



# IBM z/OS: An Operating System Solution for the Future of Your Business

## Overview

z/OS is the next generation of the OS/390® operating system, the leader among enterprise operating systems. z/OS enables you to manage the volatility of e-business workloads. z/OS and the IBM @server zSeries 900 (z900) server will deliver the 64-bit architecture to provide qualities of service that are critical for the e-business world.

z/OS and the z900 server extend the industry-leading flexibility and integration features of the S/390® platform with introduction of Intelligent Resource Director (IRD). IRD enables resources to be dynamically managed across logical partitions (LPARs) based on workload priorities.

z/OS introduces a new technology to facilitate its manageability. Managed System Infrastructure for Setup (msys for Setup) provides a new approach for installing and configuring z/OS and products running on z/OS. This new technology can greatly reduce the complexity associated with these tasks today.

z/OS and the z900, along with the new Workload License Charges (WLC) pricing model being announced today, offers you flexibility in how your software licenses are managed and charged. The new IBM License Manager and other supporting technology allow you to pay for products based on the computing resources necessary to perform your business tasks.

## Key Prerequisites

z/OS Version 1 Release 1 runs only on servers that implement certain architectural enhancements. The following IBM servers have these enhancements:

- z900 or comparable server
- S/390 Parallel Enterprise Servers — Generation 5 and Generation 6 models or comparable server
- All models of the Multiprise® 3000 Enterprise Server or comparable server

For a complete description of z/OS Version 1 Release 1 software prerequisites, refer to the *Planning for Installation (GA22-7504)* publication.

## Planned Availability Date

March 30, 2001

## At a Glance

z/OS Version 1 Release 1, combined with the IBM @server zSeries 900 (z900), offers your business ultimate customer service for the e-business world.

Release 1 offers:

- Improvements to your business productivity through workload prioritization made possible by Intelligent Resource Director (IRD)
- Assistance with managing your product licenses through the IBM License Manager
- Potential for lower total cost of computing through Workload License Charges (WLC)
- Greater power in computing with 64-bit real storage
- Ease-of-use advances through Parallel Sysplex® exploitation of the new configuration technology, Managed System Infrastructure for Setup (msys for Setup)

### For ordering, contact:

Your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at

800-IBM-CALL

Reference: LE001

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.

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## Description

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The family of z900 servers and z/OS are designed and optimized for the high-performance, transaction-serving requirements demanded by the next-generation e-business. Together they offer an array of technological advances that result in:

- The flexibility to handle dynamic workloads while empowering you with the freedom to select and implement e-business applications
- A balanced design and advanced workload management that provides a high-level of responsiveness
- A new approach to managing and paying for the resources required in a growing e-business environment

To learn more about the numerous upgrade options available from models S/390 9672 Generation 5 and 6 servers to z900 servers, refer to Hardware Announcement 100-323, dated October 3, 2000.

### ***Dynamically Manage Resources***

The Workload Manager (WLM) is extended to work with PR/SM™ on z900 servers to dynamically expand resources that are available across LPARs. An LPAR cluster is the subset of the systems that are running as LPARS on the same CEC. Based on business goals, WLM can direct PR/SM to enable or disable CP capacity for an LPAR, without human intervention. This combination of WLM working with PR/SM on a z900 server is called IRD.

WLM will use IRD to monitor the performance of all the workloads and dynamically adjust physical processor and I/O resources across them without operator intervention. In this way, WLM will be able to expand and contract the partitions, and maximize throughput in all of them. In this example, as the e-commerce work in the first virtual server explodes, perhaps as the result of a marketing campaign it can expand while the test and development servers shrink.

IRD assigns resources to the application; the application is not assigned to the resource. This capability of a system to dynamically direct resources to respond to the needs of individual components within the system is an evolutionary step. It enables the system to continuously allocate resources for different applications, and this helps to reduce the total cost of ownership of the system. IRD is made up of three parts which work together to help increase your business' productivity:

- LPAR CPU Management
- Dynamic Channel Path Management
- Channel Subsystem Priority Queuing

This powerful triad of functions can increase your productivity by putting your most business-critical work first. Systems Management is simplified through improvements to I/O configuration and workload management. Additionally, Channel Subsystem Priority Queuing and Dynamic Channel Path Management will benefit both the clustered environment and the single system customer, while LPAR CPU Management will benefit the sysplex customer. The three new functions are controlled by the WLM of z/OS and are used together.

The customer defines the business importance of the workload by goals (such as response time) for a transaction system or for a Web server. With the information on workload importance, the WLM can dynamically employ any of the elements within the scope

of the IRD to best meet the throughput and response goals of the workloads, even in heavily used systems. For additional information about IRD, refer to the **Dynamically Managed Resources** section.

### ***Pay Only For What You Need***

**IBM License Manager:** With z/OS, IBM is announcing a new software pricing model that uses the IBM License Manager (ILM). ILM allows vendors to enable their products for licensed software management by customers and is the basic tool IBM will use to implement WLC. ILM is based on Version 2 of the X-Open Software License Manager (XSLM) standard from The Open Group, which defines a software license use management system.

ILM provides value in two primary areas:

- Assistance with software product license management
- Technical basis for WLCs

ILM keeps track of what products are licensed to a particular machine (passive license management) and manages the use of those products based on its understanding of the terms and conditions associated with that license (active license management).

ILM uses License certificates to represent an established product license between a customer and a software vendor. When a certificate is supplied by IBM for a product, ILM can use the certificate for passive license management. If the product has been modified to call the license manager, active license management can be performed.

IBM will use ILM as a customer-managed tool, which means you can change certain characteristics of a product license agreement directly and the changes take effect immediately. This eliminates the overhead and delay introduced when updates must be made through interactions with the owning software company. The ILM Management Tool is used to change license certificate values, to perform tasks such as enabling or disabling priced optional features, discontinuing products, changing the serial number or model type of the machine to which a product is licensed, and increasing or decreasing a defined capacity (the portion of the machine on which you want to run a product). With ILM running on a z900, z/OS optional priced features are enabled and disabled after the initial product shipment, by updating the features' certificates using the ILM Management Tool.

ILM will be delivered initially March 30, 2001, as part of z/OS, and coincident with the availability of z/OS and WLC at full machine capacity. Full IBM testing of ILM is planned to complete between the end of Second Quarter 2001 and the end of Third Quarter 2001. WLC at less than full machine capacity, and customer production use of ILM, will be available at that time.

RMF™ will report CPU resource consumption within an LPAR in terms of millions of service units (MSUs) and the corresponding LPAR MSU defined capacity. This helps you to understand how much of the defined capacity an LPAR is consuming. For additional information about IBM License Manager, refer to the **Pay Only For What You Need** section.

**WLC:** z900 server and the z/OS operating system can enable your installation to take advantage of WLC to further reduce your total cost of computing as your e-business applications continue to grow. WLC is tailor-made for handling the variability of e-business applications. WLC makes the z900 platform a more affordable platform for growth.

The WLC pricing model, with the new technology provided by z/OS running on a z900, allows you to:

- Pay for eligible software based on defined workload requirements, not necessarily the full capacity of the machine
- Add capacity for new workloads, and not have software charges increase for existing or stable workloads
- Add capacity for an existing workload and have only that workload's software charges rise
- Buy new hardware capacity (for future growth) with no increase to the software bill
- Manage e-business spikes
- Benefit from improved price performance as workloads grow

Complete details on the WLC pricing model can be found by referring to Software Announcement 200-354, dated October, 3, 2000.

**Using LPARs as Virtual Servers:** Enhancements to LPAR support will enable products and programs running in an LPAR to query a unique identifier and the capacity for the LPAR, giving the LPAR the properties of a virtual server. This gives S/390 independent software vendors the option of licensing their software to a logical partition, and thus an additional method of implementing sub-CEC pricing.

### **Configure Your System...Easier**

z/OS starts a major ease-of-manageability initiative with the introduction of Managed System Infrastructure for Setup (msys for Setup) as a new base element. msys for Setup offers a new approach for installing and configuring z/OS and products running on z/OS, that result in major productivity improvements.

msys for Setup allows for the usage of consistent interfaces with wizard-like configuration dialogs. These new dialogs reduce the skill requirements for setting up products, freeing up scarce and valuable personnel for other tasks.

msys for Setup builds upon the Web-based wizard technology that has been introduced in a number of areas. msys for Setup employs the same easy, interview style as the wizards for defining the customization parameters. Workstation-based dialogs are used to guide the user step-by-step through the tasks required for installation and configuration. Instead of asking the user to specify hundreds of configuration parameters, the dialogs use defaults and best practices values whenever possible and derive low-level values from answers to high-level questions. msys for Setup significantly extends the wizard approach via integrated host processing. msys for Setup uses a discovery mechanism to understand the current system configuration. As a result, you do not have to re-type information the system already knows.

After the configuration parameters have been specified, msys for Setup can automatically update the system configuration directly. The user can see in detail what the changes will be before they are made. For additional information about msys for Setup, refer to the **Configure Your System...Easier** section.

### **The Power of 64-bit Architecture Can Be Yours**

z/OS Version 1 Release 1 will provide 64-bit real storage support for the new z900 servers. z/OS will continue to

provide 31-bit real and expanded storage support for Generation 5, Generation 6, and Multiprise 3000 servers. 64-bit real support will eliminate expanded storage and help eliminate paging. The 64-bit real support may allow you to consolidate your current systems into fewer LPARs or to a single native image.

These functions were enhanced in OS/390 Version 2 Release 10 to exploit 64-bit real storage above 2 GB:

- Traditional Access Methods (BSAM, QSAM, and others)
- VSAM for extended format data sets
- Hierarchical File System (HFS)
- Extended Remote Copy (XRC)

Further value can be gained when using DB2 Version 6 and IMS Version 7.

IBM is working with many software vendors to enhance 64-bit exploitation. IBM and ISV software products that run in 31-bit mode under OS/390 Version 2 Release 6 through OS/390 Version 2 Release 10 will run unchanged on z/Architecture under OS/390 Version 2 Release 6 through OS/390 Version 2 Release 10.

### **Simplify Your Work**

**SNA Master Console Support (SNA MCS):** Console support is being streamlined to simplify service configuration. You no longer need separate hardware for your console support. Channel-attached, binary synchronous terminal control units (3174s) are no longer required to do console function. Instead, you can get your console support through SNA and/or TCP/IP. Elimination of this step in the service configuration reduces the total hardware cost of setting up a new z/OS image.

**Note:** The new IBM 2074 Console Support Controller provides for the consolidation of 3174s and is available now.

Visit the following sites:

- z/OS Web site:  
<http://www.ibm.com/servers/eserver/zseries/zos/>
- General Announce Q & A:  
<http://ibm.com/servers/eserver/zseries/faq/>

### **Year 2000**

This product is Year 2000 ready. When used in accordance with its associated documentation, it is capable of correctly processing, providing, and/or receiving date data within and between the twentieth and twenty-first centuries, provided that all products (for example, hardware, software, and firmware) used with the product properly exchange accurate date data with it.

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## **Product Positioning**

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z/OS is the next generation of the OS/390 operating system. Together with the z900 server, it provides the base for architecture with 64-bit and Intelligent Resource Director support. This architecture will be the base for future system enhancements. Therefore, you are strongly encouraged to position yourself for this new technology.

OS/390 Version 2 Release 10 provides the foundation for z/OS. You can install OS/390 Version 2 Release 10 now and upgrade to z/OS with the installation of the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10, which will be available

March 30, 2001. The upgrade package will provide an easy path to z/OS Version 1 Release 1 functionality, and will install like a monthly RSU service upgrade. Non-OS/390 Version 2 Release 10 customers can order z/OS Version 1 Release 1 via Customized Offerings (ServerPac, SystemPac, and CBPDO) for a complete system. Refer to the **Ordering Information** section in this announcement for further details.

You are also encouraged to implement WLM goal mode. Goal mode is required for the Intelligent Resource Director. WLM in goal mode continues to grow in its role and importance on the S/390 platform. Each new release of the operating system and supporting subsystems brings further exploitation of WLM goal mode for improvements and efficiencies in system performance and workload balancing. Goal mode is critical to the implementation of many of our strategic solutions to be delivered over the next 1-2 years.

Consequently, the release scheduled for availability in the second half 2001 will be the last release to support WLM compatibility mode. Goal mode will be the only supported mode starting with the z/OS operating system release scheduled for the first half 2002.

z/OS is not required for the new z900 servers, but you will receive optimal processing capabilities when running z/OS on the new hardware.

OS/390 Version 2 Release 6 through 10 are also supported on the z900 servers. However, for 64-bit support, OS/390 Version 2 Release 10 with the RSU PTFs through November 2000 (RSU0011) or z/OS is required. Intelligent Resource Director and the IBM License Manager require z/OS.

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## Statement of Direction

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The following actions are planned by IBM. We highly recommend that you consider these plans when planning for system upgrades.

- HiperSockets provides high-speed memory-to-memory TCP/IP communication across partitions. This allows TCP/IP traffic to travel between partitions at memory speed rather than network speed. It will be provided in a later release of the operating system.
- S/390 Service Update Facility (SUF) Version 3, an Internet-based method for ordering and receiving S/390 or z/OS software service, is planned for the first quarter 2001.

The following will be withdrawn with the z/OS operating release planned for the second half 2001:

- The withdrawal of V4 Kerberos support from the Communications Server
- The withdrawal of Library Management Facility (LMF) and ISPF Data Compression
- The withdrawal of Pre-Compiled Header files (PCH) support in the C/C++ compiler
- The withdrawal of RMF Monitor II local 3270 display sessions
- The withdrawal of SOMobjects™

LANRES support in z/OS is planned to be functionally stabilized at the z/OS Version 1 Release 1 level. These statements represent IBM's current intentions. IBM development plans and subject to change or withdrawal without further notice.

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## Hardware and Software Support Services

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### SmoothStart™ /Installation Services

SmoothStart Services, an on-site implementation and training startup service, are designed to accelerate your productive use of your IBM solution. The service is provided by IBM Global Services or your IBM Business Partner at an additional cost. For additional information, refer to Services Announcement 697-004, dated March 25, 1997, or contact your IBM representative and ask for SmoothStart Services for z/OS.

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## Reference Information

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For earlier OS/390 Version 2 information, refer to:

- Hardware Announcement 100-323, dated October 3, 2000 (the z900 Availability)
- Software Announcement 200-354, dated October 3, 2000 (the Workload Pricing Availability)
- Hardware Announcement 100-322, dated October 3, 2000 (IBM @server Announcement Overview)
- Software Announcement 200-145, dated May 16, 2000 (the OS/390 Version 2 Release 10 Availability)

### Trademarks

PR/SM, RMF, IMS, SOMobjects, e(logo)server, z/OS, z/Architecture, zSeries 900, and SmoothStart are trademarks of International Business Machines Corporation in the United States or other countries or both.

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## IBM US Announcement Supplemental Information

October 3, 2000

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### Dynamically Managed Resources

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#### ***LPAR CPU Management***

LPAR CPU management allows dynamic adjustment of processor resources across partitions. You can specify goals in WLM. WLM will then manage these sets of logical partitions to provide the processor resources needed for your work to meet its goals based on business importance. WLM dynamically adjusts the processor resource available to each partition as the workload mix changes in today's dynamic environments.

For example, you might have several different Web servers. One might process order entries, another might process order status entries, and a third might provide product details for online shopping. If these three Web servers were placed on separate, you might find that the demand on the three servers varies. It is possible that in early in the holiday season the server providing the product details is more heavily used than the other two servers. Later in the season, the server handling orders might be more heavily used. As the holiday approaches people might begin checking the status of their orders, making the server providing the status entries the most heavily used. You might find that you have sufficient CPU power across all the servers, but not necessarily when or where you need it.

With LPAR clustering, you can consolidate multiple servers on one z/900 server, each with its own partition. As CPU demand grows, PR/SM™ will distribute the available CPU power where it is needed. With the addition of LPAR CPU Management, WLM can direct PR/SM in its distribution of CPU in order to ensure consideration of work goals based on business importance. By distributing resources in this manner, it is more likely that all three servers will achieve their goals. If unexpected demand is so high that achieving the goals is not possible, WLM can assure that the work with the highest business importance gets the most resource.

#### ***Dynamic Channel Path Management (DCM)***

DCM combines hardware strengths and software flexibility. You can now manage the path between the processor and the DASD logical control units in your system. Rather than moving a workload to a resource, DCM allows the system to move resources to your workload, responding to peaks in demand for I/O channel bandwidth. DCM enables the system to respond to channel requirements as they occur by moving additional channels to DASD logical control units when they are needed.

WLM and IOS together help to manage the I/O bandwidth. You can define managed channels that are not related to a specific control unit. As they are needed, these managed channels can move among control units with the help of WLM. This is how DCM provides some leeway with the requirement for greater than 256 channels. I/O

Queuing reports are updated to show both the static and managed channels assigned to a logical control unit during a reported interval.

For example, in an environment where an installation normally requires four channels to several control units, but occasionally needs as many as six, system programmers must currently define all six channels to each control unit that may require them. With DCM, the system programmer need only define the four channels to the control units, and indicate that DCM may add an additional two. As the control unit becomes more heavily used, DCM may assign channels from a pool of managed channels, identified by the system programmer, to the control unit. If the work shifts to other control units DCM will unassign them from lesser utilized control units and assign them to what are now the more heavily used ones. This helps reduce the requirement for greater than 256 channels.

**Note:** Dynamic Channel Path Management initially supports ESCON® switch-connected DASD.

#### ***Channel Subsystem Priority Queuing***

Priority queuing is not a new concept to enterprise operating systems. Channel Subsystem Priority Queuing extends the classic strengths of I/O priority queuing by addressing other challenges that are not currently handled by existing I/O priority schemes. If multiple OS/390® images running on the same CEC tried to access the same I/O devices, the channel had no awareness if requests from one LPAR were all lower priority than requests from another LPAR. Now, with Channel Subsystem Priority Queuing on z900, when I/O requests originate from multiple LPARs, the channel subsystem will honor the I/O priority as established by WLM. WLM ensures that all systems in a sysplex use a consistent I/O Priority assignment in order to ensure that higher priority work is handled first.

It is this fact that allows the I/O priority queuing function of the Enterprise Storage Server (SHARK) to ensure the most important I/O access to a device is always handled first. Now, when an I/O request needs to wait (within a single z/OS image, a CEC's channel, or the control unit), the priority to use in queuing the request is based consistently on the customer's workload goals. This provides optimal management of workloads and resources.

**Note:** Channel System Priority Queuing is implemented initially for Parallel OEMI and ESCON channels.

*This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.*

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## Pay Only For What You Need

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### *IBM License Manager*

There are two categories of products supported under WLC:

- **Flat Workload License Charge (FWLC)** products have one charge, regardless of the size of the machine on which they run.

Some FWLC products use ILM to provide license management. That is, when a product that exploits ILM is called, ILM will check if the product is licensed to the machine. If it is, the product continues to execute normally. If the product is not licensed to the machine, ILM supports a number of exception modes to determine whether or not this unlicensed product is allowed to run.

- **Variable Workload License Charge (VWLC)** products let you license a product for a capacity less than the total capacity of your machine.

VWLC products use ILM to provide not only license management but also management of the product to a defined capacity. Each LPAR in which a VWLC product runs has its own defined capacity specified as part of LPAR configuration. When a product is called by a running workload, ILM compares the sum of the defined capacity values of all LPARs in which the product is running with the capacity defined in the certificate. If the capacity would not be exceeded and the product is licensed to that machine, the product is allowed to continue. If the defined capacity would be exceeded, ILM checks the current mode to determine whether or not the product is allowed to run.

Once running, a workload can use more than its defined capacity should a workload spike occur, and extra capacity is required. As long as a four-hour rolling average does not exceed the defined capacity, a workload can continue to spike above that capacity.

Certificate changes and exception records are placed in a vendor-specific log file. For IBM products, customers are required to send their log file to IBM once per month, to update IBM's inventory records to reflect any certificate (and thus license) changes made at the customer site, and to process any exception records logged.

With the availability of ILM, selected major z/OS products will begin to exploit ILM, and thus be eligible for the benefits related to WLC. The value of ILM will continue to grow as additional IBM and non-IBM products exploit ILM for either license management only, or management of the product to a defined-capacity.

Other products, while not enabled to exploit ILM, will begin to ship certificates, which will make them eligible for passive license management.

**Using LPARs as Virtual Servers:** This support gives S/390 Independent Software Vendors the option of licensing their software to a logical partition, and thus an additional method of implementing sub-CEC pricing. Effective with the z900 server and z/OS Version 1 Release 1, enhancements to LPAR support will enable an LPAR to behave like a virtual server to the products and programs that are running in that LPAR. This new technology gives running applications the ability to query the following new information:

- A guaranteed unique identifier assigned to the logical partition
- The capacity of the logical partition as determined by the configuration of the LPAR

While actual processor usage within the logical partition expands and contracts based on workload demands, WLM ensures that the average usage over a rolling four-hour period never exceeds the capacity defined by the customer.

### *Configure Your System...Easier*

msys for Setup offers the opportunity for more productivity improvements and faster deployment of z/OS technology in support of growing e-business requirements. Prior to z/OS, you needed to:

- Manually update a number of system resources
- Concern yourself with multiple different interfaces and the associated syntax
- Calculate formulas
- Decide how to set each value
- Check validity after the configuration completed
- Read large amounts of (possibly scattered) documentation

With msys for Setup:

- Updates to the system are done automatically
- The system takes care of the syntax and interfaces
- The system does the calculations
- Fewer decisions are required (defaults are used if appropriate)
- Validity of a configuration is checked by the system
- Online help is just a mouse-click away

msys for Setup is exploited by Parallel Sysplex® in z/OS Version 1 Release 1. msys for Setup makes setting up a Parallel Sysplex resource sharing environment much quicker and easier by defining and implementing the required:

- Policies
- Parmlib specifications
- Security settings

This initial delivery focuses on Resource Sharing configurations, including support for Intelligent Resource Director, XCF signalling and Global Resource Serialization Star. Furthermore, msys for Setup introduces the notion of an LDAP-based z/OS Management Directory that will become the central repository for all configuration data. The z/OS Management Directory supplies the system configuration information to z/OS itself in addition to management applications via a consistent interface. Customization dialogs store the configuration parameters in the management directory. After the configuration is completed, the Update System Configuration task reads the update request in the management directory and executes them automatically. msys for Setup functions give you control of what is happening and allows you to optionally backup the current msys configuration so that you can go back to the last valid configuration. In addition, msys for Setup allows you to undo the execution of the updates requests. Additional information on using msys functions is available upon the availability of z/OS.

### *Ease of Use: Simplifying Your IT Environment*

Many customers have been involved in helping improve how z/OS manages the system environment. A new system management technology, improved Web-based wizards, guided installation and configuration of Parallel

Sysplex, and system automation are just some of the areas where z/OS is delivering improvements to simplify your IT environment.

Today's complex enterprises require powerful, functionally rich management applications to handle the challenges of a dynamic IT environment. With this increased function comes levels of complexity. z/OS recognizes these issues as well as the need to address a changing skill base, while maintaining high product quality and improved customer productivity.

z/OS comes from a product history that has positioned itself as a reliable, self-managed platform and the enterprise manager of choice. No other platform offers such a variety and degree of systems management products and solutions.

**Putting the Information You Need at Your Fingertips:** For planning and customization tasks, especially those that are complex and that you do infrequently, IBM continues to develop Web-based wizards. For example, there will be a TCP/IP Configuration Assistant as well as a DFSMS™ Migration Planning Assistant. The wizards will walk you through a set of questions and then provide you with customized output to help you accomplish the task. To see and use the wizards that are available now, visit:

<http://www.ibm.com/s390/os390/wizards>

New and enhanced wizards will appear on this Web site as soon as they are ready.

For quickly finding the full text message explanations that you might need, the LookAt tool is available and easy to install and use. With LookAt, you type in "LookAt" with the message number on your z/OS system. It retrieves the explanation and any other information associated with an z/OS message. To find out more about LookAt, including how to get the code, go to:

<http://www.ibm.com/s390/os390/bkserv/lookat>

### **z/OS Management**

- **Software Enhancements:** z/OS starts a major ease-of-manageability initiative with the introduction of msys for Setup as a base element. msys for Setup offers a new simpler approach for installing and configuring z/OS and products running on z/OS.
- **Parallel Sysplex Enhancements**
  - In z/OS Version 1 Release 1, msys for Setup makes setting up a Parallel Sysplex resource sharing environment quicker and easier by defining and implementing the policies, parmlib specifications, and security settings.
  - Automation of Parallel Sysplex applications is now possible!

Unleash the power of the Parallel Sysplex and make management easier. Use System Automation for OS/390 (SA OS/390) Version 2 Release 1 to reduce the complexity of managing a Parallel Sysplex cluster through goal-driven Parallel Sysplex application automation. With its new, patented manager/agent design, SA OS/390 Version 2 Release 1 (5645-006) can automate applications distributed over a sysplex by virtually removing system boundaries for automation. For more details about the new SA OS/390, refer to Software Announcement 200-355, dated October 3, 2000.

<http://www.ibm.com/s390/sa/>

- Integrate z/OS monitoring in Tivoli® Enterprise solutions. Tivoli Distributed Monitoring (5698-EMN) can monitor z/OS with its agent for z/OS which interacts with z/OS Resource Measurement Facility (RMF™). Tivoli Enterprise solutions allow z/OS to be managed as an endpoint. This allows monitoring z/OS UNIX® System Services (USS) and z/OS resources, including sysplex, and to trigger events when set performance thresholds are exceeded. Tivoli Distributed Monitoring has predefined Monitoring Collections for z/OS that allow to easily define enterprise-wide Monitoring Profiles from a single point. For more details about Tivoli Distributed Monitoring Agent for OS/390, refer to Software Announcement 200-199, dated June 27, 2000.

<http://www.tivoli.com/products/index/distmon/>

- **Intelligent Resource Director:** With LPAR CPU Management and Dynamic Channel Path Management, WLM adjusts CPU and Channel Path assignments in real time. This simplifies the system programmer's planning tasks and optimizes the use of hardware resources.

This enhancement combines the strengths of key z900 server leadership technologies, WLM (dynamic resource management facilities), PR/SM (logical partitioning hardware technology), and Parallel Sysplex. This powerful combination will provide z900 with the ability to manage multiple logical operating system images executing on a single z900 SMP as a single computing resource capable of efficiently utilizing the entire capacity of the server to meet your IT business goals. To maximize overall throughput across all of the system images, the Parallel Sysplex uses Intelligent Resource Director to:

- Dynamically change system image weights
- Dynamically change I/O priority based on business importance
- Reconfigure channels
- Vary logical processors on and offline dynamically

Customer involvement in our product design and development process remains key to our growth and future success.

### **z/OS Documentation — What's New for z/OS Version 1 Release 1**

Over the last several years, we've made a number of delivery, viewing, and printing enhancements to our softcopy information for OS/390. Because of these enhancements, the requirement for printed manuals has steadily decreased.

With your order of z/OS, you will receive three hardcopy documents, *Planning for Installation* book, a new book about workload pricing, and the very popular *HOT TOPICS Newsletter*. In addition, you will receive a newly repackaged CD-ROM library collection that contains all z/OS product books in BookManager® and PDF format. This collection will contain only those books for the release of z/OS that you've ordered and only those books that document the elements and features of z/OS.

For each z/OS release, we refresh this collection three months after general availability.

When you order z/OS, you have the option to subscribe to additional CD-ROM collections for redbooks, z/OS software products, and security information by using z/OS

feature numbers. We are offering a new z/OS Software Products Collection, which includes books, in both BookManager and PDF format, for products that run on z/OS. As part of the specially priced subscriptions, you automatically receive updated copies of these collections as long as the z/OS version is orderable. For more details, refer to the **Ordering Information** section.

Of course, you can order any hardcopy book or CD-ROM collection using the z/OS Internet Library at:

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

After general availability, you will be able to download any PDF or BookManager book from the Web, or you can use your browser to print sections of PDF or BookManager books.

**Note:** 64-bit real addressing information will be included in OS/390 Version 2 Release 10 books in the December 2000 update of the OS/390 Collection softcopy CDs (SK2T-6700-19 and SK2T-6718-10). As of November 30, 2000, this information will also be in updated books on the OS/390 Internet library at:

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

### **Statements of Direction**

IBM plans to take the following actions in the future. Customers are encouraged to consider these plans when making their own plans for system upgrades.

- **HiperSockets:** HiperSockets provide high-speed, memory-to-memory TCP/IP communication across partitions. This allows TCP/IP traffic to travel between partitions at memory speed rather than network speed. This “network in the box” minimizes network latency and maximizes bandwidth capabilities between LINUX® for S/390, Linux for zSeries, and z/OS images. This enables optimized e-business and ERP solutions within a single CEC. These OS images can be:
  - First level — directly under an LPAR
  - Second level — under VM

Up to four separate cluster LANs can be configured within a CEC, allowing OS images to be grouped according to the function they provide. These groupings are independent of sysplex affiliation.

- **S/390 Service Update Facility (SUF) Version 3:** IBM intends to provide further enhancements to SUF to position it as the strategic method for S/390 software service delivery. Future enhancements will include:
  - Elimination of the need for WebSphere™ Application Server
  - Simplified communications through your firewall
  - Security and data integrity enhancements
  - Improved usability and performance
  - Additional service options

Watch for future S/390 announcements, or visit our SUF home page at:

<http://www.ibm.com/s390/suf/>

- **LANRES support:** LANRES support in z/OS will be functionally stabilized at the z/OS Release 1 level. No enhancements are planned to either the host component or Netware server component of LANRES. It is intention of IBM to remove LANRES from a future release of z/OS.

The following functions will be withdrawn with the z/OS release planned for the second half 2001:

- **Version 4 Kerberos support:** Version 4 Kerberos support will be withdrawn from the Communications Server element with a future z/OS release favor of the more current Kerberos V5 support already provided as a part of OS/390. Any applications currently utilizing the Kerberos Version 4 support provided by the Communications Server should be modified to use the Kerberos Version 5 support provided by the OS/390 Security Server feature.
- **Library Management Facility (LMF):** LMF services such as LMPROM, LMHIER, LMREVIEW, LMACT, and LMDEACT are being withdrawn to take advantage of better and more modern library function in option 10 SCLM. All other LMxxxx services will remain. If you need more information, contact [ingersle@us.ibm.com](mailto:ingersle@us.ibm.com).
- **ISPF Data Compression Function:** Because far better compression mechanisms are available and being used by most customers, the ISPF Data Compression Function is being withdrawn. For more information on alternatives, contact [ingersle@us.ibm.com](mailto:ingersle@us.ibm.com).

- **SOMobjects™ for OS/390:** Object Oriented (OO) technology has come a long way since IBM's introduction of SOMobjects in June of 1995. It is now the cornerstone of e-Business. SOMobjects provided an introduction to OO technology and a way to build applications which took advantage of everything the emerging technology had to offer coupled with the advantages of the S/390 platform. As the technology advanced, we made a decision to incorporate those advances into a new line of products called WebSphere, specifically aimed at the e-Business environment and its requirements.

Given that product direction, IBM plans to remove the SOMobjects product from z/OS. The SOMobjects Application Development Environment (ADE) will no longer be available with z/OS after first half 2001. We recognize that there continues to be value in the ability to build COBOL OO applications that can be deployed on the S/390 platform, and the COBOL OO technology is based upon SOMobjects. For that reason, IBM plans to incorporate the necessary subset of the SOMobjects ADE into the IBM COBOL for OS/390 and VM compiler product. The SOMobjects run time library (RTL) is currently a component of z/OS. The subset of the SOMobjects RTL needed for OO COBOL applications will be incorporated into the Language Environment® component of z/OS. This will allow COBOL customers to continue to maintain, enhance, and execute OO COBOL applications.

- **Pre-Compiled Header (PCH) file support**

The C/C++ compilers will no longer support the GENPCH and USEPCH compiler options for Pre-Compiled Header files (PCH), starting with the z/OS planned for second half 2001. GENPCH and USEPCH served as a tactical initiative to reduce compile times. IBM will concentrate instead on improving compile times transparently for all users, without requiring any special set-up. We're doing this by building the compilers with successively higher levels of optimization from release to release, exploiting the ongoing optimization improvements made in the compilers.



- **RMF Monitor II Local 3270 Display Session**

RMF provides several options for a customer to view real-time performance data. The local display session requires a BTAM connection. Since IBM has announced end of service for BTAM, this RMF display option will be withdrawn. Customers will continue to have access to Monitor II information without an active TSO/TCAS subsystem by means of RMF Client/Server Enabling (RMFCS).

These statements represent IBM's current intentions. IBM development plans and subject to change or withdrawal without further notice.

### **General Migration Considerations**

As the components of z/OS are integrated into a single package with compatible service levels, you must install and migrate to an z/OS release in its entirety before entering into production on that release. For the JES2 or JES3 component, the migration can be staged to remain compatible with other systems. For information on JES levels that are supported with z/OS Version 1 Release 1, refer to *z/OS Planning for Installation* (GA22-7504).

For customers running OS/390 Version 2 Release 10, you can upgrade to z/OS Version 1 Release 1 with the installation of the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10. This upgrade package provides an easy migration path to z/OS Version 1 Release 1 functionality. Non-OS/390 Version 2 Release 10 customers can order z/OS Version 1 Release 1 via Customized Offerings (ServerPac, SystemPac, and CBPDO) for a complete system. Refer to the **Ordering Information** section for further details.

You must perform the **usual** release-to-release migration activities for any element you install. The publication, *z/OS Planning for Installation* (GA22-7504), can help you plan for migration actions that might be required. This publication provides a set of migration tables that help indicate the release you are migrating from and the release you are planning to migrate to. There is also an interactive edition of this publication called *z/OS Release 1 Installation Planning Assistant*.

IBM in-service middleware products that run on an S/390 model 9672 Generation 5 or Generation 6 server under OS/390 Version 2 Release 9 as of October 3, 2000, will also operate and be supported on z/Architecture under OS/390 Version 2 Release 10 and z/OS Version 1 Release 1.

### **Release Migrations**

As previously described in the OS/390 Version 2 Release 10 availability announcement, Software Announcement 200-145, dated May, 16, 2000, IBM is converging on a consistent migration and coexistence policy, effective with migrations starting from z/OS Version 1 Release 1. This consistent migration and coexistence policy is based on the current coexistence policy of four consecutive releases.

When you migrate from z/OS Version 1 Release 1 (or from any subsequent release), the release you migrate to is required to be within four consecutive releases to be fully supported. That is, migration forward and backward should be made within four consecutive releases.

This applies to release migrations for:

- Single system configurations
- Individual systems within a multisystem configuration
- Cases where a simultaneous IPL is used to migrate all systems in a multisystem configuration at the same time.

Refer to the **Coexistence** section for additional considerations that apply to multisystem configurations.

You should take this into account to ensure that you are appropriately positioned for future software migrations. Since each release can normally be ordered for only a six-month window, it is very important that you order the required releases while they are available.

### **Coexistence**

As was true for OS/390, z/OS continues to give you optimum compatibility and flexibility as you migrate systems in a multisystem configuration by allowing up to four consecutive releases to coexist. Coexistence considerations apply to multisystem configurations in which there is resource sharing. This includes non-Parallel Sysplex and Parallel Sysplex multisystem configurations.

Coexistence allows systems within a multisystem configuration to be upgraded to a new release level of the operating system one system at a time. This is contingent on the fact that the release you are migrating to is within three releases of the lowest release running in your multisystem configuration (for a total of up to four consecutive releases). Four releases is the general migration and coexistence policy that should be assumed for future z/OS releases, except where special provisions have been provided. See the following for a description of these special provisions.

Today, IBM is letting you know that OS/390 Release 10 and z/OS Version 1 Release 1 will be treated as a single coexistence level, rather than two coexistence levels. This is due to the unique characteristics of z/OS Version 1 Release 1 and the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10, which can be installed on OS/390 Release 10.

**Note:** This special treatment only applies to OS/390 Release 10 and z/OS Version 1 Release 1.

This means that in addition to the already announced special provision, which provides coexistence support between OS/390 Version 2 Release 6 and OS/390 Version 2 Release 10. Refer to Software Announcement 200-145, dated May 16, 2000. OS/390 Version 2 Release 6 can coexist with z/OS Release 1. Moreover, this special treatment of OS/390 Version 2 Release 10 and z/OS Version 1 Release 1 as a single coexistence level also extends the coexistence of specific other OS/390 and z/OS releases as well.

The following table describes the effect of this special provision. The release shown in column 1 is the highest release running in a multisystem configuration.

**Note:** The table in some cases projects releases not yet announced in order to show the effect of the combined treatment of OS/390 Version 2 Release 10 and z/OS Version 1 Release 1 (and far enough out to show when this combined treatment will no longer have an effect). For clarification where there is no product name indicated before a release, OS/390 is the assumed product name.

For completeness, this table also shows all OS/390 releases made available to date. Some releases that are shown to coexist may have gone out of support, and the appearance of releases in this table does not guarantee those releases are still service-supported. See the end of support announcements for information about releases that have gone out of currency.

**Table: Coexistence Supported Releases**

Release	Coexistence Release
R1	R1
R2	R2, R1
R3	R3, R2, R1
R4	R4, R3, R2, R1
R5	R5, R4, R3, R2
R6	R6, R5, R4, R3, R2 <sup>2</sup>
R7	R7, R6, R5, R4
R8	R8, R7, R6, R5
R9	R9, R8, R7, R6
R10	R10, R9, R8, R7, R6 <sup>3</sup>
z/OS R1	(z/OS R1 & R10) <sup>4</sup> R9, R8, R7, R6 <sup>3</sup>
z/OS R2 <sup>1</sup>	z/OS R2, (z/OS R1 & R10) <sup>4</sup> , R9, R8
z/OS R3 <sup>1</sup>	z/OS R3, z/OS R2, (z/OS R1 & R10) <sup>4</sup> , R9
z/OS R4 <sup>1</sup>	z/OS R4, z/OS R3, z/OS R2, (z/OS R1 & R10) <sup>4</sup>
z/OS R5 <sup>1</sup>	z/OS R5, z/OS R4, z/OS R3, z/OS R2

#### Notes

- <sup>1</sup> Projections based on the current six-month release cycle.
- <sup>2</sup> Coexistence of OS/390 R2 with OS/390 R6 supported as a special provision.
- <sup>3</sup> Coexistence of OS/390 R6 with OS/390 R10 supported as a special provision.
- <sup>4</sup> OS/390 R10 and z/OS R1 treated as one coexistence level.

This information is being provided to you early, to facilitate release planning and to ensure appropriate positioning for future software migrations. Since each release can normally be ordered for only a six month window, it is very important that you order the required releases while they are available.

Since z/OS allows the JES element to be separately staged, z/OS also supports the coexistence of certain lower-level JES releases with the JES release provided with z/OS.

For additional information on the general z/OS coexistence policy, in addition to the specific JES releases that can coexist with z/OS Release 1 JES in a multisystem configuration, refer to *z/OS Planning for Installation*.

**Note:** Specific functions might only be available on the up-level systems, or it might be necessary to up-level all systems to enable some functions.

#### Architectural Level Set

In Software Announcement 200-145, dated May, 16, 2000, IBM issued a statement of direction to inform customers of the architectural enhancements that would be required for the product being announced today. The following IBM servers have these enhancements.

- The z900 server
- The S/390 Parallel Enterprise Servers — Generation 5 and Generation 6 models
- All models of the S/390 Multiprise® 3000

SUF Version 3 will be available starting first quarter 2001. This Internet-based method for ordering and receiving S/390 software service supports VM, z/VM, VSE, OS/390, and z/OS systems. Enhancements to SUF provided by Version 3 include:

- Simplification of the prerequisites required to run SUF by elimination of the need for WebSphere Application Server
- Improved usability through a re-designed User Interface

Take advantage of the Internet to simplify the ordering and receipt of S/390 service, and reduce time and effort required to maintain S/390 systems. Advantages include:

- Faster and easier service
- Increased system stability, fewer outages, less down time
- Less service research required (for example, critical service required on your system, including Hipers and PE Fixes, can be delivered, with no research required)
- Automation of initial service installation steps (such as SMP/E Receive), decreasing effort required to install service
- Delivery of only the service required or requested, requiring less DASD and less SMP/E processing for service installation
- Elimination of tape handling, storage and processing

To start using the Internet to order and receive S/390 service, check out SUF by visiting:

<http://www.ibm.com/s390/suf/>

SUF Version 2 will no longer be available once Version 3 becomes available.

#### Products and Features Related to z/OS

IMS™ Version 7 Database Manager provides 64-bit real support. For OSAM databases, IMS V7 will allow buffer areas to use real storage above 2 GB.

IMS has exploitation on IMS V7 for 64-bit real by database and logger. In IMS V7, storage relief is provided through the use of 64-bit real storage above 2 GB for IMS page-fixed storage, thereby freeing real storage below 2 GB.

#### Euro Sign Support

z/OS Version 1 Release 1 includes support for the EuroSign.

#### z/OS Version 1 Release 1 Product Content

z/OS Version 1 Release 1 elements are listed below. z/OS elements that are also available as stand-alone products are listed with the release level used in z/OS.

- **System Services**
  - Base Control Program (BCP)<sup>5</sup>
  - JES2<sup>5</sup>
  - ESCON Director support<sup>5</sup>
  - MICR/OCR support<sup>5</sup>
  - Bulk Data Transfer (BDT) base<sup>5,6</sup>
  - DFSMS<sup>5</sup>

- EREP/MVS™ Version 3 Release 5
- High Level Assembler
- ICKDSF Release 16
- ISPF<sup>5</sup>
- TSO/E<sup>5</sup>
- 3270 PC File Transfer Program Version 1.1.1
- FFST™/ESA Version 1 Release 2<sup>5</sup>
- TIOC<sup>5</sup>
- IBM License Manager<sup>5</sup>

- **Systems Management and Security**

- HCD<sup>5</sup>
- Managed System Infrastructure for Setup (msys for Setup)<sup>5</sup>
- SMP/E<sup>5</sup>
- Tivoli Management Framework for z/OS (Tivoli-Management Framework level 3.6) (Limited DES 56-bit)
  - Tivoli Management Agent

- **Cryptographic Services**

- Cryptographic Services
  - ICSF<sup>5</sup>
  - Open Cryptographic Services Facility (RC2/RC4/RC5 40-56-bit, DES 56-bit)<sup>5</sup>
  - System SSL (RC2/RC4, DES through 56 bit)<sup>5</sup>

- **Application Enablement Services**

- C/C++ IBM Open Class™ Library<sup>5,8</sup>
- Language Environment (Limited DES)<sup>5</sup>
- DCE AS<sup>5</sup>
- Encina Toolkit Executive<sup>5</sup>
- SOMobjects RTL

- **Distributed Computing Services**

- Network File System Feature<sup>5</sup>
- DCE Base Services (OSF DCE level 1.1) (Limited DES)<sup>5</sup>
- Distributed File Service (DFS/SMB) (DFS support at OSF DCE level 1.2.2) (DES 56 bit)<sup>5</sup>

- **Communications Server**

- Communications Server<sup>5,7</sup>
  - SNA/APPN® Services (Includes VTAM®) (Limited DES)<sup>5</sup>
  - Multiprotocol/HPR Services (Includes AnyNet®)<sup>5</sup>
  - TCP/IP Services (Includes TCP/IP for MVS) (Firewall CDMF DES 40-bit, SNMPv3 DES 56-bit, IP Sec DES 56-bit)<sup>5</sup>

- **e-business Services**

- IBM HTTP Server for z/OS
- Text Search (formerly NetQuestion)

- **LAN Services**

- LANRES (Limited DES)<sup>5</sup>
- OSA Support Facility for z/OS Version 2 Release 1

- **z/OS UNIX System Services**

- z/OS UNIX System Services Application Services<sup>5</sup>
  - z/OS UNIX System Services Shell and Utilities<sup>5</sup>
  - z/OS UNIX System Services Debugger<sup>5</sup>

- **Softcopy Publications Support**

- BookManager READ R3<sup>5</sup>
- BookManager BookServer Version 2.2<sup>5</sup>
- GDDM® Version 3 Release 2 (including PCLK and OS/2® Link)

You have the ability to replace an z/OS base function with a commercially available product that provides a similar function. Contact an IBM representative for qualification and pricing information. All z/OS integrated testing results and performance claims are voided with such replacement.

z/OS delivers optional features that have a high affinity to the base z/OS system.

- **System Services**

- JES3<sup>5</sup>
- Bulk Data Transfer (BDT) File-to-File<sup>5</sup>
- BDT SNA NJE<sup>5</sup>

- **Systems Management**

**Note:** The DFSMS features are packaged in combinations.

- DFSMSdss™, hsm<sup>5</sup>
- DFSMSrmm<sup>5</sup>
- DFSMSdss<sup>5</sup>
- RMF<sup>5</sup>
- SDSF<sup>5</sup>
- HCM<sup>5</sup>

- **Cryptographic Services**

- Open Cryptographic Services Facility Security Level 3 (TDES, DES, RC2/RC4/RC5)<sup>5,7</sup>
- System SSL Security Level 3 (RC2/RC4,TDES)<sup>5,7</sup>

- **SecureWay Security Server**

- DCE Security Server at OSF DCE level 1.2.2 (Limited DES)<sup>5</sup>
- Open Cryptographic Enhanced Plug-ins (uses OCSF)<sup>5</sup>
- RACF® (DES, RC2 40-bit)<sup>5</sup>
- Firewall Technologies (DES)<sup>5</sup>
- LDAP Server (uses System SSL)<sup>5,9</sup>
- Network Authentication and Privacy Service (DES)<sup>5,11</sup>

- **Application Enablement Services**

- C/C++ with Debug Tool<sup>5,8</sup>
- C/C++ without Debug Tool<sup>5,8</sup>
- DFSORT™ Release 14
- GDDM-PGF Version 2 Release 1.3
- GDDM REXX Version 3 Release 2
- HLASM Toolkit
- Infoprint® Server for z/OS<sup>5</sup>
  - IP PrintWay<sup>5</sup> and NetSpool<sup>5</sup>
  - z/OS Print Interface<sup>5</sup>
  - SOMobjects ADE

- **Communications Server**

- Communications Server Security Level 1<sup>5,10</sup>
- Communications Server Security Level 2 (DES)<sup>5,10</sup>
- Communications Server Security Level 3 (TDES)<sup>5,7</sup>
- Communications Server Network Print Facility<sup>5</sup>

- **e-business Services**

- IBM HTTP Server NA Secure<sup>5,12</sup>

- **Softcopy Publications Support**

- BookManager BUILD Release 3<sup>5</sup>

<sup>5</sup> Any functional enhancements will be made only through z/OS and not through separately-orderable products.

<sup>6</sup> One or both of the BDT optional features (file-to-file or SNA NJE) must be ordered and installed in order to use the BDT function shipped with the base.

<sup>7</sup> Items have export considerations.

- 8 The C/C++ IBM Open Class Library component of the C/C++ Optional Feature is licensed with the z/OS base operating system and can be used without enabling the C/C++ Optional Feature.
- 9 The LDAP Server component of Security Server Optional Feature is licensed with the z/OS base operating system and can be used without enabling the Security Server Optional Feature.
- 10 The Communications Server Security Level 1 and Level 2 features are mutually exclusive. Only one needs to be ordered to obtain additional security function over what is provided in the z/OS base.
- 11 The Network Authentication and Privacy Service component of Security Server Optional Feature is licensed with the z/OS base operating system and can be used without enabling the Security Server Optional Feature.
- 12 If ordering IBM HTTP Server NA Secure, System SSL Security Level 3 should also be ordered to obtain additional security function over what is provided in the z/OS base.

- High Level Assembler Toolkit
- JES3
- InfoPrint Server
- RMF
- SDSF
- SecureWay® Security Server<sup>14</sup>
- SOMobjects ADE

<sup>13</sup> The C/C++ IBM Open Class Library component of the C/C++ Optional Feature is licensed with the z/OS base operating system and can be used without enabling the C/C++ Optional Feature.

<sup>14</sup> Both the Network Authentication and Privacy Service and the LDAP Server components of the SecureWay Security Server Optional Feature are licensed with the z/OS base operating system and can be used without enabling the SecureWay Security Server Optional Feature.

### **Enabling z/OS Optional Priced Features**

When running z/OS on a G5 or G6 server, the z/OS optional priced features use an z/OS product registration service, together with product policy statements, to determine whether or not the z/OS priced feature has been ordered and should run.

z/OS optional priced features that are ordered concurrently with z/OS will be shipped by IBM together with policy statements in PARMLIB which enable the ordered priced features. z/OS priced features which have not been ordered will also be shipped with z/OS, but with policy statements which disable the unordered features. If the customer subsequently enables any of the optional priced features, those features also become subject to the payment terms of the customer's existing z/OS license as described in *z/OS Program Licensed Specifications* (GC28-1728). Customers must notify IBM when they enable an optional feature that was shipped disabled from IBM. A detailed description of the enablement support for z/OS features is available in *z/OS Planning for Installation* (GA22-7504).

When running z/OS on z/Architecture, the product registration service interrogates certificates to indicate products and optional priced features for which you are licensed. Using the IBM License Manager, you can update certificates directly to enable or disable features. The license change takes effect immediately on your system, and will be communicated to IBM on a monthly basis when you send in a reconciliation message. This message contains records of all certificate changes and exception events recorded in the past month. This communication satisfies the requirement for notifying IBM when features are enabled that were shipped from IBM as disabled. Refer to *z/OS Planning for IBM Workload License Charges* (SA22-7506) for a detailed description of how to enable or disable products using the IBM License Manager, and how the monthly reconciliation process works.

The z/OS priced features that support this enablement capability in z/OS Version 1 Release 1 are:

- BookManager BUILD
- BDT File to File
- BDT SNA NJE
- C/C++ (with Debug Tool)<sup>13</sup>
- C/C++ (without Debug Tool)<sup>13</sup>
- DFSMSdss
- DFSMSrmm™
- DFSMSdss & DFSMShsm™
- DFSORT
- GDDM PGF
- GDDM REXX
- HCM

### **Program Services**

Central service for suspected defects in z/OS code is provided by the IBM Support Center within the customer's geography. Central service, including the IBM Support Center, for Parallel Sysplex License Charge (PSLC) licenses is provided through the customer location designated for the basic license. On-site (local) support, although available, is provided as part of IBM's portfolio of fee-based services.

### **Service Policy**

IBM intends to provide service support for each release of z/OS for three years following its general availability date. If a release is not in the list to be withdrawn, it will continue to be supported until further announce. For example, support for OS/390 Version 2 Release 6 is going to be extended. The current practice of providing at least twelve months' written notice prior to the withdrawal of service for a version or release will continue for z/OS.

PTF distributions, including Recommended Service Upgrades (RSUs), will be available monthly as part of the z/OS service support. RSU integration testing for a release will be performed for five quarters after the General Availability date for that release.

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

### **SystemPac and ServerPac Enhancements**

Customers who order ServerPac or SystemPac will see the following enhancements.

The ServerPac and SystemPac offerings will be enhanced to help decrease the amount of time spent in the Customized Offering dialog while installing z/OS. These enhancements include:

- The ability to have all or some data sets assigned to physical volumes automatically. This also makes it easier to configure a system according to z/OS's Recommended System Layout, as documented in *z/OS Planning for Installation*.
- A new View and Change facility to make it easier to change data set attributes and move data sets between volumes.
- The ability to rename all data sets in the order.
- Other enhancements satisfying many customer requirements.

ServerPac ordering has been made easier with the new ShopS390 Internet application. For more details, see the ShopS390 Web site at:

<http://inetsd01.boulder.ibm.com/ShopS390/ShopS390.jsp>

### *Fee-Based Software Services Offerings*

**Enhancements for z/OS Version 1 Release 1 SystemPac Orders:** SystemPac offers the capability to build a system with integrated subsystems in either full-volume dump/restore format or dataset copy format. The full volume dump/restore format enables you to install z/OS without using the dialog. Installation is done via pack restore using DFDSS or FDR (if the vendor product is selected in the order).

IBM products and selected independent software vendor (ISV) products can be included with the SystemPac. After the delivery of the SystemPac, selective follow-on service tapes (HIPER fixes and PTFs resolving PEs) can be shipped at specified intervals and frequencies based upon the customer's selection at ordering time.

Customers ordering the z/OS product can now take advantage of the following new enhancements. SystemPac is enhanced with the enablement of the WLM Goal Mode, MVS System Logger, and Resources Recovery Services.

Additionally, SystemPac comes with the option of having z/OS Communications Server enabled. This feature, coupled with the enablement of z/OS UNIX System Services in full-function mode, allows the customer to easily tailor the default setup provided to match their standard for Internet access after the system is restored and IPLed. SystemPac and its Selective follow-on service tapes can be delivered using the 3590 media. For details, visit:

<http://www.ibm.com/ca/custompac>

Customers ordering the z/OS product can now take advantage of the following new enhancements. SystemPac is enhanced with the enablement of the WLM Goal Mode, MVS System Logger, and Resources Recovery Services.

SystemPac is further enhanced with the default enablement of the following products when they are ordered in a SystemPac.

- **CICS® Transaction Server for OS/390 1.3.0** now has the following enabled:
  - CICS Log Manager
  - CICS Web Support
  - CICS 3270 Bridge
  - External CICS Interface
- **DB2 Universal Database® (UDB) Server for OS/390 6.1.0** now has the following enabled:
  - DB2® ODBC
  - DB2 JDBC
  - DB2 Net.Data®
  - WLM-established Stored Procedures
- **IMS V7** (which exploits 64-bit support, VAJava for S/390, Parallel Sysplex sharing, and improved MVS System Logger performance)

These enablements allow installations to exploit features that come with the various subsystems and provide ease in migrating to e-business applications.

HOLDDATA cover letters for ISV products installed using SMP/E will now be supported by SystemPac. The cover letters will be delivered using the same mechanism as IBM products. Customers will now be able to review the ISV HOLDDATA for the service applied to their SystemPac order, without the need to contact the ISV support.

More ISV products are now available for ordering through SystemPac (representing an increase in both the number of products and the vendor representation). For a list of available ISVs offered with SystemPac, visit:

<http://www.ibm.com/ca/custompac>

SystemPac is built according to a copy of your IODF. The IODF can be sent to selected worldwide production centers via the Internet. To get access to the Internet application, visit:

<http://www.ibm.com/ca/custompac>

- Select your location or country
- Access the application "IODF/Data set Shipment"

For more information on SystemPac, contact IBM at 877-387-7344.

For details about SystemPac and other related offerings, visit:

<http://www.ibm.com/ca/custompac>

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## Education Support

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Keep up-to-date on new z/OS releases with the **z/OS Update Information Service**. This distributed learning (DL) training gives you the technical details on each new z/OS release level to help you decide when to migrate.

The z/OS Update Information Service is available in two delivery formats: CD-ROM and via the Internet. The Internet version is available in the U.S. only. Customers who subscribe to this service receive training shortly after each new z/OS release is made available. This DL training lets you ask questions via e-mail to an IBM expert. Answers to frequently-asked questions are summarized in a FAQ data base.

Subscribing to the z/OS Update Information Service gives you:

- Automatic updates on the key technical details of each new z/OS release
- A consolidated information repository on all z/OS releases
- E-mail access to an IBM expert who can answer your training questions
- Immediate answers to common questions via a FAQ
- A simple, effective way to keep current without the hassles and expenses of travelling to an instructor-led class

### **Why Distributed Learning (DL) Training?**

DL gives you the convenience of training at your desktop at your own pace. DL education is also a cost-effective alternative to traditional classroom training: no travel costs or productivity loss due to time away from the office. Plus, you have a handy reference for technical questions that need an immediate answer.

**How to Order:** The z/OS Update Information Service on z/OS Version 1 Release 1 will be available shortly after it becomes available. For a demonstration of this exciting new way to stay current on z/OS, visit:

<http://www.ibm.com/services/learning/demo/s390updt.html>

In the United States and Canada call 800-IBM-TEACH (426-8322) to order a CD-ROM subscription.

In the United States, to order a Web or CD-ROM subscription, visit:

<http://www.ibm.com/services/learning/us>

and enter the Web user ID Order Number or the CD-ROM Order Number in the search window at the top of the page. Below are the order numbers for subscriptions.

Number of CD-ROMs or Web User IDs	CD-ROM Order Number	Web User ID Order Number
5	EW01A	EW011
10	EW01B	EW012
15	EW01C	EW013

## Technical Information

### Hardware Requirements

z/OS Version 1 Release 1 can run on the following processors exclusively:

- z900 server
- Models of the S/390 Parallel Enterprise Servers — Generation 5 and Generation 6
- All models of the S/390 Multiprise 3000

Additional hardware may be required for certain, specific functions.

- **Coupling Facility (CF):** A CF is IBM-patented architecture, global shared memory, that enables read/write data sharing across multiple systems. It is a function that is implemented in hardware and Coupling Facility Control Code (CFCC). A CF is established in a PR/SM logical partition dedicated to running CFCC. A CF partition can exist on a stand-alone dedicated system such as a z900, 9674 C0x or 9672 G5 R06 model, or can run in a partition of a z900 server or as an Internal Coupling Facility (ICF). For additional information on the z900 server, refer to Hardware Announcement 100-323, dated October 3, 2000.
- **CF Channels:** In a Parallel Sysplex environment, these channels are required to connect between a CF and production z/OS or OS/390 logical partitions running in multiple S/390 systems. Today there are five types of CF Channels or coupling links available depending on the machine type and model:
  - Inter System Coupling (ISC) links
  - HiPerLinks (ISC)
  - Integrated Cluster Bus (ICB) links
  - Internal Channel (IC) links
  - Integrated Coupling Migration Facility (ICMF) Links

The choice of links is dependent on configuration, distance, and performance requirements. Coupling links, of at least one variety, are available on the IBM z900 Server. For the latest information on these servers, refer to Hardware Announcement 100-323, dated October 3, 2000.

- **Sysplex Timer®:** A Sysplex Timer is required to synchronize the time-of-day (TOD) clocks in all the CPCs attached to the coupling facility (except for a single CPC Parallel System).
- **ICSF:** Hardware cryptographic functions including Triple DES are supported on 9672 G5 and G6, z900, and Multiprise 3000 servers.

**Note:** Products classified as Retail and which contain Triple DES are exportable to all customers except those in embargoed countries, subject to the usual screening.

**Software Requirements:** The z/OS base is an IPL-able system. There are no hard requirements in order to IPL. Specific functions may require additional products not included in z/OS base, or in the optional features of z/OS. Refer to information provided below, and also *z/OS Planning for Installation* (GA22-7504) for a listing of specific PTF numbers.

**Minimum Levels of Related Products:** In order to determine the minimum levels of IBM stand-alone products that run with z/OS Version 1 Release 1, refer to *z/OS Planning for Installation* (GA22-7504).

**Java™ for OS/390:** Certain functions provided by elements and features of z/OS Version 1 Release 1 include exploitation of Java. In order to use these functions, the minimum level of Java required is Java 1.1.8 or later. To understand which functions require Java, see “Appendix B” *z/OS Planning for Installation*. For more information on Java visit:

<http://www.ibm.com/s390/os390/java/>

**Performance Considerations:** Additional information on z/OS performance will be available at general availability. You should consult your marketing representative at or after general availability.

**User Group Requirements:** z/OS Version 1 Release 1 satisfies or partially satisfies requirements from IBM customers and one or more of the worldwide user group communities, which include Australasian SHARE/GUIDE (ASG), COMMON, COMMON Europe, GUIDE International, G.U.I.D.E. Europe, Japan GUIDE/SHARE (JGS), Guide Latin American (LAG), SHARE EUROPE, and SHARE Inc.

Information on the specific User Group Requirements (numbers and descriptions) can be found at:

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

### Planning Information

**Direct Customer Support:** Installation and technical support is provided by the S/390 Support Family of offerings. For more information on available services, call 800-IBM-4YOU (426-4968).

**Packaging:** When ordering z/OS Unpriced Optional (**encryption controlled**) features, IBM recommends that you order these features during the release cycle. The function is only sent when ordered.

For example, to obtain encryption support (security) for IBM HTTP Server for z/OS, you **must** specify the following security feature, IBM HTTP Server North America Secure.

Refer to the **Ordering Information** sections in this announcement for specific details on feature numbers.

### **System Integrity**

IBM will accept APARs where the installation of z/OS introduces an exposure to system integrity.

### **Security, Auditability, and Control**

Data security and auditability in the z/OS environment are enhanced by the functions available in the RACF part of the optional SecureWay Security Server for z/OS feature.

**B1/C2 Security:** The most recent MVS system formally evaluated by IBM and the U.S. government using the B1 Trusted Computer Systems Evaluation Criteria (TCSEC) comprised MVS/ESA™ 3.1.3, RACF 1.9, and selected other MVS components in a non-networking configuration. Since then MVS and the evaluated components have undergone many changes. MVS has grown to include Parallel Sysplex technology and UNIX functionality and has further evolved into z/OS with the incorporation of many new components. Over the years, the nature of networking has changed and the importance of networking has grown, with increased usage of TCP/IP communications, and connection of z/OS systems to the Internet and extranets to conduct e-business.

Although IBM has not undertaken further formal security evaluations of z/OS, we maintain our strong focus on security during the design, development, and testing of z/OS. While we continue to consider the B1-related requirements when making enhancements to the key components from the earlier-evaluated package, for the newer components of z/OS, we have focused mainly on those security aspects that we consider more important to our commercial customer set: the functions of user authentication, access control, auditing, and object reuse required by the C2 level of the TCSEC. Also, IBM continues its security commitment with its Security APAR process, described below.

**Security APARs:** IBM accepts Security APARs for z/OS. Security APARs are for reporting problems in existing security mechanisms where the problem descriptions do not meet the precise definition of system integrity, but do constitute an exposure to the security of the system as a whole or to an IBM product which runs on the system. This information was originally announced in Software Announcement 289-581, dated October 24, 1989. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## **Customer Financing**

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IBM Global Financing offers attractive financing to credit-qualified commercial and government customers and Business Partners in more than 40 countries around the world. IBM Global Financing is provided by the IBM Credit Corporation in the United States. Offerings, rates, terms, and availability may vary by country. Contact your local IBM Global Financing organization. Country organizations are listed on the Web at:

<http://www.financing.ibm.com>

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## **Ordering Information**

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### **New Licensees**

For the recent changes in pricing information, consult Software Announcement 200-354, dated October 3, 2000.

The CFSW configurator stand-alone path for 5694-A01 is updated to support price proposals for z/OS Version 1 Release 1.

Most z/OS media is only shipped via Customized Offerings (ServerPac, SystemPac, and CBPDO). CFSW configuration and order entry capability for ServerPac, SystemPac, and CBPDO for z/OS Version 1 Release 1 will be available beginning **March 16, 2001**.

z/OS Version 1 Release 1 is being offered via the following:

- z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10 (via CBPDO)

Available for customers currently running OS/390 Version 2 Release 10, this upgrade package provides a quick and easy upgrade to the first release of z/OS. Customers need to obtain a license for the z/OS Version 1 Release 1 (5694-A01), specifying the priced and unpriced optional features that were in use for OS/390 Version 2 Release 10. You can then order the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10 (an unpriced optional feature), which provides the additional new z/OS Version 1 Release 1 code in CBPDO format. The z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10 is **ONLY** for use by OS/390 Version 2 Release 10 licensees, and for use in migrating to z/OS Version 1 Release 1.

When ordering the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10, if you wish to obtain current service for just the upgrade package, the product-only option should be used when ordering CBPDO. This will restrict the delivery to just the upgrade function and its service. If you wish to upgrade service for the entire OS/390 Version 2 Release 10 system, including the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2 Release 10, you should choose "selective service" option when ordering CBPDO.

- Customized Offerings (ServerPac, SystemPac, CBPDO)

These are the deliverables most customers are familiar with using to install prior OS/390 releases. Any customer not currently running OS/390 Version 2 Release 10 will want to order a complete z/OS Version 1 Release 1 package. You would obtain a license for z/OS Version 1 Release 1 (5694-A01), specifying the priced and unpriced optional features, and request the executable code be delivered via the Customized Offering (ServerPac, SystemPac, CBPDO) of your choice. This method will provide you the same complete system of z/OS Version 1 Release 1 code deliverables you were familiar with in the past. When ordering a complete system, ServerPac or SystemPac Customized Offerings continue to be the deliverables recommended, rather than CBPDO.

Both methods above provide the customer with the Basic Package deliverables, which are hardcopy publications, diskettes, and CD-ROMs. When OS/390 Version 2 Release 10 customers order the z/OS Version 1 Release 1 Upgrade Package for OS/390 Version 2

Release 10, they will receive an additional small Program Directory for use in the easier install/migration path for them to move to z/OS Version 1 Release 1.

Refer to information in this announcement section for further ordering details.

Production of z/OS Version 1 Release 1 orders will begin on the general availability date, **March 30, 2001**. Shipment dates for orders will be based on order sequence, Customized Offering selected, production capability, and customer-requested arrival date. Due to the amount of customization of ServerPac orders, shipments will begin approximately two weeks after planned availability. Due to the amount of additional customization of SystemPac orders, shipments will begin approximately four weeks after order and data input verification. For CBPDO orders, shipments will begin one week after planned availability. In all cases, no delivery commitments are to be made to the customer until confirmed arrival dates are in AAS.

### Basic License

To order a basic license, specify the z/OS Version 1 Release 1 program number 5694-A01 (and feature number 9001) for asset registration.

### Basic Machine-Readable Material

**Features Added to Release 1 Marketing, Effective October 3, 2000**

#### Basic Features

z/OS V1R1 Function	Licensed Feature Number 3480 Cartridge
Base	5812

Though z/OS will use only the 3480 cartridge media for licensing, ServerPac and SystemPac continue to offer media types 3480, 3480C, 3490, or 6250. Additionally, SystemPac will support 3590 cartridge media.

**Note:** OS/390 Version 2 Release 10 will remain orderable until March 2002.

### Basic Publications

A memo, program directory, LANRES diskettes, and one copy of the following publications are supplied automatically with the basic machine-readable material:

#### Basic/Unlicensed Hardcopy Publications

Title	Order Number
z/OS Hot Topics Newsletter	GA22-7501
z/OS Planning for Installation	GA22-7504
z/OS Planning for Workload License Charges	SA22-7506

#### Basic/Unlicensed Softcopy Publications

Title	Order Number
z/OS V1R1 Collection	SK3T-4269

For a fee, you can order additional copies of these books or any other z/OS hardcopy book using our Web site at:

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

When using the IBM Publication Ordering System, payment is by credit card and the following credit cards are accepted:

- MasterCard
- Visa
- American Express
- Diners Club

**z/OS Version 1 Release 1 Collection (BookManager and PDF):** The z/OS Version 1 Release 1 Collection contains the z/OS product books in both BookManager and PDF softcopy formats on CD-ROM. If this collection is refreshed three months after planned availability, an updated collection will be automatically sent to z/OS Version 1 Release 1 licensees.

By planned availability, all of the z/OS unlicensed books will also be available at:

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

For those customers who want to upload BookManager softcopy and create softcopy repositories, the SoftCopy Librarian is our strategic tool for uploading and managing BookManager files on an z/OS or OS/390 host or server, and on LANs and workstations. SoftCopy Librarian, a free program that is provided on the softcopy tools disc of the CD-ROM collections, outperforms the previous Softcopy Receiver Tool (SCRT) for uploading books and also provides you with management functions for your bookshelves and book files.

SoftCopy Librarian runs on Windows 95, or later, Windows NT™ 4.0, or later, and OS/2 workstations. The latest versions of the SoftCopy Librarian can be downloaded from the following site:

<ftp://ftp.software.ibm.com/ps/products/ibmreader/tools/>

### Optional Machine-Readable Material

#### Optional Priced Features

z/OS Function	Licensed Feature Number 3480 Cartridge
BDT FTF	6010
BDT SNA NJE	6011
BookManager Build	6004
C/C++ with Debug	6031
C/C++ without Debug	6035
DFSMS dss, hsm	6033
DFSMS rmm	6042
DFSMS dss	6034
DFSORT	6039
GDDM-PGF	6045
GDDM-REXX	6044
HCM	6041
HLASM Toolkit	6043
InfoPrint Server	6046
JES3	6063
RMF	6053
SDSF	6057
SecureWay Security Server	6049
SOMobjects ADE	6070



**Note:** If the above optional priced features are enabled after receipt of initial order, the IBM License Manager will be used to update the license certificate directly. Then, IBM is informed of the change via the reconciliation message sent monthly, since this message contains all certificate changes made during the past month.

### Optional Unpriced Features

z/OS Function	Licensed Feature Number 3480 Cartridge
z/OS V1.1-OS/390 R10 Upgrade	6068
HTTP Server NA Secure	6038
OCSF Security Level 3	6052
Communications Server Security Level 1	6030
Communications Server Security Level 2	6029
Communications Server Security Level 3	6028
Communications Server Network Print Facility	6037
System SSL Security Level 3	6051

**Note:** All of the above features can be exported outside the United States. These features should be ordered during this release cycle, since they are not automatically included in all orders, due to need for export regulation tracking.

**Triple DES Feature Information:** z/OS features containing Triple DES encryption can be shipped to all customers except for those in embargoed countries, subject to the usual screening. This is pertinent to the following elements only:

- Open Cryptographic Services Facility Security Level 3
- Communications Server Security Level 3
- System SSL Security Level 3

**Note:** France's import regulations require special authorization for all encryption features.

### NLS Features

The z/OS Version 1 Release 1 NLV support features will become generally available on the same date the release code becomes available.

z/OS Version 1 Release 1 provides support in the languages listed below. However, not all elements within z/OS are translated into each language. Refer to the *z/OS Planning for Installation (GA22-7504)* for information on which elements are translated into which languages.

The NLS features for z/OS Version 1 Release 1 are:

Description	Licensed Feature Number 3480
Brazilian Portuguese Base	5822
Brazilian Portuguese BookManager Build	6006
Canadian French Base	5832
Canadian French BookManager Build	6005
Danish Base	5862
Dutch Base	5872
French Base	5950
French BookManager Build	6007
German Base	5882
German BookManager Build	6008

Description	Licensed Feature Number 3480
Italian Base	6001
Japan Base	5989
Japan C/C++ w/Debug	6032
Japan C/C++ without/Debug	6036
Japan DFSORT	6040
Japan InfoPrint Server	6047
Japan RMF	6054
Japan SDSF	6058
Japan SecureWay Security Server	6050
Japan SOMobjects ADE	6069
Upper Case English Base	5892
Korean Base	6000
Norwegian Base	5976
Spanish Base	5963
Spanish BookManager Build	6009
Spanish InfoPrint Server	6048
Swedish Base	6002
Swiss German Base	6003
Simplified Chinese Base	5842
Traditional Chinese Base	5852

### Optional Source Tapes

Optional Source	6250 Tape	3480 Cartridge	4-mm DAT
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#### Licensed Feature Numbers

Source Base <sup>15</sup>	5811	6059	6060
Source Base JPN <sup>16</sup>	5821	6061	6062
Source SecureWay Security Server (RACF) <sup>17</sup>	5801	6055	6056

#### Notes

- <sup>15</sup> Base source code contains source for elements: BCP, DFSMS, BDT, MICR/OCR.  
<sup>16</sup> Base source code contains source for BCP JPN element.  
<sup>17</sup> SecureWay Security Server source code is for RACF.

### Optional Unlicensed Publications

**Optional Hardcopy Unlicensed Publications:** There are no optional hardcopy unlicensed publications.

**Optional Softcopy Unlicensed Publications:** Subscriptions to the following CD-ROM collections may be ordered for a fee by specifying the feature numbers listed:

Title	Order Number	Feature Number
z/OS Software Products Collection	SK3T-4270	8002
IBM Redbooks S/390 Collection <sup>18</sup>	SK2T-2177	8000
z/OS SecureWay Security Server RACF Collection <sup>19</sup>	SK3T-4272	8001

<sup>18</sup> The Redbooks collection is updated twice a year, concurrent with z/OS releases.

<sup>19</sup> Available to users of the SecureWay Security Server optional feature. Available April 13, 2001. For z/OS general availability, the December 2000 refresh of OS/390 SecureWay Security Server RACF Information Package (SK2T-2180) will ship with orders for feature 8001. After April 13, 2001, the z/OS SecureWay Security Server RACF Collection (SK3T-4272) will ship with orders for feature 8001 and will automatically be sent to customers who ordered the feature at general availability.

**Note:** When the *IBM Redbooks S/390 Collection* and the *z/OS SecureWay Security Server RACF Collection* are ordered as features of z/OS, the special subscription price includes automatic shipment of all updates made while the product version is orderable.

The *IBM Redbooks S/390 Collection* contains over **300** technical bulletins, in BookManager and PDF format, that are related to z/OS. The bulletins are *redbooks* produced by the International Technical Support Center (ITSO) and *orange and yellow books* produced by the Washington Systems Center and Networking Systems Center.

The *z/OS SecureWay Security Server RACF Collection* includes unlicensed softcopy books, in BookManager format, for numerous software product libraries that reference the SecureWay Security Server. It also includes ITSO redbooks (technical bulletins related to RACF system security), flyers, education course listings, sample code, Portable Document Format (PDF) files for the SecureWay Security Server manuals, and more.

### Optional Licensed Publications

There are no optional licensed hardcopy or softcopy publications.

### Customization Options

Select the appropriate feature numbers to customize your z/OS Version 1 Release 1 (5694-A01) order to specify the delivery options desired. Note that this applies to hardcopy publications, diskettes, and CD-ROM collections. These features can be specified on the initial or MES orders.

*Example:* If publications are not desired for the initial order, specify feature number 3470 to ship media only. For future updates, specify feature number 3480 to ship media updates only. If in the future, publication updates are required, order an MES to remove feature number 3480. The publications will then ship with the subsequent release of the program.

Description	Feature Number
<b>Initial Shipments</b>	
Serial number only (suppresses shipment of media and documentation)	3444
Ship media only (suppresses initial shipment of documentation)	3470
Ship documentation only (suppresses initial shipment of media)	3471
<b>Update Shipments</b>	
Ship Media updates only (suppresses update shipment of documentation)	3480
Ship documentation only (suppresses update shipment of media)	3481
Suppress updates (suppresses update shipment of media and documentation)	3482
ESO Registration	3490

## Billing Features

The following are z/OS Version 1 Billing options being offered. The following pages will list the feature numbers for each, followed by the **Prices** section.

	VWLC	FWLC	PSLC	GOLC*	NALC+	FMLC#
z/OS Version 1 Base	x		x	x	x	
EDT FITF	x		x	x		
EDT SNA NJE	x		x	x		
BookManager Build	x		x	x		
C/C++ with Debug	x		x	x	x	
C/C++ without Debug	x		x			
DFSMS dss,hsm	x		x	x	x	
DFSMS rmm	x		x	x	x	
DFSMS dss	x		x	x		
DFSORT	x		x	x	x	
GDDM PGF	x		x	x		
GDDM REXX	x		x	x		
HCM		x				x
HLASM Toolkit		x				x
InfoPrint Server	x		x	x		
JES3	x		x	x		
RMF	x		x	x	x	
SDSF	x		x	x	x	
SecureWay Security Server	x		x	x	x	
SOMobjects ADE	x		x	x		

\* Growth Opportunity License Charge  
 + New Application License Charge  
 # Flat Monthly License Charge

### VWLCs Basic License

To order a basic license, specify the program number and feature number 9001 for asset registration. Specify the WLC Base feature. If applicable, specify the WLC Level 1, WLC Level 2, WLC Level 3 and WLC Level 4 features with the appropriate quantity. Also, specify the feature number of the desired distribution medium.

For z/OS (5694-A01), the VWLC feature numbers are as follows:

#### z/OS V1 Base

MSU Capacity	WLC Feature Number	WLC Basic License Feature Description	MLC
0 — 45	0481	WLC Base 45 MSU Base	
46 — 175	0482	WLC L1 1 MSU Base	
176 — 315	0485	WLC L2 1 MSU Base	
316 — 575	0487	WLC L3 1 MSU Base	
	0489	WLC L3 50 MSU Base	
576 or more	0491	WLC L4 1 MSU Base	
	0493	WLC L4 50 MSU Base	

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 1	0483	WLC Base 1 MSU RG Base
2 — 175	0484	WLC L1 1 MSU RG Base
176 — 315	0486	WLC L2 1 MSU RG Base
316 — 575	0488	WLC L3 1 MSU RG Base
	0490	WLC L3 50 MSU RG Base
576 or more	0492	WLC L4 1 MSU RG Base
	0494	WLC L4 50 MSU RG Base

#### **z/OS V1 BDT FTF**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 45	0061	WLC Base 45 MSU BDT FTF
46 — 175	0062	WLC L1 1 MSU BDT FTF
176 — 315	0065	WLC L2 1 MSU BDT FTF
316 — 575	0067	WLC L3 1 MSU BDT FTF
	0069	WLC L3 50 MSU BDT FTF
576 or more	0071	WLC L4 1 MSU BDT FTF
	0073	WLC L4 50 MSU BDT FTF

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 1	0063	WLC Base 1 MSU RG BDT FTF
2 — 175	0064	WLC L1 1 MSU RG BDT FTF
176 — 315	0066	WLC L2 1 MSU RG BDT FTF
316 — 575	0068	WLC L3 1 MSU RG BDT FTF
	0070	WLC L3 50 MSU RG BDT FTF
576 or more	0072	WLC L4 1 MSU RG BDT FTF
	0074	WLC L4 50 MSU RG BDT FTF

#### **z/OS V1 BDT SNA NJE**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 45	0181	WLC Base 45 MSU BDT SNA
46 — 175	0182	WLC L1 1 MSU BDT SNA
176 — 315	0185	WLC L2 1 MSU BDT SNA
316 — 575	0187	WLC L3 1 MSU BDT SNA
	0189	WLC L3 50 MSU BDT SNA
576 or more	0191	WLC L4 1 MSU BDT SNA
	0193	WLC L4 50 MSU BDT SNA

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 1	0183	WLC Base 1 MSU RG BDT SNA
2 — 175	0184	WLC L1 1 MSU RG BDT SNA
176 — 315	0186	WLC L2 1 MSU RG BDT SNA
316 — 575	0188	WLC L3 1 MSU RG BDT SNA
	0190	WLC L3 50 MSU RG BDT SNA
576 or more	0192	WLC L4 1 MSU RG BDT SNA
	0194	WLC L4 50 MSU RG BDT SNA

#### **z/OS V1 BookManager Build**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 45	0091	WLC Base 45 MSU BM BLD
46 — 175	0092	WLC L1 1 MSU BM BLD
176 — 315	0095	WLC L2 1 MSU BM BLD
316 — 575	0097	WLC L3 1 MSU BM BLD
	0099	WLC L3 50 MSU BM BLD
576 or more	0101	WLC L4 1 MSU BM BLD
	0103	WLC L4 50 MSU BM BLD

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 1	0093	WLC Base 1 MSU RG BM BLD
2 — 175	0094	WLC L1 1 MSU RG BM BLD
176 — 315	0096	WLC L2 1 MSU RG BM BLD
316 — 575	0098	WLC L3 1 MSU RG BM BLD
	0100	WLC L3 50 MSU RG BM BLD
576 or more	0102	WLC L4 1 MSU RG BM BLD
	0104	WLC L4 50 MSU RG BM BLD

#### **z/OS V1 C/C++ with Debug**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 45	0511	WLC Base 45 MSU C+ wD
46 — 175	0512	WLC L1 1 MSU C+ wD
176 — 315	0515	WLC L2 1 MSU C+ wD
316 — 575	0517	WLC L3 1 MSU C+ wD
	0519	WLC L3 50 MSU C+ wD
576 or more	0521	WLC L4 1 MSU C+ wD
	0523	WLC L4 50 MSU C+ wD

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 1	0513	WLC Base 1 MSU RG C+ wD
2 — 175	0514	WLC L1 1 MSU RG C+ wD
176 — 315	0516	WLC L2 1 MSU RG C+ wD
316 — 575	0518	WLC L3 1 MSU RG C+ wD
	0520	WLC L3 50 MSU RG C+ wD
576 or more	0522	WLC L4 1 MSU RG C+ wD
	0524	WLC L4 50 MSU RG C+ wD

#### **z/OS V1 C/C++ without Debug**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 45	0241	WLC Base 45 MSU C+ woD
46 — 175	0242	WLC L1 1 MSU C+ woD
176 — 315	0245	WLC L2 1 MSU C+ woD
316 — 575	0247	WLC L3 1 MSU C+ woD
	0249	WLC L3 50 MSU C+ woD
576 or more	0251	WLC L4 1 MSU C+ woD
	0253	WLC L4 50 MSU C+ woD

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>	<b>z/OS V1 DFSMS rmm MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 1	0243	WLC Base 1 MSU RG C+ woD	0 — 45	0331	WLC Base 45 MSU DFSMSr
2 — 175	0244	WLC L1 1 MSU RG C+ woD	46 — 175	0332	WLC L1 1 MSU DFSMSr
176 — 315	0245	WLC L2 1 MSU RG C+ woD	176 — 315	0335	WLC L2 1 MSU DFSMSr
316 — 575	0246	WLC L3 1 MSU RG C+ woD	316 — 575	0337	WLC L3 1 MSU DFSMSr
	0248	WLC L3 50 MSU RG C+ woD		0339	WLC L3 50 MSU DFSMSr
576 or more	0252	WLC L4 1 MSU RG C+ woD	576 or more	0341	WLC L4 1 MSU DFSMSr
	0254	WLC L4 50 MSU RG C+ woD		0343	WLC L4 50 MSU DFSMSr

**z/OS V1 DFSMS dss**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>	<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 45	0301	WLC Base 45 MSU DFSMSd	0 — 1	0333	WLC Base 1 MSU RG DFSMSr
46 — 175	0302	WLC L1 1 MSU DFSMSd	2 — 175	0334	WLC L1 1 MSU RG DFSMSr
176 — 315	0305	WLC L2 1 MSU DFSMSd	176 — 315	0336	WLC L2 1 MSU RG DFSMSr
316 — 575	0307	WLC L3 1 MSU DFSMSd	316 — 575	0338	WLC L3 1 MSU RG DFSMSr
	0309	WLC L3 50 MSU DFSMSd		0340	WLC L3 50 MSU RG DFSMSr
576 or more	0311	WLC L4 1 MSU DFSMSd	576 or more	0342	WLC L4 1 MSU RG DFSMSr
	0313	WLC L4 50 MSU DFSMSd		0344	WLC L4 50 MSU RG DFSMSr

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>	<b>z/OS V1 DFSORT MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 1	0303	WLC Base 1 MSU RG DFSMSd	0 — 45	0391	WLC Base 45 MSU DFSORT
2 — 175	0304	WLC L1 1 MSU RG DFSMSd	46 — 175	0392	WLC L1 1 MSU DFSORT
176 — 315	0306	WLC L2 1 MSU RG DFSMSd	176 — 315	0395	WLC L2 1 MSU DFSORT
316 — 575	0308	WLC L3 1 MSU RG DFSMSd	316 — 575	0397	WLC L3 1 MSU DFSORT
	0310	WLC L3 50 MSU RG DFSMSd		0399	WLC L3 50 MSU DFSORT
576 or more	0312	WLC L4 1 MSU RG DFSMSd	576 or more	0401	WLC L4 1 MSU DFSORT
	0314	WLC L4 50 MSU RG DFSMSd		0403	WLC L4 50 MSU DFSORT

**z/OS V1 DFSMS dss,hsm**

<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>	<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 45	0151	WLC Base 45 MSU DFSMSdh	0 — 1	0393	WLC Base 1 MSU RG DFSORT
46 — 175	0152	WLC L1 1 MSU DFSMSdh	2 — 175	0394	WLC L1 1 MSU RG DFSORT
176 — 315	0155	WLC L2 1 MSU DFSMSdh	176 — 315	0396	WLC L2 1 MSU RG DFSORT
316 — 575	0157	WLC L3 1 MSU DFSMSdh	316 — 575	0398	WLC L3 1 MSU RG DFSORT
	0159	WLC L3 50 MSU DFSMSdh		0400	WLC L3 50 MSU RG DFSORT
576 or more	0161	WLC L4 1 MSU DFSMSdh	576 or more	0402	WLC L4 1 MSU RG DFSORT
	0163	WLC L4 50 MSU DFSMSdh		0404	WLC L4 50 MSU RG DFSORT

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>	<b>z/OS V1 GDDM-PGF MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
0 — 1	0153	WLC Base 1 MSU RG DFSMSdh	0 — 45	0271	WLC Base 45 MSU GDDMPGF
2 — 175	0154	WLC L1 1 MSU RG DFSMSdh	46 — 175	0272	WLC L1 1 MSU GDDMPGF
176 — 315	0156	WLC L2 1 MSU RG DFSMSdh	176 — 315	0275	WLC L2 1 MSU GDDMPGF
316 — 575	0158	WLC L3 1 MSU RG DFSMSdh	316 — 575	0277	WLC L3 1 MSU GDDMPGF
	0160	WLC L3 50 MSU RG DFSMSdh		0279	WLC L3 50 MSU GDDMPGF
576 or more	0162	WLC L4 1 MSU RG DFSMSdh	576 or more	0281	WLC L4 1 MSU GDDMPGF
	0164	WLC L4 50 MSU RG DFSMSdh		0283	WLC L4 50 MSU GDDMPGF

<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>	<b>z/OS V1 JES3</b>		
0 — 1	0273	WLC Base 1 MSU RG GDDMPGF		<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
2 — 175	0274	WLC L1 1 MSU RG GDDMPGF	<b>MSU Capacity</b>		
176 — 315	0276	WLC L2 1 MSU RG GDDMPGF			
316 — 575	0278	WLC L3 1 MSU RG GDDMPGF	0 — 45	0001	WLC Base 45 MSU JES3
	0280	WLC L3 50 MSU RG GDDMPGF	46 — 175	0002	WLC L1 1 MSU JES3
576 or more	0282	WLC L4 1 MSU RG GDDMPGF	176 — 315	0005	WLC L2 1 MSU JES3
	0284	WLC L4 50 MSU RG GDDMPGF	316 — 575	0007	WLC L3 1 MSU JES3
				0009	WLC L3 50 MSU JES3
<b>z/OS V1 GDDM-REXX</b>			576 or more	0011	WLC L4 1 MSU JES3
				0013	WLC L4 50 MSU JES3
<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>	<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 45	0121	WLC Base 45 MSU GDDMRX	0 — 1	0003	WLC Base 1 MSU RG JES3
46 — 175	0122	WLC L1 1 MSU GDDMRX	2 — 175	0004	WLC L1 1 MSU RG JES3
176 — 315	0125	WLC L2 1 MSU GDDMRX	176 — 315	0006	WLC L2 1 MSU RG JES3
316 — 575	0127	WLC L3 1 MSU GDDMRX	316 — 575	0008	WLC L3 1 MSU RG JES3
	0129	WLC L3 50 MSU GDDMRX		0010	WLC L3 50 MSU RG JES3
576 or more	0131	WLC L4 1 MSU GDDMRX	576 or more	0012	WLC L4 1 MSU RG JES3
	0133	WLC L4 50 MSU GDDMRX		0014	WLC L4 50 MSU RG JES3
<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>	<b>z/OS V1 RMF</b>		
0 — 1	0123	WLC Base 1 MSU RG GDDMRX		<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
2 — 175	0124	WLC L1 1 MSU RG GDDMRX	<b>MSU Capacity</b>		
176 — 315	0126	WLC L2 1 MSU RG GDDMRX			
316 — 575	0128	WLC L3 1 MSU RG GDDMRX	0 — 45	0361	WLC Base 45 MSU RMF
	0130	WLC L3 50 MSU RG GDDMRX	46 — 175	0362	WLC L1 1 MSU RMF
576 or more	0132	WLC L4 1 MSU RG GDDMRX	176 — 315	0365	WLC L2 1 MSU RMF
	0134	WLC L4 50 MSU RG GDDMRX	316 — 575	0367	WLC L3 1 MSU RMF
				0369	WLC L3 50 MSU RMF
<b>z/OS V1 InfoPrint Server</b>			576 or more	0371	WLC L4 1 MSU RMF
				0373	WLC L4 50 MSU RMF
<b>MSU Capacity</b>	<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>	<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>
0 — 45	0031	WLC Base 45 MSU Infoprt	0 — 1	0363	WLC Base 1 MSU RG RMF
46 — 175	0032	WLC L1 1 MSU Infoprt	2 — 175	0364	WLC L1 1 MSU RG RMF
176 — 315	0035	WLC L2 1 MSU Infoprt	176 — 315	0366	WLC L2 1 MSU RG RMF
316 — 575	0037	WLC L3 1 MSU Infoprt	316 — 575	0368	WLC L3 1 MSU RG RMF
	0039	WLC L3 50 MSU Infoprt		0370	WLC L3 50 MSU RG RMF
576 or more	0041	WLC L4 1 MSU Infoprt	576 or more	0372	WLC L4 1 MSU RG RMF
	0043	WLC L4 50 MSU Infoprt		0374	WLC L4 50 MSU RG RMF
<b>MSU Capacity</b>	<b>WLC Reg Feature Number</b>	<b>WLC Basic License No-Charge Registration Feature Description</b>	<b>z/OS V1 SDSF</b>		
0 — 1	0033	WLC Base 1 MSU RG Infoprt		<b>WLC Feature Number</b>	<b>WLC Basic License MLC Feature Description</b>
2 — 175	0034	WLC L1 1 MSU RG Infoprt	<b>MSU Capacity</b>		
176 — 315	0036	WLC L2 1 MSU RG Infoprt			
316 — 575	0038	WLC L3 1 MSU RG Infoprt	0 — 45	0211	WLC Base 45 MSU SDSF
	0040	WLC L3 50 MSU RG Infoprt	46 — 175	0212	WLC L1 1 MSU SDSF
576 or more	0042	WLC L4 1 MSU RG Infoprt	176 — 315	0215	WLC L2 1 MSU SDSF
	0044	WLC L4 50 MSU RG Infoprt	316 — 575	0217	WLC L3 1 MSU SDSF
				0219	WLC L3 50 MSU SDSF
			576 or more	0221	WLC L4 1 MSU SDSF
				0223	WLC L4 50 MSU SDSF

**FWLC Basic License**

For z/OS (5694-A01), the FWLCs are as follows:

**z/OS V1 HCM**

WLC Basic License MLC Feature Description	WLC Feature Number
WLC HCM	1267

**z/OS V1 HLASM Toolkit**

WLC HLASM Toolkit	1269
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MSU Capacity	WLC Reg Feature Number	WLC Basic License No-Charge Registration Feature Description
0 — 1	0213	WLC Base 1 MSU RG SDSF
2 — 175	0214	WLC L1 1 MSU RG SDSF
176 — 315	0216	WLC L2 1 MSU RG SDSF
316 — 575	0218	WLC L3 1 MSU RG SDSF
	0220	WLC L3 50 MSU RG SDSF
576 or more	0222	WLC L4 1 MSU RG SDSF
	0224	WLC L4 50 MSU RG SDSF

**z/OS V1 SecureWay Security Server**

MSU Capacity	WLC Feature Number	WLC Basic License MLC Feature Description
0 — 45	0421	WLC Base 45 MSU SecServ
46 — 175	0422	WLC L1 1 MSU SecServ
176 — 315	0425	WLC L2 1 MSU SecServ
316 — 575	0427	WLC L3 1 MSU SecServ
	0429	WLC L3 50 MSU SecServ
576 or more	0431	WLC L4 1 MSU SecServ
	0433	WLC L4 50 MSU SecServ

**FMLC Basic License**

For z/OS (5694-A01), the MLC feature numbers are as follows:

**z/OS V1 HCM**

WLC Basic License MLC Feature Description	WLC Feature Number
MLC HCM	1271

**z/OS V1 HLASM Toolkit**

MLC HLASM Toolkit	1272
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MSU Capacity	WLC Reg Feature Number	WLC Basic License No-Charge Registration Feature Description
0 — 1	0423	WLC Base 1 MSU RG SecServ
2 — 175	0424	WLC L1 1 MSU RG SecServ
176 — 315	0426	WLC L2 1 MSU RG SecServ
316 — 575	0428	WLC L3 1 MSU RG SecServ
	0430	WLC L3 50 MSU RG SecServ
576 or more	0432	WLC L4 1 MSU RG SecServ
	0434	WLC L4 50 MSU RG SecServ

**PSLC Basic License**

Machine MSU Capacity	PSLC Feature Number	PSLC Basic License MLC Feature Description
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**z/OS V1 Base**

3	0495	PSLC Base 3 MSU Base
4 — 45	0496	PSLC Level A 1 MSU Base
	0497	PSLC Level A 42 MSU Base
46 — 175	0498	PSLC Level B 1 MSU Base
	0499	PSLC Level B 10 MSU Base
	0500	PSLC Level B 50 MSU Base
176 — 315	0501	PSLC Level C 1 MSU Base
	0502	PSLC Level C 10 MSU Base
	0503	PSLC Level C 50 MSU Base
316 or more	0504	PSLC Level D 1 MSU Base
	0505	PSLC Level D 50 MSU Base
NA	0506	PSLC NC IDENTIFIER

**z/OS V1 SOMobjects ADE**

MSU Capacity	WLC Feature Number	WLC Basic License MLC Feature Description
0 — 45	0541	WLC Base 45 MSU SOMobj
46 — 175	0542	WLC L1 1 MSU SOMobj
176 — 315	0545	WLC L2 1 MSU SOMobj
316 — 575	0547	WLC L3 1 MSU SOMobj
	0549	WLC L3 50 MSU SOMobj
576 or more	0551	WLC L4 1 MSU SOMobj
	0553	WLC L4 50 MSU SOMobj

MSU Capacity	WLC Reg Feature Number	WLC Basic License No-Charge Registration Feature Description
0 — 1	0543	WLC Base 1 MSU RG SOMobj
2 — 175	0544	WLC L1 1 MSU RG SOMobj
176 — 315	0546	WLC L2 1 MSU RG SOMobj
316 — 575	0548	WLC L3 1 MSU RG SOMobj
	0550	WLC L3 50 MSU RG SOMobj
576 or more	0552	WLC L4 1 MSU RG SOMobj
	0554	WLC L4 50 MSU RG SOMobj

**z/OS V1 BDT FTF**

3	0075	PSLC Base 3 MSUs BDT FTF
4 — 45	0076	PSLC Level A 1 MSU BDT FTF
	0077	PSLC Level A 42 MSU BDT FTF
46 — 175	0078	PSLC Level B 1 MSU BDT FTF
	0079	PSLC Level B 10 MSU BDT FTF
	0080	PSLC Level B 50 MSU BDT FTF
176 — 315	0081	PSLC Level C 1 MSU BDT FTF
	0082	PSLC Level C 10 MSU BDT FTF
	0083	PSLC Level C 50 MSU BDT FTF
316 or more	0084	PSLC Level D 1 MSU BDT FTF
	0085	PSLC Level D 50 MSU BDT FTF
NA	0086	PSLC NC IDENTIFIER

Machine MSU Capacity	PSLC Feature Number	PSLC Basic License MLC Feature Description	Machine MSU Capacity	PSLC Feature Number	PSLC Basic License MLC Feature Description
<b>z/OS V1 BDT SNA NJE</b>					
3	0195	PSLC Base 3 MSU BDT SNA	3	0315	PSLC Base 3 MSU DFSMSd
4 — 45	0196	PSLC Level A 1 MSU BDT SNA	4 — 45	0316	PSLC Level A 1 MSU DFSMSd
	0197	PSLC Level A 42 MSU BDT SNA		0317	PSLC Level A 42 MSU DFSMSd
46 — 175	0198	PSLC Level B 1 MSU BDT SNA	46 — 175	0318	PSLC Level B 1 MSU DFSMSd
	0199	PSLC Level B 10 MSU BDT SNA		0319	PSLC Level B 10 MSU DFSMSd
	0200	PSLC Level B 50 MSU BDT SNA		0320	PSLC Level B 50 MSU DFSMSd
176 — 315	0201	PSLC Level C 1 MSU BDT SNA	176 — 315	0321	PSLC Level C 1 MSU DFSMSd
	0202	PSLC Level C 10 MSU BDT SNA		0322	PSLC Level C 10 MSU DFSMSd
	0203	PSLC Level C 50 MSU BDT SNA		0323	PSLC Level C 50 MSU DFSMSd
316 or more	0204	PSLC Level D 1 MSU BDT SNA	316 or more	0324	PSLC Level D 1 MSU DFSMSd
	0205	PSLC Level D 50 MSU BDT SNA		0325	PSLC Level D 50 MSU DFSMSd
NA	0206	PSLC NC IDENTIFIER	NA	0326	PSLC NC IDENTIFIER
<b>z/OS V1 BookManager Build</b>					
3	0105	PSLC Base 3 MSU BM BLD	3	0165	PSLC Base 3 MSU DFSMSdh
4 — 45	0106	PSLC Level A 1 MSU BM BLD	4 — 45	0166	PSLC Level A 1 MSU DFSMSdh
	0107	PSLC Level A 42 MSU BM BLD		0167	PSLC Level A 42 MSU DFSMSdh
46 — 175	0108	PSLC Level B 1 MSU BM BLD	46 — 175	0168	PSLC Level B 1 MSU DFSMSdh
	0109	PSLC Level B 10 MSU BM BLD		0169	PSLC Level B 10 MSU DFSMSdh
	0110	PSLC Level B 50 MSU BM BLD		0170	PSLC Level B 50 MSU DFSMSdh
176 — 315	0111	PSLC Level C 1 MSU BM BLD	176 — 315	0171	PSLC Level C 1 MSU DFSMSdh
	0112	PSLC Level C 10 MSU BM BLD		0172	PSLC Level C 10 MSU DFSMSdh
	0113	PSLC Level C 50 MSU BM BLD		0173	PSLC Level C 50 MSU DFSMSdh
316 or more	0114	PSLC Level D 1 MSU BM BLD	316 or more	0174	PSLC Level D 1 MSU DFSMSdh
	0115	PSLC Level D 50 MSU BM BLD		0175	PSLC Level D 50 MSU DFSMSdh
NA	0116	PSLC NC IDENTIFIER	NA	0176	PSLC NC IDENTIFIER
<b>z/OS V1 DFSMS dss</b>					
<b>z/OS V1 DFSMS dss,hsm</b>					
<b>z/OS V1 DFSMS rmm</b>					
<b>z/OS V1 DFSORT</b>					
<b>z/OS V1 C/C+ with Debug</b>					
3	0525	PSLC Base 3 MSU C+ wD	3	0345	PSLC Base 3 MSU DFSMSr
4 — 45	0526	PSLC Level A 1 MSU C+ wD	4 — 45	0346	PSLC Level A 1 MSU DFSMSr
	0527	PSLC Level A 42 MSU C+ wD		0347	PSLC Level A 42 MSU DFSMSr
46 — 175	0528	PSLC Level B 1 MSU C+ wD	46 — 175	0348	PSLC Level B 1 MSU DFSMSr
	0529	PSLC Level B 10 MSU C+ wD		0349	PSLC Level B 10 MSU DFSMSr
	0530	PSLC Level B 50 MSU C+ wD		0350	PSLC Level B 50 MSU DFSMSr
176 — 315	0531	PSLC Level C 1 MSU C+ wD	176 — 315	0351	PSLC Level C 1 MSU DFSMSr
	0532	PSLC Level C 10 MSU C+ wD		0352	PSLC Level C 10 MSU DFSMSr
	0533	PSLC Level C 50 MSU C+ wD		0353	PSLC Level C 50 MSU DFSMSr
316 or more	0534	PSLC Level D 1 MSU C+ wD	316 or more	0354	PSLC Level D 1 MSU DFSMSr
	0535	PSLC Level D 50 MSU C+ wD		0355	PSLC Level D 50 MSU DFSMSr
NA	0536	PSLC NC IDENTIFIER	NA	0356	PSLC NC IDENTIFIER
<b>z/OS V1 C/C+ without Debug</b>					
3	0255	PSLC Base 3 MSU C+ woD	3	0405	PSLC Base 3 MSU DFSORT
4 — 45	0256	PSLC Level A 1 MSU C+ woD	4 — 45	0406	PSLC Level A 1 MSU DFSORT
	0257	PSLC Level A 42 MSU C+ woD		0407	PSLC Level A 42 MSU DFSORT
46 — 175	0258	PSLC Level B 1 MSU C+ woD	46 — 175	0408	PSLC Level B 1 MSU DFSORT
	0259	PSLC Level B 10 MSU C+ woD		0409	PSLC Level B 10 MSU DFSORT
	0260	PSLC Level B 50 MSU C+ woD		0410	PSLC Level B 50 MSU DFSORT
176 — 315	0261	PSLC Level C 1 MSU C+ woD	176 — 315	0411	PSLC Level C 1 MSU DFSORT
	0262	PSLC Level C 10 MSU C+ woD		0412	PSLC Level C 10 MSU DFSORT
	0263	PSLC Level C 50 MSU C+ woD		0413	PSLC Level C 50 MSU DFSORT
316 or more	0264	PSLC Level D 1 MSU C+ woD	316 or more	0414	PSLC Level D 1 MSU DFSORT
	0265	PSLC Level D 50 MSU C+ woD		0415	PSLC Level D 50 MSU DFSORT
NA	0266	PSLC NC IDENTIFIER	NA	0416	PSLC NC IDENTIFIER

Machine MSU Capacity	PSLC Feature Number	PSLC Basic License MLC Feature Description	Machine MSU Capacity	PSLC Feature Number	PSLC Basic License MLC Feature Description
<b>z/OS V1 GDDM-PGF</b>			<b>z/OS V1 RMF</b>		
3	0285	PSLC Base 3 MSU GDDMPGF	3	0375	PSLC Base 3 MSU RMF
4 — 45	0286	PSLC Level A 1 MSU GDDMPGF	4 — 45	0376	PSLC Level A 1 MSU RMF
	0287	PSLC Level A 42 MSU GDDMPGF		0377	PSLC Level A 42 MSU RMF
46 — 175	0288	PSLC Level B 1 MSU GDDMPGF	46 — 175	0378	PSLC Level B 1 MSU RMF
	0289	PSLC Level B 10 MSU GDDMPGF		0379	PSLC Level B 10 MSU RMF
176 — 315	0291	PSLC Level C 1 MSU GDDMPGF	176 — 315	0380	PSLC Level B 50 MSU RMF
	0292	PSLC Level C 10 MSU GDDMPGF		0381	PSLC Level C 1 MSU RMF
	0293	PSLC Level C 50 MSU GDDMPGF		0382	PSLC Level C 10 MSU RMF
316 or more	0294	PSLC Level D 1 MSU GDDMPGF	316 or more	0383	PSLC Level C 50 MSU RMF
	0295	PSLC Level D 50 MSU GDDMPGF		0384	PSLC Level D 1 MSU RMF
NA	0296	PSLC NC IDENTIFIER	NA	0385	PSLC Level D 50 MSU RMF
				0386	PSLC NC IDENTIFIER
<b>z/OS V1 GDDM-REXX</b>			<b>z/OS V1 SDSF</b>		
3	0135	PSLC Base 3 MSU GDDMRX	3	0225	PSLC Base 3 MSU SDSF
4 — 45	0136	PSLC Level A 1 MSU GDDMRX	4 — 45	0226	PSLC Level A 1 MSU SDSF
	0137	PSLC Level A 42 MSU GDDMRX		0227	PSLC Level A 42 MSU SDSF
46 — 175	0138	PSLC Level B 1 MSU GDDMRX	46 — 175	0228	PSLC Level B 1 MSU SDSF
	0139	PSLC Level B 10 MSU GDDMRX		0229	PSLC Level B 10 MSU SDSF
176 — 315	0140	PSLC Level B 50 MSU GDDMRX	176 — 315	0230	PSLC Level B 50 MSU SDSF
	0141	PSLC Level C 1 MSU GDDMRX		0231	PSLC Level C 1 MSU SDSF
	0142	PSLC Level C 10 MSU GDDMRX		0232	PSLC Level C 10 MSU SDSF
	0143	PSLC Level C 50 MSU GDDMRX		0233	PSLC Level C 50 MSU SDSF
316 or more	0144	PSLC Level D 1 MSU GDDMRX	316 or more	0234	PSLC Level D 1 MSU SDSF
	0145	PSLC Level D 50 MSU GDDMRX		0235	PSLC Level D 50 MSU SDSF
NA	0146	PSLC NC IDENTIFIER	NA	0236	PSLC NC IDENTIFIER
<b>z/OS V1 InfoPrint Server</b>			<b>z/OS V1 SecureWay Security Server</b>		
3	0045	PSLC Base 3 MSU Infoprnt	3	0435	PSLC Base 3 MSUs SecServ
4 — 45	0046	PSLC Level A 1 MSU Infoprnt	4 — 45	0436	PSLC Level A 1 MSU SecServ
	0047	PSLC Level A 42 MSU Infoprnt		0437	PSLC Level A 42 MSU SecServ
46 — 175	0048	PSLC Level B 1 MSU Infoprnt	46 — 175	0438	PSLC Level B 1 MSU SecServ
	0049	PSLC Level B 10 MSU Infoprnt		0439	PSLC Level B 10 MSU SecServ
176 — 315	0050	PSLC Level B 50 MSU Infoprnt	176 — 315	0440	PSLC Level B 50 MSU SecServ
	0051	PSLC Level C 1 MSU Infoprnt		0441	PSLC Level C 1 MSU SecServ
	0052	PSLC Level C 10 MSU Infoprnt		0442	PSLC Level C 10 MSU SecServ
	0053	PSLC Level C 50 MSU Infoprnt		0443	PSLC Level C 50 MSU SecServ
316 or more	0054	PSLC Level D 1 MSU Infoprnt	316 or more	0444	PSLC Level D 1 MSU SecServ
	0055	PSLC Level D 50 MSU Infoprnt		0445	PSLC Level D 50 MSU SecServ
NA	0056	PSLC NC IDENTIFIER	NA	0446	PSLC NC IDENTIFIER
<b>z/OS V1 JES3</b>			<b>z/OS V1 SOMobjects ADE</b>		
3	0015	PSLC Base 3 MSU JES3	3	0555	PSLC Base 3 MSU Somobj
4 — 45	0016	PSLC Level A 1 MSU JES3	4 — 45	0556	PSLC Level A 1 MSU Somobj
	0017	PSLC Level A 42 MSU JES3		0557	PSLC Level A 42 MSU Somobj
46 — 175	0018	PSLC Level B 1 MSU JES3	46 — 175	0558	PSLC Level B 1 MSU Somobj
	0019	PSLC Level B 10 MSU JES3		0559	PSLC Level B 10 MSU Somobj
176 — 315	0020	PSLC Level B 50 MSU JES3	176 — 315	0560	PSLC Level B 50 MSU Somobj
	0021	PSLC Level C 1 MSU JES3		0561	PSLC Level C 1 MSU Somobj
	0022	PSLC Level C 10 MSU JES3		0562	PSLC Level C 10 MSU Somobj
	0023	PSLC Level C 50 MSU JES3		0563	PSLC Level C 50 MSU Somobj
316 or more	0024	PSLC Level D 1 MSU JES3	316 or more	0564	PSLC Level D 1 MSU SOMobj
	0025	PSLC Level D 50 MSU JES3		0565	PSLC Level D 50 MSU SOMobj
NA	0026	PSLC NC IDENTIFIER	NA	0566	PSLC NC IDENTIFIER



## GOLC Basic License

z/OS V1	Feature Number		
	H30	H50	H70
BASE	0508	0509	0510
BDT FTF	0088	0089	0090
BDT SNA NJE	0208	0209	0210
BOOKMANAGER BUILD	0118	0119	0120
C/C++ W/DEBUG	0538	0539	0540
C/C++ W/O DEBUG	0268	0269	0270
DFSMS dss	0328	0329	0330
DFSMS dss,hsm	0178	0179	0180
DFSMS rmm	0358	0359	0360
DFSORT	0418	0419	0420
GDDM-PGF	0298	0299	0300
GDDM-REXX	0148	0149	0150
INFOPRINT SERVER	0058	0059	0060
JES3	0028	0029	0030
RMF	0388	0389	0390
SDSF	0238	0239	0240
SECUREWAY SEC SERVER	0448	0449	0450
SOMobjects ADE	0568	0569	0570

## NALC Basic License

z/OS V1 Feature Description	Feature Number
Base	0507
C/C++ with Debug	0537
DFSMS dss,hsm	0177
DFSMS rmm	0357
DFSORT	0417
RMF	0387
SDSF	0237
SecureWay Security Server	0447

To order a basic license for G5 and G6 models of S/390 Parallel Enterprise Servers, and all models of the Multiprise 3000 Enterprises Server, specify the program number and feature number 9001 for asset registration. Specify the PSLC Base feature. If applicable, specify the PSLC Level A and PSLC Level B, and PSLC Level C, PSLC Level D features and quantity.

For the z900 server, choose WLCs.

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable PSLC feature numbers and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the PSLC No-Charge (NC) Identifier feature on the licenses.

Also, specify the feature number of the desired distribution medium.

*Example 1:* For a single machine with 11 MSUs, the PSLC features would be:

- xxx1 — quantity 1
- xxx2 — quantity 8

*Example 2:* For two machines in a Parallel Sysplex, which have an aggregation of 60 MSUs, the PSLC features would be:

- PSLC chargeable license #1:
  - xxx1 — quantity 1
  - xxx3 — quantity 1
  - xxx4 — quantity 5
  - xxx5 — quantity 1
- PSLC no-charge license #2:
  - xxx7 — quantity 1

**Single Version Charging:** To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on.

**Displayable Softcopy Publications:** z/OS publications are offered in displayable softcopy form, in both BookManager format and Portable Document Format (PDF). The displayable publications are part of the basic machine-readable material and are shipped on CD-ROM. Terms and conditions for use of the machine-readable files are shipped with the files.

The *z/OS Version 1 Release 1 Collection* (SK3T-4269) contains the unlicensed z/OS Version 1 Release 1 books for z/OS elements and optional features in BookManager and PDF format on separate discs in the same collection. BookManager's strengths are in viewing and searching while PDF files are superior for printing, especially complete books.

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## Terms and Conditions

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**Licensing:** IBM Customer Agreement (ICA)

**Variable Charges Apply:** No

**Workload License Charge (WLC) applies:** Yes

The Attachment for zSeries Workload License Charges (Z125-6323) and its exhibit (Z125-6324) apply.

**Indexed Monthly License Charge (IMLC) Applies:** No

**Installation License or Location License Applies:** No

**Usage Restriction Applies:** No

**Educational Allowance:** Yes, 15% education allowance applies to qualified education institution customers.

**Volume Orders:** Not applicable

### Products Eligible for Single Version Charging

Replaced Program (name and number)	Replacement Program (name and number)
---------------------------------------	--

**Single Version Charging Applies:** Yes

OS/390 Version 1 (5645-001)	z/OS Version 1 (5694-A01)
OS/390 Version 2 (5647-A01)	z/OS Version 1 (5694-A01)

#### z/OS Base

MVS/ESA JES2 (5655-068)	z/OS (5694-A01)
VTAM (5695-117)	z/OS (5694-A01)
BookManager Read (5695-046)	z/OS (5694-A01)
BookManager Server (5655-A20)	z/OS (5694-A01)
DFSMSdfp™ (5695-DF1)	z/OS (5694-A01)
DFSMS/MVS® Network File System (5695-DF1)	z/OS (5694-A01)
GDDM (5695-167)	z/OS (5694-A01)
HLASM (5696-234)	z/OS (5694-A01)
ISPF (5655-042)	z/OS (5694-A01)
LANRES/MVS (5695-123)	z/OS (5694-A01)
LAN Server (5648-039)	z/OS (5694-A01)
Language Environment MVS (5688-198)	z/OS (5694-A01)
OSA/SF (5655-104)	z/OS (5694-A01)
SMP/E (5668-949)	z/OS (5694-A01)
TCP/IP (5655-HAL)	z/OS (5694-A01)
TSO/E (5685-025)	z/OS (5694-A01)
ICSF/MVS (5685-051)	z/OS (5694-A01)
BDT (5665-264)	z/OS (5694-A01)
PCFiletrn (5665-311)	z/OS (5694-A01)
Communications Server (5655-A29)	z/OS (5694-A01)
DCE/AS (5655-064)	z/OS (5694-A01)
z/OS Version 1 (5694-A01)	To a follow-on, if any

#### z/OS Optional Features

BDT File-to-File (5665-264)	z/OS (5694-A01)
BDT SNA NJE (5665-264)	z/OS (5694-A01)
BookManager Read (5695-045)	z/OS (5694-A01)
C/C++ (5655-121)	z/OS (5694-A01)
DFSORT (5740-SM1)	z/OS (5694-A01)
DFSMSdss (5695-DF1)	z/OS (5694-A01)
DFSMSHsm (5695-DF1)	z/OS (5694-A01)
DFSMSrsm (5695-DF1)	z/OS (5694-A01)
GDDM-PGF (5668-812)	z/OS (5694-A01)
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MVS/ESA JES3 (5655-069)	z/OS (5694-A01)
RACF (5695-039)	z/OS (5694-A01)
SOMobjects ADE (5696-039)	z/OS (5694-A01)
VisualLift® ADE (5648-109)	z/OS (5694-A01)
RMF (5655-084)	z/OS (5694-A01)
SDSF (5665-488)	z/OS (5694-A01)

**Warranted:** Yes

#### Licensed Program Materials Availability

- Restricted materials of IBM: Some
- Non-restricted source materials: Some
- Object code only (OCO): Some

**Testing Period:** Two months

#### Program Services

- Support Center applies: Yes, access available through the IBM Support Center.
- Available until discontinued: 12-months written notice.

**Support Line:** Yes

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### Charges

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Contact your IBM representative for charges information for this announcement.

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