

## TidBits on zOS V1.11 Upgrade & Migration

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1. The program number for z/OS Version 1 Release 11 is **5694-A01**. When ordering this program number, remember to order all the optional features that you were licensed for in previous releases of z/OS.

2. In z/OS V1R11 there are only two export controlled unpriced features: **z/OS Security Level 3**, and **Communications Server Security Level 3**. z/OS Security Level 3 contains the sub-elements: IBM Tivoli Directory Server for z/OS Security Level 3, Network Authentication Service Level 3, OCSF Security Level 3, and System Secure Sockets Layer (SSL) Security Level 3.

Typically, when one new z/OS release becomes orderable in ServerPac and CBPDO, the previous release is orderable for only a month. Due to this short overlap, it is very important that you order the z/OS release you need for migration and coexistence while it's still available for ordering. Typically, a z/OS release remains orderable in the fee'd deliverable SystemPac longer than in ServerPac.

**3. Important Future Ordering Consideration!** IBM intends to discontinue delivery of software on 3480, 3480 Compressed (3480C), and 3490E tape media. IBM recommends using Internet delivery when ordering your z/OS products or service which eliminates tape handling. If you must use physical delivery, you may continue to choose 3590 or 3592 tape media. Internet delivery is IBM's strategic delivery method, therefore future software delivery enhancements will be focused on Internet delivery.

**4. Statement of Direction for DVD!** IBM intends to provide the capability to deliver the z/OS Customized Offerings (such as ServerPac, CBPDO, Customized Offerings Driver, SystemPac, ProductPac) and service orders on DVD media. Though IBM recommends using Internet delivery when ordering z/OS products or service, eliminating tape handling, the option to specify DVD physical delivery may provide an option for those who cannot accept Internet delivery.

**5. Ordering and Installing z/OS R11 Electronically!** Internet delivery is the newer medium and, like tape, can be used for all products, that is, z/OS and products that run on z/OS. You must place the order using ShopzSeries (<http://www.ibm.com/software/shopzseries>). You can install the order using ServerPac, CBPDO, or SystemPac. ShopzSeries generates a customized download page for each order; the page includes order content and instructions. Support to install Internet orders has been added to the CustomPac Installation Dialog and CBPDO installation process.

A typical z/OS-only ServerPac or SystemPac order is approximately 10 GB (compressed) in size, but it could be much larger than that depending on what you order. A typical SystemPac order with multiple SRELs is approximately 14 GB (compressed) in size. A typical subsystem ServerPac or SystemPac order is approximately 1 GB (compressed) in size. You will know the size of your order when it is ready to download (the size can be found in the *CustomPac Dialog Information* document). As a general rule, you should have file system space equal to twice the order size, to allow it to be processed.

If you are downloading your order, the **entire** download might take considerable time. However, the download is done in two phases, and the first phase will usually not take very long (just a couple of minutes). Once it has finished, you can begin to use the dialog to configure your new order while the second phase is occurring. The RECEIVE job will send you a message to tell you when the dialog is ready to be used if you are logged on and have INTERCOM set in your TSO/E Profile. To see whether you have INTERCOM set, issue the PROFILE command from the TSO/E Ready prompt or ISPF Option 6. To set INTERCOM, issue PROFILE INTERCOM.

Before downloading your order, you must understand your network security environment. For example, does a z/OS image have access to the Internet? Are there security concerns for downloading to a workstation or transferring files to the host? If you are planning to download directly to z/OS, you must be familiar with the security and networking information required to navigate your enterprise's firewall from z/OS.

## 6. SMP/E for z/OS and OS/390 Version 3 Release 5 (5655-G44)

SMP/E for z/OS V3.5 provides the following enhancements:

**Simplifying PSP buckets** - SMP/E has been extended to help simplify the task of verifying that required software fixes identified in the Preventive Service Planning (PSP) buckets have been installed. PSP buckets identify required software

fixes for new hardware devices, toleration and coexistence of new software releases, and enabling new functions. IBM will consolidate the lists of required fixes from the PSP buckets and produce new Fix Category (FIXCAT) HOLDDATA to identify those fixes. Some example fix categories are IBM.Device.Server.z10-EC-2097 and IBM.Coexistence.z/OS.V1R10. The new type of ++HOLD statement will be used to identify APARs, their fix categories, and the PTFs that resolve the APARs. Just like Error HOLDDATA, the new FIXCAT HOLDDATA will be delivered by IBM as part of all corrective service, preventative service, and product orders such as SMP/E Internet Service Retrieval (the SMP/E RECEIVE ORDER command), ShopzSeries, ServiceLink, TechSupport, and the Customized Offerings such as CBPDO, ServerPac, and SystemPac. It will also be available independently on an IBM Internet server (<http://service.software.ibm.com/holddata/390holddata.html>).

The ZONEEDIT command has been extended to allow wildcard specification in the conditional CHANGE subcommand, and to allow the UNIT, VOLUME, and WAITFORDSN subentries for DDDEF entries to be added if they do not already exist. Formerly the ZONEEDIT command only allowed existing subentries to be changed, but did not allow subentries to be added. If you prefer to keep your target or distribution library data sets uncataloged, then this change makes it easier for you, for example, to add the necessary UNIT and VOLUME subentries for DDDEF entries defined by a ServerPac.

The SYSMOD Management dialog will now allow all SYSTEM HOLDS to be bypassed easily with one action. To accomplish the same result, formerly you were required to select each unique reasonid. In addition, the REDO operand may now be specified for the APPLY and ACCEPT commands. In the Order Management dialog, when an ORDER entry is deleted from the global zone, the associated package directory within the SMPNTS will now also be deleted.

SMP/E has been extended to allow definition side deck files stored in the z/OS UNIX System Services file system to be included easily during link-edit operations. Specifically, in addition to members of partitioned data sets, relative file names can now be used as utility input on INCLUDE statements in JCLIN link-edit steps. This change is designed to make it easier for product packagers to use definition side deck files that reside in the z/OS UNIX file system.

**7. HTTPS and FTP reconnect and retry support** - SMP/E has added reconnect and retry capabilities for HTTPS and FTP operations that fail due to apparent network outages and anomalies. This will help prevent SMP/E RECEIVE command and GIMGTPKG service routine failures because of short-lived network outages.

**8. Support for FTP client parameters** - SMP/E will now allow user-specified parameters to be passed to the FTP client program for SMP/E FTP operations during the RECEIVE command and the GIMGTPKG service routine. A new FTPOPTIONS tag may be specified in the CLIENT or SMPCLNT data set to identify any parameters that SMP/E should pass to the FTP client program. This is most useful when you need to override the FTP.DATA configuration file used by the FTP client program.

**9. IBM Debug Tool for z/OS** helps examine, monitor, and control the execution of application programs by letting customers:

- \* Interactively debug an application as it runs
- \* Perform seamless debugging of mixed-language applications
- \* Make adjustments to your application while debugging
- \* Display, monitor, and alter program variables

Debug Tool also supports many programming languages and numerous execution environments. IBM Debug Tool for z/OS V9.1 **replaces all prior versions** of both IBM Debug Tool for z/OS and IBM Debug Tool Utilities and Advanced Functions for z/OS. Debug Tool for z/OS V9.1 includes all of the function in the previous separate products as well as the new V9.1 function. Delivering this single comprehensive product provides significantly more function to existing Debug Tool for z/OS customers, and will help simplify ordering and installation. Current licensees of IBM Debug Tool Utilities and Advanced Functions Subscription and Support (5655-J19) are entitled to Debug Tool for z/OS V9.1. That existing 5655-J19 S&S offering is renamed IBM Debug Tool Subscription and Support. Existing Debug Tool for z/OS customers, looking to upgrade, will need to order the improved Debug Tool for

z/OS V9.1 (5655-U27). It is recommended that they obtain the IBM Debug Tool Subscription and Support (5655-J19) as well.

Some of the enhancements include:

- \* A utility has been added to Debug Tool that can help users edit JCL to include Debug Tool enablement so that a debug session is started when the modified JCL is submitted for execution.
- \* You can now create CICS DTCN debugging profiles that persist across region termination and restart, and after the terminal that was used to create the profile has been disconnected.
- \* CICS DTCN users can now identify the program to debug by the data passed to the program through a COMMAREA or container in the current channel when the program is invoked.
- \* CICS DTCN users can now invoke Debug Tool at a program boundary for a CICS task that has already started.  
[ DTCN is a menu-driven tool that allows you to create a profile that contains a pattern of CICS<sup>(R)</sup> resource names that identify a task that you want to debug. ]

**10. Service Policy** IBM's current policy is to provide maintenance (service) for each release of z/OS for three years following its general availability (GA) date. However, service on the last release of a version might be extended beyond the intended three-year period. Prior to withdrawing service for any version or release of z/OS, IBM intends to provide at least 12 months notice. The service policy for z/OS also applies to any enhancements (including but not limited to web deliverables), such as the *System REXX Support for z/OS V1.8* download that was provided for z/OS R8.

See the table below for expiration dates for service support. Planned end of service dates are based on the 3-year service policy.

Version and release	General availability (GA)	End of service (EOS)
OS/390 V2R8	24 September 1999	Occurred 30 September 2002
OS/390 V2R9	31 March 2000	Occurred 31 March 2003
OS/390 V2R10	29 September 2000	Occurred 30 September 2004
z/OS V1R1	30 March 2001	Occurred 31 March 2004
z/OS V1R2	26 October 2001	Occurred 31 October 2004
z/OS V1R3	29 March 2002	Occurred 31 March 2005
z/OS V1R4	27 September 2002	Occurred on 31 March 2007
z/OS V1R5	26 March 2004	Occurred on 31 March 2007
z/OS V1R6	24 September 2004	Occurred on 30 September 2007
z/OS V1R7	30 September 2005	Occurred on 30 September 2008 * *See "z/OS V1.7 Lifecycle Extended Service" below for a fee-based accommodation.
z/OS V1R8	29 September 2006	30 September 2009 (announced) *See "z/OS V1.8 Lifecycle Extended Service" below for a fee-based accommodation.
z/OS V1R9	28 September 2007	30 September 2010 (announced)
z/OS V1R10	26 September 2008	September 2011 (planned)
z/OS V1R11	25 September 2009 (planned)	September 2012 (planned)

**NOTE:** The IBM Lifecycle Extension for z/OS V1.7 does not provide preventive service or new function, nor does it provide any extension or changes to IBM's coexistence or migration policy for z/OS. The IBM Lifecycle Extension for z/OS V1.8 (5638-A01) provides fee-based corrective service (a fix, bypass, or restriction to a problem) beyond the September 30, 2009, withdrawal of program services date for z/OS V1.8 (5694-A01).

**- - Understanding Coexistence - -**

*Coexistence* occurs when two or more systems at different software levels share resources. The resources could be shared at the same time by different systems in a multisystem configuration, or they could be shared over a period of time by the same system in a single-system configuration. Examples of coexistence are two different JES releases sharing a spool, two different service levels of DFSMSdfp sharing catalogs, multiple levels of SMP/E processing SYSMODs packaged to exploit the latest enhancements, or an older level of the system using the updated system control files of a newer level (even if new function has been exploited in the newer level).

The sharing of resources is inherent in multisystem configurations that involve Parallel Sysplex implementations.

But other types of configurations can have resource sharing too. Examples of configurations where resource sharing can occur are:

- \* A single processor that is time-sliced to run different levels of the system, such as during different times of the day
- \* A single processor running multiple images by means of logical partitions (LPARs)
- \* Multiple images running on several different processors
- \* Parallel Sysplex or non-Parallel Sysplex configurations

**Note:** The term coexistence does not refer to z/OS residing on a single system along with VSE/ESA, VM/ESA, or z/VM in an LPAR or as a VM guest. z/OS systems can coexist with specific prior releases. This is important because it gives you flexibility to migrate systems in a multisystem configuration using rolling IPLs rather than requiring a systems-wide IPL. The way in which you make it possible for earlier-level systems to coexist with z/OS is to install coexistence service (PTFs) on the earlier-level systems.

You should complete the migration of all earlier-level coexisting systems as soon as you can. Keep in mind that the objective of coexistence PTFs is to allow existing functions to continue to be used on the earlier-level systems when run in a mixed environment that contains later-level systems. Coexistence PTFs are not aimed at allowing new functions provided in later releases to work on earlier-level systems.

Exceptions are:

- \* In some cases, more than three releases may be coexistence, fallback, and migration supported if IBM at its *discretion* chooses to provide service support for greater than three years for a release.
- \* Any z/OS release having three or fewer months of service remaining at general availability of a new release will not be coexistence, fallback, or migration supported with the new release.

Thus, except for JES2 and JES3, **z/OS V1R11 is coexistence, fallback, and migration supported with the following two z/OS releases: V1R10 and V1R9.**

<b>Coexistence, Fallback, Migration</b>		<b>Explanation</b>
Rel.	Migration (Note1)	Explanation (Note2)
R6	R6, R5, R4, R3	The new policy starts. General availability of R6 was September 2004. R2 would be the oldest service-supported release at that time and therefore the oldest release that is coexistence, fallback, and migration supported. However, its end-of-service date (October 2004) is within three months of R6 general availability (September 2004), so R3 becomes the oldest release that is coexistence, fallback, and migration supported with R6.
R7	R7, R6, R5, R4	General availability of R7 was September 30, 2005. R4 is the oldest release that is service supported at that time and therefore the oldest release that is coexistence, fallback, and migration supported with R7.
R8	R8, R7, R6, R5	General availability of R8 was September 29, 2006. R4 is the oldest release that is service supported at that time because its end-of-service date was extended by 18 months to 31 March 2007. <b>However, R4 is not coexistence, fallback, and migration supported with R8.</b> Therefore, R5 is oldest release that is coexistence, fallback, and migration supported with R8.
R9	R9, R8, R7	General availability of R9 was September 28, 2007. R7 is the oldest release that is service supported at that time and therefore the oldest release that is coexistence, fallback, and migration supported with R9.
R10	R10, R9, R8	General availability of R10 was September 26, 2008. R8 is the oldest release that is service supported at that time and therefore the oldest release that is coexistence, fallback, and migration supported with R10.
R11	R11, R10, R9	Planned availability for R11 is September 25, 2009. At that time, R9 is planned to be the oldest release that is service supported and therefore the oldest release that is coexistence, fallback, and migration supported with R11.
R12	R12, R11, R10	Planned availability for R12 is September 2010. At that time, R10 is planned to be the oldest release that is service supported and therefore the oldest release that is coexistence, fallback, and migration supported with R12.

Notes

1. For readability, the version numbers have been omitted from the releases shown. Also, release numbering of future releases (later than R7) is for illustrative purposes and is not a guarantee of actual release numbers.
2. Future general availability (GA) dates are projections based on the annual release cycle. Future end of service (EOS) dates are projections based on the 3-year service policy.

## 11. Review migration actions you can do NOW !



z/OS Documentation: **Where to Start...**

To gain an overview of z/OS and plan for the installation, review:

- \* z/OS V1R11 Migration (**GA22-7499**)
- \* z/OS V1R11 Planning for Installation (**GA22-7504**)
- \* zSeries Platform Test Report for z/OS and Linux Virtual Servers (formerly, the z/OS Parallel Sysplex Test Report)
- \* z/OS V1 R11 Introduction and Release Guide (**GA22-7502**)

To install z/OS, review Preventive Service Planning (PSP) Buckets for:

- \* ServerPac (if using ServerPac to install)
- \* z/OS and individual elements (including ZOSGEN, which is handy for coexistence service)
- \* Hardware, if you will be using specific HW functions or upgrading your server

In addition, to install z/OS using **ServerPac**, review:

- \* ServerPac: Using the Installation Dialog (**SC28-1244**)
- \* The custom-built installation guide, ServerPac: Installing Your Order.

To install z/OS using **CBPDO**, review the z/OS Program Directory.

## 12. DASD Storage Requirements

If you are migrating to z/OS R11 from z/OS R9 or you will have a different product set than your previous release, you will see increased need for DASD. How much more depends on what levels of products you are running. Keep in mind the DASD required for your z/OS system includes (per the z/OS Policy). That is, it includes ALL elements, ALL features that support dynamic enablement, regardless of your order, and ALL unpriced features that you ordered. This storage is in addition to the storage required by other products you might have installed. All sizes include 15% freespace to accommodate the installation of maintenance. The total storage required for z/OS data sets is listed in the space table in the *z/OS Program Directory*.

### For z/OS R11:

- \* The total storage required for all the target data sets is 6,063 cylinders on a 3390 device. **It is strongly recommended that you review the size of your existing target volumes and plan for the required target volume storage for z/OS R11.**
- \* The total storage required for all the distribution data sets listed in the space table is 8,781 cylinders on a 3390 device.
- \* The total file system (HFS or zFS) storage is 3,100 cylinders on a 3390 device for the ROOT and 50 cylinders for the /etc file system. For the CIM element, the space required for the /var VARWBEM file system is 50 cylinders. **It is strongly recommended that you put your file system ROOT data set on multiple 3390-3 volumes (a multi-volume data set) or on a volume larger than a 3390-3.** Use IBM Health Checker for z/OS check **ZOSMIGREC\_ROOT\_FS\_SIZE** to determine whether a volume has enough space for the z/OS version root file system, available back to z/OS R9 in APARs OA28684 and OA28631.

## 13. Choosing IBM Products That You Want to Run with z/OS

The functional and minimal requirements are found in the *z/OS Planning for Installation* which is available on the Internet from <http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>.

For a list of products available for ordering with z/OS, you can use the self-service Internet application ShopzSeries: <http://www.ibm.com/software/shopzseries>.

The IBM software products that run with z/OS, and which are documented in *z/OS V1R11 Planning for Installation* Appendix, are documented slightly differently than they had been. Only the IBM software products levels **above the minimum service-supported level, or which need specific APARs or PTFs are documented.** Other IBM software products not documented in this Appendix, if they are still service-supported, are supported with z/OS R11.

Many of these products can be ordered as part of your z/OS ServerPac order, z/OS SystemPac order, separate CBPDO order, or separate ProductPac order. Note that there may be differences between what is minimally service supported, what is minimally supported with z/OS R11, and what is currently orderable.

If you're migrating to z/OS V1R11, you can find out which products have new levels by using ShopzSeries or by using the SMP/E base element's Planning and Migration Assistant. Both tools use data found on your system as well as the latest IBM software product catalog.

#### 14. Choosing ISV products that you want to run with z/OS

For a list of independent software vendors (ISVs) that support z/OS, as well as announcements, testimonials, and other information,

See

<http://www.ibm.com/systems/z/os/zos/software/isv110.html> for z/OS R10 support.

See

<http://www.ibm.com/systems/z/os/zos/software/isv111.html> for z/OS R11 support at z/OS R11 GA.

For a directory of IBM and IBM Business partners that provide z/OS applications, tools, and services, see the Global Solutions Directory: <http://www.ibm.com/software/solutions/isv>

#### 15. Target System Hardware Requirements

The minimal hardware requirements for z/OS, as well as additional hardware needed by specific z/OS elements and features, are documented in *z/OS Planning for Installation*. Remember, z/OS V1R11 runs only in z/Architecture mode, and only on z10, z9, z990, z890, z900 or z800 servers.

#### 16. Identifying Coupling Facility Requirements

There are hardware and software requirements related to coupling facility levels (CFLEVELs). See <http://www.ibm.com/eserver/zseries/psocftable.html>.

When migrating coupling facility levels, lock, list and cache structure sizes might need to be increased to support new function. **For example, when you upgrade from CFCC level 14 to the level 15 the required size of the structure might increase.** This adjustment can have an impact when the system allocates structures or copies structures from one coupling facility to another at different coupling facility levels.

The coupling facility structure sizer tool can size structures for you and takes into account the amount of space needed for the current CFCC levels. Access the tool at:

<http://www.ibm.com/servers/eserver/zseries/cfsizer/>.

#### 17 . Using IBM Health Checker for z/OS V1.11 for migration purposes

Starting in z/OS V1R10, the Health Checker infrastructure is exploited for migration purposes. Health Checks that are helpful for determining migration action applicability are provided. These checks ("Migration Health Checks") should be used prior to your migration to the new z/OS release to assist with your migration planning, and re-run after your migration to verify that the migration action was successfully performed. As with any Health Check, **no updates are performed** to the system. Migration Health Checks only report on the applicability of a specific migration action on a system; and only report on the currently active system.

##### - - Migration Health Checks and Best Practice Health Checks - -

Migration Health Checks are not different from other Health Checks, but they do have some characteristics which allow them to be uniquely identified:

- The name of the check follows a convention. For z/OS, the convention is: **ZOSMIGVvRrr***\_component\_program\_name* (and for the ICSF element, the convention is **ICSFMIGnnn***\_component\_program\_name*). Notice the "MIG" characters, followed immediately by the release identifier. This tells you that the check helps with migration, and the migration action was introduced in the release specified in the name. If the version and release where the change is occurring isn't announced yet, you may see **ZOSMIGREC***\_component\_program\_name* (where **REC** indicates it is RECommended, and is not a requirement yet).

- The check has a status of **INACTIVE** by default. Because you may not want to know about migration actions during non-migration periods, Migration Health Checks will not automatically be active.

There are Best Practice Health Checks that can help with migration actions, and yet they do not have the Migration Health Check naming convention described about. That is because the component owners felt that the practice is recommended for reasons above and beyond migration purposes. All Health Checks (whether they are Migration Health Checks or Best Practice Health Checks) will be cross-referenced in the *z/OS Migration* book when they can assist with a specific migration action. *So be aware, your migration assistance is not just limited to the checks that follow the Migration Health Check naming convention!*

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