

# IBM Installation Manager for z/OS System Programmers: Web-based Installs, Fix Packs, and How iFixes Really Work

*Don Bagwell, Bryant Panyarachun*  
*IBM*

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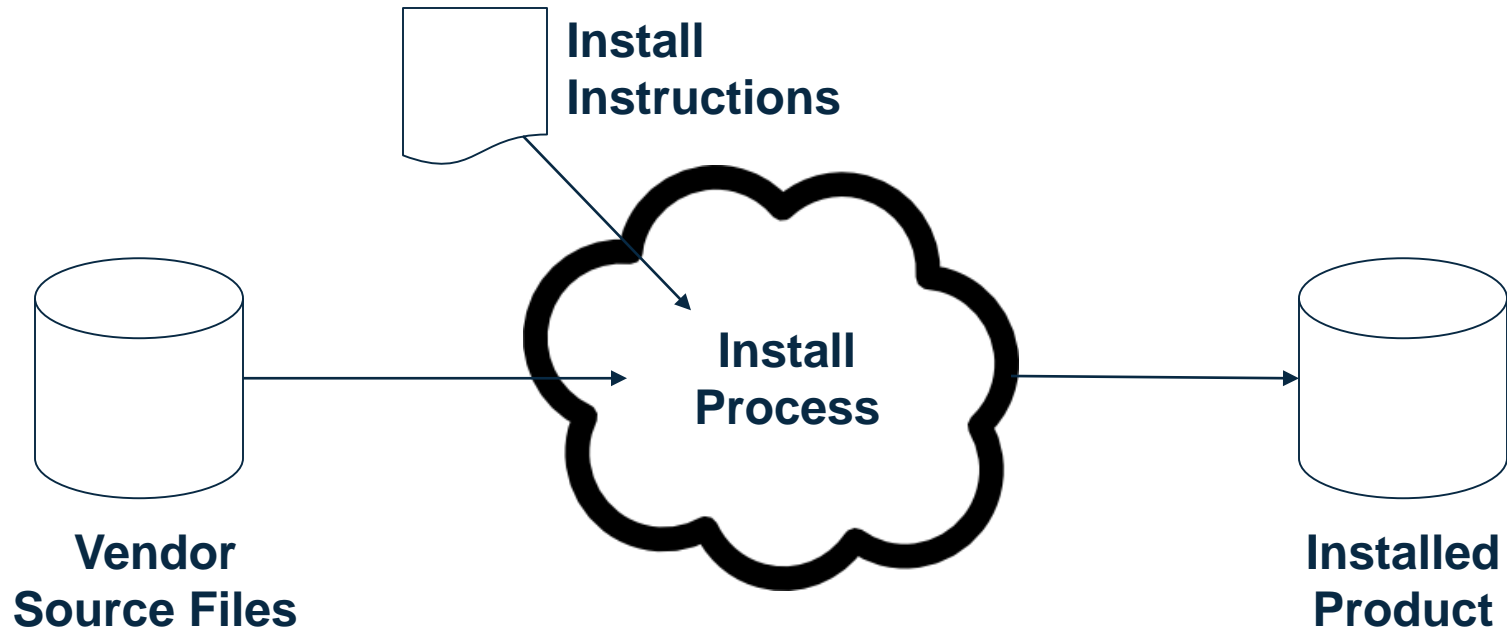
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# 100,000 Foot View of any Installation Function



**It's worth keeping this picture in mind when we get into the details of "repositories" and "imcl" parameters**

## Two Things to Cover:

1. Using IM to install IBM products
2. Installing IM itself

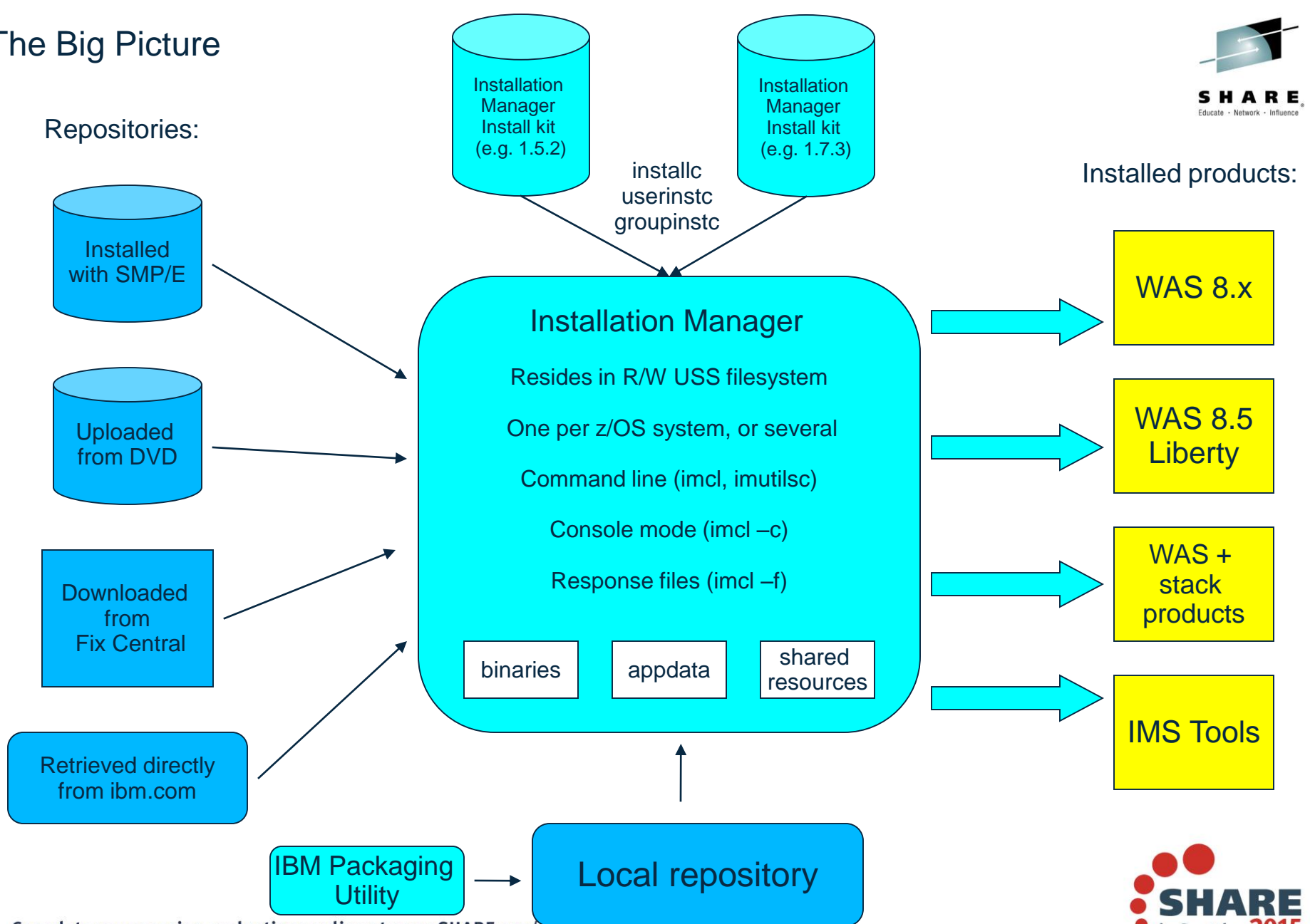
We'll cover them in the order shown ... makes more sense to get an understanding of what IM is and does, *then* cover how to get IM installed and usable

# Why IBM Installation Manager?



- Allows efficient delivery of large products and inter-mixed products into a Unix-style filesystem
- Supports multiple platforms from a single object repository
- In use since 2006
- Available on z/OS since 2010 (WAS V8)

# The Big Picture



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# The basics: the imcl install command

```
imcl install product_to_be_installed  
-repositories list_of_repositories  
-installationDirectory where_the_product_should_be_installed  
-acceptLicense
```

- The imcl (IM command line) binary is in <IM binaries>/eclipse/tools
- Must be run under the Installation Manager user ID



# The basics: packages

IM-installable products are defined by an offering name or package name:

`com.ibm.websphere.zOS.v85`

The release and a build timestamp make this package name unique for each product level:

`com.ibm.websphere.zOS.v85_8.5.5001.20131018_2325`

Version format:             $v.r.m.f \rightarrow v.r.(m*1000 + f)$   
                              8.5.5.1  $\rightarrow$  8.5.5001

*8.5.0.2014... is 8.5.0.0,  
not 8.5.0.2!*

Timestamp format:        `yyyyddmm_hhmm`

If the underscore and version/timestamp are omitted, Installation Manager will install the latest level available in the repositor(ies).

To see all installed products: `imcl listInstalledPackages`  
                                  `imcl listInstalledPackages -verbose`

# The basics: repositories

Collections of metadata and “parts”

Two flavors:

1. **Local file system (example: SMP/E install, or from product DVD)**
2. **Hosted network location**

```
-repositories /path/to/repository      ← must include complete path!  
  
-repositories http://<hostname>:<port>/path  
  
-repositories <repository>,<repository>,<repository> etc.
```

**To see the contents of repository:**

```
imcl listAvailablePackages -repositories <repository list>
```

# Where do product repositories come from?

## 1 Installed with SMP/E:

For example, WAS 8.5 ships FMID HBBO850, which installs the WAS 8.5 product repository into target data set SBBOIMR.

```
-repositories /usr/lpp/InstallationManagerRepository/HBBO850
```

With service, this repository usually contains the base (GA) level of the product, plus one fix pack level (corresponding to the PTFs installed). This repository can be used to install at the GA or the installed fix pack level, or upgrade any previous level of WAS 8.5 to the fix pack level in the repository.

FMID HBJA700 installs the WAS Java 7.0 product repository into target data set HBJAIMR.

```
-repositories /usr/lpp/InstallationManagerRepository/HBJA700
```

Again, when service is applied, the base level of Java 7 is available, together with one fix pack level, which can be used for both initial installs and upgrades.

# Where do product repositories comes from?

## 2 Uploaded from product media:

WAS 8.5.5 includes the following DVD or DVD image (.iso file):

### Compressed repositories for WebSphere Application Server for z/OS

Name	Date modified	Type	Size
▲ Files Currently on the Disc (9)			
lafiles	5/14/2013 7:43 PM	File folder	
readme	5/14/2013 7:43 PM	File folder	
was.repo.1104.w2mtk.zip	5/14/2013 7:43 PM	Compressed (zipp...	82,967 KB
was.repo.7501.adapters.zip	5/14/2013 7:43 PM	Compressed (zipp...	18,361 KB
was.repo.8550.ihs.zOS.zip	5/14/2013 7:43 PM	Compressed (zipp...	33,904 KB
was.repo.8550.liberty.zOS.zip	5/14/2013 7:43 PM	Compressed (zipp...	110,278 KB
was.repo.8550.plugins.zOS.zip	5/14/2013 7:43 PM	Compressed (zipp...	35,595 KB
was.repo.8550.zOS.zip	5/14/2013 7:43 PM	Compressed (zipp...	1,752,787 ...
Copyright.txt	5/14/2013 4:56 PM	TXT File	1 KB

*And a second  
DVD or .iso  
for JDK 7.0*

Each zip file contains a base product repository. Upload the desired repository in binary to z/OS, and point to it:

`-repositories /prod/WAS855/repositories/was.repo.8550.zOS.zip`

Unzipping the repository (and pointing `-repositories` to the unzip directory) improves performance at the cost of additional disk space.

# Where do product repositories comes from?

## 3 Downloaded from Fix Central:

Fix Central (<http://www.ibm.com/support/fixcentral>) allows you to search for and download product refreshes (fix packs) and corrective service (iFixes):

**Find product** **Select product**

Select the product below.

When using the keyboard to navigate the page, use the **Alt** and **down arrow** keys to navigate the selection lists.

**Product Group\***  
WebSphere

**Select from WebSphere\***  
WebSphere Application Server

**Installed Version\***  
8.5.5.1

**Platform\***  
z/OS

Continue

Select Continue,  
then Browse for Fixes...

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# Where do product repositories comes from?

And you will get a list of all service that can be applied to the specific product level (in this case, WAS for z/OS 8.5.5.1):

- ☐ 10. **interim fix:** [8.5.5.0-WAS-WASProd-IFPI16082](#) →  
8.5.5.0-WAS-WASProd-IFPI16082  
[More Information](#)
- ☐ 11. **interim fix:** [8.5.5.0-WAS-WASProd-IFPI12648](#) →  
8.5.5.0-WAS-WASProd-IFPI12648  
[More Information](#)
- ☐ 12. **fix pack:** [8.5.5-WAS-LIBERTYPROFILE-FP0000002](#) →  
WebSphere Application Server Liberty Profile V8.5.5 Fix Pack 2  
[More Information](#)
- ☐ 13. **fix pack:** [8.5.5-WAS-WAS-OS390-FP0000002](#) →  
IBM WebSphere Application Server Version 8.5.5 Fix Pack 2 for zOS platform.  
[More Information](#)

Use the links to decide what service you want, then download it to your workstation and upload it in binary to z/OS. Point Installation Manager to the downloaded service:

-repositories /path/to/downloaded/file/filename.zip

# Where do product repositories comes from?

## 4 From the IBM hosted repository

But if your z/OS system has access to the Internet – possibly through a proxy server – you can have Installation Manager access Fix Central directly, through the **service repository**:

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

For example:

<http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v85>

(This URL is meant to be used by Installation Manager only, but you can point a browser at it by adding /repository.config to the end.)

This repository provides access to all product fix packs and all published corrective service (iFixes) for com.ibm.websphere.zOS.v85.

All you need is an IBM ID – get one at <http://www.ibm.com/account/profile>

Installation Manager will pull down only the required parts to apply service.

All transactions are encrypted (HTTPS).

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# Saving a Credentials File

Once you have an IBM ID and password, create a credentials file for Installation Manager to use:

```
imutilsc saveCredential  
  -userName IBM_userid  
  -userPassword IBM_password  
  -url http://www.ibm.com/software/repositorymanager/  
        com.ibm.websphere.zOS.v85/repository.config  
  -secureStorageFile /path/im.ssf
```

The imutilsc binary is in the same location as imcl: <IMbin>/eclipse/tools

Additional options can be used to provide proxy credentials, and to specify a master password that is used to provide better encryption for the credentials file.

*If you installed the WAS 8.5 repository (HBBO850) at fix pack level 8.5.5.2 or above, see sample member BBO1CRED in SBBOJCL.*



# Making your life easier

Since many installs will require a number of repositories – base product, fix packs, iFixes, and so on – you may want to create a composite repository. This is a single repository.config file that points to a number of other repositories:

```
LayoutPolicy=Composite LayoutPolicyVersion=0.0.0.1    repository.url.01=location_repository_A  
repository.url.02=location_repository_B  
repository.url.03=location_repository_C  
repository.url.04=location_repository_D
```

*The file must be in ASCII!*

Pointing the imcl parameter **–repositories** to the directory containing this repository.config file will cause Installation Manager to search all the repositories named in the file – which can be any mix of local and web-accessible repositories.

See the following article for more about composite repositories:

[http://pic.dhe.ibm.com/infocenter/install/v1r7/topic/com.ibm.silentinstall12.doc/topics/t\\_repository\\_composite.html](http://pic.dhe.ibm.com/infocenter/install/v1r7/topic/com.ibm.silentinstall12.doc/topics/t_repository_composite.html)

You can also use **IBM Package Utility** (free; see links at the end) to create and manage a local repository containing multiple products and service.

# The basics: installation directories

Installed products are identified to Installation Manager by their installation directories – so these can't be changed.

**New (empty) installation directory:** Installation Manager performs a new product install

**Existing installation directory:** Installation Manager performs a product upgrade to the new/specified level

Some products can only be installed with (“on top of”) other products; Installation Manager checks the product dependencies in each case.

Installation Manager provides a script to create product filesystems:

```
zCreateFileSystem.sh -name WAS.V8551.SBBOHFS -type ZFS  
-cylinders 3000 300 -mountpoint /prod/WAS/V8551  
-owner IMADMIN -group IMGROUP
```

To see all directories in use: `imcl listInstallationDirectories`

# Installing products and service

Suppose you have installed the WAS 8.5 product repository with SMP/E (FMID HBBO850).

Run sample job BBO1CFS to create a file system for a new WAS 8.5 install.

Run sample job BBO1INST to perform the install:

```
//INSTALL EXEC PGM=IKJEFT01,REGION=0M,MEMLIMIT=NOLIMIT
//SYSTSPRT DD SYSOUT=*
//BPXOUT DD SYSOUT=*
//STDOUT DD SYSOUT=*
//SYSTSIN DD *
BPXBATCH SH +
  /InstallationManager/bin/eclipse/tools/imcl +
  install com.ibm.websphere.zOS.v85 +
  -installationDirectory /usr/lpp/zWebSphere/V8R5 +
  -sharedResourcesDirectory /InstallationManager/sharedResources +
  -repositories /usr/lpp/InstallationManagerRepository/HBBO850 +
  -preferences com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts=false +
  -acceptLicense +
/*
```

The WAS level in the product repository will be installed.

# Installing products and service

Perhaps, instead of using SMP/E, you uploaded the WAS 8.5.5 compressed repository file from the product DVD.

Create a filesystem to install the product into:

```
zCreateFileSystem.sh -name WAS.V8550.SBBOHFS -type ZFS -cylinders 3000 300  
-mountpoint /prod/WAS/V8550 -owner IMADMIN -group IMGROUP
```

Perform the install:

```
imcl install com.ibm.websphere.zOS.v85  
-repositories /prod/WAS855/repositories/was.repo.8550.zOS.zip  
-installationDirectory /prod/WAS/V8550  
-sharedResourcesDirectory /InstallationManager/sharedResources  
-preferences com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts=false  
-acceptLicense
```

The WAS level in the compressed product repository will be installed – namely, WAS 8.5.5.0.

# Installing products and service

To install an iFix that you have downloaded as a zip file:

```
imcl install 8.5.5.0-WS-WAS-IFPM89206  
-repositories /path/to/ifix/8.5.5.0-WS-WAS-IFPM89206  
-installationDirectory /prod/WAS/V8550  
-acceptLicense
```

To install the same iFix directly from Fix Central:

```
imcl install 8.5.5.0-WS-WAS-IFPM89206  
-repositories http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v85  
-installationDirectory /prod/WAS/V8550  
-secureStorageFile /u/jdoe/fix.central.ssf  
-acceptLicense
```

# Installing products and service

To install the latest fix pack and all recommended iFixes from Fix Central:

## Full-Profile WAS z/OS

```
imcl install com.ibm.websphere.zOS.v85
-repositories
    http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v85
-installationDirectory /prod/WAS/V8552
-preferences com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts=false
-installFixes recommended
-secureStorageFile /u/jdoe/fix.central.ssf
-acceptLicense
```

## Liberty Profile

```
imcl install com.ibm.websphere.liberty.zOS.v85
-repositories
    http://www.ibm.com/software/repositorymanager/com.ibm.websphere.liberty.zOS.v85
-installationDirectory /prod/WASLiberty/V8552
-preferences com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts=false
-installFixes recommended
-secureStorageFile /u/jdoe/fix.central.ssf
-acceptLicense
```

# New in 2014:

If you link your IBM ID with an IBM customer number that is associated with a current license for the WAS 8.5 product, you no longer need to get the base product repository via SMP/E or from the product media.

Follow the instructions in <http://www-01.ibm.com/support/docview.wss?uid=swg21659636> and you can install the entire WAS 8.5 product from ibm.com with one cmd:

```
imcl install com.ibm.websphere.zOS.v85  
-repositories http://www.ibm.com/software/repositorymanager/com.ibm.websphere.zOS.v85  
-installationDirectory /prod/WAS/V8552  
-preferences com.ibm.cic.common.core.preferences.preserveDownloadedArtifacts=false  
-installFixes recommended  
-secureStorageFile /u/jdoe/fix.central.ssf  
-acceptLicense
```

This will install the latest level of WAS, plus all recommended service, without any additional space requirements on z/OS besides the disk space for Installation Manager, and for the installed WAS product.

# IM and IMS



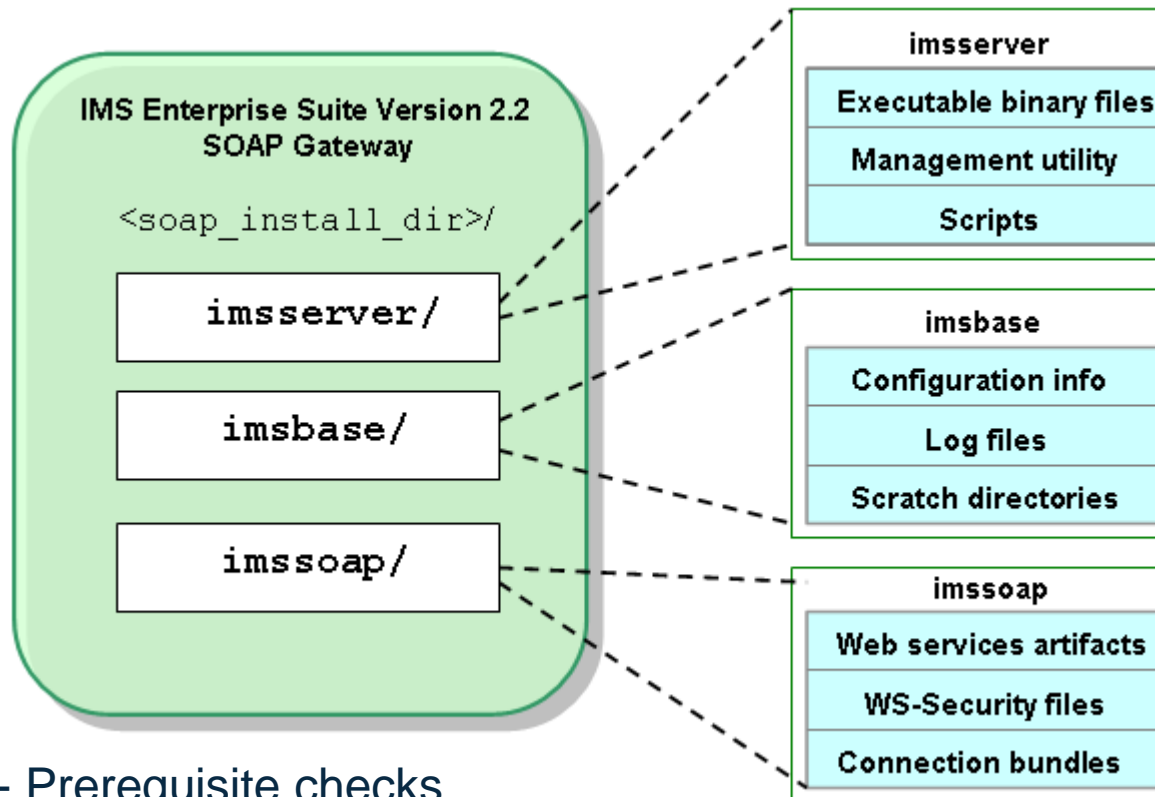
# Installation Manager and IMS

- IMS Enterprise Suite SOAP Gateway
- IMS Mobile Feature Pack
- Management Console for z/OS

IM features used:

- Prerequisite checks
- Custom Panels
- Post installation configuration
- Hosted repositories

# IMS Enterprise Suite SOAP Gateway



- Prerequisite checks
- Installation directory requirements
- Component requirements
- Post installation configuration
- Server.xml
- JAVA\_HOME
- Properties file configuration

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# IMS Mobile Feature Pack

```
//STDOUT DD SYSOUT=*
//SYSTIN DD *
BPXBATCH SH +
  /InstallationManager/bin/eclipse/tools/imcl +
  install com.ibm.ims.imsmobile.v31 +
  -installationDirectory /usr/lpp/ims/imses/V3R1/rest_gw +
  -sharedResourcesDirectory /InstallationManager/sharedResources +
  -repositories /usr/lpp/InstallationManagerRepository/+
  JAHF31A/IMSES_IMSMobile_V3.1.1.0.zip +
  -preferences com.ibm.cic.common.core.preferences.preserveDownlo+
  adedArtifacts=false +
  -properties +
  user.javaHome,,com.ibm.ims.imsmobile.v31=+
  /usr/lpp/ims/imses/V3R1/java170/SR6/FP1/J7.0,+
  user.imsTechnicalGroup,,com.ibm.ims.imsmobile.v31=IMSGROUP,+
  user.imsTechnicalID,,com.ibm.ims.imsmobile.v31=MSGUEST,+
  user.registryHome,,com.ibm.ims.imsmobile.v31=./registry +
  -acceptLicense
/*
```

- Custom panel parameters
- JAVA\_HOME
- Technical ID & Group (SAF/RACF security)
- server registry
- Post installation configuration
- server.xml

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# Management Console for z/OS

```
usr/lpp/InstallationManager/bin/eclipse/tools/imcl +  
install 'com.ibm.imac',imsbase.feature,db2.feature +  
-installationDirectory /usr/lpp/IBM/mgmtconsole/v110 +  
-sharedResourcesDirectory /usr/lpp/InstallationManager/+  
sharedResources +  
-repositories /usr/lpp/InstallationManagerRepository/HDYW110/+  
mgmtconsole.zip +  
-preferences com.ibm.cic.common.core.preferences.+  
preserveDownloadedArtifacts=false +  
-properties +  
user.enableHttpPortCheckButtonUserData,,com.ibm.imac=false,+  
user.httpPortPropertyUserData,,com.ibm.imac=9080,+  
user.enableHttpsPortCheckButtonUserData,,com.ibm.imac=true,+  
user.httpsPortPropertyUserData,,com.ibm.imac=9443,+  
user.zosJavaHomeUserData,,com.ibm.imac=/usr/lpp/java170/J7.0_64 +  
-acceptLicense +  
-sVP
```

- Custom panel parameters
- Detects IMS or DB2 Tools base features
- Hostname & port
- http or https
- Post installation configuration
- server.xml
- Hosted repositories
- Access to product repositories via URL

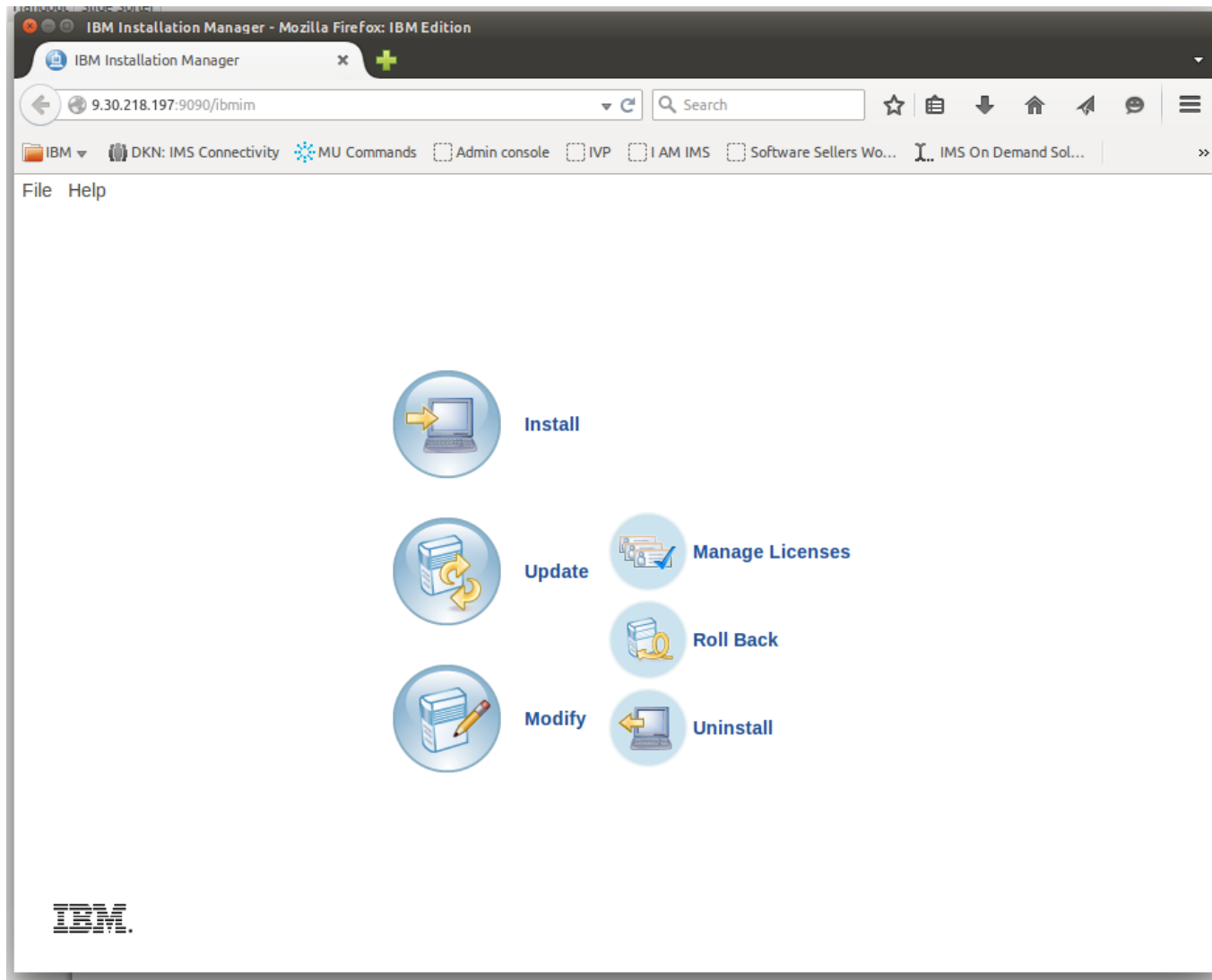
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# Installation Manager Web GUI

- Installation Manager web server
- Available with Installation Manager 1.8.0
- Provides same GUI as seen on distributed systems

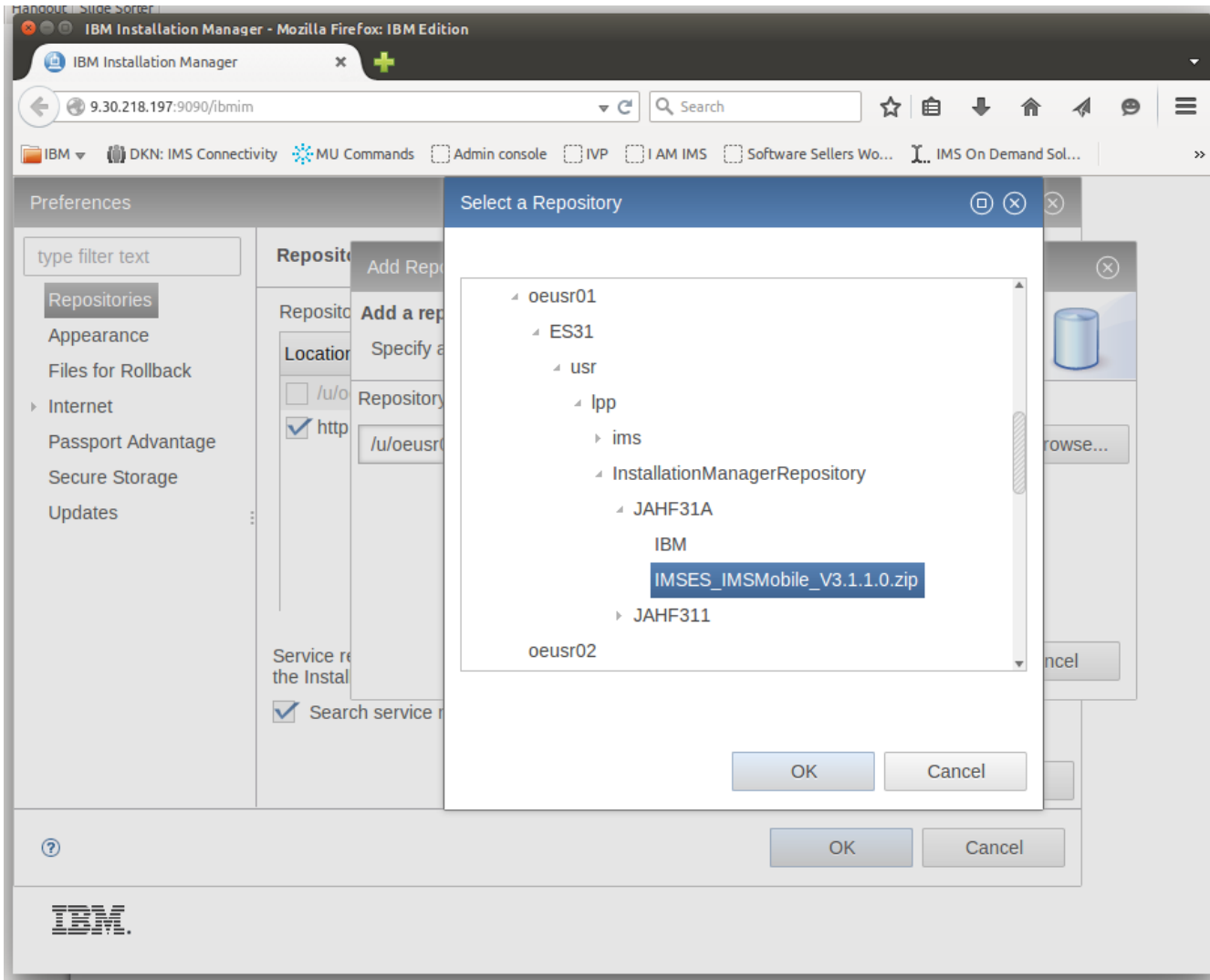
```
//~  
2 //STEPD EXEC PGM=BPXBATCH,DYNAMNBR=250,REGION=0M  
3 //SYSPRINT DD SYSOUT=*  
4 //SYSTSPRT DD SYSOUT=*  
5 //STDOUT DD SYSOUT=*  
6 //STDERR DD SYSOUT=*  
7 //STDENV DD DISP=SHR,DSN=IMSTESTL.EC32016A.ES31.JCL(VARCF)  
8 //STDPARM DD *,SYMBOLS=EXEC SYS  
ICH70001I OMVSADM LAST ACCESS AT 15:41:57 ON WEDNESDAY, FEBRUARY 25, 2015  
IEF236I ALLOC. FOR IBMIMSRV STEP  
IEF237I JES2 ALLOCATED TO SYSPRINT  
IEF237I JES2 ALLOCATED TO SYSTSPRT  
IEF237I JES2 ALLOCATED TO STDOUT  
IEF237I JES2 ALLOCATED TO STDERR  
IEF237I 0900 ALLOCATED TO STDENV  
IEF237I JES2 ALLOCATED TO STDPARM  
SH  
/InstallationManager/bin/eclipse/web/ibmim-web;  
IBM Installation Manager web server has started at: http://9.30.218.197:9090/ibmim
```

# Installation Manager Web GUI



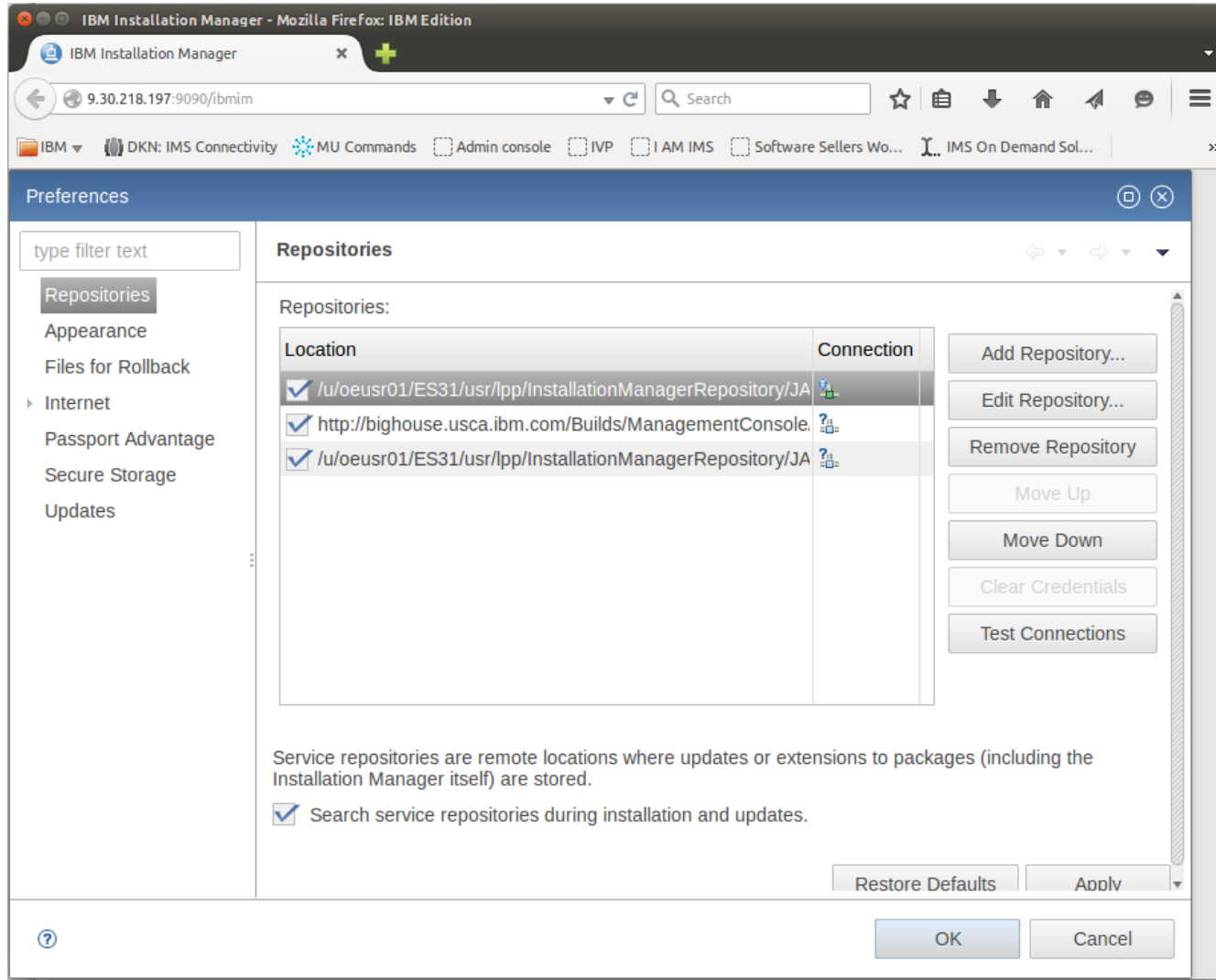
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# Installation Manager Web GUI



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# Installation Manager Web GUI



IBM Installation Manager - Mozilla Firefox: IBM Edition

IBM Installation Manager

9.30.218.197:9090/ibmim

IBM DKN: IMS Connectivity MU Commands Admin console IVP I AM IMS Software Sellers Wo... IMS On Demand Sol...

Preferences

type filter text

Repositories

Appearance

Files for Rollback

Internet

Passport Advantage

Secure Storage

Updates

Repositories:

Location	Connection
<input checked="" type="checkbox"/> /u/oeusr01/ES31/usr/lpp/InstallationManagerRepository/JA	
<input checked="" type="checkbox"/> http://bighouse.usca.ibm.com/Builds/ManagementConsole.	
<input checked="" type="checkbox"/> /u/oeusr01/ES31/usr/lpp/InstallationManagerRepository/JA	

Add Repository...

Edit Repository...

Remove Repository

Move Up

Move Down

Clear Credentials

Test Connections

Service repositories are remote locations where updates or extensions to packages (including the Installation Manager itself) are stored.

☒ Search service repositories during installation and updates.

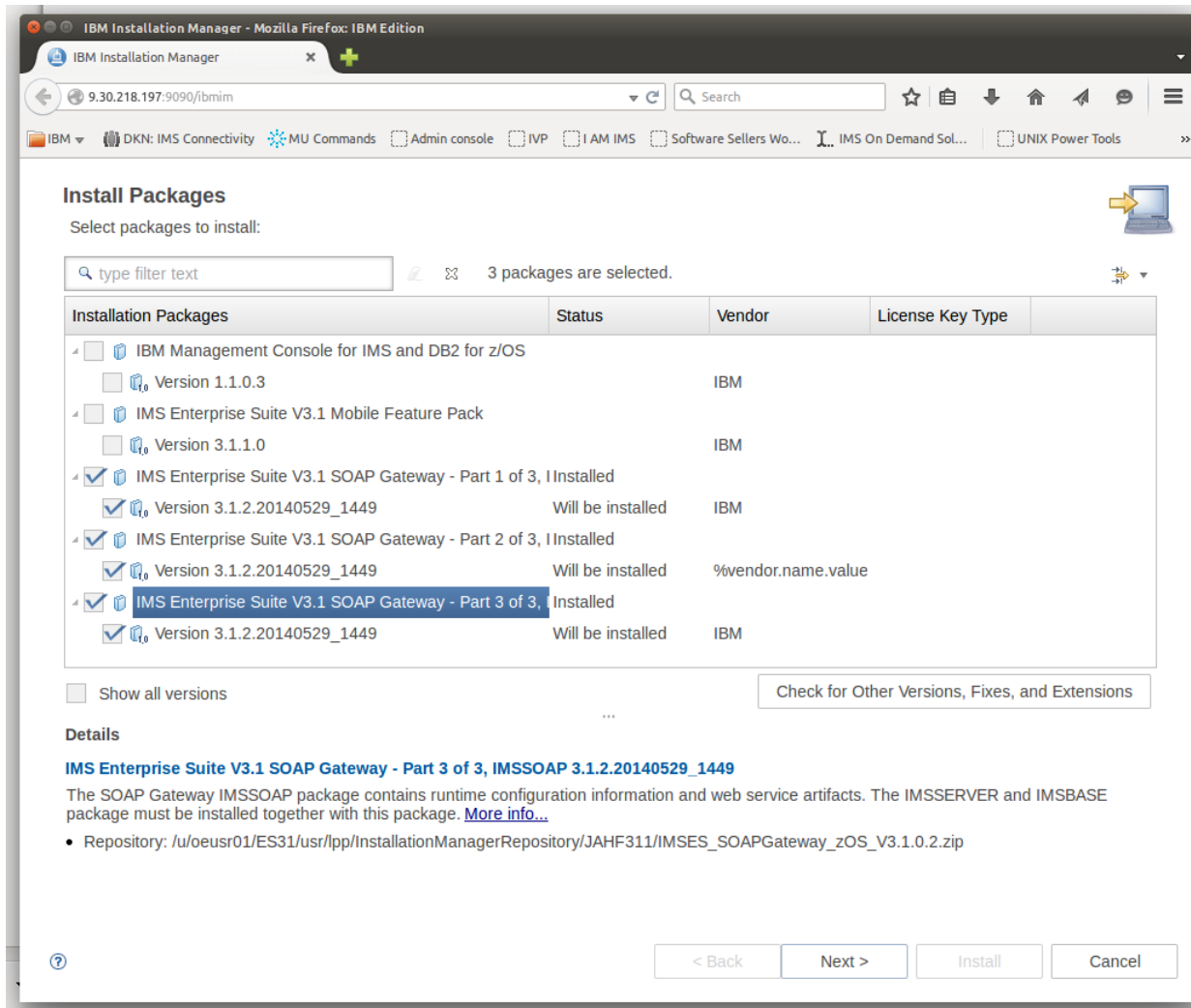
Restore Defaults Apply

OK Cancel

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)



# Installation Manager Web GUI



IBM Installation Manager - Mozilla Firefox: IBM Edition

IBM Installation Manager

9.30.218.197:9090/ibmin

Search

IBM DKN: IMS Connectivity MU Commands Admin console IVP IAM IMS Software Sellers Wo... IMS On Demand Sol... UNIX Power Tools

### Install Packages

Select packages to install:

type filter text 3 packages are selected.

Installation Packages	Status	Vendor	License Key Type
<input type="checkbox"/> IBM Management Console for IMS and DB2 for z/OS		IBM	
<input type="checkbox"/> Version 1.1.0.3			
<input type="checkbox"/> IMS Enterprise Suite V3.1 Mobile Feature Pack		IBM	
<input type="checkbox"/> Version 3.1.1.0			
<input checked="" type="checkbox"/> IMS Enterprise Suite V3.1 SOAP Gateway - Part 1 of 3, I Installed			
<input checked="" type="checkbox"/> Version 3.1.2.20140529_1449	Will be installed	IBM	
<input checked="" type="checkbox"/> IMS Enterprise Suite V3.1 SOAP Gateway - Part 2 of 3, I Installed			
<input checked="" type="checkbox"/> Version 3.1.2.20140529_1449	Will be installed	%vendor.name.value	
<input checked="" type="checkbox"/> <b>IMS Enterprise Suite V3.1 SOAP Gateway - Part 3 of 3, I Installed</b>			
<input checked="" type="checkbox"/> Version 3.1.2.20140529_1449	Will be installed	IBM	

☐ Show all versions

Check for Other Versions, Fixes, and Extensions

### Details

**IMS Enterprise Suite V3.1 SOAP Gateway - Part 3 of 3, IMSSOAP 3.1.2.20140529\_1449**

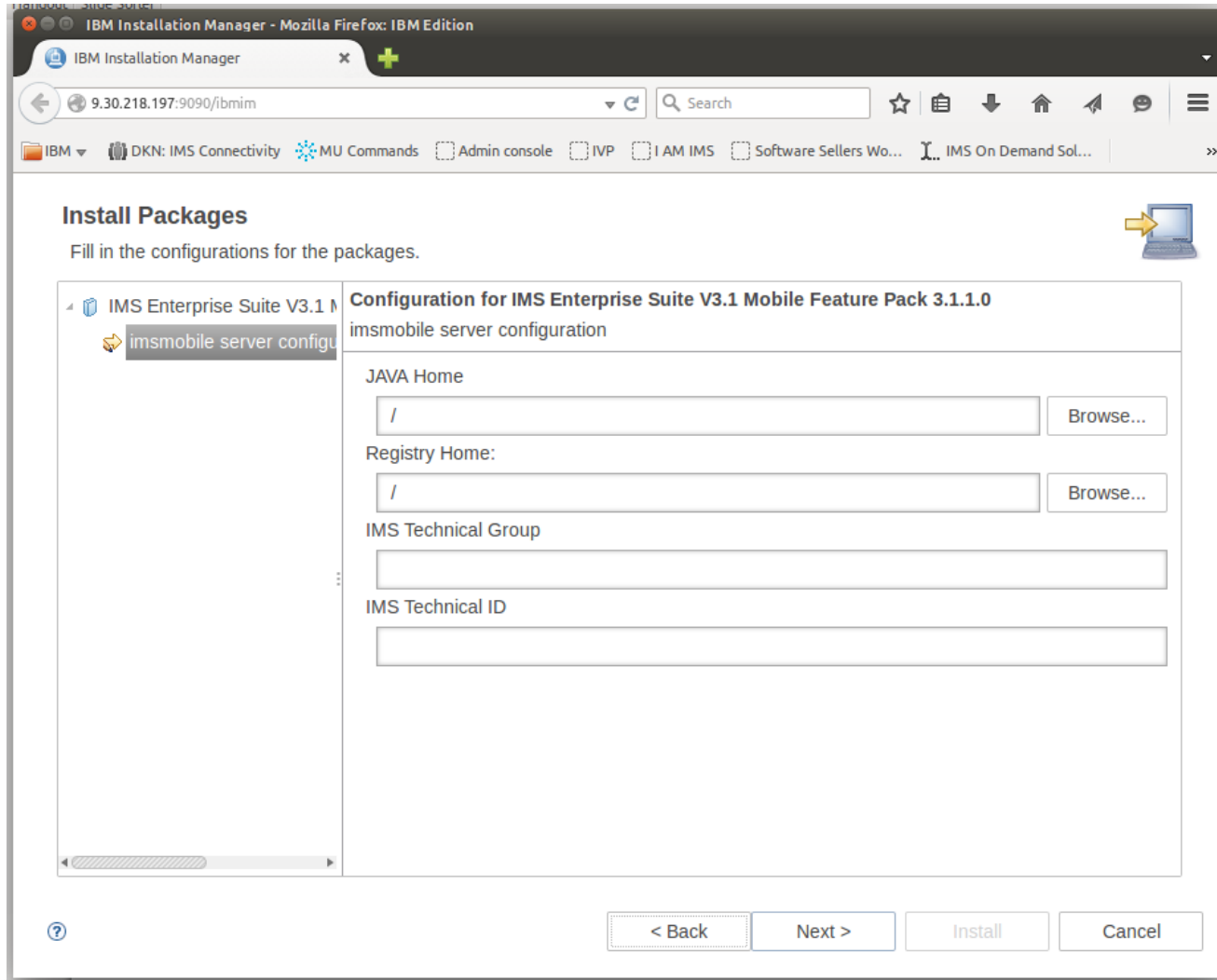
The SOAP Gateway IMSSOAP package contains runtime configuration information and web service artifacts. The IMSSERVER and IMSBASE package must be installed together with this package. [More info...](#)

- Repository: /u/oeusr01/ES31/usr/lpp/InstallationManagerRepository/JAHF311/IMSES\_SOAPGateway\_zOS\_V3.1.0.2.zip

< Back Next > Install Cancel

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# Installation Manager Web GUI



IBM Installation Manager - Mozilla Firefox: IBM Edition

IBM Installation Manager

9.30.218.197:9090/ibmim

IBM DKN: IMS Connectivity MU Commands Admin console IVP I AM IMS Software Sellers Wo... IMS On Demand Sol...

### Install Packages

Fill in the configurations for the packages.

IMS Enterprise Suite V3.1 Mobile Feature Pack 3.1.1.0

imsmobile server configuration

Configuration for IMS Enterprise Suite V3.1 Mobile Feature Pack 3.1.1.0

imsmobile server configuration

JAVA Home

/ Browse...

Registry Home:

/ Browse...

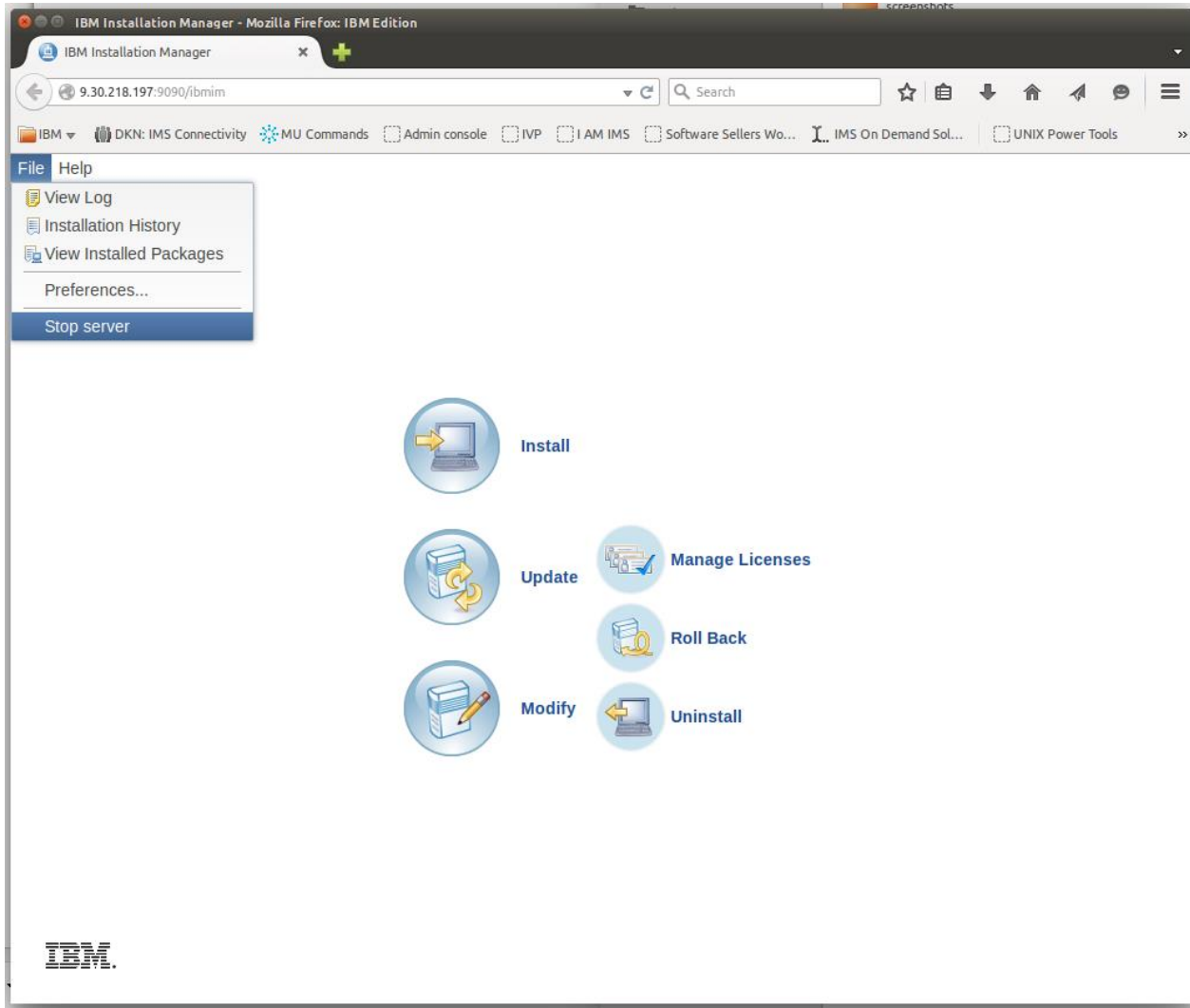
IMS Technical Group

IMS Technical ID

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# Installation Manager Web GUI



Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# Installing IM on z/OS

# Where does Installation Manager come from?



Install with SMP/E as FMID HGIN140 – shipped with all products that require IBM Installation Manager

+ one PTF to give you a current level of the install kit – IM 1.7.3 = UI18566

= product data set SGINHFS containing the IBM Installation Manager install kit:

/usr/lpp/InstallationManager/V1R4

*yes, even if it is no longer 1.4...*

```
# ls -al /usr/lpp/InstallationManager/V1R4
total 304840
drwxr-xr-x 12 GOMARK SYS1      8192 Jun  5 16:59 .
drwxr-xr-x  3 GOMARK SYS1      8192 Mar 26 11:51 ..
drwxr-xr-x  2 GOMARK SYS1      8192 Jun  5 16:58 IBM
drwxr-xr-x  2 GOMARK SYS1      8192 Jun  5 16:58 Offerings
drwxr-xr-x  3 GOMARK SYS1      8192 Jun  5 16:58 configuration
-rwxr-xr-x  1 GOMARK SYS1      2225 Jun  5 16:58 consoleinst.sh
drwxr-xr-x 13 GOMARK SYS1      8192 Jun  5 16:58 documentation
drwxr-xr-x  2 GOMARK SYS1      8192 Jun  5 16:58 features
-rwxr-xr-x  1 GOMARK SYS1    118784 Jun  5 16:58 groupinstc
-rwxr-xr-x  1 GOMARK SYS1       305 Jun  5 16:58 groupinstc.ini
-rwxr-xr-x  1 GOMARK SYS1       265 Jun  5 16:58 install.xml
-rwxr-xr-x  1 GOMARK SYS1    118784 Jun  5 16:58 installc
-rwxr-xr-x  1 GOMARK SYS1       303 Jun  5 16:58 installc.ini
drwxr-xr-x  3 GOMARK SYS1      8192 Jun  5 16:58 jre_6.0.0.sr9_20110303_01
drwxr-xr-x  2 GOMARK SYS1      8192 Jun  5 16:58 license
drwxr-xr-x  2 GOMARK SYS1      8192 Jun  5 16:58 native
drwxr-xr-x 10 GOMARK SYS1     73728 Jun  5 16:59 plugins
-rwxr-xr-x  1 GOMARK SYS1     10770 Jun  5 16:59 readme.html
-rwxr-xr-x  1 GOMARK SYS1       201 Jun  5 16:59 repository.config
-rwxr-xr-x  1 GOMARK SYS1     10746 Jun  5 16:59 repository.xml
-rwxr-xr-x  1 GOMARK SYS1      2253 Jun  5 16:59 set-ext-attr.sh
-rwxr-xr-x  2 GOMARK SYS1      4113 Jun  5 16:57 toolkit.unzip.sh
-rwxr-xr-x  2 GOMARK SYS1    155495977 Jun  5 16:58 toolkit.zip
drwxr-xr-x  2 GOMARK SYS1      8192 Jun  5 16:59 tools
-rwxr-xr-x  1 GOMARK SYS1    118784 Jun  5 16:59 userinstc
-rwxr-xr-x  1 GOMARK SYS1       307 Jun  5 16:59 userinstc.ini
#
==>
```

# Where does Installation Manager come from?

OR

Download a current copy of the install kit from

<http://www-01.ibm.com/support/docview.wss?uid=swg27025142>

- ☐ 2. **refresh pack: [1.7.3.0-IBMIM-LINUX-X86\\_64-20140521\\_1925](#)** →  
IBM Installation Manager 1.7.3 Install Kit for Linux x86\_64
- ☐ 3. **refresh pack: [1.7.3.0-IBMIM-ZOS-20140521\\_1925](#)** →  
IBM Installation Manager 1.7.3 Install Kit for Z/OS
- ☐ 4. **refresh pack: [1.7.3.0-IBMIM-WIN64-20140521\\_1925](#)** →  
IBM Installation Manager 1.7.3 Install Kit for Windows x86\_64

**refresh pack: 1.7.3.0-IBMIM-ZOS-20140521\_1925**

IBM Installation Manager 1.7.3 Install Kit for Z/OS

The following files implement this fix.

→ [agent.installer.zos.motif.s390\\_1.7.3000.20140521\\_1925.zip](#) (148.29 MB)

Upload the zip file in binary to z/OS and unzip it\* Into an empty directory. Then run the set-ext-attr.sh script to set some extended attributes. Voila – an Installation Manager install kit.

\* You can get an unzip for x/OS from  
[www.ibm.com/systems/z/os/zos/features/unix/bpxa1ty1.html](http://www.ibm.com/systems/z/os/zos/features/unix/bpxa1ty1.html)  
or just use any Java JDK: `jar -xvf <zipfile>`

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# Setting up Installation Manager

1. Set up filesystem(s) to hold the IM binaries, appdata, and shared resources – at least 37,000 tracks for a large product like WAS for z/OS.  
(See sample job GIN2CFS in SGINJCL)
2. Create a user ID with a r/w USS home directory and READ access to  
FACILITY profiles BPX.FILEATTR.APF  
BPX.FILEATTR.PROGCTL  
BPX.FILEATTR.SHARELIB  
UNIXPRIV profiles SUPERUSER.FILESYS.CHOWN  
SUPERUSER.FILESYS.CHANGEPERMS *(or equivalent)*
3. **From this ID**, run the installc, userinstc, or groupinstc commands to create an Installation Manager in admin, user, or group mode:

```
installc -installationDirectory /InstallationManager/bin  
        -dataLocation /InstallationManager/appdata  
        -acceptLicense
```

This will copy the Installation Manager binaries to /InstallationManager/bin, and initialize Installation Manager runtime data (installed products) in /InstallationManager/appdata.

Now just invoke the Installation Manager under the ID you created in step 2.

Complete your session evaluations online at [www.SHARE.org/Seattle-Eval](http://www.SHARE.org/Seattle-Eval)

# Updating an Installation Manager

The Installation Manager you created will continue to run at the same level until you update its binaries:

Install a new PTF for HGIN140, or download and unzip a new level of the install kit.

From the updated install kit, re-issue the original command you used to create the Installation Manager (installc, userinstc, or groupinstc, with the same arguments. (Be sure to use the same Installation Manager user ID!)

This will copy the updated Installation Manager binaries from the install kit into the Installation Manager binaries directory, and update the IM run-time data.

Installation Manager has fairly strict requirements for upward compatibility – there is very little risk in upgrading to a new IM level.

And here's why you might want to upgrade:



# Why update Installation Manager?

## IM 1.5.2 enhancements:

- Group mode should handle file permissions and ownership better
- Addition of -useServiceRepository parameter

## IM 1.7.0 enhancements:

- Ability to view product licenses from the imcl command line

## IM 1.7.2 enhancements:

- Uninstall prevented if offering is required by other installed pkgs
- The imutilsc saveCredential command no longer requires repository.config on end of URL
- Installation Manager now checks for required free space before performing install or upgrade

## IM 1.7.3 enhancements:

- ciclogs files no longer left in /tmp to cause problems

## Under consideration:

- Abbreviations for all parameter options (-installationDirectory, etc.)
- Full support for SMS options in the zCreateFileSystem.sh script
- Web interface to Installation Manager
- Integration with z/OSMF

# Avoiding problems with Installation Manager:



## Home directories

Installation Manager assumes that a writeable home directory is available. If you see errors about specifying the `-configuration` option, check your `OMVS(USERHOME)` setting!

## File permissions

When uploading fixes for Installation Manager to consume, always make sure they are readable by the Installation Manager user ID!

Group mode allows several user IDs (all in the same SAF group) to share a common set of IM binaries and run-time data. With some products, you may need to `chmod -R g+w` the product filesystem being maintained when you switch to a different user ID in the group. Also, if the IM group is not your default group, you may need to use the `newgrp` command, or `GROUP=` on the `JOB` statement, to force the correct group to be used.

## Special characters [SWG21612945](#)

Installation Manager can be fussy about special characters such as `% # < > "`  
Avoid these characters in path names that Installation Manager will use!

# Avoiding problems with Installation Manager:



## **Symbolic links** SWG21628092

Installation Manager stores some path names in canonical form – for example, /tmp may be stored as /SYSA/tmp or /SYSTEM/tmp. This can cause problems if an IPL causes the saved path to point to the wrong location!

Where possible, avoid symlinks in the paths to the Installation Manager binaries, appdata, shared resources, or installed products. If these change, you may need to find a way to mount the affected filesystems at the original locations in order to run Installation Manager.

## **Space requirements**

If Installation Manager is interrupted in mid-flight – for example, due to an out-of-space-on-volume error – installed products can be left in an inconsistent state, and must be uninstalled (usually with ignorable errors) then reinstalled.

To avoid these problems, Installation Manager 1.7.2 and above check the filesystem containing the product directory before any install or upgrade operation, to verify that sufficient space is available. The operation will not start if space is not available; use the configfs or zfsadmin commands to add the required space.

# Avoiding problems with Installation Manager:



**If you try to to upgrade WebSphere Application Server and forget to mount the WAS product filesystem:**

CRIMA1075E ERROR: Error during "pre-install configure" phase:

CRIMA1075E ERROR: **Unable to find custom install operation  
com.ibm.ws.exec.command.Exec**

A package has an issue that cannot be resolved by Installation Manager.

java.lang.ClassNotFoundException: com.ibm.ws.exec.command.Exec

Recheck your filesystems!

# Useful links

**Installation Manager online documentation (all versions):**

**[https://www.ibm.com/support/knowledgecenter/SSDV2W/im\\_family\\_welcome.html](https://www.ibm.com/support/knowledgecenter/SSDV2W/im_family_welcome.html)**

**Installation Manager install kit downloads (all versions):**

**<http://www.ibm.com/support/docview.wss?uid=swg27025142>**

**Washington System Center Cookbook for WAS install with IBM Installation Manager**

**<http://www-01.ibm.com/support/docview.wss?uid=tss1wp102014>**

**Announcement of Web-based install for WebSphere Application Server**

**<http://www.ibm.com/support/docview.wss?uid=swg21659636>**



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Entries must be complete and submitted by **17 Sept 2014**.

# ??? QUESTIONS ???