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NOTE: Unless otherwise noted, all references to z/OS 1.3, 1.4, 1.5 and 1.6 function are the same for z/OS.e at that release level. z/OS.e is only supported on the z890 and z800 servers.
**z/OS and z/OS.e 1.6 Preview**

**Question:**
What has been previewed for z/OS® and z/OS.e 1.6?

**Answer:**
NOTE: Unless otherwise noted, all references to z/OS 1.3, 1.4, 1.5 and 1.6 function are the same for z/OS.e at that release level. z/OS.e is only supported on the IBM @server® zSeries® 890 (z890) and IBM @server zSeries 800 (z800) servers.

IBM previewed z/OS 1.6 on February 10, 2004, and previewed additional planned enhancements on April 7, 2004. z/OS 1.6 is planned to be available in September, 2004, and will be the first release of z/OS that requires z/Architecture™. This means that z/OS will only be supported on IBM @server zSeries servers (z890, z990, z800, z900) or equivalent.

z/OS 1.6 was designed to deliver continued improvements for running new workloads on z/OS. These workloads include running ERP applications with DB2® database on z/OS, modernizing current IMS™ and CICS® applications for the Web, and WebSphere® application serving.

z/OS 1.6 is planned to support the zSeries Application Assist Processor (zAAP) planned to be available on the IBM z990 and z890. zAAP is an attractively priced special processing unit that provides a Java™ execution environment for z/OS with the traditional qualities of service and the integration advantages of the zSeries platform.

z/OS 1.6 is also planned to support for up to 24 processors in a single z/OS image. The total of 24 processors can be made up of both Central Processors (CPs) and zAAPs. The sum cannot exceed 24.

Application flexibility on z/OS is planned to be extended with 64-bit support for C/C++, enabling applications to scale and take advantage of the 64-bit programming model. This improvement is particularly important for new workloads on z/OS that require significantly larger addressability of data. Many customer business applications, Web serving applications, independent software vendor (ISV) applications, and internal IBM componentry is written in both C and C++.

Additional planned enhancements include further improvements for TCP/IP availability in a sysplex, with the new TCP/IP Health Monitor, and improved application availability with Resource Recovery Services (RRS) restart enhancements. The RRS enhancements enable a resource manager to restart on any z/OS 1.6 image whenever the resource manager terminates.

For more information on the zAAP, see the zAAP Frequently Asked Questions on the zSeries FAQ web page.
**Question:**
When will performance information be available for planned z/OS support of up to 24 processors in a single z/OS image?

**Answer:**
Performance information for greater than 16-way single image support is planned to be available concurrent with the general availability of z/OS 1.6, planned for September 24, 2004.

**Question:**
Will z/OS 1.6 support more than 24 processors in the future?

**Answer:**
IBM intends to support greater than 24 CPs, or combined CPs and zAAPs, in a single LPAR in the future on appropriate releases of z/OS and z/VM®, in combination with designated zSeries server(s). All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

**Question:**
What enhancements are planned for 64-bit support of C/C++?

**Answer:**
The C/C++ compiler feature of z/OS enables customers to develop and port high-performance and complex C/C++ programs. In z/OS 1.6, IBM plans to support the generation and debugging of 64-bit applications. This capability will remove the current limitations on virtual memory and address space sizing, and will aid in porting of applications from other platforms. The C/C++ compiler will support the industry-standard LP63 programming model to allow C/C++ code to exploit virtual memory above the bar. In addition, the architecture level of ARCH(6) will be supported to allow for exploitation of the new z990 and z890 hardware features for performance enhancements.
**Question:**
What is new in z/OS 1.5?

**Answer:**
This fifth release of z/OS, available on March 26, 2004, is the first and only IBM operating system to provide Multilevel Security. This technology can help improve the way government agencies and other organizations share critical classified information.

Other enhancements in z/OS 1.5 include extended self-optimization of WebSphere applications, improved backup and recovery of DB2 data, improved performance for DFSORT, and expanded scope for Intrusion Detection Services.

z/OS 1.5 can also help simplify the management of z/OS with a new front end for managing print across the enterprise, improved navigation of the z/OS library, and easier setup of DB2, RMF™ and FTP on z/OS.

For more information on z/OS 1.5, see the z/OS 1.5 Web page, [ibm.com/zseries/announce/zos_r5/](http://ibm.com/zseries/announce/zos_r5/)

**Question:**
What is the importance of Multilevel Security on z/OS?

**Answer:**
Combined with IBM's DB2 Universal Database™ for z/OS Version 8, z/OS 1.5 provides multilevel security on the IBM eServer zSeries mainframe to help meet the stringent security requirements of government agencies and financial institutions, and can open up new options for e-hosting facilities. This technology can help improve the way government agencies and other organizations share critical classified information.

Multilevel security technology allows IT administrators to give users access to information based on their need to know, or clearance level. It is designed to prevent individuals from accessing unauthorized information and to prevent individuals from declassifying information.

IBM's z/OS 1.5 and DB2 V8 enable a single repository of data to be managed at the row level and accessed by individuals based on their need to know. For example, a person with a top secret clearance will be able to access more information in a database than someone without that clearance level.

Using the new IBM solution, organizations can help reduce duplicate infrastructures previously needed to separate highly confidential data, which in turn can help reduce IT costs, floor space and administration costs. In addition, records can be more up to date as well as more easily shared, administered and managed, because information does not have to be merged from various sources.
What is the importance of the improvements to print management in the Infoprint feature of z/OS?

**Answer:**
Businesses seeking to reduce their IT costs often focus on the "big ticket" items in the budget. They ignore costs that appear relatively low, but are repeated across many areas of the business, or are hidden in a variety of general expense categories. The cost of distributed output management is one of these often overlooked expenses. However, when the costs of buying, managing, supporting, and administrating hundreds of distributed print servers are accumulated enterprise-wide, they can amount to a significant business cost.

Businesses may be able to achieve cost savings by

- Consolidating thousands of underutilized desktop printers into centralized multi-application printers
- Converting print output for distribution as e-mail to save paper and supplies
- Centralizing management of the distributed print environment

The Infoprint® Server feature of z/OS can provide the foundation for a reliable, highly secure print infrastructure that can scale to meet growing business needs. For the latest enhancements to Infoprint, see the z/OS 1.5 Announcement Letter, Software Announcement 204-017 February 10, 2004.
**Question:**
What is new in z/OS 1.4?

**Answer:**
The fourth release of z/OS, the flagship operating system of the IBM @server mainframe product line, features enhancements to z/OS self-managing capabilities, TCP/IP networking and e-business security.

Self-optimizing improvements include better dynamic balancing of batch workloads across a sysplex, and better self-tuning and more granular performance reporting of WebSphere for z/OS. Ease of configuration improvements include enhancements to msys for Setup and two new Web-based wizards. One wizard, IBM @server Security Planner, provides recommendations to help users create a more consistent security policy across IBM platforms. The other wizard helps plan your Intelligent Resource Director (IRD) implementation (available 3Q02).

z/OS 1.4 also extends TCP/IP networking scale with support for the new IPv6 protocol (note: a z800, z900, or z990 is required for this support). Other networking enhancements include a new TCP/IP daemon for synchronizing clocks between various platforms in the network, VPN support across a sysplex, and improvements to SNA network manageability.

For more information see the z/OS 1.4 Web page, [ibm.com/zseries/announce/zos_r4/](http://ibm.com/zseries/announce/zos_r4/)

**Question:**
When is end of ordering for z/OS 1.4?

**Answer:**
In order to give as many customers as possible the opportunity to migrate to z/OS before OS/390® V2R10 end of service, IBM is extending marketing of z/OS 1.4 such that it will orderable until September 9. To allow for adequate order processing time, it is recommended that z/OS V1.4 orders be submitted by August 31, 2004. Customers should be encouraged to start this migration now.

**Question:**
What is the Console Availability Feature and how will it be made available for z/OS 1.4?

**Answer:**
This feature initiates zSeries delivery of its Console Strategy to enhance the operator messaging architecture of z/OS. The first enhancements will focus on improving system availability by minimizing impacts related to WTO buffer shortages. This is an optional no-charge feature for z/OS 1.4 which was made available on March 26, 2004. As an optional feature customers can order and install it at their convenience. The new functions are enabled when the feature is installed with no additional customization required. This feature will not be made available on releases previous to z/OS 1.4. In z/OS 1.5 and subsequent releases, this function will be rolled into the base product and will no longer be an optional feature.
z/OS Support for z890 and z990 Servers

Question:
What software updates are for z/OS to support the z890 and z990 servers?

Answer:
Because of the similarities between the z890 and z990 servers, the software deliverables that support the z990 server also apply to the z890 server. That is, the features and Web deliverables that are required for the z990 server are also required for the z890 server, even though “z890” is not in the names of most of the features and Web deliverables.

Specifically, the following features and Web deliverables support both the z990 and z890 servers:

- For z/OS V1.4:
  - z/OS V1.4 z990 Compatibility Support feature. This unpriced optional feature allows z/OS V1.4 to run on a z990 or z890 server but does not allow z/OS to exploit the new z990 and z890 functions. This feature can also be required on coexisting z/OS V1.4 non-z990 and non-z890 systems. **This feature is no longer orderable and is replaced by the z/OS V1.4 z990 Exploitation Support feature.** However, customers who have this feature can continue to use it (as long as they don’t want to exploit the new functions).
  - z/OS V1.4 z990 Exploitation Support feature. This unpriced optional feature allows z/OS V1.4 to take advantage of new functions provided by the z990 and z890 servers. This feature also provides the compatibility support that was in the z/OS V1.4 z990 Compatibility Support feature, which this feature replaces. Any z/OS V1.4 customer who doesn’t already have the compatibility support but requires it, must now order the z/OS V1.4 z990 Exploitation Support feature. This feature can be required on coexisting non-z990 and non-z890 systems.

- For z/OS V1.3, z/OS V1.2, and OS/390 V2.10:
  - z990 Compatibility for Selected Releases Web deliverable. This deliverable allows z/OS V1.3, z/OS V1.2, and OS/390 V2.10 to run on a z990 or z890 server but does not allow these releases to exploit the new z990 and z890 functions. This deliverable can also be required on coexisting z/OS V1.3, z/OS V1.2, or OS/390 V2.10 non-z990 and non-z890 systems.

- For z/OS.e V1.4:
  - z/OS.e V1.4 z990 Coexistence feature. This feature allows z/OS.e V1.4 running on a z800 server to coexist in a sysplex with a z990 or z890 system. Also, this feature allows z/OS.e V1.4 to run on a z890 server, but it does not allow z/OS.e V1.4 to exploit the new z890 functions. This feature does not allow z/OS.e V1.4 to run on a z990 server, but it allows customers to maintain a consistent code base for z/OS and z/OS.e. This feature is no longer orderable and is replaced by the z/OS.e V1.4 z990 Coexistence Update feature.
  - z/OS.e V1.4 z990 Coexistence Update feature. This feature allows z/OS.e V1.4 to take advantage of new functions provided by the z890 server. This feature can also be
required on coexisting z800 systems. This feature allows customers to maintain a consistent code base for z/OS and z/OS.e.

- For z/OS.e V1.3:
  - z990 Compatibility for Selected Releases Web deliverable. This deliverable allows z/OS.e V1.3 to run on a z890 server, and allows z/OS.e V1.3 running on a z800 server to coexist in a sysplex with a z990 or z890 server. This deliverable allows customers to maintain a consistent code base for z/OS and z/OS.e.

For z/OS V1.5, z890 and z990 support has been integrated into the base product. That is, no additional feature or Web deliverable is required for z/OS V1.5 to take advantage of new functions provided by the z990 and z890 servers, or for z/OS V1.5 to coexist with z990 or z890 systems in a sysplex. Similarly, for z/OS.e V1.5, z890 support has been integrated into the base product. That is, no additional feature or Web deliverable is required for z/OS.e V1.5 to take advantage of new functions provided by the z890 server, or for z/OS.e V1.5 to coexist with z990 or z890 systems in a sysplex.

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**Question:**
What releases of z/OS support the latest z890 and z990 enhancements?

**Answer:**
Below is a list of the latest z890 and z990 enhancements, and the releases that support these functions.

- zSeries Application Assist Processor: z/OS 1.6* and above
- Up to 24 CPs within a single LPAR: z/OS 1.6* and above (z990 only)
- Up to 30 LPARs: z/OS 1.4 and above
- Up to 4 Logical Channel Subsystems: z/OS 1.4 and above (up to 2 LCSSs with z890s)
- External Spanned Channels: z/OS 1.4 and above
- OSA Integrated Console Controller: z/OS 1.3 and above

For more information, see the April 7, 2004 Announcement Letters for the z890 and z990 servers.

* - Planned support previewed for z/OS 1.6. Planned availability is September 24, 2004.
**z/OS.e**

**Question:**
What is z/OS.e?

**Answer:**
z/OS.e is a specially priced offering of z/OS that is only available for z890/z800 customers. z/OS.e provides select z/OS function at an exceptional price. This product offering is intended to help customers exploit the fast growing world of next generation e-business by making the deployment of Java and C/C++ applications on the z890/z800 very attractively priced. This product offering does not replace z/OS. z/OS.e is intended for (and licensed for) use with “new workloads” and it disables traditional workloads.

For more information see the z/OS.e Web site, [ibm.com/zseries/zose/](http://ibm.com/zseries/zose/)

**Question:**
What are “new workloads” that are supported on z/OS.e?

**Answer:**
z/OS.e is an ideal way to enter, exploit, and profit from the world of next-generation applications. z/OS.e will execute applications written in Java and C/C++.

New next-generation workloads that exploit the qualities of service of the mainframe and run unencumbered under z/OS.e V1.5 include, but are not limited to:

- WebSphere Application Server for z/OS (WAS V5.0.0) with DB2 for z/OS
- Software Development Kit (SDK) with Java 2 Platform, Enterprise Edition
- C/C++
- Lotus® Domino™
- SAP R/3
- Siebel

For the latest z/OS.e product catalog for ServerPac and SystemPac, visit the following Web site and select z/OS.e. [ibm.com/zseries/software/swinfo/](http://ibm.com/zseries/software/swinfo/)

Products that are unavailable via ServerPac or SystemPac, such as Lotus Domino (5655-B86), can also be separately ordered for use with z/OS.e.

**Question:**
What traditional workloads are disabled on z/OS.e?

**Answer:**
When IPLed, z/OS.e invokes an operating environment that is for new e-business transaction processing or database serving workloads. z/OS.e will not execute CICS, IMS, COBOL, or FORTRAN applications. However, precompiled COBOL DB2 stored procedures, and other precompiled applications using the Language Environment® preinitialization interface (CEEPPI) are supported. You may not use the following compilers: COBOL, PL/I, VisualAge®.
PL/I, and FORTRAN. However, z/OS.e supports execution of precompiled PL/I and VisualAge PL/I applications.

In addition, customers cannot use the following z/OS Base Elements and Features:

- BookManager® Read and BookManager Build
- DCE AS
- GDDM® and GDDM-PGF and GDDM-REXX
- LANRES®
- Encina® Toolkit, MICR/ OCR are not licensed
- BDT File to File

Please note, non-current z/OS.e releases of JES2, JES3 and LE are not supported. Also, TSO usage is limited to eight concurrent users per z/OS.e system image.

For z/OS.e, and for IBM programs in general, only supported IBM programs are licensed to run on z/OS.e. Refer to the minimum releases of IBM software products that run with z/OS.e in z/OS and z/OS.e Planning for Installation (GA22-7504) for actual IBM products supported. Note that the list of supported products is regularly updated and may change over time without notice.

**Question:**
How can z/OS.e be configured on a z890/z800?

**Answer:**
z/OS.e can be run as the only operating system on a z890/z800 or with other operating systems like z/OS, OS/390, VSE/ESA™, VM/ESA®, Linux and TPF.

On a z890/z800, z/OS.e may run in one LPAR, multiple LPARs, or as a guest under z/VM running in an LPAR.
**z/OS: Supported servers, End-of-Service and End-of-Marketing**

**Question:**
What servers are supported by the different z/OS releases?

**Answer:**
z/OS 1.1 is supported on z800, z900, G5/G6, and MP3000 servers or equivalent servers.

Z/OS 1.2, 1.3, 1.4 and 1.5 are supported on z890, z990, z800, z900, G5/G6, and MP 3000 servers or equivalent servers.

On the G5/G6 and Multiprise 3000 servers, z/OS is not able to take advantage of the new features provided by the z/Architecture which include 64-bit real and virtual support, Intelligent Resource Director, HiperSockets™, and IPv6. The Workload License Charges pricing option is also not available on these servers. However, many other functions provided in z/OS can be taken advantage of by customers running on these servers — for example, msys for Operations, the zSeries File System, C/C++ enhancements, and numerous security, networking, and availability enhancements.

z/OS 1.6 requires z/Architecture servers and is therefore only supported on z890, z990, z800 and z900 or equivalent servers.

**Question:**
Where can I get information on the End-of-Service and End-of-Marketing dates for z/OS and OS/390 releases?

**Answer:**
This information is available on the Web site for z/OS, z/OS.e, and OS/390 marketing and service announce, availability, and withdrawal dates.


**Question:**
What are the End of Service dates for the currently supported z/OS and OS/390 releases?

**Answer:**
IBM has announced End of Service for the following operating system releases:

- **OS/390 2.10**  September 30, 2004
- **z/OS 1.2:**  October 31, 2004
- **z/OS 1.3:**  March 31, 2005
- **z/OS 1.4:**  March 31, 2007

The planned end of service date for z/OS 1.5 is March 31, 2007.
**Question:** What does end of service announcement mean for OS/390 2.10 customers?

**Answer:**
OS/390 2.10 customers should develop migration plans to z/OS 1.4 to ensure that they can complete their migration to z/OS 1.4 prior to OS/390 2.10 end of service on September 30, 2004. z/OS 1.4 is the last release of z/OS that an OS/390 2.10 customer can migrate to directly. Migration from OS/390 2.10 to z/OS 1.5 would require a two-step migration.

**Question:** Why has the end of service date for z/OS 1.4 been extended from the typical three years?

**Answer:**
The end of service for z/OS 1.4 was moved to line up with the planned end of service for z/OS 1.5. z/OS 1.5 is the last release that will support IBM S/390® G5/G6 and Multiprise® 3000 servers (or equivalent server). With this extension of service, customers who have made the move from OS/390 2.10 to z/OS 1.4 will not have to migrate to z/OS 1.5 to extend the support for their G5/G6/MP3000 servers. z/OS 1.4 customers are encouraged to assess the function in z/OS 1.5 to determine whether their next step for migration should be to z/OS 1.5 or to a later release. z/OS 1.6, planned to be available in September 2004, will require z/Architecture™ servers (z890, z990, z800, z900).

**Question:** With this extension of service for z/OS 1.4, what future releases will a customer on z/OS 1.4 be able to migrate to?

**Answer:**
z/OS 1.4 customers will have the option to migrate directly to z/OS 1.5, 1.6, or 1.7. z/OS 1.6 is planned to be available September 2004, and z/OS 1.7 is planned to be available September 2005. Customers should assess the value these releases provide to their business to determine which release to migrate to.

**Question:** I’d like to plan my next release migration. What release can I migrate to in one step? Do I have fallback options? What releases of OS/390 can coexist with each other?

**Answer:**
Using the table below, find the release that you are currently executing in Column A. Column C, labeled “Looking forward” lists the releases that can be migrated to in one step. Column B, labeled “Looking backward,” lists the releases that you can fallback to. As for sharing resources between releases:

- If the release in Column A is the highest executing release: Column B, labeled “Looking backward,” lists the releases that can coexist with the release in Column A.
If the release in Column A is the lowest executing release: Column C, labeled “Looking forward,” lists the releases that can coexist with the release in Column A.

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
<th>COLUMN C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release (All EOS dates are projections)</td>
<td>“Looking backward” (i.e. The release in column A is the highest executing release), the release in column A may coexist with or fallback to:</td>
<td>“Looking forward” (i.e. The release in column A is the lowest executing release), the release in column A may coexist with or migrate in one step to:</td>
</tr>
</tbody>
</table>
| OS/390 2.10 (EOS - at least 9/04) | OS/390 2.9 | z/OS 1.1  
z/OS 1.2  
z/OS 1.3  
z/OS 1.4 |
| z/OS 1.1 (EOS - 3/04) | OS/390 2.9  
OS/390 2.10 | z/OS 1.2  
z/OS 1.3  
z/OS 1.4 |
| z/OS 1.2 (EOS - 10/04) | OS/390 2.9  
OS/390 2.10  
z/OS 1.1 | z/OS 1.3  
z/OS 1.4  
z/OS 1.5 |
| z/OS 1.4 (EOS - 3/07) | OS/390 2.10  
z/OS 1.1  
z/OS 1.2  
z/OS 1.3 | z/OS 1.5  
z/OS 1.6  
z/OS 1.7* |
| z/OS 1.5 (EOS - 1Q07*) | z/OS 1.2  
z/OS 1.3  
z/OS 1.4 | z/OS 1.6  
z/OS 1.7*  
z/OS 1.8* |
| z/OS 1.6 (EOS - 9/07*) | z/OS 1.3  
z/OS 1.4  
z/OS 1.5 | z/OS 1.7*  
z/OS 1.8* |

* Planned releases and dates.
Transition to Annual Releases

**Question:**
Why did IBM change to an annual release cycle for z/OS?

**Answer:**
IBM has moved from a 6-month release cycle to an annual release cycle based on feedback from our customers and the independent software vendors (ISVs). Customers have told us that the previous 6-month release cycle is more aggressive than their own migration practices. Most customers are on 12 or 18-month migration schedules. This also addresses requests from our ISVs to move to a less frequent release cycle so they can ensure quality support of each z/OS release by their products.

Less frequent releases will also allow IBM to provide even more integration testing for z/OS and related IBM middleware. This will include longer Early Support Programs, giving a number of customers even more time to test and stress z/OS releases in their environments prior to availability.

New z/OS and z/OS.e functions will be delivered between releases through the normal maintenance stream or as Web deliverables. In addition, significant new function may be delivered between releases as features of the z/OS product.

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**Question:**
With the move to annual releases, is there a change to the coexistence/migration/fallback policy?

**Answer:**
With z/OS 1.6, the first annual release of z/OS, IBM has aligned the Coexistence/Migration/Fallback policy with the Service policy. IBM intends to continue with the practice of providing service support for each release of z/OS or z/OS.e for three years following General Availability. IBM at its sole discretion, may choose to leave a release supported for more than three years. As a general rule, this means that three releases will be coexistence, migration, fallback supported over a period of three years. This represents an increase of one year over the two year period provided by the current Coexistence/Migration/Fallback policy of four releases under a 6-month release cycle.

In some cases, more than three releases may be coexistence, migration, and fallback supported, if IBM at its sole discretion chooses to provide service support for greater than three years for a release. However, as an exception, any z/OS or z/OS.e releases having three or less months of service remaining at GA of a new release will be excluded. Our intention with this policy change is to simplify (with the alignment to the Service policy) and provide predictability for future release migrations.
For z/OS and z/OS.e 1.5, z/OS and 1.4 and lower releases, the previous Coexistence/Migration/Fallback policy (and any accommodations previously provided) remains in effect and unchanged. Note: These statements represent IBM's current intentions. IBM reserves the right to change or alter the Coexistence/Migration/Fallback policy in the future or to exclude certain releases beyond those stated. IBM development plans are subject to change or withdrawal without further notice. Any reliance on this statement of direction is at the relying party's sole risk and does not create any liability or obligation from IBM.
Migration to z/OS

Question:
Why is IBM encouraging OS/390 2.10 customers to migrate to z/OS 1.4?

Answer:
Customers are encouraged to move forward to z/OS 1.4 because it positions them to take advantage of the latest middleware and zSeries technologies and because it is the base for exploiting the z890 and z990 servers. Also support for OS/390 2.10 will end in September 2004, and z/OS 1.4 is the last release of z/OS that these customers can migrate to in a single step. In addition, z/OS is the base for key IBM middleware, and the following releases will not be supported on OS/390 2.10:

- DB2 for z/OS V8 requires z/OS 1.3 or higher in 64-bit mode.
- Lotus Domino 6 requires z/OS 1.2 or higher.
- Java SDK, 1.4.1 requires z/OS 1.2 or higher.
- CICS V2.3 requires z/OS 1.3 or higher.

Question:
What aids are available to help customers accelerate their migration from OS/390 2.10 to z/OS 1.4?

Answer:
A z/OS V1.4 Migration Manual is available on the Web to help accelerate your migration. This manual consolidates all relevant information into a single reference. It specifically identifies any multi-release migration considerations and is based on an actual OS/390 V2.10-to-z/OS V1.4 migration performed at the IBM Poughkeepsie z/OS test facility. Feedback from users has been extremely favorable of this new publication. Similar z/OS V1.5 migration manuals are also available.

This guide is in addition to the standard migration documentation, and is available through the Web at ibm.com/zseries/zos/installation/zos_migration.html.

IBM provides the z/OS Bimodal Migration Accommodation offering as a 31-bit mode "fallback" option for those migrating to z/OS on a z/Architecture server (z990, z900, z800, or equivalent) for the first time. This offering is available from the web for z/OS V1.2, V1.3, and V1.4. This offering will not be provided for z/OS V1.5. Please see the z/OS Bimodal Migration Accommodation download Web page for applicable terms and conditions, ibm.com/zseries/zos/installation/zos_migration.html.

The Search390 web site also has a list of The Best 25 References for z/OS Migration. See search390.techtarget.com
Question: Where can I find more information on migrating to z/OS?

Answer: The z/OS Migration Web page is an excellent point of reference to the aids, documents, and Q&As on migration to z/OS. [ibm.com/zseries/zos/installation/zos_migration.html](http://ibm.com/zseries/zos/installation/zos_migration.html)

Question: When running on a z800/z900/z990, is z/OS only supported in z/Architecture mode (64-bit mode)?

Answer: The intended operating environment for z/OS on a zSeries server (z800/z900/z990) is z/Architecture mode (64-bit). All releases of z/OS and z/OS.e running on a z800/z900/z990 have been architected, designed, implemented, and tested to exploit the new z/Architecture, which includes 64-bit real and virtual storage support. However, a z/OS Bimodal Migration Accommodation Offering is now available for z/OS 1.2, 1.3, and 1.4, to give customers a fallback option to 31-bit mode should there be any 64-bit problems during the migration. Customers can only run in 31-bit mode on zSeries servers, or equivalent (test or production) during the Accommodation Period (6 months beginning with the date z/OS is licensed to that zSeries.)

Question: Will all applications and products that run in 31-bit ESA mode run on z/OS in 64-bit real memory?

Answer: Yes, the vast majority of applications and products have no awareness of the amount of real storage available. Therefore, we would expect that most should run without any consideration for the increased storage available to z/OS on a z/Architecture server (z890/z990/z800/z900 or equivalent). z/OS is tri-modal. Even when a z/OS system is running in 64-bit mode, customers can still run existing 24-bit (AMODE=24) and 31-bit (AMODE=31) applications without having to relink or recompile them. For example:

- COBOL applications will run in 64-bit mode. Although COBOL does not support 64-bit addresses within COBOL programs, customers may get some of the benefits of 64-bit z/OS just by moving to it. With a 64-bit addressable real memory backing virtual memory, there will be less paging and swapping and, therefore, the possibility of better system performance. Actual results obtained in specific operating systems environments will vary depending on individual configurations and workload conditions.

- In addition, DB2 can exploit 64-bit addressing for SQL statements in COBOL programs without any changes to the COBOL programs.

Please note, if a customer has any authorized programs that deal with real storage addresses, these programs may need to be changed. Similarly, some ISV products may have authorized programs that deal with real storage addresses as well. The majority of ISV programs have been...
tested and many are already in production in customer sites around the world. z/OS 1.1 has been available since March of 2001.

IBM recommends that customers contact their ISV providers to determine the ISV product requirements for 64-bit real. To assist customers, a Web site is available with ISV-provided compatibility information for the different releases of z/OS. The URL address is: ibm.com/servers/eserver/zseries/solutions/s390da/. This information is voluntary and provided at the discretion of the ISVs. If your product is not listed, contact the ISV directly.

Question:
What is the value of z/Architecture 64-bit real storage support?

Answer:
The benefit of the new 64-bit real storage support depends upon the constraints your system has today. For example, a heavy-paging application environment should gain more value from this function than a smaller-paging environment. The benefits that result from 64-bit addressing are not a linear function of system size, so heavily loaded systems can realize greater value. Customers with significant database or communication activity may see performance benefits with 64-bit real addressing. 64-bit real addressing may also enable some customers to consolidate their current system into fewer LPARs, or to a single native image. In addition, 64-bit real addressing allows z/OS to support the larger multiprocessing available with the z890/z990/z800/z900. With the 9672 G6 servers, inter-processor communication and contention for 2 GB of storage prevented the introduction of a 16-way model. Now z/OS can use 64-bit real storage to apply the 16-way z990 to productive workloads, rather than to negotiating contention.

Question:
Can I test 64-bit addressing on my G5 or G6?

Answer:
No. The 9672 server only implements ESA/390 architecture. To use z/Architecture, you must have a zSeries processor.
**z/OS Bimodal Migration Accommodation offering**

**Question:**
What is the z/OS Bimodal Migration Accommodation offering?

**Answer:**
This offering is in response to customer requests to provide a fallback option to run in 31-bit mode when first migrating to z/OS 1.2, 1.3, or 1.4 on a z/Architecture server (z890/z800/z990/z900 or equivalent). Previously, z/OS had to run in 64-bit z/Architecture mode on a z/Architecture server. This offering, which is available at no charge as a download off the Web, gives customers the security of knowing they can fallback to 31-bit mode if there are any 64-bit problems during their migration. 31-bit mode is fully supported during the Accommodation period. This offering is only available for a 6-month period on each z/Architecture server. The 6 months begins when z/OS is licensed to the server.

**Question:**
Why is IBM offering this z/OS Bimodal Migration Accommodation now?

**Answer:**
Some customers have told us they are delaying their migration to z/OS because only OS/390 2.10 provides fallback to 31-bit mode on a z/Architecture server (zSeries or equivalent). They were asking for fallback capability on z/OS when first moving to 64-bit mode on a zSeries server. It is very important that our OS/390 customers make the move to z/OS, and IBM has reconsidered the investment to support z/OS 31-bit mode on a z/Architecture server on a limited basis to encourage our customers to move forward.

Customers who are still on G5/G6/MP3000 servers can now migrate from OS/390 to z/OS on their 31-bit servers, with the confidence that they can make a smooth transition to z/Architecture when they install z/Architecture servers.

**Question:**
What has been the general customer experience in moving to 64-bit mode?

**Answer:**
Customer experience has been very positive. Many customers have stated that this migration is no more difficult than other release to release migrations. This accommodation is provided to give customers the security that they can fallback to 31-bit mode if necessary.

**Question:**
How can you order this Accommodation offering?

**Answer:**
This offering was available at no charge concurrent with the availability of z/OS 1.4, September 27, 2002. The Accommodation offering is downloadable from:

**Question:**
Is this a supported offering?

**Answer:**
Yes. The z/OS Bimodal Migration Accommodation offering for z/OS 1.2, 1.3 and 1.4 is supported through normal IBM support channels. This offering will not be provided for z/OS 1.5, and it is not provided for any z/OS.e releases.

**Question:**
Why is the z/OS Migration Accommodation offering limited to six months for a z/OS license on a z/Architecture server?

**Answer:**
Feedback that we have received from customers is that a 6 month window provides ample time to be running in 64-bit mode and discover possible problems that may require a backout to 31-bit mode. Many customers are already receiving the benefits of a successful migration to z/Architecture. This migration offering is for customers who are moving to z/OS on a z/Architecture server with the option of falling-back to 31-bit in the unlikely event of any problems in 64-bit mode.

Customers without a zSeries server should be moving forward to z/OS on their G5/G6/MP3000. When a zSeries server is installed at a later date, the migration to z/Architecture is made simpler and more fail-safe with the Accommodation offering. These customers should download and install the Accommodation when they migrate to z/OS even though they will be running in 31-bit mode on a G5/G6/MP3000. The 6-month window doesn't begin until they license z/OS on a z/Architecture server.

**Question:**
Does IBM recommend that a customer run z/OS in 31-bit mode on a zSeries server prior to moving to 64-bit mode?

**Answer:**
IBM still recommends that customers who are running z/OS on a G5/G6/MP3000 server migrate directly to z/Architecture (64-bit) mode when they install a z890/z990/z800/z900 server. Significant testing has been completed since the introduction of 64-bit mode support with OS/390 2.10 in September 2000. z/OS 1.4 is the fourth release exercising the z/Architecture. Many customers are running production systems in 64-bit mode. These environments include a long list of ISV products. As with any migration, customers should check all of their ISV products to determine if they are supported on the new release of z/OS. ISV/USV products may require maintenance or a new release to run on the new release of z/OS. This is a standard release to release migration activity. We expect there will be very few situations where customers will actually need to fallback to 31-bit mode, but we are glad to provide this "safety net" to our customers to assist in their migration plans to move forward to z/OS. Therefore we recommend customers download and install the Accommodation offering prior to migrating to z/OS 1.2, 1.3, or 1.4 on a z/Architecture server.
**Question:**
What z/OS functions will not be supported when running in 31-bit mode on a z/Architecture server?

**Answer:**
The Bimodal Accommodation Migration offering does not extend support to those functions previously announced as requiring z/Architecture (64-bit). This includes, but is not limited to: Intelligent Resource Director, HiperSockets, 64-bit Real Storage, 64-bit Virtual Storage, and IPv6. In addition, Workload License Charges on z900 servers will not be available. z/OS.e is not supported by the Bimodal Migration Accommodation offering.

**Question:**
Why is this offering not available for z/OS.e?

**Answer:**
z/OS.e is intended for new non-traditional workloads on a z890/z800 server. These new workloads are typically coming from a non-IBM server like Sun or HP, so there is no migration issues of testing in 31-bit mode. These new workloads benefit greatly from having large memory stores which are available with the 64-bit z/Architecture of z/OS on a z890/z800.

**Question:**
If a customer already has WLC pricing on a zSeries server, what happens if they fallback to 31-bit mode?

**Answer:**
A customer cannot fallback to 31-bit mode after they have begun WLC pricing. A customer with WLC pricing will have already completed at least 2 months in 64-bit mode in order to provide the required reports. It is highly unlikely that any fallback would be required under these circumstances. Fallback to 31-bit mode after the commencement of WLC pricing would be in violation of the terms and conditions of the offering.

**Question:**
What are the terms of this Accommodation offering?

**Answer:**
See the Bimodal Accommodation download page for the terms and conditions for this offering, [ibm.com/servers/eserver/zseries/zos/downloads/](http://ibm.com/servers/eserver/zseries/zos/downloads/).
Question:
Are there conditions for the Bimodal Accommodation offering in support of disaster recovery?

Answer:
When a server running z/OS is inoperable, you may run IBM licensed programs temporarily on another machine (“Disaster Recovery”). Under the following terms and conditions, the offering is available during Disaster Recovery: If z/OS 1.2, 3 or 4 is licensed to a Multiprise 3000 server, a 9672 Generation 5 or Generation 6 server, or other equivalent 31-bit server (“31-bit server”), the offering may be utilized for Disaster Recovery purposes only. The offering may be installed on a 31-bit Server, and will remain dormant. In the event that you are required to implement Disaster Recovery on a zSeries server (z890, z800, z900 or z990) or equivalent 64-bit z/Architecture server ("64-bit Server"), the z/OS V1R2/3/4 license (that is licensed to a 31-bit Server) may be run on the 64-bit Server and the offering may be invoked during Disaster Recovery. When the disaster is over and the inoperable machine becomes operable, you are required to move the z/OS V1R2/3/4 license back to the 31-bit Server on which it was originally licensed.

When this z/OS license is subsequently licensed to a 64-bit z/Architecture Server, the use of this Disaster Recovery option terminates. Customers cannot fallback to 31-bit mode after they have begun.