

Abstract : z/OS Web Deliverables 101

Ever heard of a "z/OS web deliverable" and wonder how the heck you'd install it? z/OS has several important web deliverables available. This session will tell you how to install a z/OS web deliverable step-by-step. Discussed will be :

- where the z/OS web deliverables are found
- how the z/OS web deliverables are packaged
- how to get service for your z/OS web deliverable (and how z/OS web deliverables are serviced)
- where to get the documentation for z/OS web deliverables
- install instructions of the SMP/E-installable z/OS web deliverables (including brief coverage of the popular non-SMP/E-installable web deliverable HealthChecker)

A live demo will be done at the end of the session to recap the install process and to show the install of a z/OS web deliverable. Installing an FMID from the web isn't hard - but you need to know how to do it!





Why do we have z/OS web deliverables?

When we have new non-priced functions to deliver to you, we've got several methods to do it. First off, we can package it to install with SMP/E or without SMP/E packaging.

If we package it without SMP/E, then we can deliver it to you from the internet. In fact, we've got plenty of these types of packages available today. We'll talk about one of the most popular, the IBM HealthChecker for z/OS and Sysplex later.

If we package it with SMP/E, we still have more choices...should it be an FMID or a PTF?

- If we use a PTF, you're familar with this already it's an SPE! You can get SPEs through your regular service delivery methods.
- If we use an FMID, there's several delivery methods that we could use:
 - Program product this means the product will be separately orderable, and available as program products are today (CBPDO, ServerPac, ...).
 - Feature on a product the product must still be orderable for us to use this option. We've done this in the past, with the z990 Compatibility Support and z990 Exploitation Support features on z/OS R4.
 - Web deliverable this is the quickest way for us to deliver the code to you. This way has the advantage of being applicable to products that aren't currently orderable, as well as those that are orderable. We package the FMID as a web deliverable, and shortly thereafter it's available to you!



Where are the z/OS Web deliverables found?

z/OS web deliverables are found at *http://www.ibm.com/eserver/zseries/zos/downloads/*. You will need a userid and password to complete the download. You can register for a userid and password while downloading, if you need to. There are SMP/E and non-SMP/E deliverables found on this web page. Let's concentrate on the SMP/E installable ones. All SMP/E installable web deliverables install in the same manner.

Currently, there are these SMP/E web deliverables offered from this web page:

- 1. IBM Developer Kit for OS/390, Java 2 Technology Edition
- OS/390 V2R10.0 and z/OS V1R1.0 Managed System Infrastructure for Operations Program Directory (msys for Operations)
- 3. SMP/E V3.3
- 4. XML Toolkit for z/OS
- 5. z/OS V1R2.0-V1R4.0 Bimodal Migration Accommodation offering
- 6. z990/z890 Compatibility for Selected Releases
- 7. z990/z890 Enhancements to Cryptographic Support
- 8. XML C++ Parser for the OS/390 V2.10 C++ Compiler for z/OS. This package is a repackaging of the C++ parser originally shipped within the IBM XML Toolkit for z/OS and OS/390 V1.4.
- 9. LDAP Enhancements for z/OS V1.4/V1.5.



What do I need to install a web deliverable?

Of course, in order to actually install the FMID you retrieve from the web, you'll need to meet the driving system requirements for that FMID. The driving system requirements for the FMID can be found in the program directory that accompanies the web deliverable. In general (and I know of no exceptions thus far!), the FMIDs have the same driving system requirements as the z/OS release they install onto. That is, as long as you've met the driving system requirements for a particular z/OS release, you should have no trouble installing the web deliverable FMID onto that release.

In addition to meeting the driving system requirements for the FMID, there are some requirements you need to actually retrieve the FMID from the web, and unload it into a suitable format for the traditional SMP/E APPLY and ACCEPT that you're familar with:

- The userid you do the work from should have an OMVS segment defined. That's because you'll actually be issuing UNIX commands. (Don't worry if you don't know much about UNIX, there are sample jobs that help you through the way!). This userid should be able to use the **ftp** command, or some other command of your choosing to move the code from your workstation to the z/OS host system.
- Enough space in an HFS to store the web deliverable, and be able to write to it. (Make sure the HFS is mounted in read-write mode.) You'll see the size on the web deliverable from the download web page.
- z/OS UNIX System Services pax utility. The z/OS UNIX pax utility can be found on your z/OS host system in the /bin directory of your version HFS. The pax utility makes a single archive file from many files, and un-archives those files in the HFS.
- The fairly new SMP/E function GIMUNZIP. This function simply takes an HFS file and creates SMP/E RELFILEs. The GIMUNZIP function is provided in SMP/E V3R2, SMP/E V3R1 (with z/OS V1R2 and later), and rolled back to SMP/E for OS/390 V2R10 and z/OS V1R1 with PTF UR52471.
- If you want to perform hash checking during GIMUNZIP, you must configure ICSF. Hashing provides additional security and verification for the download file. For ICSF help, the best place to start is the z/OS Cryptographic Services ICSF System Programmer's Guide, Appendix C. Helpful Hints for ICSF First Time Startup.



What's in a z/OS Web deliverable package?

A single binary file and a ReadMe file compose the download package. The binary file contains all the SMP/E RELFILEs and SMPMCS. The ReadMe file contains the instructions and sample jobs for the package.

Also, where these two files are available, is the accompanying program directory. The program directory is provided in PDF and BookManager book formats.



How are z/OS web deliverables installed?

To install a web deliverable, do the following:

- 1. Go to *http://www.ibm.com/eserver/zseries/zos/downloads/* and select your download. There are several pages you need to click through to get to the actual web deliverable files. Remember to read the terms and conditions before you accept the license. You'll see two files associated with the deliverable: the **pax** binary file and the **README** file.
- 2. Download the two files in the package to your workstation through your internet browser.

Hint: If you use SMB (Server Message Block), you can omit uploading to your z/OS host by transferring directly to a shared directory. For instance, I have a directory in my z/OS HFS shared with my workstation as my **M**: drive, using SMB. When I download, I save the files on my **M**: drive, and then reference it directly from my z/OS system. See *z/OS Distributed File Service SMB Administration* for more information about setting up SMB.

3. Follow the instructions on the web site and in the **README** JCL. There are several steps in the sample **README** job:

a. There is an optional separate job at the beginning that is commented out. This job will allocate an HFS data set and mount it for you. You could use this job if you wanted to store the web deliverable in a separate HFS.

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b. If you haven't used SMB to transfer directly to your z/OS host system, then there are instructions in the comments on how to use *ftp* to upload both the **pax** file and the **README** file to your z/OS host system. The **README** file contains the sample JCL to do the subsequent steps, and should be uploaded as text. The **pax** file contains the archive of the actual FMIDs and should be uploaded into an HFS file as binary.

```
//*
     To upload xxxxxx.README.txt and xxxxxx.pax.Z
//*
      from your workstation to your z/OS or OS/390 host driving
system for install processing:
        - Upload xxxxxx.README.txt into a sequential file
         - Upload xxxxxx.pax.Z into the HFS directory for
          pax and GIMUNZIP processing.
          e.g. /u/userid/-directory- created from step 2 above
        From your workstation COMMAND PROMPT panel -
          enter: "ftp your_host_system_name"
          Login with your userid and password
           enter:
           "put xxxxxx.README.txt xxxxxx.README.txt"
          When the transfer is complete,
          enter: "cd /u/userid/-directory-"
          enter: "binary"
          enter:
           "put xxxxxx.pax.Z xxxxxx.pax.Z"
//*
          When the transfer is complete, enter: "quit" to exit from
//*
          FTP.
```

Whatever method you use to get the files to your host, make sure that the target file system is mounted **R/W** (read write) on z/OS, and you transfer the **pax** file in binary format. You'll need to write to the file system again later.

c. Invoke the UNIX **pax** utility to extract the component archive files into the same HFS directory where you did the upload.

```
//UNPAX EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSEXEC DD DSN=SYS1.SBPXEXEC,DISP=SHR
//SYSTSIN DD *
oshell cd /u/userid/-directory-/;
pax -rvf /u/userid/-directory-/;
xxxxxxx.pax.Z
```

d. Invoke SMP/E to perform *GIMUNZIP* on the component archive files. This produces SMP/E SMPMCS and RELFILEs from the extracted files in the HFS directory.

+

```
//GIMUNZIP EXEC PGM=GIMUNZIP, PARM='HASH=NO', REGION=0M
11
//* Utility work data sets:
//SYSUT3
          DD UNIT=SYSALLDA, SPACE=(CYL, (50, 10))
//SYSUT4
          DD UNIT=SYSALLDA, SPACE=(CYL, (25,5))
//* Message output data sets:
//SMPOUT
         DD SYSOUT="
//SYSPRINT DD SYSOUT=*
//SMPDIR DD PATH='/u/userid/-directory-/',
              PATHDISP=KEEP
//SYSTN
          DD
<GIMUNZIP>
 <ARCHDEF name="SMPPTFIN/S0001.DEPT42RJ.FMIDxxx.SMPMCS.pax.Z"</pre>
           newname="dsprefix.FMIDxxx.SMPMCS" >
  </ARCHDEF>
  <ARCHDEF name="SMPRELF/DEPT42RJ.IBM.FMIDxxx.F1.pax.Z"</pre>
           newname="dsprefix.IBM.FMIDxxx.F1" >
  </ARCHDEF>
</GIMUNZIP>
/*
   e. Invoke SMP/E to perform a RECEIVE on the FMID RELFILES.
//RECEIVE EXEC PGM=GIMSMP,REGION=0M
//SMPCSI DD DSN=smpe.global.csi,
              DISP=SHR
//SMPPTFIN DD DSN=dsprefix.FMIDxxx.SMPMCS,
              DISP=SHR
//SMPCNTL DD *
  SET BDY(GLOBAL).
  RECEIVE SYSMODS
          RFPREFIX (dsprefix)
          SELECT (
                 FMIDxxx
                ).
```

/*

4. Obtain service for the web deliverable from ShopzSeries or your regular preventive service deliverable. No service is included in the web deliverables, so you'll need to get the service for the web deliverable FMIDs elsewhere. It is recommended to use ShopzSeries to obtain this service -- select as a service package type "service for individual installed FMIDs" using the FMIDs in web deliverable.

5. Continue the installation, following the program directory available from the z/OS download Web page. From this point onward, the FMID installs just as any other FMID does---with the SMP/E **APPLY, ACCEPT** that you know and love.



A word or two on service for web deliverables...

Service is not included in your web deliverable because the package is *stabilized* once it is made available. Service for web deliverables is automatically included in your regular preventive service vehicle for z/OS, like ESO or CBPDO, regardless of whether you downloaded the functions.

Problem reporting on Web deliverables is done through IBM Support Center, just as you would get product support.



Where is the documentation for a web deliverable?

The documentation for installing the web deliverable is available right on the web page where the package is available.

The download web page, as well as the program directory, will instruct you on where to find the documentation to start exploiting the new function within the web deliverable. Most often, this is an updated book that can be found in the internet.



Let's look at the popular HealthChecker download!

The IBM Health Checker for z/OS and Sysplex helps improve availability by reporting on active z/OS and Parallel Sysplex settings that are different from best practices recommended by IBM or customer-defined settings. This download has been available since February 2003, and has over 2000 registrations!

Problem reporting for the Health Checker is done through a forum on IBM Resource Link. We strongly recommend that you subscribe to notification of updates using the following registration steps:

- 1. Register for IBM Resource Link to obtain a user ID and password at http://www.ibm.com/servers/resourcelink/
- 2. Request authorization to the IBM Health Checker for z/OS and Sysplex forum from the administrator Debbie Beatrice by sending an email to debbiebe@us.ibm.com.

When you have been authorized to the IBM Health Checker for z/OS and Sysplex forum, you can access it using the Forums link, then selecting IBM Health Checker for z/OS and Sysplex in the list of ESP forums.

The documentation, *z/OS and Sysplex Health Checker V3 User's Guide,* is available right from where you download the HealthChecker tool.

IBM plans to provide updates to the Health Checker.



Installing the HealthChecker download

1. Download the IBM Health Checker for z/OS and Sysplex tool, you should have the following files. The package names reflect the level of the package where *mmmddyy* reflects the date of the package for month, day, year:

hchecker.mmmddyy.load.bin, load library containing load modules: INGPKCHK and INGPKTAB

- hchecker.mmmddyy.samplib.bin sample library consisting of the following members:
 - HCHECK: sample JCL for a batch invocation of the IBM Health Checker for z/OS and Sysplex
 - USERPARM: This data set used to either specify overrides to IBM recommended values or to suppress the invocation of a check. You may wish to create a copy before modifying values.

• hchecker.mmmddyy.readme.txt text file describing the change history of the tool. Upload these files to z/OS. For loadlib.bin and samplib.bin, ensure that you use a binary and Fixed Block LRECL(80). You can pre-allocate three RECFM=FB LRECL=80 BLKSIZE=3120 data sets on your host system prior to transferring your files. For example, your.host.dataset1, your.host.dataset2, and your.host.dataset3. You can use FTP as described in these procedures.

- a. Establish an FTP connection to your host system from a Command Prompt window. Enter: ftp your_host_system_name Log in with your userID and password
- c. Change transfer mode to binary for the load library and sample library packages, and transfer the packages. Enter: binary Enter: put hchecker.mmmddyy.load.bin your.host.dataset2 Enter: put hchecker.mmmddyy.samplib.bin your.host.dataset3
- $d. \quad \text{When transfer is complete, end the FTP session. From the Command prompt window, enter: quit.}$

2. Install the libraries. Enter: TSO RECEIVE INDATASET('dsn')

Where 'dsn' is your_host_dataset2 and your_host_dataset3 specified for the load library and sample library. This will convert the libraries back into their original format. You should end up with a load library and a SAMPLIB library containing JCL to run the IBM Health Checker for z/OS and Sysplex.

3. Complete the installation and set up as described in the "IBM Health Checker for z/OS and Sysplex User's Guide".



Ready to download? Let's go!

You can see that z/OS downloads aren't hard, once you know how they are packaged, and understand the steps necessary to bring them to your z/OS system. Keep the download page bookmarked on your browser, so you can **shop** for new functions in a single click!

I'll do a canned demo now... I'll include the screen shots of the steps in this handout. I'll be showing the z/OS R4 Bimodal Migration Accommodation web deliverable.



z/OS Web Deliverables 101















