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z/OS Version 1 Release 5 and Release 6 Update

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eNetwork	DFSMS/MVS	IMS	RACF
geoManager	DFSMSdfp	IMS/ESA	RMF
AD/Cycle	DFSMSdss	IP PrintWay	RS/6000
ADSTAR	DFSMSshm	IPDS	S/390
AFP	DFSMSrmm	Language Environment	S/390 Parallel Enterprise Server
APL2	DFSORT	Multiprise	SecureWay
APPN	Enterprise System 3090	MQSeries	StorWatch
BookManger	Enterprise System 4381	MVS/ESA	Sysplex Timer
BookMaster	Enterprise System 9000	Network Station	System/390
C/370	ES/3090	NetSpool	SystemView
CallPath	ES/4381	OfficeVision/MVS	SOM
CICS	ES/9000	Open Class	SOMobjects
CICS/ESA	ESA/390	OpenEdition	SP
CICS/MVS	ESCON	OS/2	VisualAge
CICSPlex	First Failure Support Technology	OS/390	VisualGen
COBOL/370	FLowMark	Parallel Sysplex	VisualLift
DataPropagator	FFST	Print Services Facility	VTAM
DisplayWrite	GDDM	PrintWay	WebSphere
DB2	ImagePlus	ProductPac	3090
DB2 Universal Database	Intelligent Miner	PR/SM	3890/XP
DFSMS/MVS	IBM	QMFr	z/OS
			z/OS.e

Domino (Lotus Development Corporation)
DFS (Transarc Corporation)
Java (Sun Microsystems, Inc.)
Lotus (Lotus Development Corporation)

Tivoli (Tivoli Systems Inc.)
Tivoli Management Framework
(Tivoli Systems Inc.)
Tivoli Manger (Tivoli Systems Inc.)

UNIX (X/Open Company Limited)
Windows (Microsoft Corporation)
Windows NT (Microsoft Corporation)

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Agenda



- ❑ z/OS V1R5 and z/OS V1R6 overview
- ❑ Multilevel security (MLS)
- ❑ zSeries Application Assist Processor (zAAP)
- ❑ Base control program (BCP) enhancements (R5 and R6)
- ❑ JES2 (z/OS V1R5) and SDSF
- ❑ zFS (z/OS V1R5 and z/OS V1R6)
- ❑ UNIX System Services (z/OS V1R5 and z/OS V1R6)
- ❑ JES3 (z/OS V1R5)
- ❑ Infoprint Server (z/OS V1R5)
 - Infoprint Central

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z/OS Redbooks



Currently available on Redbooks site
WWW.REDBOOKS.IBM.COM

z/OS Version 1 Release 3 and 4
Implementation -- SG24-6581 --

z/OS V1R3 DFSMS Technical Guide, SG24-6569

z/OS Version 1 Release 5
Implementation -- SG24-6326 -(draft)

z/OS V1R3 and V1R5 DFSMS Technical
Guide, SG24-6979-01

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Currently being edited for publication

z/OS Version 1 Release 6 Implementation -- SG24-6377 --

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Release Availability for 2004



☐ **Release Frequency**

- z/OS V1R5 available on March 26, 2004
- z/OS V1R6 available on September 24, 2004
 - After this release, annual releases are intended
 - z/OS V1R7 scheduled for September 2005

☐ **Coexistence-Migration-Fallback**

☐ **Service Policy**

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zFS Strategy - Announcement Preview



- ❑ Earlier this year, IBM announced that Hierarchical File System (HFS) function is stabilized
- ❑ The zSeries File System (zFS) is the strategic UNIX Systems Services file system for z/OS
- ❑ IBM plans to enhance zFS function in z/OS V1.7 so that you can use zFS file systems at all levels within the file hierarchy

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z/OS V1R7 zFS Preview



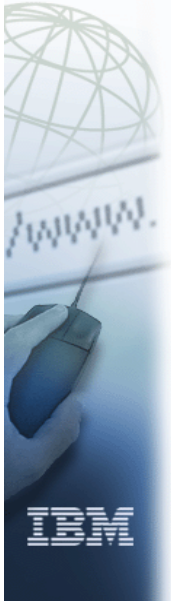
- ❑ zFS can now be used as the root filesystem
- ❑ zFS recovery feature provided now for application End of Memory problems
- ❑ zFS aggregate data set names can now contain national characters (same as HFS data set names)
- ❑ An operator command to unquiesce a quiesced zFS aggregate data set
- ❑ zfsadm command forwarding in a sysplex
- ❑ Tools provided to migrate HFS data to zFS

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Migration to: z/OS V1R5 or z/OS V1R6



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z/OS Coexistence for V1R5



OS/390
R10

z/OS
V1R1

z/OS
V1R2

z/OS
V1R3

z/OS
V1R4

z/OS
V1R5

❑ "4 consecutive releases" Coexist

- N to N+3 releases are supported for coexistence, migration, and fallback
 - When on z/OS, must migrate from four consecutive releases of the current release
 - When on z/OS, must back out within four consecutive releases of the current release
- z/OS V1R1 counts the same as OS/390 V2R10
- z/OS V1R2, z/OS V1R3, z/OS V1R4, and z/OS V1R5 are supported for coexistence, migration, and fallback

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New and Changed Base Elements



z/OS V1R5

Cryptographic Services	Base element - includes the component PKI Services, which used to be in optional feature Security Server. The complete list of Cryptographic Services components is now ICSF, OCSF, PKI Services, and System SSL .
DFSMSStvs	Priced feature - to enable batch jobs and CICS online transactions to update shared VSAM data sets concurrently. Introduced in June 2003 on z/OS V1.4.
Distributed File Services	Base element - new sub-component, zSeries File System (zFS) introduced in R5.
Integrated Security Services	New base element - it's comprised of the new component Enterprise Identity Mapping (EIM) and all the former components of optional feature Security Server, except for the RACF component. Those components are DCE Security Server, Firewall Technologies, LDAP Server, Network Authentication Service, and OCEP .
Integrated Security Services (z/OS V1R6)	Base Element – New subcomponent LDAP Server 64 bit Client (JRSL362) added.

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New and Changed Base Elements



z/OS V1R5

Library Server	Base element - formerly known as BookManager BookServer.
Run-Time Library Extensions	Base element which is an extension of the run-time support provided by the Language Environment element
Security Server	Optional priced feature - most sub-components moved to new base element Integrated Security Services. RACF , the only component remains in the feature
z/OS Security Level 3	New optional unpriced feature -repackaging (no new functions), comprised of the formerly separate optional features Network Authentication Service Level 3, OCSF Security Level 3, and System SSL Security Level 3 .

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New and Changed Base Elements



z/OS V1R6

Integrated Security Services	Base Element – New subcomponent LDAP Server 64 bit Client (JRSL362) added.	z/OS R6
IBM HTTP NA Secure	Formerly unpriced feature; becomes part of IBM HTTP Server base element	z/OS R6
z/OS Security Level 3	Unpriced feature – New feature in z/OS R5 which contains Network Authentication Service Level 3; OCSF Security Level 3; and System SSL Security Level 3 components. New subcomponents LDAP 31bit Client Security Level 3 (JRSL361) ; LDAP 64 bit Client Security Level 3 (JRSL363) added.	z/OS R6

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Base Elements and Feature Deleted



z/OS V1R6

C/C++ ISPF panels (from C/C++)	Priced Feature - invoke the C/C++ compiler via UNIX, JCL, or TSO/E.
Run-time Library Services (RTLS) (from Lang Env)	Base Element - no longer required due to stability and upward compatibility
Dynamic Link Library (DLL) Rename Utility (from Lang Env)	Base Element - no longer needed due to C/C++ DLLs being licensed with the z/OS base
SMlv1 version of the IBM MVS Enterprise-specific MIB module (from Communications Server)	Base Element - if you want to continue to use SMlv1, publicly available tools can convert SMlv2 to SMlv1
System SSL Java Class and JNDI support	Base Element – For Java application, use the IBM Java Secure Sockets Extension (JSSE) product
DCE Application Support	Base Element - no replacement necessary. Evaluate WebSphere for similar function
Encina Toolkit Executive	Base Element - no replacement offered. Marketplace has moved to other technologies
Text Search	Base Element - no replacement offered

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Functions to be Withdrawn in Future



z/OS V1R6 Future Withdrawals

OROUTED (from Communications Server)	Base Element - use OMPROUTE as the dynamic routing daemon	After z/OS R6
ISAM and the utility program, IEABISAM (from DFSMS)	Base Element - ISAM Compatibility Interface still be provided (allows you to run an ISAM program against a VSAM KSDS data set)	After z/OS R6
Bind DNS 4.9.3 (from Communications Server)	Base Element - implement BIND 9.2.0 as a replacement (available since z/OS R4)	After z/OS R6
JOB CAT and STEPCAT facilities (from DFSMSdfp)	Base Element	future
OS/390 R10 level of the C/C++ compilers (from C/C++)	Priced Feature - move to the ISO 1998 Standard level of the compilers (introduced in z/OS R2)	future
AnyNet (from Communications Server)	Base Element - implement Enterprise Extender as a replacement	future

Prepare for JOBCAT and STEPCAT removal (Recommended)

In z/OS R5, JOBCAT and STEPCAT DD statements are disabled by default. You have the option to enable them via the MODIFY CATALOG,ENABLE(JOBSTEPCAT) in COMMNDxx.

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z/OS Version 1 Release 5



- ❑ The following visuals describe some of the z/OS V1.5 functional enhancements that may be of particular interest to system programmers
- ❑ BCP enhancements
 - WLM dynamic application environment API
 - AutoPDAS (HyperSwap)
 - Outage avoidance-Logger service tasks hang relief
 - Logstream Data Set Deletion Management
 - System-Managed Coupling Facility (CF) Structure Duplexing
 - Consoles enhancements feature
 - 64-bit shared virtual storage

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z/OS V1R5 Enhancements



☐ **UNIX System Services enhancements**

- BPXPRMxx creates mountpoints within the filesystem
- BPXCOPY extensions for UNIX file to file copy
- Sysplex verification shutdown versus hardwait
- Sysplex remount
- New symlink symbolics

☐ **RACF enhancements**

- Dynamic template
- Multilevel security (MLS)

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z/OS V1R5 Enhancements



☐ **DFSMS enhancements**

- RMM backup at any time
- RMM duplicate VOLSER support
- Re-index of online volumes
- SMS enhancements

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z/OS V1R6 - Program Number: 5694-A01



- ☐ Ensure you order the optional priced and unpriced features you were using in previous releases of z/OS
- ☐ Remember to order the z/OS Security Level 3 includes
 - OCSF Security Level 3
 - LDAP 31 bit Client Security Level 3 (new FMID in V1R6)
 - LDAP 64 bit Client Security Level 3 (new FMID in V1R6)
 - Network Authentication Service Level 3
 - System SSL Security Level 3, if you desire
- ☐ Communications Server Security Level 3 - not part of z/OS Security Level 3
- ☐ HTTP Server NA Secure feature now incorporated in HTTP Server base element
- ☐ Tivoli NetView and System Automation users take note!
- ☐ Order z/OS V1.6 electronically via ShopzSeries

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Products Related to z/OS V1R6



- ☐ IBM SMP/E for z/OS, V3R3 (5655-G44)
 - Incorporated in z/OS V1R6 (SMP/E is non-exclusive!)
 - Available 9/2004, at no charge to z/OS licensed users
- ☐ IBM Debug Tool for z/OS V4R1 (5655-L24)
 - No longer incorporated, as of z/OS V1.5
- ☐ ICKDSF R17 (5655-257)
 - Incorporated into z/OS V1R6
- ☐ z/OS V1.6 msys for Operations contains parts of:
 - Tivoli Netview for OS/390 V1R4 (5697-B82)
 - System Automation for z/OS V2R3 (5645-006)
- ☐ Tivoli NetView for OS/390 V5R1 (5697-ENV)
 - Can be ordered with, and is compatible with z/OS V1R6 msys for Ops

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z/OS V1R6 Enhancements



- ❑ **ServerPac Enhancements for z/OS V1.6**
 - Support for downloading electronic ServerPac orders
 - Enhanced dialog and installation jobs to handle install from Internet or Tape
- ❑ **SMP/E V3.3 Enhancements**
 - Communications Server FTP client exploitation
 - GIMZIP and GIMUNZIP Extensions
- ❑ **UNIX System Services**
 - Automove System List Enhancements
 - Increase 64K Per Process File Descriptor Limit
 - Automount Enhancements
 - HFS to zFS Automount

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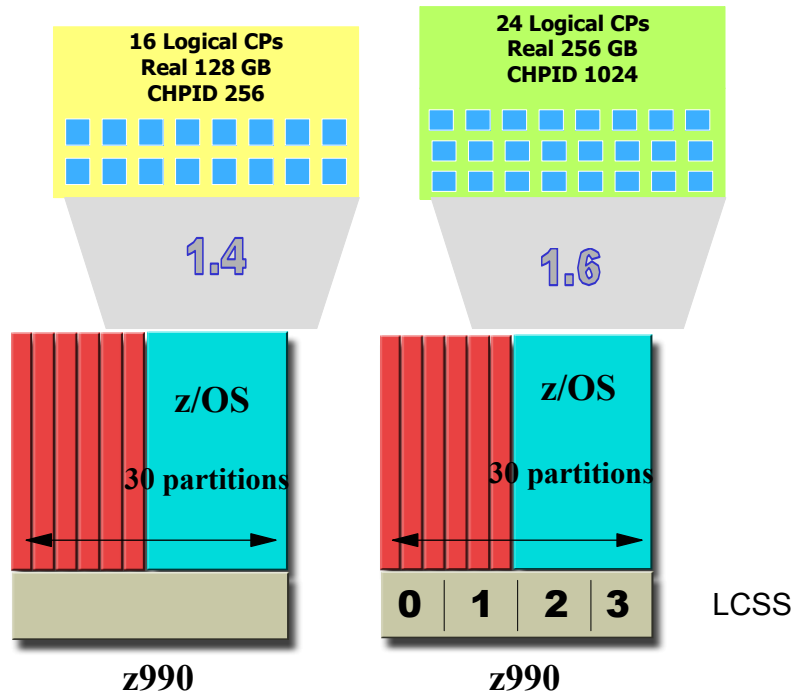
z/OS V1R6 Enhancements



- ❑ **Support for zSeries Application Assist Processor (zAAP)**
 - Specialized z/OS Java environment on zSeries servers
 - Provides economical Java execution environment leveraged by workloads with Java cycles, WebSphere, DB2 ...
 - Available on z990, z890, and future zSeries servers only
 - Attractively priced at \$125K USD per zAAP engine
 - Executes Java cycles with no anticipated changes to applications
 - Traditional IBM zSeries software charges unaffected
 - Sub-capacity eligible IBM software charges may be reduced
 - Significantly lower price than the standard CP processor

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z/OS V1R6 LCSS



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24 Logical CPs Considerations



- ❑ Restriction: Affinity scheduling is not supported for processors with addresses larger than x'F'
- ❑ Contact ISVs to identify any maintenance required to support CPs with addresses > F
- ❑ Ensure the partition has sufficient real memory for the increased processing power
- ❑ The level of efficiency achieved is highly dependent upon workload - the efficiency curve up to 16 CPs is a good indicator of behaviour as the number of CPs increases beyond 16
- ❑ Limitations on other resources, like common virtual below 2GB, may limit the number of processors that can be deployed for a specific workload

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z/OS Support for Processors per Image



❑ 32-way single image

- Planned for z/OS 1.6 in 2005*
- Single z/OS image up to 32 processors in a single logical partition on z990 server
- 32 = sum of central processors and zAAP processors defined to a z/OS logical partition
- 24-way single image is planned to be supported in z/OS 1.6 at general availability in Sept. 2004

* All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only

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Migration to z/OS V1R5 or z/OS V1R6

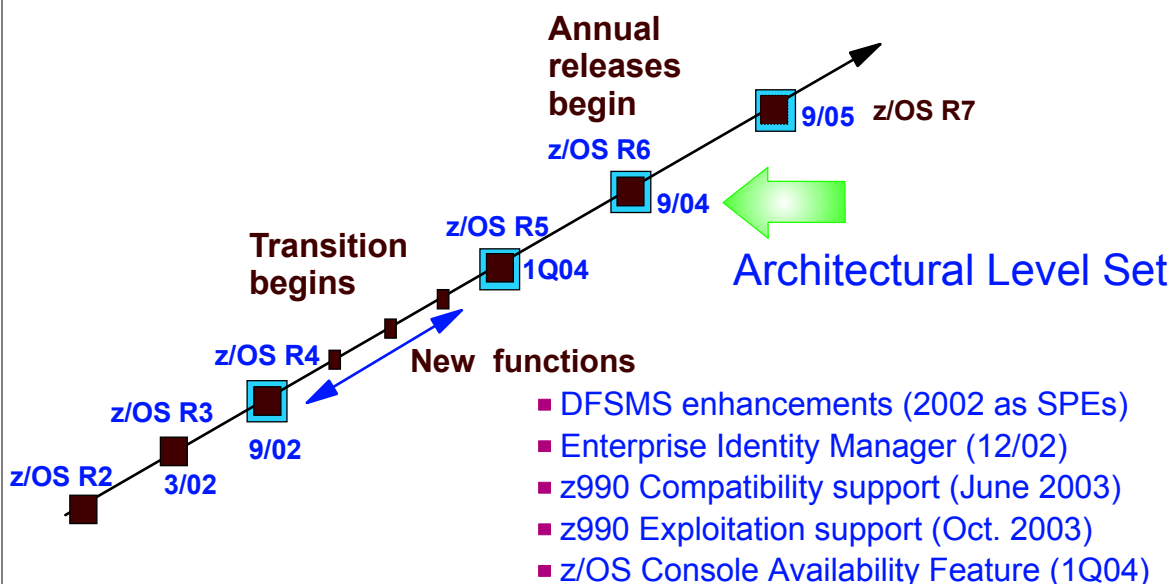


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Planned Transition to Annual Releases



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z/OS Service Policy z/OS V1R5



- Release serviceable for three years following GA
- Service on last release of a version might be extended
- At least 12 months notice before withdrawing service
- Service policy supercedes the Coexistence Policy

Version and Release	General Availability (GA)	End of Service (EOS)
z/OS V1R5 and z/OS.e V1R5	26 March 2004	March 2007 (announced)
z/OS V1R4 and z/OS.e V1R4	27 September 2002	31 March 2007 (announced)
z/OS V1R3 and z/OS.e V1R3	29 March 2002	31 March 2005 (announced)
z/OS V1R2	26 October 2001	31 October 2004 (announced)
z/OS V1R1	30 March 2001	31 March 2004 (announced)
OS/390 V2R10	29 September 2000	30 September 2004 (announced)
OS/390 V2R9 and earlier	31 March 2000 and earlier	31 March 2003 and earlier

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z/OS Service Policy z/OS V1R6



- ☐ Release serviceable for three years following GA
- ☐ Service on last release of a version might be extended
- ☐ At least 12 months notice before withdrawing service
- ☐ Service policy supercedes the Coexistence Policy

Release	General Availability	Service Expiration
OS/390 V2R10	29 September 2000	30 September 2004 (announced)
z/OS V1R1	30 March 2001	31 March 2004 (announced)
z/OS V1R2	26 October 2001	31 October 2004 (announced)
z/OS V1R3 and z/OS.e V1R3	29 March 2002	31 October 2005 (announced)
z/OS V1R4 and z/OS.e V1R4	27 September 2002	31 March 2007 (announced)
z/OS V1R5 and z/OS.e V1R5	26 March 2004	March 2007 (planned)
z/OS V1R6 and z/OS.e V1R6	25 September 2004	September 2007 (planned)

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Ordering until 9/9/2004



- ☐ Until 9/9/2004, it is possible for the following to be ordered:
 - In ServerPac, CBPDO, and SystemPac
 - Both z/OS R4 and R5 full releases (and also separately in CBPDO these R4 post-GA features
 - z/OS R4 DFSMStvs, z/OS R4 Consoles Enhancements features and z/OS R4 z990 Exploitation features)
 - In ServerPac and SystemPac - both z/OS.e R4 and R5 full releases
 - In CBPDO - z/OS.e V1R4 DFSMStvs, z/OS.e R4 Consoles Enhancements features and z/OS.e R4 z990 Coexistence Update features

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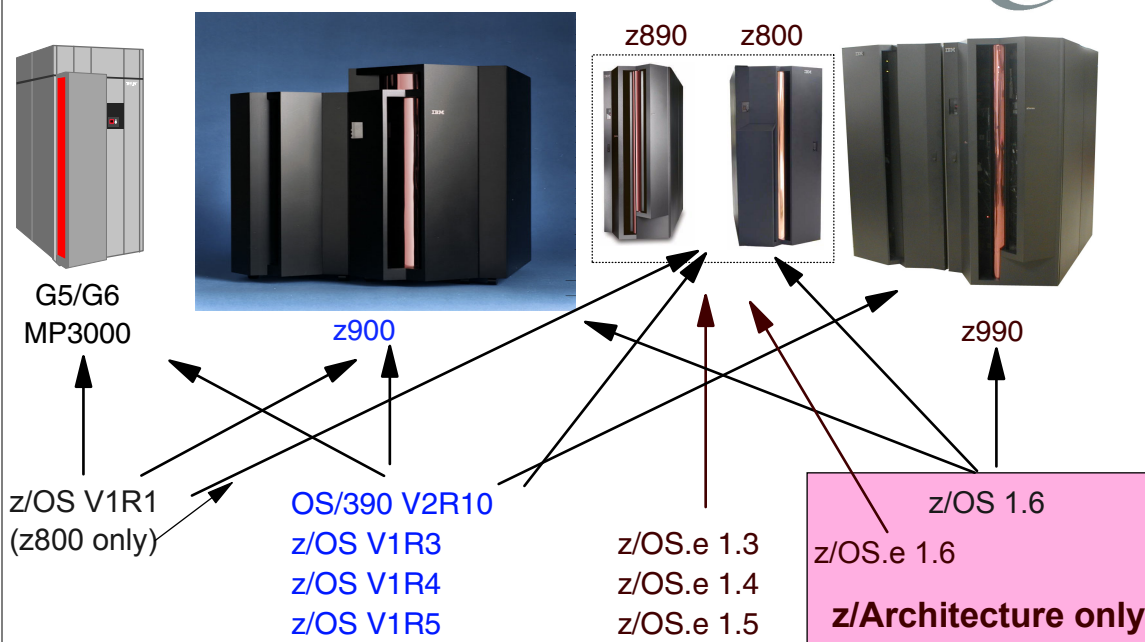
Ordering from 9/10/2004



- ❑ In ServerPac, CBPDO, SystemPac - z/OS R6 full release
- ❑ In SystemPac - both z/OS R4 and z/OS.e R4 (full releases including all the Release 4 Post-GA features that were all orderable in 2004 and detailed on previous foil)
 - This will not be announced officially in any announcement letter but both standalone and SystemPac will remain up in the configurators.
- ❑ In ServerPac and SystemPac - z/OS.e R6 full release
- ❑ In CBPDO - z/OS.e R4 Consoles Enhancements features and z/OS.e R4 z990 Coexistence Update features
- ❑ In CBPDO - z/OS R4 Consoles Enhancements features and z/OS R4 z990 Exploitation features
- ❑ Note - Full releases of z/OS R4 and z/OS.e R4 in ServerPac and in CBPDO will be removed from ordering as of 9/10/2004.
- ❑ z/OS 1.4 availability
 - Will be orderable after Sept/2004 via SystemPac only. The normal extension is 6 month (until March 2005)

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z/OS / zOS.e - Supported Environments



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Architectural Level Set with z/OS 1.6



- ❑ z/OS 1.6 requires z/Architecture
 - z/OS 1.6 is available 9/24/04
- ❑ Only zSeries Servers (or comparable) are planned to be supported:
 - z900 or z990 or comparable server
 - z800 or z890 or comparable server
- ❑ Following servers do not support z/Architecture and are not planned to be able to run on z/OS 1.6:
 - G5/G6 servers
 - S/390 Parallel Enterprise Servers - Generation 5 and Generation 6 models or comparable server
 - MP/3000
 - All models of the Multiprise 3000 Enterprise Server or comparable server

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z/OS V1R6 Support



		G3-G4	G5/G6 MP3000	z800 z900	z890 z990	End of Service	Coexistence Migration Policy	Ship Date
OS/390	2.8	x	x	x		9/02	1.2	
	2.9	x	x	x		9/03	1.3	
	2.10	x	x	x	x ^c	9/04	1.4	
z/OS	1.1		x	x		3/04	1.4	
	1.2		x	x	x ^c	10/04	1.5	
	1.3		x	x	x ^c	3/05	1.6	
	1.4		x	x	x	3/07	1.7	9/02
	1.5		x	x	x	3/07*	1.8	3/04
	1.6			x	x	9/07*	1.8	9/04
	1.7			x	x	9/08*	1.9	9/05*

* Planned dates

1.4 and 1.5 will remain orderable until Sept. 9, 2004

c - Compatibility support – does not exploit new z990 features, 30 LPARs, multiple LCSSs

Bimodal Accommodation Offering available for z/OS 1.2, 1.3, and 1.4 - not be provided for z/OS 1.5

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z/OS.e Support Summary Dates



						
		z800	z890	End of Service	Coexistence Migration Policy	Planned Ship Date
z/OS.e	1.3	x	x ^c	3/05	1.6	
	1.4	x	x	3/07	1.7	9/02
	1.5	x	x	3/07*	1.8	3/04
	1.6	x	x	9/07*	TBD	9/04

z/OS.e 1.4 and 1.5 will remain orderable until Sept. 9, 2004

Bimodal Accommodation offering is not available for z/OS.e

c - Compatibility support – does not exploit z890 features: 30 LPARs, 2 LCSS

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Where to Find Information



❑ [z/OS Web site](#)

- ibm.com/servers/eserver/zseries/zos
- ibm.com/servers/eserver/zseries/zose

❑ [z/OS Migration and Installation Web pages](#)

- ibm.com/servers/eserver/zseries/zos/installation/zos_migration.html

❑ [Order z/OS online](#)

- ibm.com/software/ShopzSeries/

❑ [z/OS Hot Topics Magazine](#)

- ibm.com/servers/s390/os390/bkserv/hot_topics.html

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