Just specify the product level you want, and *both* the initial and service repositories.

```
imcl install com.ibm.websphere.zOS.v80_8.0.5.20120915_0100
       -installDirectory /usr/lpp/zWebSphere/V8R0
       -repositories /usr/lpp/InstallationManagerRepository/HBBO800,
             http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v80
       -acceptLicense -keyring /u/smith/IM.software.keyring
```

← comma, no white space

You *could* just omit the version (_8.0.5.20120915_100) to get the latest product version found in either of the repositories in the -repositories list. But more likely you will want a specific product version.

If your z/OS system has (direct or proxy) Internet access, we recommend this path for all product installs and maintenance. (See the IM InfoCenter for information on using proxies.)

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More about repositories

Downloaded fix
packs and
iFixes

If your z/OS system does not have Internet access – or if you need to install certain materials such as non-published iFixes – you will need to download some service. Usually this will be in the form of compressed (.zip) repositories.

/IMrepo/WAS/service

IBM Installation Manager *can* process compressed repositories directly, there are hefty performance penalties. So you will usually want to unzip the downloaded repositories before using them.

imcl install 8.0.0.0-WS-WAS-IFPM39074
    -installDirectory /usr/lpp/zWebSphere/V8R0
    -repositories /iFixes/8.0.0.0-WS-WAS-IFPM39074.zip
    -acceptLicense

We recommend that you set up a product-based directory structure so that downloaded and unzipped repositories are easy to find. (The zip files themselves can be deleted.)

If you use downloaded fix pack files, remember that each one requires the previous product level. So to upgrade from WAS 8.0.01 to 8.0.0.4, your repository list would look like this:

    -repositories /Imrepo/WAS8002,/IMrepo/WAS8003,/IMrepo/WAS8004

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More about repositories

Enterprise repository

http://it.mycorp.com/software

The in-house equivalent of the IBM service repository is an enterprise repository. For data centers which strictly limit Internet access, or which maintain a large number of machines or a range of platforms, this can be an attractive choice.

IBM Packaging Utility is a tool to copy, merge, and manage repositories. It can retrieve materials from the IBM service repository and downloaded or SMP/E-installed repositories, and create a local repository with just the packages and package levels you need. If several packages or levels contain the same program objects, only one copy is kept in the repository.

IBM Packaging Utility does not (yet) run on z/OS. But you can run it on a non-z/OS machine with access to the Internet, create a repository with the materials you need, and either copy that repository to z/OS, or make it available through NFS, HTTP, or FTP.

This can provide particular economies to organizations that support products on several platforms, or which apply service on machines across a widely dispersed area

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More about repositories

Enterprise repository

http://it.mycorp.com/software

You can create an enterprise repository even in a z/OS-only shop.

1) Build a composite repository* on z/OS, using SMP/E-delivered and downloaded packages.

2) Serve this repository through a z/OS-based HTTP or FTP server across your shop.

* A **composite repository** is Installation Manager's way of creating a "view" of several repositories through a single URL.

Create a file like the following, convert it to ASCII, and put it wherever you want the composite repository to "live:"

When you point -repositories to the directory containing this file, Installation Manager can "see" the packages in the 8001, 8002, and iFixes subdirectories. You can next composite repositories as well.

LayoutPolicy=Composite
LayoutPolicyVersion=0.0.0.1

repository.url.1=./8001
repository.url.2=./8002
repository.url.3=./iFixes

Take a look at the following for another example:
/usr/lpp/InstallationManagerRepository/HBBO800/repository.config

Maintaining products

To see all the products / product levels currently installed by a particular Installation Manager, run the following Installation Manager command:

    imcl listInstalledPackages -long

This will show you the installation directory, complete package name, printable name and version for each.

Note: Many IBM products, including WebSphere Application Server. use "four level" versioning – 8.0.0.3. On the other hand, Installation Manager's versioning, and appended to the package name, is three levels plus a date / time stamp: 8.0.3_20120312_0101 (WAS 8.0.0.3, built at 1:01 AM on March 12, 2012).

Each product, as managed by Installation Manager, has a fixed installation location which cannot be changed, and must be unique within that Installation Manager's scope. We recommend you choose and stick to one of the following schemes:

• Create a product install for with a **logical** service path, such as /prod/WebSphere/V8R0/Test1

  When the Test1 copy needs service, apply it (upgrade, rollback, etc.).

OR

• Install each product version from scratch (this is easy to do with Installation Manager), and assign a version specific installation location such as /prod/WebSphere/V8.0.0.

  Apply iFixes for WAS 8.0.0.1as needed; when you are done with WAS 8.0.0.1, just uninstall that copy.

Maintaining products

Once you have installed a copy of any product with Installation Manager, you can copy the target file system and use it across your data center, just as if it had been created with SMP/E.

Applying service to a copy of a product

With SMP/E, you can make a copy of a product serviceable by copying target and dlib zones along with target and distribution data sets, and using SMP/E on the system when the copy of the product resides.

You can do something similar with Installation Manager. If you copy:

> the Installation Manager binaries
> the Instalation Manager appdata
> product target filesystems

for a **group-mode** Installation Manager to another z/OS system, mount them at the *same* locations, and create the necessary Installation Manager user ID (use the same UID/GID values), you can run the Installation Manager on the new system and apply service there to the copy. (Obviously, the original Installation Manager knows nothing about this change.)

You will also need access to any product repositories (using the Web-based service repository or an enterprise repository makes this easier.) But this way, you can apply iFixes in particular at any location.

(You can also do this with an admin-mode or user-mode Installation Manager, but you will have to move the Installation Manager registry file from /etc/.ibm/registry or $HOME/.ibm/registry to the same location on the new system, in order to start Installation Manager there.)

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Hints, Tip, Things to Know

File Permissions and Group Mode IM

By default, WebSphere Application Server product files are created with 644 or 755 permissions, and files are owned by the user ID that invokes the Installation Manager.

This is appropriate for admin-mode and user-mode Installation Managers, since in both cases the user ID's that will invoke the Installation Manager can also update the installed files in the future.

If you use a group-mode Installation Manager, you will have to ensure that the user ID(s) that invoke the Installation Manager have permission to write and delete the files being manipulated.

The simplest way may be to issue the chown command for the files in a product's target location before invoking a group-mod Installation Manager, to change file ownership to the user ID that will be invoking the Installation Manager.

The zMountFilesystem.sh script (in the <IM binaries>/eclipse/tools directory) can be used to mount a filesystem in read/write mode, and optionally set file ownership and permissions.

The Shared Resources Location

The shared resources directory (one per Installation Manager) is used to cache repository files, and hold them in case a future rollback is performed *and the initial repositories are not available.*

Assuming you are managing your repositories in such as way as to retain those levels of software you are currently running, you can have Installation Manager clear the cached files from the shared resources directory once an install operation is complete. Do this by adding the following preference parameter to the install command:

  -preferences com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts=false

This parameter is recommended for z/OS customers, and is included in the shipped sample install jobs for WebSphere Application Server V8, such as member BBO1INST in the samples data set, SBBOJCL.

- *As noted above, when the shared resources location becomes empty, Installation Manager may "un-set" the location value. So it is a good idea to specify the -sharedResourcesDirectory on each install command*

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Good Things to Know...

- Location of "Fix Central".
  - http://www-933.ibm.com/support/fixcentral/
- Info on How to Locate and Install Interim Fixes (IFIXes).
  - http://www-01.ibm.com/support/docview.wss?
    rs=0&context=SS7K4U&q1=V8RNotes&uid=swg27021730&l
    oc=en_US&cs=utf-8&lang=
- Installation Manager V1.4.4 is now available.
  - Install Install Kit PTF UK68672.
  - Adds a success message after every install showing the
    package, version, and install location.
  - Other good stuff...

Useful Information Sources

Installation Manager V1.4 InfoCenter:

http://publib.boulder.ibm.com/infocenter/install/v1r4/index.jsp

WebSphere Application Server V8 InfoCenter:

http://publib.boulder.ibm.com/infocenter/wasinfo/v8r0/index.jsp

IBM Education Assistant (has a 1-hour presentation on WAS V8 install on z/OS):

http://publib.boulder.ibm.com/infocenter/ieduasst/v1r1m0/index.jsp

PSP buckets:

http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp

IBM Installation Manager: Upgrade IIMZOSV1, subset HGIN140

WebSphere Application Server: Upgrade WASAS800, subset HBBO800

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Questions?