



# IBM OS/390 Version 2 Release 10 Availability

## Overview

For OS/390® customers, IBM offers a rich set of choices in the areas of application development, deployment, and systems management. These choices have been expanded by a recent announcement: the S/390® platform now supports Linux for S/390.

The long-term IBM commitment to OS/390 is not affected by this new Linux direction. S/390 customers are offered additional opportunities to leverage their OS/390 investments through Linux. New doors are opening for OS/390 customers to bring Linux-centric workloads to the platform.

The current S/390 strategy supports four models of application sourcing:

- OS/390 — Traditional
- OS/390 — UNIX® System Services
- Linux for S/390
- Java™, Enterprise Java Beans (EJB), and CORBA

## Traditional

OS/390 is constantly being extended and enhanced to facilitate traditional application sourcing on the platform. In Release 10, elements of OS/390 such as Language Environment® and Resource Measurement Facility (RMF™) are being augmented in alignment with the IBM application sourcing vision.

## OS/390 UNIX System Services

OS/390 UNIX System Services builds on the core strengths of OS/390 and extends these strengths to the UNIX-based applications executing on S/390. In addition, UNIX-skilled resources can begin to leverage the extensive data and applications resident on the S/390 platform today.

## Linux for S/390

Separate from the OS/390 product, Linux for S/390 can execute in one of three modes:

- S/390 Native
- S/390 LPAR

- VM Guest

Linux for S/390 offers S/390 customers an open operating system executing on super-reliable hardware that can be centrally managed.

For more on Linux for S/390, visit:

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

## Java, EJB, and CORBA

Separate from the OS/390 product, WebSphere™ Application Server for OS/390 (5655-A98) offers S/390 customers the ability to deploy Enterprise Java Beans and CORBA Business Objects on the platform. Also, IBM now offers Java 2 technology on OS/390, via the IBM Developer Kit for OS/390, Java 2 Technology Edition (5655-D35).

For more on WebSphere Application Server for OS/390, visit:

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

## Key Prerequisites

Release 10 will only run on servers that implement certain architectural enhancements. The following IBM servers have these enhancements:

- All models of the S/390 Parallel Enterprise Servers™ except Release 1 models
- All models of the S/390 Multiprise®
- All PC Server S/390 servers and RS/6000® with S/390 Server-on-Board models
- All S/390 Integrated Servers

For a complete description of OS/390 Version 2 Release 10 software prerequisites, refer to the *OS/390 Planning for Installation* (GC28-1726) publication at:

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

## At a Glance

Release 10 offers:

- Ease in porting C and C++ applications to S/390 through Extra Performance Linkage
- Application development flexibility through downward compatibility of Language Environment
- Better security in the network operating environment and the TCP/IP environment
- Increased flexibility in data storage and management
- Standard workstation access to SAM, PDS(E), and VSAM files
- Easier systems management through enhanced performance reporting
- Wizard technology, multimedia instructional animations, and Automatic Alter support to advance ease-of-use

### For ordering, contact:

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

**800-IBM-CALL**

Reference: LE001

## Planned Availability Date

September 29, 2000

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## Description

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Release 10 of OS/390 is the base for addressing the future needs of mission-critical computing. It further extends OS/390 strengths in the following areas:

- Development
- Deployment
- Systems Management

### ***Development on OS/390***

In addition to the reliability, availability, and security you need to build new applications, the OS/390 platform offers the flexibility necessary to port your mission-critical applications to OS/390. Release 10 offers the following functions to meet these application development needs:

- **Extra Performance Linkage (XPLINK)**

This enhanced function call linkage between programs:

- Can significantly improve the performance of your C and C++ programs by reducing function call overhead
- Allows for a common linkage for C and C++ programs
- Helps function pointers to work as on other platforms

With XPLINK, you can more easily develop applications on other platforms and deploy them on OS/390.

- **Language Environment Downward Compatibility**

OS/390 Release 10 will provide downward compatibility support through Language Environment. This new function offers more flexibility to your application developers. Language Environment downward compatibility allows applications built on higher release levels of OS/390 to execute successfully (if they do not exploit any new function in the higher release) on lower releases of OS/390.

- **Large File Support**

Language Environment provides large file support for 31-bit applications to improve porting capabilities of C/C++ applications accessing Hierarchical File System (HFS) and Network File Server (NFS) files larger than 2 GB. This is done by changing some C run-time library I/O functions to support the long long data type for recording file offsets.

Refer to the corresponding **Development on OS/390** section in the **Additional Information** section, for more details.

### ***Deployment on OS/390***

In the networked world, speed is measured in “Web years.” Such an environment requires faster decision making, faster implementation, and faster adaptation to change. OS/390 can respond to these changes. Release 10 offers the following functions to ease deployment on OS/390:

- **VSAM Striping**

- Enhances the throughput of data warehouse application subsystems for faster response for e-tp
- Reduces batch window by increasing the data rate for I/O

- **Virtual IP Address (VIPA) Takeback**

The VIPA Takeover function introduced in Release 8 is now enhanced to be non-disruptive to existing connections. New connections are moved to the primary owner, allowing work to go to the original stack within a Parallel Sysplex® cluster. The VIPA Takeback in Release 10 can be used along with the Sysplex Distributor function to distribute workload to multiple backup servers during an outage.

- **Sysplex Distributor**

The Sysplex Distributor function in Release 10 takes the XCF dynamics support in Release 7 and the Dynamic VIPA support in Release 8 to a whole new level in terms of availability and workload balancing in a Parallel Sysplex cluster. By allowing a dynamic VIPA to become a sysplex-wide VIPA address, workload can be distributed to multiple server instances without requiring changes to clients or networking hardware and without delays in connection setup.

Because the Sysplex Distributor function resides on a system in the Parallel Sysplex cluster itself, it has the ability to factor “real-time” information concerning the multiple server instances including server status and Quality of Service (QoS) and Policy information provided by IBM Communication Server for OS/390’s (CS OS/390) Service Policy Agent. By combining these “real-time” factors with the information obtained from Workload Manager (WLM), the Sysplex Distributor has the unique ability to ensure that the best destination server instance is chosen for a particular client connection while ensuring that client/server specific Service Level Agreements are maintained.

- **Additional PCI Crypto Coprocessor Support**

The recently announced optional PCI Cryptographic Coprocessor (PCICC) brings additional cryptographic processing capacity and function to S/390 Parallel Enterprise G5 and G6 Servers. In this release, OS/390 supports user-defined extensions (UDX) so that IBM can provide customized cryptographic functions to meet unique customer needs.

- **SecureWay™ Security Server for OS/390 Enhancements**

Customers implementing e-business applications have an increasing need for interoperability, integrity, and standards-based directory facilities. Enhancements in Release 10 include:

- **Lightweight Directory Access Protocol (LDAP)** — LDAP (RFC 1823) is a fast-growing, network-based technology adopted by both customers and the industry for enabling these applications. OS/390 provides both an LDAP Directory and an LDAP Client, enabling a full range of application design options. This release of OS/390 enhances this vital technology with functions for better cross-platform interoperation, increased directory storage capacity, and tools to help set up a large LDAP directory.

Functions in Release 10 include:

- LDAP V3 Schema Publication and Update
- LDAP Bulk load utility
- New Table Model

- **Network Authentication and Privacy Service** — OS/390 Release 10 introduces a new component of the OS/390 SecureWay Security Server, the Network Authentication and Privacy Service. Based on an implementation of MIT’s Kerberos Version 5, this new component provides

authentication, delegation and data confidentiality services which are interoperable with other industry implementations based on the MIT Kerberos Version 5 reference implementation. The Network Authentication Server provides the basis of consistent user identification and authentication in a heterogeneous networked environment when combined with Kerberos-aware applications that can span OS/390 and other platforms which support the MIT Version 5 Kerberos reference implementation.

- **RACF® Program Control Enhancements** — Updates to the SecureWay Security Server (RACF) enhance the configuration of program control for both traditional MVS™ libraries and OS/390 UNIX files. It is now easier for customers to determine which programs they need to define as controlled programs to allow OS/390 UNIX server and daemon programs to run with good security and integrity. In addition, it is easier to prevent the introduction of uncontrolled programs into the execution environment of the server or daemon. This can prevent Trojan horses from compromising the security or integrity of the server daemon.

- **Server Message Block (SMB) File/Print Server Enhancements**

The SMB file server provided by the Distributed File Service previously supported direct Windows™ and OS/2® workstation client access to OS/390 UNIX files (HFS data sets). Now, it provides the same access to traditional OS/390 data sets and libraries. This enables S/390 to be used as a repository for shared workstation data in a wider variety of distributed application environments. A higher level of SMB protocol dialect is also supported which enables the SMB server to provide additional capabilities that are only available when the dialect is used by the client for SMB requests.

Refer to the corresponding **Deployment on OS/390** section in the **Additional Information** section for more details.

### ***Easier Systems Management on OS/390***

There are many enhancements found in Release 10 to help you manage your system.

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

With wizards, guided multimedia animation, and improved systems management and automation offerings, S/390 technology takes a big step forward in simplifying the actions customers need to take to deploy new offerings and manage their business environments. With continued customer involvement in our product design and development process, OS/390 looks forward to:

- Expanding upon the model established with Parallel Sysplex configuration
- Making it easier for you to expedite time-to-market deployment of our technology in support of your e-business environment

The user-centered design approach was used to develop the following capabilities for OS/390:

- Wizards
- Multimedia instructional animations
- Improved systems management

- **System Automation for OS/390 V2 R1 (5645-006)**

Automation of Parallel Sysplex applications will soon be possible! To further improve Parallel Sysplex manageability, IBM plans to make a new version of System Automation for OS/390 (SA OS/390) generally available in the second half 2000. SA OS/390 V2.1 (5645-006) can reduce the complexity of managing a Parallel Sysplex cluster through its goal-driven Parallel Sysplex application automation. SA OS/390 is not a component of OS/390. You must specify the program number listed above when ordering.

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

- **Automatic Alter for Coupling Facility (CF) Structures (Auto Alter)**

Auto Alter supports the automatic tuning of CF structure size and ratios of structure objects in response to changing structure object usage. This helps ensure the efficient utilization of CF and CF structure storage resources, while at the same time allowing the system to automatically attempt to correct problems that might lead to structure-full conditions.

- **Qualities of Service (QoS)**

Also known as traffic shaping, QoS enforcement is very important in the emerging multimedia networking field and in large enterprise networks. Qualities of Service (QoS) enforcement enhancements in Release 10 provide automatic QoS enforcement via traffic shaping (that is, preventing large bursts of data). It provides the ability for the network administrator to control and allocate the traffic flow into the network for more optimal use of the available bandwidth.

- **Resource Measurement Facility (RMF)**

RMF enhancements can help monitor your system performance. They include:

- RMF Performance Monitor of OS/390 Java Edition
- RMF UNIX System Services Support
- RMF Web Server Performance Reporting
- RMF Lotus® Domino™ Support

- **Spool Display and Search Facility (SDSF) Enhancements**

SDSF in Release 10 provides several enhancements to simplify systems management in a Parallel Sysplex environment. Users are able to browse the SYSLOG or job output regardless of the system they are logged on to.

- **IP Sec Enhancement**

Administrative actions needed to set up the IP Sec security association in advance are eliminated with the On-Demand Tunnels function in Release 10.

Stack, port, and network access enhancements will provide a mechanism to control in a simple and secure manner which users and services are able to access the TCP/IP environment.

Refer to the corresponding **Easier Systems Management on OS/390** section in the **Additional Information** section for more details.

## **Additional Release 10 Enhancements**

### **• Telnet and FTP**

The TN3270E Client Resource Pooling enhancement to the TN3270 support in Release 10 reduces the administrative burden of defining clients individually to connect to specific logical units (LUs). Autologon support, similar to the autologon support currently provided for SNA LUs, is now available for TN3270 LUs. This allows automatic session setup when an application becomes available to the client. Enhancements have also been made to make the OS/390 FTP server more usable in a Web or UNIX client environment.

In Release 10, the TN3270 Server supports the latest Internet Engineering Task Force (IETF) standards to support negotiation of SSL. Enhancements will also be provided that allow TN3270 servers to use a single port for both secure and basic TN3270 connections, reducing administrative support for client configurations.

### **DFSMS™ Enhancements**

In OS/390 Release 10, DFSMS continues to add enhancements to performance, availability, system throughput, and usability for data access and storage management. In addition, DFSMS in Release 10 is the first release of DFSMS that is available solely with OS/390. DFSMS is packaged and shipped with OS/390 Release 10 and offers customers the ease of installation, integration, and ease of maintenance inherent in the OS/390 product.

### **• Backup Processing Flexibility**

New function in DFSMSHsm™ will provide additional flexibility and throughput in backup processing while maintaining data availability for the 24x7 environment. You will have full capability and choice of doing backup either via a timed event, or invoked via batch or macros when job runs and synchronization require. Also, all these backup processes can now proceed with integrity while leaving the data in full READ/WRITE mode and maintaining 24x7 availability by using proven functions like concurrent copy.

### **• Large Tape Block Size**

Large business intelligence applications often place production data on both disk and tape. In Release 10, DFSMS introduces changes in tape block size support which will allow certain applications to take better advantage of the speed and storage capabilities of newer tape devices such as the 3590, as well as older devices such as 3480 and 3490.

### **• Writing Data to Different Media**

Data Warehouse applications, some Enterprise Resource Planning (ERP) applications, and native OS/390 subsystems have requirements to write data to different media (disk and tape) using native OS/390 allocation techniques (such as UNIT=AFF). New capability in Release 10:

- Allows for seamless use of these allocation techniques
- Minimizes allocation failures across device types
- Improves the availability of these applications and subsystems

### **• Multiple Address Space for DFSMSHsm**

DFSMSHsm now allows multiple host address spaces per OS/390 image, up to a total of 39 host address spaces per Parallel Sysplex cluster. This can help

reduce contention and improve system throughput in a highly multi-tasked system. It also allows each host address space to be given a different dispatching priority or velocity goal. Functions can be assigned to specific DFSMSHsm address spaces, or spread across multiple address spaces.

In addition to improvements to availability and performance, DFSMS also offers many more enhancements in:

- Improved system throughput
- Removable media management

Refer to the corresponding **Additional Release 10 Enhancements** section in the **Additional Information** section for more details.

### **Additional Information for Release 10**

For more information on Release 10 items and enhancements, refer to the *OS/390 Introduction and Release Guide* (GC28-1725). To view it online:

- In BookManager® format, visit:

<http://www.s390.ibm.com/bookmgr-cgi/bookmgr.cmd/BOOKS/E0Z1A150/CCONTENTS>

- In Adobe Acrobat PDF file format, visit:

<http://www.s390.ibm.com/ftp/books/os390/pdf/e0z1a150.pdf>

Refer to the *OS/390 Introduction and Release Guide* (GC28-1725) for a comprehensive look at Release 10 when it becomes available.

### **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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OS/390 Release 10 provides the functionality, performance, and Reliability, Availability, and Serviceability (RAS) needed to support critical business applications like e-business and Customer Relationship Management (CRM), and to respond to sudden unanticipated user demands for additional system resources. Release 10 offers additional value in improved system ease-of-use, greater product integration, and enablement of new application workloads in order to meet tomorrow's e-business needs.

These new functions and logical extensions to both S/390 hardware and OS/390 software provide the best balanced solution for the future of your business.

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## **Statement of Direction**

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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.

- Discontinuation of support of Workload Manager compatibility mode effective with the operating system release planned for availability in the first half 2002.

- Starting with the operating system release planned for availability in the first half 2001, IBM intends to converge on a consistent migration and coexistence design policy (of four consecutive releases) that is applicable to all customer configurations.
- To balance the needs of customers, including providing some protection for earlier processor investments, IBM has chosen to define periodic architecture level sets. These are releases that begin to exploit new architecture features, which in turn define a minimum server level on which that release will execute. Today's announcement includes information on the new architecture level set:

**The operating system release planned for first half 2001, will require one of these servers:**

- S/390 Multiprise 3000 (or compatible server)
- S/390 Parallel Enterprise — G5, or higher (or compatible server)

The architectural enhancements that will be required by the operating system release scheduled for availability in first half 2001 can be found at:

<http://www.ibm.com/s390/os390/plug1.html>

- Transactional VSAM will be available through an extended Early Support Program.

Refer to the corresponding **Statements of Direction** section following the **Additional Information** section for more details.

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## Hardware and Software Support Services

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### **SmoothStart™ /Installation Services**

SmoothStart Services, on-site implementation and training startup services designed to help accelerate a customer's productive use of their IBM solutions, are provided by IBM Global Services or the customer's IBM Business Partner at an additional cost. For more information on SmoothStart Services, refer to Services Announcement 697-004, dated March 25, 1997, or you may contact your IBM representative and ask for SmoothStart Services for OS/390.

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## Reference Information

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

- Software Announcement 200-030, dated February 29, 2000 (the OS/390 Version 2 Release 9 Availability)
- Software Announcement 299-234, dated August 24, 1999 (the OS/390 Version 2 Release 8 Availability)
- Software Announcement 299-042, dated February 22, 1999 (the OS/390 Version 2 Release 7 Availability)
- Software Announcement 298-278, dated August 18, 1998 (the OS/390 Version 2 Release 6 Availability)
- Software Announcement 298-049, dated February 24, 1998 (the OS/390 Version 2 Release 5 Availability)
- Software Announcement 297-355, dated September 9, 1997 (the OS/390 Version 2 Release 4 Availability)

- Software Announcement 297-194, dated June 9, 1997 (the initial OS/390 Version 2 announcement)

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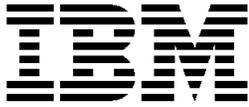
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# IBM US Announcement Supplemental Information

May 16, 2000

## Additional Information

### *Development on OS/390®*

#### **Extra Performance Linkage (XPLINK)**

XPLINK is an enhanced function call linkage that can significantly improve the performance of your C and C++ programs by reducing function call overhead. This new linkage addresses many issues you may face in application environments that have frequent calls between small functions. XPLINK offers the following benefits to your application environment:

- Reduced overhead for C and C++ function linkage
- Improved performance through reduction in function size
- Increased ease in porting new applications to S/390®

The primary goal of XPLINK is to make function calls as fast and efficient as possible by removing all nonessential instructions from the main path.

Modern applications written in the C++ and Java™ languages tend to involve many small functions and are very call-intensive. Applications written in the C language in a modular way may also exhibit high linkage overhead. XPLINK, by reducing linkage costs by up to 50%, can improve the performance of modern applications. The performance improvement for a given application depends on how much time the application currently spends in function call overhead. XPLINK enhances the OS/390 platform for e-commerce applications.

Because XPLINK conventions are as functionally rich as the current OS/390 linkage, they are being evaluated as a strategic linkage convention for the platform. Beginning with Release 10, during the transition to this more efficient linkage convention, "compatibility mode" support is provided. Program objects with the new linkage to communicate with those built with the old linkage. In this mixed linkage environment, some of the performance gains of an XPLINKed application may offset the cost of calling legacy libraries until they are rebuilt using the new conventions. Guidelines will be provided to help users evaluate and exploit the performance benefits of this new linkage in the mixed environment case.

XPLINK can significantly speed up the linkage for C and C++ routines by using a downward growing stack (as opposed to the current mechanism of an upward growing stack) and by passing parameters in registers. It includes support for calls to functions in Dynamic Link Libraries (DLLs) and compatibility with old code.

XPLINK can also reduce the size of the program that is loaded into memory, allowing your system programmers to fit more functions into memory. This is especially effective for the typically small functions in C++. XPLINK reduces the function footprint as much as possible.

A common linkage for C and C++ is introduced by XPLINK. When all functions are compiled with XPLINK, function pointers can be used without restriction. Casting of integers to function pointers will work as on other platforms. This can ease the porting of new applications to S/390. The IBM Debug Tool supports the debugging of applications that use the XPLINK linkage convention.

#### **Language Environment® Downward Compatibility**

OS/390 Release 10 now provides downward compatibility support through Language Environment. Assuming that required programming guidelines and restrictions (as documented in the *Language Environment Programming Guide*) are observed, this support enables programmers to develop applications on higher release levels of OS/390, for deployment on execution platforms that are running lower release levels of OS/390. For example, a company may use OS/390 Release 10 (and Language Environment) on a development system where applications are coded, link edited, and tested, while using any supported lower release of OS/390 (and Language Environment) on their production systems where the finished application modules are deployed.

Downward compatibility support is not the roll-back of new function to prior releases of OS/390. Applications developed exploiting the downward compatibility support must not use Language Environment function that is unavailable on the lower release of OS/390 where the application will be deployed.

The downward compatibility support includes toleration PTFs for lower releases of OS/390 (specific PTF numbers can be found in the PSP buckets), to assist in diagnosis of applications that violate the programming requirements for this support.

The downward compatibility support provided by Release 10 and by the toleration PTFs does not change the upward compatibility of Language Environment. That is, applications coded and link edited with one release of Language Environment will continue to execute on later releases of OS/390 Language Environment without a need to recompile or re-link edit the application, independent of the downward compatibility support.

### *Deployment on OS/390*

#### **VSAM Striping**

IBM introduced sequential data set striping with DFSMS™ 1.1, which provided significant throughput improvements for large sequential accesses. In Release 10, VSAM can now also take advantage of data set striping. VSAM data sets can be striped across multiple volumes. It also allows VSAM applications such as DB2® to substantially reduce run times and shorten batch windows.

#### **Virtual IP Address (VIPA) Takeback**

VIPA Takeover function introduced in Release 8 provides for automatic takeover of a dynamic VIPA within a Parallel

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Sysplex® cluster when its owning stack or OS/390 image fails. When the owning stack is restored, the Dynamic VIPA is not released by the backup stack until there are no more active connections to that VIPA on the backup stack. Given that new connections are not refused, the movement of the Dynamic VIPA back to the “proper” stack is delayed. The VIPA Non-Disruptive Takeback function introduced in Release 10 moves the VIPA back to the primary owner, getting the workload back to where it belongs. New connections are handled by the primary owner, thereby allowing the workload to move back to the original stack. This takeback is non-disruptive to existing connections with the backup stack and the takeback is not delayed until all connections with the backup stack have terminated. Connection data for the new sessions is forwarded to the backup owner by the primary owner.

This function can be used in conjunction with the Sysplex Distributor function to distribute connection workload to multiple backup servers during an outage of the primary owner. It also allows movement of applications servers without impacting existing workload. Data for existing connections continue to be forwarded to the old location. This allows the user to off-load work for planned maintenance outages.

### **RACF® and TCP/IP**

Enhancements are made to an installation’s ability to restrict which services and users run in their TCP/IP environment using RACF mechanisms. Three levels of RACF resources are provided which control user/program users’ access to a TCP/IP stack, TCP or UDP port, and network. With respect to network access control, the installation can group IP addresses (or groups of addresses) to a “security zone” which is protected as a RACF resource. S/390 users must be permitted to the “security zone” before access is allowed.

### **Sysplex Distributor**

Several Sysplex Distributor functions are introduced in OS/390 Release 10. These functions enhance workload distribution and availability, while ensuring that client/server specific Service Level Agreements are maintained. Sysplex Distributor helps manage workload balancing and optimize end-to-end response time in a Parallel Sysplex environment.

Currently, workload distribution in the Parallel Sysplex cluster involves the use of a front-end box (channel-attached router). Also, Domain Name System (DNS)/WLM often cannot effectively distribute workload in the Parallel Sysplex cluster due to clients caching the IP address.

A Sysplex Distributor enhancement in Release 10 allows Workload Manager (WLM) to balance workload across a Parallel Sysplex cluster for new connection requests, just as is done with a channel-attached router, but without requiring the router. As a result, configuration restrictions are removed, with few nodes directly connected to the routing network. The workload distribution limitations resulting from clients caching the IP address in a DNS/WLM environment are removed. Caching of IP addresses has no effect on choice of server and workload balance is maintained.

With Sysplex Distributor Policy-Based Routing, differentiation of client IP addresses is considered in the routing decision to distribute incoming connection requests to different target servers within the Parallel Sysplex cluster. The network administrator can now define different policies for different clients. When the client accesses an application in S/390, the policy defined for the client determines the target server to which the

user’s requests will be routed. This provides for a differentiation of service for clients based on different clients’ performance and connectivity needs. For example, an Internet service provider having clients accessing the same application, can assign the clients to different servers where the differentiators can be servers with different capability and/or connectivity.

Another Sysplex Distributor enhancement optimizes the performance of servers by routing requests based on real-time QoS information pertaining to an individual server. This information includes the server’s capacity obtained from WLM and the network quality of service information obtained from CS for OS/390 Service Policy Agent. This information is used to ensure that the server’s end-to-end response time is optimized. For example, given two servers with equal CPU utilization, more incoming connection requests will be routed to the server with better network performance than the server whose routes traverse more congested paths.

### **QDIO Support for OSA-Express Fast Ethernet and 155 ATM Ethernet LAN Emulation**

Queued Direct Input/Output (QDIO), a highly efficient data transfer architecture introduced to satisfy the increasing volume of TCP/IP applications and the increasing demands for bandwidth, is now supported for OSA-Express Fast Ethernet and 155 ATM Ethernet LAN Emulation, as well as OSA-Express Gigabit Ethernet. For more details, visit:

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

### **Additional PCI Crypto Coprocessor Support**

The recently announced optional PCI Cryptographic Coprocessor (PCICC), brings additional cryptographic processing capacity and function to S/390 Parallel Enterprise G5 and G6 Servers. The PCICC feature works in conjunction with the CMOS Cryptographic Coprocessor that is standard on those servers. OS/390 will transparently route requests to the appropriate crypto engines for processing.

In this release, OS/390 supports additional PCICC functions that extend the use of S/390 integrated hardware cryptography to customer OS/390 applications that today rely on the IBM 4753 Transaction Security System — an outboard, channel-attached cryptographic processor box. IBM recently announced the withdrawal from marketing of the IBM 4753. Customers who currently utilize the IBM 4753 to provide their OS/390 applications with cryptographic functions may wish to migrate their applications to S/390 integrated hardware cryptography.

Customers can take advantage of higher performance, newer technology, better reliability, simpler management, and new functions provided by S/390 integrated cryptography by migrating.

In order to ease the transition from IBM 4753 to S/390 integrated hardware cryptography, support is provided by OS/390 ICSF and by the PCI Cryptographic Coprocessor for additional callable services and for additional key types and control vectors. In Release 10, OS/390 provides support for User Defined Extensions (UDX) so that IBM can provide customized cryptographic functions to meet unique customer needs.

### **LDAP Enhancements**

LDAP (IETF RFC 2251-2256) enhancements provide better interoperability with other LDAP V3 servers across multiple platforms, increased directory storage capacity, and tools to help set up a large LDAP directory.

- **LDAP V3 Schema Publication and Update** greatly enhances interoperability by augmenting the supported LDAP V3 function, begun in Release 8. With this support directory administrators can dynamically add and modify the active schema which defines the format of information stored in the directory. This support removes the requirement for a server re-start to modify the schema. The schema can be queried using the LDAP protocol, as defined by IETF RFC 2251.
- **LDAP Bulk Load Utility** provides a mechanism to load large numbers of directory entries into the OS/390 LDAP server. This can ease migrations from other directories on other platforms to OS/390 LDAP. It can also help the transition from a testing to a production LDAP environment.
- **New Table Model** allows a single OS/390 LDAP server to manage millions of directory entries across multiple DB2 databases. In addition, the new table model uses a fixed DB2 table schema which allows for greater control of the size and storage characteristics of the DB2 tables used by the LDAP server.
- **OS/390 UNIX® Configuration Assistant** simplifies your initial installation and configuration of UNIX System Services. This wizard helps you build a BPXPRMxx parmlib member with system processing parameters and file system statements, and to do the initial RACF security setup for OS/390 UNIX. Current OS/390 UNIX System Services users can use the tool to verify settings.

Enhancements to existing OS/390 wizards are continuous and delivered on the OS/390 Internet site as soon as they are available. For the latest information and access to OS/390 wizards visit:

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

- **OS/390 multimedia animated instructions** are also available. The animations give you a new way of learning conceptual material and relating it to wizards and procedural documentation. Animations are available on the OS/390 Web site for Component Broker, Language Environment, and security topics at the following sites:

<http://www.ibm.com/s390/products/cb/anim>

<http://www.ibm.com/s390/le/overview/leanim>

<http://www.ibm.com/s390/security/topics>

- **System Automation for OS/390 (SA OS/390) Version 2 Release 1 (5645-006)**

Enhancements to System Automation will make it easier to manage OS/390 by automating many of your difficult tasks. SA OS/390 V2.1 can automate applications distributed over a Parallel Sysplex cluster by virtually removing system boundaries for automation through its patented new manager/agent design exploiting MQSeries® 2.2 technology. For more details on System Automation for OS/390, including planning and migration considerations for the new version, visit the SA OS/390 home page at:

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

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

#### **Automatic Alter for CF Structures (Auto Alter)**

This function supports the automatic tuning of CF structure size and ratios of structure objects in response to changing structure object usage. Its improved systems management reduces the effort to manage CF structure size for CF structure users. Auto Alter allows the sysplex to dynamically manage CF structure storage resources by automatically altering the size and/or internal geometry of the structures.

Auto Alter automatically tunes these CF structures in response to observed constraints and threshold conditions. It redistributes storage resources to structures where they are needed in real-time, taking them away from structures where they are not needed. It allows more efficient utilization of the CF "real estate." The result: reducing costs and helping to ease the system programmer's "structure sizing" burden significantly.

The installation can define a structure's minimum and maximum sizes, and Auto Alter is then at liberty to expand or contract the structure only within those customer-specified boundaries. The installation also controls the "threshold" percent full against which a structure is to be managed by Auto Alter, and if desired, the installation has the ability to turn off the Auto Alter function for a structure.

#### **SMB File/Print Enhancements**

The SMB server provides print serving support for Windows™ clients. By allowing the SMB protocol to be used to send print requests to the OS/390 Infoprint® Server, it removes the need for additional print client code or unique printer setup steps on the user workstation.

The SMB server support is integrated within the Distributed File Service (DFS) element which also provides DCE DFS client and server support. The SMB support does not require DCE but the same server can optionally support DFS clients, SMB clients, or both.

In Release 10, in addition to its support for workstation access to OS/390 data stored in HFS using SMB protocols, the OS/390 DFS/SMB Server now supports workstation access to OS/390 data stored in SAM, PDS(E), and VSAM files to further expand the S/390 support for application development.

The Release 10 SMB server now supports the NT LM 0.12 level of the SMB protocol dialect used by the Windows NT™ networking support, thereby providing additional password encryption, file sizes greater than 32 bits (4 GB), and other capabilities allowed by this level of the SMB protocol.

### ***Easier Systems Management on OS/390***

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

Ease-of-use is important to you and your customers. This is why OS/390 designers and developers followed the User-Centered Design (UCD) approach when creating these tools to make your IT shop more efficient. The UCD approach involves users in all phases of product development. Continuous user input ensures that the team has a good understanding of what users do and want to do, and how well the designs satisfy their needs. The UCD approach was used to develop the following capabilities for OS/390:

- **OS/390 SDSF Configuration Assistant** simplifies the migration to the new SDSF Parallel Sysplex support in Release 10. The assistant asks the user a few questions, then generates results (such as a set of JCL or a list of RACF commands) that can be cut and pasted into OS/390 data sets. Graphics and hypertext links also make it easier to find specific information, such as the SAF resources that protect an SDSF function.

Structure Full Monitoring support was shipped in OS/390 Release 9. That support provided an ability for the system to monitor structures, detect over-threshold conditions, and call attention to them via messages, but taking actions to relieve the conditions was done either manually or via message-based automation. With the support for Auto Alter, however, the system can take actions to relieve these conditions automatically, within limits stated by the installation.

### Quality of Service (QoS)

OS/390 Release 8 introduced Differentiated Services (DS) QoS support in TCP/IP. The support provided a way to set the IP TOS byte and to police TCP throughput by defining parameters for each policed connection. QoS support provided service differentiation specified in QoS policies that are managed by the OS/390 UNIX Service Policy Agent. The QoS Enforcements enhancements in Release 10 enhance the ability of network administrators to control and allocate the traffic flow into their network. For Differentiated Services, Release 10 provides a way to define the QoS level in the policies managed by the Policy Agent in terms of traffic parameters such as mean rate, peak rates and burst sizes, in addition to the current parameters such as window sizes and number of connections. When traffic exceeds requested QoS parameters, options are provided in QoS policies to either discard packets or change their TOS setting. The aggregate of traffic is policed to ensure that it does not exceed the requested traffic profile, and that each connection receives its "fair share" of traffic. It also provides a way to police Enterprise Extender (EE) traffic by invoking adaptive rate-based (ARB) congestion control.

The QDIO Queue Management function in Release 10 provides a Service Level Agreement implementation that manages QDIO queues using a mechanism (Random Early Slowdown) that immediately relieves congestion on outbound QDIO write priority queues for MPCIPA devices. It does so by reducing the TCP congestion window for TCP connections and by reducing the windows used by adaptive rate-based (ARB) congestion control for Enterprise Extender traffic. As the name implies, RES seeks to slow down traffic flow from randomly selected connections after congestion is detected on an outbound QDIO queue. Note that RES functions within a priority queue to minimize the impact of low priority traffic on high priority traffic. The VTAM® display command has also been enhanced to display the current congestion state of the VTAM TRLE for this MPCIPA device.

**Resource Measurement Facility (RMF™)** enhancements can help monitor your system performance.

### Parallel Sysplex

- **RMF VSAM RLS Support** provides online support for VSAM RLS performance analysis and problem determination. Online monitoring is necessary when both online CICS® and batch programs access the same set of files and can impact CICS transactions and batch throughput. Monitor III has been enhanced to support monitoring of VSAM RLS measurements (for example, buffering and locking activities, cache structure effectiveness, and resource contention.)
- **RMF Performance Monitor of OS/390 Java Edition** provides a powerful, graphics-based workstation for performance monitoring and problem determination of any number of stand alone OS/390 systems or sysplexes. The PM of OS/390 Java Edition is platform independent and replaces the previous OS/2®-only solution.

### New S/390 Workloads

#### • RMF UNIX System Services Support

Monitor III has been enhanced to include performance measurements for OS/390 UNIX processes (OS/390 UNIX System Services address spaces). This will improve the ability of the OS/390 platform to manage the growing UNIX workloads.

The data provided by the OMVS command will be accessible via a callable interface. It includes CPU information about the different processes owned by a TSO user, process threads and their state, as well as global settings of the kernel address space itself. RMF provides this information in Monitor III which will improve problem determination in addition to performance management for UNIX workloads.

#### • WebSphere™ Performance Reporting

The WebSphere HTTP Server is one of the strategic applications in the IBM e-business portfolio. RMF has been enhanced to improve the tuning and capacity planning support on the S/390 platform.

With Release 10, the RMF Postprocessor will accept the System Monitoring Facility (SMF) record type 103 subtype 1 and 3 written by the WebSphere HTTP Server and build reports that provide usage statistics as well as performance information about the WebSphere HTTP Server.

#### • RMF Lotus® Domino™ Support

Another strategic application for e-business is Lotus Domino. To help customers improve the performance of Domino servers on S/390 and to plan for future growth, extensive performance reporting is required.

RMF has enhanced the Postprocessor to accept the SMF record type 108 subtype 1 and 3 written by Lotus Domino and to build reports that provide feedback on server load as well as the number and type of messages that the server handles.

### SDSF Enhancements

SDSF in Release 10 provides several enhancements to simplify systems management in a Parallel Sysplex environment. The SDSF Initiator and Printer panels can now display a device defined to any JES in the MAS, regardless of the system the user is logged on to. Similarly, when browsing the SYSLOG or a job's output, users now see the most recent data, regardless of the system they are logged on to.

The new System Requests panel displays outstanding operator messages (WTOs) and eventual action messages (such as tape mounts) in an easy-to-use format. Action characters simplify replying to messages. Users can filter, sort and arrange the panel to suit their needs. In addition, users can filter, by system, the outstanding operator messages displayed on the SDSF SYSLOG and Operlog panels.

Other improvements to SDSF include support for new function in OS/390 JES2, additional columns on the Printer panel, support for mixed-case system commands, new codepages, and the OS/390 SDSF Configuration Assistant. The new sysplex function on the Initiator, Printer, Output Data Set, and SYSLOG panels requires the installation of MQSeries for OS/390 Version 2 Release 1. If MQSeries is not installed or available, the panels operate as they did in prior releases. The other SDSF enhancements do not require MQSeries.

## IP Sec Enhancements through On-Demand Tunnels

As the number of virtual private networks (VPNs) grows, it is critical that the administrative burden associated with establishing security associations is lessened without compromising the security of the network.

With the initial IKE offering in Release 8, a tunnel (security association) could be initiated by either the other host (typically a client) or explicitly by a S/390 administrator. When security is required by the policy for outbound data and a security association does not exist, the data is discarded. IP Sec policy can be specified so that with the VPN On-Demand Tunnels function in Release 10 security associations are set up on demand and without the previously needed administrative actions to set up the security associations in advance.

### **Additional Release 10 Enhancements**

#### **FTP Enhancements**

The IBM Communications Server FTP server function is enhanced to fully support a Web browser FTP client. They include:

- UNIX appearance from Web browsers when accessing OS/390 HFS files
- Anonymous FTP server operations
  - Limits HFS visibility for anonymous user
  - Prompts for e-mail address as anonymous password and logs connections
  - Extensive configuration controls for scope of anonymous access
- Optional welcome, login, and directory information message support
- OS/390 data set FTP URL support

Several usability enhancements have been made to the FTP server command security exit routines to:

- Allow the command security exit routine to modify the FTP command arguments that are received by the FTP server.
- Implement a new file transfer post-processing exit routine that is given control when file transfer operations are completed. The exit routine is passed information that can be used to determine if the file transfer operation completed successfully or not.
- Allow FTP client users to submit jobs (without any FTP server-imposed jobname restrictions) and retrieve JES output based on SDSF-like filters. Access to spool files is controlled by standard SAF resource classes.
- Allow users to transfer full load libraries or selected load modules between an OS/390 FTP client and an OS/390 FTP server.

This new routine can also be used to generate messages to the console/syslog when a file transfer has completed.

Also, additional sample exits are provided to:

- Reject DIR commands when user has an empty OS/390 HLQ (prevents catalog scans)
- Implement customized SITE commands
- Log additional information to SYSLOGD for file transfer operations

## Telnet Enhancements

TN3270E Client Resource Pooling reduces the administrative burden associated with administering Telnet clients to connect to specific LUs. Currently each TN3270 client must be defined specifying the exact LU name to use to connect to a host application. With the TN3270E Client Resource Pooling function, the client specifies a group name which contains a list of LUs that are compatible with the host application. Telnet chooses an LU name from that group, removing the need for each client to individually assign and administer a specific LU to many clients.

When a client uses the TN3270 server, currently no information regarding the TN3270 client's IP address is provided to various VTAM user exits and applications. The TN3270 Address Visibility function in Release 10 allows a number of VTAM user exits and applications to obtain the benefits that result from knowing the IP address of a TN3270 client, such as:

- Authorization and accounting can be done based on IP characteristics of the TN3270 client
- Session managers can use IP characteristics to customize menus (for example, different menu choices for intranet versus Internet clients)
- the IP characteristics are also added to session failure messages as an aid to problem diagnostics

**Note:** The following vendors plan to exploit the TN3270 Address Visibility function:

- Avesta Technologies in TDSLink Access. For more information visit:  
<http://www.avesta.com>
- Computer Associates (formerly Sterling Software) in SOLVE: Access. For more information, visit:  
<http://www.cai.com>
- North Ridge Software in The Network Director and The Network Center. For more information, visit:  
<http://www.north-ridge.com/TN3270.asp>

Similar to VTAM's autologon support currently provided in a SNA 3270 environment, the Enhanced SLU Simulation function in Release 10 extends autologon support to TN3270 LUs, providing for automatic session setup when the application becomes available to the client.

The SSL TN3270 Negotiation enhancement allows the use of SSL TN3270 negotiation to determine the use of SSL based on enterprise security policy. The decision to use SSL can be based on IP address, hostname, or link. By allowing a mix of SSL and non-SSL traffic for a single port, multiple ports are no longer needed and client configuration is simplified.

## DFSMS Enhancements

DFSMS/MVS®, now called DFSMS, is part of OS/390 with Release 10. DFSMS introduces new functions that provide:

- Higher availability
- More flexibility
- Better throughput
- More efficient use of both software and hardware resources in the e-transaction processing (e-tp) environment and in some of the new application environments

## Improved Availability

- Large Tape Block Size

Today, data is growing at an exponential rate. In order to manage this data on tape, higher capacity tape media like the IBM 3590 is becoming the standard. In order to fully exploit this new denser media, sequential access methods (BSAM and QSAM) are provided to support tape block sizes larger than 32760 bytes. Tape block sizes up to 256 KB (where KB is 1024 bytes) for 3590 and up to 64 KB for non-3590 are now supported, to enable applications to read and write tape much faster.

- UNIT=AFF Support for Tape Libraries

UNIT=AFF helps minimize the number of tape drives required for a job and stack multiple data sets on a tape. Starting with DFSMS, 1.3 allocation failures could be prevented for data set stacking (with VOL=REF= or VOL=SER=) as the ACS routines could determine whether the referenced DD was directed to SMS-managed DASD, SMS-managed tape or was not SMS-managed. This could not be done when UNIT=AFF was used to reduce the number of drives required for a job and data sets were not stacked.

New with DFSMS in Release 10, during ACS processing for the referencing DD, the ACS routines can determine the storage residency (SMS-managed DASD, SMS-managed tape, or unmanaged devices) of the referenced DD. Without having to make JCL changes, you can direct allocations to either disk or tape based on their characteristics rather than the fact that they have UNIT=AFF specified.

### Improved System Throughput

- Multiple Address Spaces for DFSMSHsm™

Prior to DFSMS in Release 10, only one main DFSMSHsm host address space was allowed per OS/390 system image. This address space performed backups, migrations, expiration, recalls, and recoveries. New with Release 10, in addition to the main DFSMSHsm host, additional auxiliary DFSMSHsm host address spaces can be started in the same OS/390 system image. This will:

- Reduce contention
- Increase the number of tasks available for space management, incremental backup, and full volume dump processing in a highly multi-tasked system

Each host address space can be assigned different tasking levels and functions to be performed, and each can be assigned a different dispatching priority or velocity goal. For example, recalls processed by the main DFSMSHsm host can have a higher priority than backups performed by an auxiliary host.

ABARS is not impacted by this change. The main host will still manage up to 64 ABARS in secondary address spaces per OS/390 image. Up to 39 DFSMSHsm hosts can share a common set of control data sets. These hosts can be all on a single OS/390 system image, or spread over several systems.

- DFSMSHsm Data Set Command Backups Directly to Tape

Prior to Release 10, command data set backups were single threaded. New with Release 10, DFSMSHsm supports up to 64 concurrent command data set backups per OS/390 image. With this release, DFSMSHsm supports backup directly to tape devices. This eliminates the size constraint of having to fit a

backup copy on a single DASD volume. This increases the rate at which DFSMSHsm can perform multiple concurrent command data set backup requests, and allows more batch applications to take advantage of the data set backup function.

- DFSMSHsm Concurrent Copy Enhancement on Data Set Backups

Prior to DFSMS in Release 10, subsequent jobsteps could not be started until the jobstep taking a backup using concurrent copy was physically completed. In this release, subsequent jobsteps can be started as soon as the backup with concurrent copy is logically completed. This concurrent copy enhancement along with backup direct to tape and 64 concurrent backup tasks allows you to reduce the application batch window.

- DFSMSHsm Fast Subsequent Migration

Before Release 10, when a migrated data set was recalled for read, the data set had to again be re-migrated. With Release 10, data sets that are recalled from ML2 tape, not changed, and subsequently re-migrated, may be reconnected back to the original ML2 tape migration copy without data movement from Level 0 DASD to tape. This eliminates the unnecessary data movement resulting from re-migration, and may reduce the need to perform RECYCLE processing against these tapes.

### Removable Media Management Enhancements with DFSMSrmm™

- Multi-volume Set Retention and Movement

DFSMSrmm now provides an option to process multi-volume, multi-data set tapes as aggregates for retention and movement. This capability makes DFSMSrmm more compatible with other products during migration to DFSMSrmm and gives you more flexibility in managing your data.

- DFSMSrmm support for Tivoli® OPC

With Release 10, sample jobs will be provided that can be used to run the Tivoli OPC batch loader utility to set up DFSMSrmm as an application whose scheduling is managed by OPC.

- Pre-ACS interface support

DFSMSrmm can now provide its pool name (via MSPPOOL) and management value (via MSPOLICY) to the DFSMS ACS routines to help you manage your tape data set allocations

- SMS ACS support

DFSMSrmm now calls the SMS ACS routines to enable management class and storage groups to be used for non-system-managed tape data sets. SMS management class names can be used to replace the VRS management values for policy management set by exits, allowing all policy management decisions for tape to be made in SMS ACS processing. SMS storage group names can be used to replace or extend the exit-based or system-based scratch pooling supported by DFSMSrmm.

- Virtual Tape Server support

DFSMSrmm has added support for a volume type of "stacked" to allow identification of the stacked volumes in a Virtual Tape Server and direct management of these volumes when exported. These

stacked volumes will now be assigned to specific slots when moved to storage locations which require shelf management. Logical volumes are no longer assigned to slots at storage locations.

- **Fast Tape Positioning**

DFSMSrmm enables the use of tape block IDs for applications that do not themselves exploit tape block IDs. DFSMSrmm records the starting and ending tape block IDs and requests that they be used when files are read and when more data is written to a tape volume.

- **Audit support for CDS against TCDB and Library Manager**

With DFSMS in Release 10, DFSMSrmm will have the ability to audit the data in its CDS against or synchronize with the OAM TCDB and the IBM 3494 Library Manager data, including both the logical and the stacked volumes in an export capable VTS.

**Distributed File Service/Server Message Block (DFS/SMB)**

Besides the SMB support enhancements, Release 10 delivers incremental performance and RAS improvements that apply for customers that use either the SMB File/Print Server, the DCE DFS support, or both. Included is the support for large files with a size greater than 4 GB.

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## Statements of Direction

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### *Workload Manager in Goal Mode*

Workload Manager (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 operating system 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 operating system release scheduled for the first half 2002.

A number of functions which have been considered by some customers to be inhibitors to the migration from WLM compatibility to goal mode will be addressed in the Release 10 time frame via APAR service. These items include:

- Enhanced CPU management to provide protection for critical work across major workload shifts
- Selective management of CICS or IMS™ regions with either velocity goals or transaction response time goals
- Storage Isolation for critical regions over long, idle periods
- Classification by system group, system name, or "subsystem collection" name (for example, JES2 MAS name) — support for heterogeneous Parallel sysplex clusters

To aid customers in their migration, a Goal Mode Migration Tool is available at no charge starting the first half 2000. The Goal Mode Migration Tool can be accessed from the WLM Web page at:

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

A quick start policy developed by Cheryl Watson of Watson & Walker, Inc. is also available from the Web site.

### *Release Migrations and Coexistence in the Future*

Starting with the operating system release planned to be made available in the first half 2001, IBM intends to converge on a consistent migration and coexistence design policy applicable to all customer configurations. This policy will be applicable to all single system/single image configurations and all multisystem configurations, regardless of whether resource sharing is present.

This consistent migration and coexistence policy is planned to be based on the current OS/390 coexistence policy of four consecutive OS/390 releases. When you migrate from the operating system release planned to be made available in the first half 2001 (or from any subsequent release made available after this release), the release you migrate to should be within four consecutive releases to be fully supported. That is, the migration forward and backout should be made within four consecutive releases.

### *Architectural Level Set*

In the operating system release planned to be available in the first half 2001, IBM intends to exploit architectural enhancements which were introduced with the S/390 Multiprise® 3000 Server and with G5 of the S/390 servers.

The architectural enhancements provide performance and functional enhancements and reliability improvements. To exploit these enhancements, simulations or dual paths within OS/390 were needed to enable OS/390 to run on servers without the enhancements. The benefits of this architectural level set include:

- Elimination of redundant code
- Potentially greater exploitation of the enhancements by designers and programmers to deliver new function to customers more quickly

The release of the operating system planned to be available the first half 2001 will only run on servers that implement the architectural enhancements, and will not run on servers that have not implemented them. The following IBM servers have these enhancements:

- S/390 Parallel Enterprise Servers — G5 and G6 (or compatible server)
- Multiprise 3000 Enterprise Server (or compatible server)

IBM makes this statement at this time to provide additional planning time for the first half 2001 release of the operating system.

The architectural enhancements that will be required by the operating system release scheduled for availability in first half 2001 can be found at:

<http://www.ibm.com/s390/os390/plug1.html>

### *Transactional VSAM*

Transactional VSAM Services allows VSAM dataset sharing in batch/online and batch/batch environments. It will be available through an extended Early Support Program at the time Release 10 is available. Transactional VSAM supports recoverable VSAM datasets to allow batch programs and CICS online applications to concurrently share data for read and write

processing. This capability will allow CICS applications to stay online along with many batch update applications to help meet the 24/7 data availability requirement. Transactional VSAM exploits the Automatic Restart Manager (ARM). Transactional VSAM services will be restarted on another system by ARM in the case of a system failure.

To participate in the Early Support Program for Transactional VSAM, you must install OS/390 Release 10. For information on how to participate in the Early Support Program for Transactional VSAM, send an e-mail to DFSMSESP@us.ibm.com.

### **Coexistence Policy**

As described under Statement of Direction for Release Migration and Coexistence, IBM intends to converge on a consistent migration and coexistence policy that is applicable to all customer configurations.

This consistent migration and coexistence policy is planned to be based on the current OS/390 coexistence policy of four consecutive OS/390 releases. When you migrate from the operating system release planned to be made available in the first half 2001 (or from any subsequent release made available after this release), the release you migrate to should be within four consecutive releases to be fully supported. That is, the migration forward as well as backout should be made within four consecutive releases.

In recognition that some enterprises could not remain current in their software production systems due to year 2000 preparations, IBM previously extended the ordering capability for OS/390 Release 6 as well as the coexistence support for OS/390 Release 2 through OS/390 Release 6.

Today, for those enterprises who have upgraded or plan to upgrade to OS/390 Release 6 in 2000, IBM wants to assure that you will not need to immediately follow that upgrade with another upgrade this year to OS/390 Release 9.

An additional special provision is being provided that supports coexistence between OS/390 Release 6 and OS/390 Release 10.

Prior to this provision, OS/390 Release 6 coexisting with Release 10 would not be supported since Release 10 falls outside the four OS/390 release coexistence period allowed. Previously, OS/390 Release 6 was only supported from a coexistence standpoint with OS/390 Releases 7, 8, and 9.

This information is being provided to you early, so that you may take this into account in your release planning. For OS/390 Release 6 customers who wish to take advantage of this special provision, it is important to place your order for OS/390 Release 10 while it is still available.

For additional information, refer to the paper *Planning Guide for Multisystem Customers: OS/390 Coexistence and Planning Considerations Through the Year 2000* available at

<http://www.ibm.com/s390/stories/year2000/coexist.html>

### **Architectural Level Set for Release 10**

#### **Generation 2 of S/390 Servers**

OS/390 Release 10 will exploit ESA/390™ architectural enhancements which were implemented on selected IBM

S/390 servers. OS/390 Release 10 (September 2000) will run only on servers that implement the architectural enhancements, and will not run on servers that have not implemented them. The following IBM servers have these enhancements.

- All models of the S/390 Parallel Enterprise Servers except for Release 1 models
- All models of the S/390 Multiprise
- All PC Server S/390 servers and RS/6000® with S/390 Server-on-Board models
- All S/390 Integrated Servers

The following IBM servers do not have these enhancements and will not be able to run Release 10.

- ES/9000® Processor Unit 9021, 9121, or 9221
- ES/3090™ Models
- ES/4381™ Models
- S/390 Parallel Transaction Server 9672 E or P models
- S/390 Parallel Enterprise Server™ 9672 Release 1 models

The architectural enhancements that will be required by Release 10 can be found at:

<http://www.ibm.com/s390/os390/plug.html>

### **OS/390 Withdrawn Function**

The following functions are removed in Release 10:

- WebSphere Application Server
- Selected Functions within the C/C++ Compilers
- LAN Server
- IBM Communications Server High Speed UDP
- Softcopy Print
- VisualLift RTE
- VisualLift ADE

#### **WebSphere Application Server for OS/390**

A new S/390-based program product, the WebSphere Application Server for OS/390 (5655-A98), has joined the WebSphere Family as the strategic deliverable for deployment of Web applications on S/390. The first release of this product, WebSphere Application Server for OS/390 Release 3.02, will provide servlet and Java Server Page (JSP) functionality equivalent to that of distributed systems. It will also add support for the Enterprise Java Beans (EJBs) programming model.

The WebSphere Application Server (WAS) element is removed from OS/390 in Release 10. Service support will continue through March 2002 for the levels of this element (WAS V 1.1 and WAS V1.2) that were included in prior releases of OS/390. No new functionality will be provided to these integrated elements. It is strongly recommended that customers acquire and install the new WebSphere for OS/390 product to ensure synchronized support for new levels of servlet, JSP and EJB programming specifications, Web application tools (for example, VisualAge® for Java and WebSphere Studio) and other enhancements to the WebSphere Family of products.

Base HTTP server functionality, via existing Domino Go technology, will continue to be delivered integrated in OS/390 as part of the IBM HTTP Server element.

#### **Selected Functions within the C/C++ Compiler**

- The IBM System Object Model™ (SOM®) is no longer supported in the C++ compiler.

- The SOM-enabled Class Library DLLs have been stabilized at the Version 2 Release 9 level and continue to be shipped as a run-time environment only.
- The Model Tool is no longer available within the C/C++ compiler.

For more information, visit:

<http://www.ibm.com/software/ad/c390>

As mentioned in the OS/390 Version 2 Release 9 Software Announcement 200-030, dated February 29, 2000, here is a restatement of those functions withdrawn from OS/390 effective with Release 10.

#### • OS/390 LAN Server

The OS/390 LAN Server is no longer available in OS/390 Release 10 because the prerequisite OS/2 software is no longer available. Service for all releases of OS/390 LAN Server will be discontinued on March 31, 2001.

##### Migration Aids

1. *File Server Consolidation on S/390* (SG24-5330) describes alternative solutions and provides migration guidance.
2. The OS/2 Front End Processor configurations from previous releases of OS/390 LAN Server is supported on Release 10 for customers who want to migrate to Release 10 prior to migrating off of OS/390 LAN Server.

#### • High-Speed UDP

The technology developed for the High-Speed UDP facility and documented in the High-Speed Access Services User's Guide, is NOT integrated into the IBM Communications Server for OS/390 (CS OS/390) Release 10 TCP/IP Services. Beginning with CS OS/390 Release 10, High-Speed UDP is no longer a configurable option. Applications previously using High-Speed UDP can be configured to use the base TCP/IP Release 10 stack to obtain equivalent functionality and performance.

#### • OS/390 Softcopy Print Element

The OS/390 Softcopy Print element is no longer available in OS/390 Release 10. The purpose of the Softcopy Print element is to print BookManager® books (or topics) on AFP™ printers.

##### Migration Aids

1. Sections of BookManager books (served by BookServer) can be printed from the OS/390 Internet Library using the print function of your browser. PDF files of the OS/390 books are also available for printing purposes. You can access the PDF files from the OS/390 PDF Library Collection (SK2T-6718) or from the OS/390 Internet Library at:

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

2. Customers who wish to use the Softcopy Print function on Release 10 can still obtain all of the individual required pieces of the Softcopy Print element by obtaining the products that the pieces are part of (if you do not already have those products). For a list of those products, see the *OS/390 Planning for Installation* (GC28-1726).

#### Notes

- The DBCS Print Utility (previously shipped only with the DBCS versions of OS/390) is being added to BookManager READ.
- With Release 10, OS/390 no longer ships a subset of the AFP Font Collection as part of the OS/390 base. If you were relying on the use of these fonts for AFP printing, you might need to purchase the AFP Font Collection (5648-B33).

#### Products and Features Related to OS/390

##### Withdrawn Service Delivery

As part of the IBM strategic direction to reduce the number of S/390 service deliverables, IBM announces the elimination of the Cumulative Service Tapes (CUM), manufactured for a subset of stand-alone products available today that run on OS/390. The CUM service tape has been selected for this reduction due to its downlevel content, which requires customers to order more recent service in order to bring the product to a current service level.

Starting in September 2000, IBM offers software products via customized offerings instead of the stand-alone product media options available today. Replacing the traditional stand-alone deliverable with an enhanced Custom Built Product Delivery Offering (CBPDO) provides a more complete, up-to-date product with service package than ever before.

This change also improves product installation with the following data on a single logical tape:

- FMIDs and latest service for the ordered products only
- Up-to-date service, reducing the need to request additional PTFs
- Required program directories
- Preventive Service Planning (PSP) Buckets
- Relevant HOLDDATA and ++ASSIGN statements

##### Installation Enhancements

CBPDO currently provides service for all releases of each product licensed under your customer number, as well as non-integrated service for the ordered products. Starting in September 2000, CBPDO is being changed to allow service to be limited to either the ordered products for all SRELs, or to selected releases of OS/390 for MVS™ SREL orders. This change allows you to customize the service in your order to your specific needs as well as reduce the overall size of the deliverable.

When requesting service for the ordered products only, your order will include the products you selected as well as all the non-integrated service applicable to these products. Your order will not include service for any other products licensed under your customer number.

When requesting service for specific releases of OS/390, your order will include service only for the releases you select, as well as all releases of the non-OS/390 products licensed under your customer number. In addition the order will include all the non-integrated service for any products you have selected.

Further details of this enhancement may be obtained upon availability of the *OS/390 Version 2 Release 10 Planning For Installation* publication.

##### Euro Sign Support

OS/390 Version 2 Release 10 includes support for the EuroSign.

## About Tivoli SecureWay™ Branding

The Tivoli SecureWay product family provides a thorough security management and access control solution that enables e-business success. Available either as stand alone products or as part of an extensive portfolio of Tivoli products, Tivoli SecureWay management software brings together point products and policies and best practices established by services providers, into a comprehensive, integrated environment for managing security in today's e-business. For more information about Tivoli SecureWay, visit:

<http://www.tivoli.com/security>

## UNIX 98 Branding

OS/390 has already delivered certain key functions meeting immediate customer needs that are associated with UNIX 98 branding. Additional UNIX 98 functions which deliver customer and application vendor value are planned for roll out over multiple future OS/390 releases.

## Announcement References

For earlier OS/390 Version 2 information, you can find announcements on the Web at:

<http://www.ibm.com/news/usalet/>

Refer to:

- Software Announcement 200-030, dated February 29, 2000 (OS/390 Version 2 Release 9 Availability)
- Software Announcement 299-234, dated August 24, 1999 (OS/390 Version 2 Release 8 Availability)
- Software Announcement 299-042, dated February 22, 1999 (OS/390 Version 2 Release 7 Availability)
- Software Announcement 298-279, dated August 18, 1998 (OS/390 Version 2 Release 6 Availability)
- Software Announcement 298-049, dated February 24, 1998 (OS/390 Version 2 Release 5 Availability)
- Software Announcement 297-355, dated September 9, 1997 (OS/390 Version 2 Release 4 Availability)
- Software Announcement 297-194, dated June 9, 1997 (initial OS/390 Version 2 announcement)

Other announcements referenced in this document include:

- Hardware Announcement 199-115, dated May 3, 1999 (S/390 Parallel Enterprise Server — G6)
- Hardware Announcement 199-048, dated February 22, 1999 (Introducing Gigabit Ethernet for the S/390 Parallel Enterprise Server — G5 Plus FICON™ Enhancements)
- Software Announcement 299-041, dated February 22, 1999 (S/390 Open Systems Adapter Support Facility for OS/390 Version 2 Release 1)
- Software Announcement 299-039, dated February 22, 1999 (DFSMS/MVS Version 1 Release 5)
- Hardware Announcement 199-036, dated January 25, 1999 (S/390 G5: Plan-Ahead for 1999 and Additional Upgrades to Model R06)
- Software Announcement 298-269, dated July 28, 1998 (Runtime Analyzer)

- Software Announcement 298-271, dated July 28, 1998 (High Level Assembler (HLASM))
- Hardware Announcement 198-115, (RFA30600) dated May 7, 1998 (G5 Servers)
- Software Announcement 298-151, dated May 5, 1998 (Domino Go Webserver for OS/390)
- Services Announcement 697-004, dated March 25, 1997 (SmoothStart™ Services)
- Hardware Announcement 195-147, dated May 23, 1995 (concerns CD-ROM and OS/390)
- Hardware Announcement 194-281, dated September 13, 1994 (concerns Coupling Facility)
- Hardware Announcement 194-082, dated April 6, 1994 (concerns Coupling Facility)
- Software Announcement 289-581, dated October 24, 1989 (concerns security APARs)

## OS/390 Version 2 Release 10 Product Content

OS/390 Version 2 Release 10 elements are listed below. OS/390 elements that are also available as stand-alone products are listed with the release level used in OS/390.

### • System Services

- MVS/ESA™ SP<sup>1</sup>
  - Base Control Program (BCP)<sup>1</sup>
  - JES<sup>2</sup>
- ESCON® Director support<sup>1</sup>
- MICR/OCR support<sup>1</sup>
- Bulk Data Transfer (BDT) base<sup>1,2</sup>
- DFSMS
- EREP/MVS Version 3 Release 5
- High Level Assembler
- ICKDSF Release 16
- ISPF<sup>1</sup>
- TSO/E<sup>1</sup>
- 3270 PC File Transfer Program Version 1.1.1
- FFST™/ESA Version 1 Release 2<sup>1</sup>
- TIOC<sup>1</sup>

### • Systems Management and Security

- HCD<sup>1</sup>
- SMP/E<sup>1</sup>
- Tivoli Management Framework for OS/390 (Tivoli Management Framework level 3.6) (Limited DES 56 bit)
  - Tivoli Management Agent

### • Cryptographic Services

- Cryptographic Services
  - ICSF<sup>1</sup>
  - Open Cryptographic Services Facility (RC2/RC4/RC5 40-56 bit, DES 56 bit)<sup>1</sup>
  - System SSL (RC2/RC4, DES through 56 bit)<sup>1</sup> DES 56 bit<sup>1</sup>

### • Application Enablement Services

- C/C++ IBM Open Class™ Library<sup>3</sup>
- Language Environment (Limited DES)<sup>1</sup>
- DCE AS<sup>1</sup>
- Encina Toolkit Executive<sup>1</sup>
- SOMobjects for MVS Runtime Library<sup>1</sup>

### • Distributed Computing Services

- Network File System Feature<sup>1</sup>
- DCE Base Services (OSF DCE level 1.1) (Limited DES)<sup>1</sup>

- Distributed File Service (DFS support at OSF DCE level 1.2.2) (DES 56 bit)<sup>1</sup>
- **Communications Server**
  - IBM Communications Server for OS/390<sup>1,4</sup>
    - SNA/APPN® Services (Includes VTAM) (Limited DES)<sup>1</sup>
    - Multiprotocol/HPR Services (Includes AnyNet®)<sup>1</sup>
    - TCP/IP Services (Includes TCP/IP for MVS) (Firewall CDMF DES 40 bit, SNMPv3 DES 56 bit, IP Sec DES 56 bit)<sup>1</sup>
- **e-business Services**
  - IBM HTTP Server for OS/390 (uses System SSL)
  - Text Search (formerly NetQuestion)
- **LAN Services**
  - LANRes (Limited DES)<sup>1</sup>
  - OSA Support Facility for OS/390 Version 2 Release 1
- **OS/390 UNIX System Services**
  - OS/390 UNIX System Services Application Services<sup>1</sup>
    - OS/390 UNIX System Services Shell and Utilities<sup>1</sup>
    - OS/390 UNIX System Services Debugger<sup>1</sup>
- **Softcopy Publications Support**
  - BookManager READ R3<sup>1</sup>
  - BookManager BookServer Version 2.2<sup>1</sup>
  - GDDM® Version 3 Release 2 (including PCLK and OS/2 Link)

You have the ability to replace an OS/390 base function with a commercially available product that provides a similar function. Contact an IBM representative for qualification and pricing information. All OS/390 integrated testing results and performance claims are voided with such replacement.

OS/390 delivers optional features that have a high affinity to the base OS/390 system.

- **System Services**
  - JES3<sup>1</sup>
  - Bulk Data Transfer (BDT) File-to-File<sup>1</sup>
  - Bulk Data Transfer (BDT) SNA NJE<sup>1</sup>
- **Systems Management**

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

  - DFSMSdss™, hsm
  - DFSMSrmm
  - DFSMSdss
  - RMF<sup>1</sup>
  - SDSF<sup>1</sup>
  - HCM<sup>1</sup>
- **Cryptographic Services**
  - Open Cryptographic Services Facility Security Level 3 (TDES, DES, RC2/RC4/RC5)<sup>1,4</sup>
  - System SSL Security Level 3 (RC2/RC4,TDES)<sup>1,4</sup>
- **SecureWay Security Server**
  - DCE Security Server at OSF DCE level 1.2.2 (Limited DES)<sup>1</sup>
  - Open Cryptographic Enhanced Plug-ins (uses OCSF)<sup>1</sup>
  - RACF (DES, RC2 40 bit)<sup>1</sup>

- Firewall Technologies (DES)<sup>1</sup>
- LDAP Server (uses System SSL)<sup>1,5</sup>
- Network Authentication and Privacy Service (DES)<sup>1,6</sup>
- **Application Enablement Services**
  - C/C++ with Debug Tool<sup>1,3</sup>
  - C/C++ without Debug Tool<sup>1,3</sup>
  - DFSORT™ Release 14
  - GDDM-PGF Version 2 Release 1.3
  - GDDM REXX Version 3 Release 2
  - HLASM Toolkit
  - SOMobjects for MVS Application Development Environment (ADE)<sup>1</sup>
  - Infoprint Server for OS/390<sup>1</sup>
    - IP PrintWay<sup>1</sup> and NetSpool<sup>1</sup>
    - OS/390 Print Interface<sup>1</sup>
- **Communications Server**
  - IBM Communications Server Security Level 1<sup>1,7</sup>
  - IBM Communications Server Security Level 2 (DES)<sup>1,7</sup>
  - IBM Communications Server Security Level 3 (TDES)<sup>1,4</sup>
  - IBM Communications Server Network Print Facility<sup>1</sup>
- **e-business Services**
  - IBM HTTP Server NA Secure<sup>1,4</sup>
- **Softcopy Publications Support**
  - BookManager BUILD Release 3<sup>1</sup>

<sup>1</sup> Functional enhancements for items have already or will be made available only through OS/390 and not through additional releases or versions of these products or features.

<sup>2</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>3</sup> Retroactive to OS/390 Version 1 Release 3, the C/C++ IBM Open Class Library component of the C/C++ Optional Feature is licensed with the OS/390 base operating system and can be used without enabling the C/C++ Optional Feature.

<sup>4</sup> Items have export considerations.

<sup>5</sup> The LDAP Server component of SecureWay Security Server Optional Feature is licensed with the OS/390 base operating system and can be used without enabling the SecureWay Security Server Optional Feature.

<sup>6</sup> The Network Authentication and Privacy Service component of SecureWay Security Server Optional Feature is licensed with the OS/390 base operating system and can be used without enabling the SecureWay Security Server Optional Feature.

<sup>7</sup> The IBM 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 OS/390 base.

### **Enabling OS/390 Optional Priced Features**

OS/390 optional priced features use an OS/390 product registration service, together with product policy statements, to determine whether or not the OS/390 priced feature has been ordered and should run.

OS/390 optional priced features that are ordered concurrently with OS/390 will be shipped by IBM together with policy statements in PARMLIB which enable the ordered priced features. OS/390 priced features which have not been ordered will also be shipped with OS/390, 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 OS/390 license as described in *OS/390 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 OS/390 features is available in *OS/390 Planning for Installation* (GC28-1726). This publication is available at the OS/390 Installation:

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

The OS/390 priced features which support this enablement capability in OS/390 Version 2 Release 10 are:

- BookManager BUILD
- BDT File to File
- BDT SNA NJE
- C/C++ (with Debug Tool)<sup>8</sup>
- C/C++ (without Debug Tool)<sup>8</sup>
- DFSMSdss
- DFSMSrmm
- DFSMSdss & DFSMSshm
- DFSMSdss, DFSMSshm, & DFSMSrmm
- DFSORT
- GDDM PGF
- GDDM REXX
- HCM
- High Level Assembler Toolkit
- JES3
- Infoprint Server for OS/390
- RMF
- SDSF
- SecureWay Security Server for OS/390<sup>9</sup>
- SOMobjects ADE

<sup>8</sup> The C/C++ IBM Open Class Library component of the C/C++ Optional Feature is licensed with the OS/390 base operating system and can be used without enabling the C/C++ Optional Feature.

<sup>9</sup> Both the Network Authentication and Privacy Service and the LDAP Server components of the SecureWay Security Server for OS/390 Optional Feature are licensed with the OS/390 base operating system and can be used without enabling the SecureWay Security Server for OS/390 Optional Feature.

### **Program Services**

Central service for suspected defects in OS/390 code is provided by the IBM Support Center within the customer's geography. Central service, including the IBM Support Center, for DSLO licenses is provided through the customer location designated for the basic license. On-site (local) support, although available, is provided as part of the IBM portfolio of fee-based services.

### **Service Policy**

IBM intends to provide service support for each release of OS/390 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. The current practice of providing at least twelve months written notice prior to the withdrawal of a service for a version or release will continue for OS/390.

Recognizing the special circumstances for year 2000 preparations, OS/390 Version 1 Release 1 and Release 2 were considered current for almost five years. However, it was announced in September of 1999 that OS/390 Version 1 Release 1 and Release 2 will effectively end currency on January 31, 2001. (For more information, refer to Software Withdrawal Announcement 999-275, dated September 21, 1999.)

OS/390 Version 1 Release 3 and Version 2 Release 4 have also been extended beyond three years of service currency. However, it was announced in March 2000 that

OS/390 Version 1 Release 3 and Version 2 Releases 4 and 5 will effectively end currency on March 31, 2001. (For more information, refer to Software Withdrawal 900-040, dated March 7, 2000.)

PTF distributions, including Recommended Service Upgrades (RSUs), will continue to be available monthly as part of the OS/390 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 the future direction and intent of IBM are subject to change or withdrawal without notice and represent goals and objectives only.

### **OS/390 Enhanced HOLDDATA Availability with Year 2000 Information**

OS/390 Enhanced HOLDDATA, previously announced in OS/390 Version 2 Release 4, has replaced the HOLDDATA that is delivered on ESOs, CBPDO, and Corrective Service Orders. (Refer to Software Announcement 297-355, dated September 9, 1997 to review the HOLDDATA announcement in Release 4.) In addition, OS/390 Enhanced HOLDDATA includes information to ease identification of missing Year 2000 service.

OS/390 Enhanced HOLDDATA improves the content, timeliness, and consistency of HOLDDATA. These improvements make it easier to identify and analyze missing critical service on any level of an OS/390 or MVS system. ++HOLDS are created for HIPER (High Impact and Pervasive) and Year 2000 APARs in addition to PE (PTF in Error) APARs. Additional information is provided that includes the fixing PTF number, when available, any HIPER reason flags and a YR2000 flag for any Year 2000 APARs.

OS/390 Enhanced HOLDDATA is cumulative and complete. This allows Enhanced HOLDDATA to be a single source of HOLDDATA to serve multiple systems. There is no need to collect and compile ERROR HOLDDATA from multiple sources. The content covers the entire OS/390 and MVS platform of IBM SMP/E-managed products with one consistent source of HOLDDATA.

**Note:** Coverage of the entire platform with a single HOLDDATA source does not negatively affect processing HOLDDATA since SMP/E ignores data for products that are not listed in the SMP/E environment.

Timeliness of OS/390 Enhanced HOLDDATA is improved by providing daily updates available via the Internet at:

<http://service.boulder.ibm.com/390holddata.html>

The updated files are also available via ServiceLink and through the S/390 Service Update Facility.

The files available on the Internet and ServiceLink are the same files that are delivered on orders built that day. HOLDDATA can be kept current by downloading and receiving the most recent file. Subsequent updates of the Web data can be downloaded and received on top of existing HOLDDATA without concern about regression of HOLDDATA, provided the time span of the latest Enhanced HOLDDATA overlaps any previously RECEIVED HOLDDATA. Automation of data retrieval is possible through the use of Batch FTP and job scheduling.

OS/390 Enhanced HOLDDATA is currently provided on all ESOs, CBPDO, Corrective service orders, orders placed via the S/390 Service Update Facility, directly through the S/390 Service Update Facility and via ServiceLink.

## Fee-Based Software Services Offerings

**Note:** OS/390 Version 2 Release 10 is also available through the SystemPac fee-based offering.

**Enhancements for OS/390 Version 2 Release 10 SystemPac Orders:** SystemPac offers the capability of building a system with integrated subsystems in both copy by data set format and full volume dump/restore format. The full volume dump/restore format provides the capability of an OS/390 installation without using the dialog. Installation is done via pack restore using DFSMSdss 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 (Hipers and PTFs resolving PEs) can be shipped at specified intervals and frequencies based upon your selection at ordering time.

In addition, SystemPac also comes with the option of having SecureWay Communications Server for OS/390 and WebSphere Application Server enabled. These features, coupled with the enablement of UNIX System Services in full function mode, allow you the ease of tailoring the default set up provided to match your standard for Internet access upon restored and IPL'ed. 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 Release 10 SystemPac are now able to take advantage of the following new enhancements:

- Increase in number of ISV products available for ordering in SystemPac (both an increase in the number of products and the vendor representation). For a list of available ISVs offered with SystemPac, refer to:

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

- SystemPac is built according to a copy of your IODF. You can send in your IODF to selected worldwide production centers via the Internet. To get access to the Internet application, perform the following:

- Go to:

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

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

For more information on SystemPac, contact IBM at 800-IBM-4YOU (426-4968). To get details about the CustomPac related family of offerings, you can also access:

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

### Education Support

Keep up-to-date on new OS/390 releases with the **OS/390 Update Information Service**. This distributed learning (DL) training gives you the technical details on each new OS/390 release level to help you decide when to migrate.

The OS/390 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 OS/390 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 OS/390 Update Information Service gives you:

- Automatic updates on the key technical details of each new OS/390 release
- A consolidated information repository on all OS/390 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 OS/390 Update Information Service on OS/390 Release 10 will be available shortly after OS/390 Release 10 becomes available. For a demo of this exciting new way to stay current on OS/390, visit:

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

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

In the U.S., 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

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## Technical Information

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**Hardware Requirements:** Any processor that supports Enterprise Systems Architecture (ESA) with the required architectural enhancements (identified at: <http://www.ibm.com/s390/OS390/plug.html>) enables you to run basic OS/390. Some examples are listed below.

- Models of the S/390 Parallel Enterprise Servers — G5 and 6
- Releases 2 through 4 of the S/390 Parallel Transaction Servers
- All models of the S/390 Multiprise 3000 or Multiprise 2000
- All S/390 Integrated Servers

- PC Server System/390® or RS/6000 with System/390 Server-on-Board

Additional hardware may be required for certain, specific functions.

- **Coupling Facility (CF)** — A CF is the common system focal point, in a Parallel Sysplex environment, for data sharing across multiple S/390 systems. It is a function that is implemented in S/390 hardware and Coupling Facility Control Code (CFCC). A CF is established in a S/390 PR/SM logical partition dedicated to running CFCC. A CF partition can exist on a stand-alone dedicated system such as a 9674 C0x or 9672 G5 R06 model or can run in a partition of a S/390 9672 General Purpose Server or ES/9000 9021 711-based system. For additional information on the 9672 G6 Servers, refer to Hardware Announcement 199-115, dated May 3, 1999.
- **CF Channels:** In a Parallel Sysplex environment, these channels are required to connect between a CF and production OS/390 or MVS/ESA 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
  - 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 S/390 Parallel Enterprise Server. For the latest information on the 9672 S/390 G6 Servers, refer to Hardware Announcement 100-050, dated February 29, 2000.

- **Sysplex Timer®:** A Sysplex Timer is required to synchronize the time-of-day (TOD) clocks in all the CPCs attached to the CF (except for a single CPC Parallel System).
- **ICSF:** The Triple DES function requires at least a 9672 G5 Server

For G5 and 6 Servers, the Triple DES support is included in the product.

**Note:** Triple DES is exportable to all customers except governments. It may not be exported to governments except pursuant to an appropriate export license.

An S/390 G5 Server, or higher, is required if a customer wishes to use Double-Key MAC.

For related S/390 Parallel Enterprise Server, G6 information, refer to Hardware Announcement 100-050, dated February 29, 2000.

**Software Requirements:** The OS/390 base is an IPL-able system. There are no hard requirements in order to IPL. Specific functions may require additional products not included in OS/390 base, or in the optional features of OS/390. Refer to information provided below, as well as *OS/390 Planning for Installation* (GC28-1726) 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 OS/390 Version 2 Release 10, refer to *OS/390 Planning for Installation* (GC28-1726). This publication is also available at:

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

**Print Services Facility™:** If you decide to use the Print Services Facility (PSF) with OS/390 Version 2 Release 10, the minimum required level is PSF for OS/390 Version 3 (5655-B17).

**Java for OS/390:** OS/390 Release 10 requires Java for OS/390 at the 1.1.8 level or later. Java for OS/390 includes support for IEEE 754 native instruction execution, exploitation of native operating system services for security enhancements, and continued performance enhancements. For complete information, visit the Java for OS/390 Web site at:

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

**Performance Considerations:** Additional information on OS/390 performance will be available at general availability. You should consult your marketing representative at or after general availability.

**User Group Requirements:** Over 529 requirements have been either fully or partially satisfied by the first nine releases of OS/390. This announcement of OS/390, Version 2 Release 10, satisfies or partially satisfies many more 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/s390/os390/bkserv/user\\_group\\_reqs.html](http://www.ibm.com/s390/os390/bkserv/user_group_reqs.html)

#### 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 OS/390 Unpriced Optional (encryption controlled) features, IBM recommends:

- That you order these features during the release cycle. The function is only sent when ordered.
- That you order the highest level of encryption available for your geography.

For example, to obtain encryption support (security) for IBM HTTP Server for OS/390, you **must** specify the following security feature:

- IBM HTTP Server North America Secure

Refer to the **Ordering Information** sections in the previous and current OS/390 announcements for specific details on feature numbers.

As the cryptographic export regulations are changing, for the most current export regulations, visit:

<http://w3.ibm.com/chq/ero/ero.nsf>

#### System Integrity

IBM will accept APARs where the installation of OS/390 introduces an exposure to system integrity.

## Security, Auditability, and Control

Data security and auditability in the OS/390 environment are enhanced by the functions available in the RACF part of the optional SecureWay Security Server for OS/390 feature.

**B1/C2 Security:** The most recent MVS system formally evaluated by IBM and the US 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 OS/390 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 OS/390 systems to the Internet and extranets to conduct e-business. Although IBM has not undertaken further formal security evaluations of OS/390, we maintain our strong focus on security during the design, development and testing of OS/390. 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 OS/390 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 OS/390. 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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### Current Licensees

#### Notes

- The last date for ordering OS/390 Version 2 Release 9 is September 14, 2000.

To allow for adequate order processing time, we recommend that all OS/390 Version 2 Release 9

orders be submitted no later than September 5, 2000 so that they can meet the process deadline of September 14, 2000.

- The first date for ordering OS/390 Version 2 Release 10 is September 15, 2000.

The following information only provides new and changed ordering information for OS/390 Version 2 Release 10. For ordering information previously announced for OS/390 Version 2 Releases 4, 5, 6, 7, 8, and 9 refer to:

- Software Announcement 297-355, dated September 9, 1997
- Software Announcement 298-049, dated February 24, 1998
- Software Announcement 298-278, dated August 18, 1998
- Software Announcement 299-042, dated February 22, 1999
- Software Announcement 299-234, dated August 24, 1999
- Software Announcement 200-030, dated February 29, 2000

For OS/390 Version 2 Release 10 price proposals, the CFSW configurator stand-alone path for 5647-A01 will be updated to support Release 10 on May 16, 2000.

Most OS/390 media is only shipped via OS/390 Customized Offerings (ServerPac, SystemPac and CBPDO). CFSW configuration and order entry capability for ServerPac, SystemPac, and CBPDO for OS/390 Version 2 Release 10 will be available beginning September 15, 2000.

Production of OS/390 Version 2 Release 10 orders will begin on the general availability date, September 29, 2000. 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 general 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 general availability. Delivery commitments are not made until confirmed by the AAS.

**Note:** For all OS/390 orders, the current customer install base of the OS/390 Customized Offering 5751-CSx (not the install base of 5645-001 or 5647-A01) must be retained to determine the OS/390 version/release level most recently ordered.

### Program Reorder Form

A Program Reorder Form will not be offered to current licensees of OS/390 Version 2 to obtain Release 10.

In the past the PRF was used to obtain deliverables, refreshed from previous releases within Version 2, that are not shipped via OS/390 Customized Offerings (ServerPac, SystemPac, CBPDO). These deliverables include hardcopy publications, tapes, diskettes, CD-ROMs.

Since OS/390 Version 2 Release 10 has issued new feature numbers for OS/390 BASE, a prompt will occur at ORDER ENTRY time for the numbers. This will allow the order to include the Release 10 level of hardcopy publications, CD-ROMs, and diskettes.

In addition to the new OS/390 Release 10 feature numbers offered, (refer to the **Feature Numbers Added** section of this announcement), other features will have to be considered.

Current licensees who wish to order a feature that is NEW to OS/390 between their Version 2 Releases 4, 5, 6, 7, 8, 9, and Version 2 Release 10 need to consider the following features:

OS/390 Function Description	9/6250 Tape	3480 Cart	4-mm DAT	Notes
IBM Communications Server Security Level 1	5786	5787	5788	(1,2)
IBM Communications Server Security Level 2 (DES)	5789	5790	5791	(1,2)
IBM Communications Server Security Level 3 (TDES)	5792	5793	5794	(1,3)
IBM HTTP Server NA Secure	5507	5508	5509	(3)
Open Crypto Services Facility Security Level 3 (RC2/RC4/RC5, DES, TDES support)	5795	5796	5797	(3)
System SSL Security Level 3 (RC2/RC4, TDES support)	5731	5753	5506	(3,4)
Infoprint Server	5040	5041	5042	(5)
Infoprint Server JAPAN	5111	5112	5337	(5)
Infoprint Server SPANISH	5525	5526	5398	(5)

**Notes:**

- (1) Includes feature number content formerly known as eNetwork (TM) or SecureWay Communications Server Security Levels 1,2,3 in Release 7, 8, and 9 prior to Release 7 known as TCP/IP Kerberos, IP Security.
- (2) The IBM Communications Server Security Level 1 and Level 2 features are mutually exclusive. Only one needs to be ordered for you to obtain additional security function over what is provided in the OS/390 base.
- (3) Triple DES encryption can now be shipped outside the U.S. and Canada to all customers except governments. For government customers, a special export license is required which must be obtained and provided to your IBM representative PRIOR to order submission. The definition of a government customer does NOT include:
  - o Utilities (including telecommunications companies and Internet service providers)
  - o Banks and financial institutions
  - o Transportation
  - o Broadcast or entertainment
  - o Educational organizations
  - o Civil health and medical organizations
  - o Retail or wholesale firms
  - o Manufacturing or industrial entities not engaged in the manufacture or distribution of items or services related to munitions
- (4) System SSL Security Level 3 was formerly known as System SSL Crypto
- (5) Infoprint Server is formerly known as OS/390 Print Server, which includes IP PrintWay (TM), NetSpool(TM) and OS/390 Print Interface.

**New Licensees**

**Notes**

- The last date for ordering OS/390 Version 2 Release 9 is September 14, 2000.

To allow for adequate order processing time, we recommend that all OS/390 Version 2 Release 9 orders be submitted no later than September 5, 2000, so that they can meet the process deadline of September 14, 2000.

- The first date for ordering OS/390 Version 2 Release 10 is September 15, 2000.

For OS/390 Version 2 Release 10 price proposals, the CFSW configurator stand-alone path for 5647-A01 will be updated to support Release 10 on May 16, 2000.

Most OS/390 media is only shipped via OS/390 Customized Offerings (ServerPac, SystemPac and CBPDO). CFSW configuration and order entry capability for ServerPac, SystemPac, and CBPDO for OS/390 Version 2 Release 10 will be available beginning September 15, 2000.

Production of OS/390 Version 2 Release 10 orders will begin on the general availability date, September 29, 2000. 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 general 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 general availability. In all cases, no delivery commitments are to be made to the customer until confirmed arrival dates are in AAS.

**Note:** For all OS/390 orders, the current customer install base of the OS/390 Customized Offering 5751-CSx (not the install base of 5645-001 or 5647-A01) must be retained to determine the OS/390 version/release level most recently ordered. Availability date will be assigned a schedule date of one week.

Shipment will begin on the planned availability date.

- Orders that ship before the planned availability will receive OS/390 Version 2 Release 9.
- Orders that ship after the planned availability date will receive OS/390 Version 2 Release 10.

New users of OS/390 should specify:

Type	Model
5647	A01

New licensees should also consult the following announcements for recent changes to pricing information:

- Software Announcement 299-052, dated February 22, 1999 (PSLC Level D Price Introduction for S/390 Software Products)
- Software Announcement 998-273, dated September 29, 1998 (Software Withdrawal and Changes: Measured Usage License Charges for S/390 Software Products)
- Software Withdrawal Announcement 998-294, dated September 29, 1998 (One-Time Charge (OTC/GOTC) Option for S/390)
- Software Withdrawal Announcement 998-295, dated September 29, 1998 (Selected IBM Basic and DSLO Licensing Options for S/390, MVS, and OS/390)
- Software Announcement 298-355, dated September 29, 1998 (PSLC Level C Price for S/390 Software Reduces the Cost of Growing Workloads)
- Software Announcement 298-357, dated September 29, 1998 (New Usage Pricing for S/390 Software Products)

**Basic License**

To order a basic license,specify the program number and feature number 9001 for asset registration. Refer to:

- Software Announcement 200-030, dated February 29, 2000
- Software Announcement 299-234, dated August 24, 1999
- Software Announcement 299-042, dated February 22, 1999
- Software Announcement 298-278, dated August 18, 1998
- Software Announcement 298-049, dated February 24, 1998
- Software Announcement 297-355, dated September 9, 1997

When OS/390 Version 2 Release 10 is available, OS/390 Version 2 Release 9 will no longer be available.

**Basic Machine-Readable Material**

**Features Added to Release 10 Marketing, effective May 16, 2000.**

**Basic Features**

OS/390 Function	Feature Number	
	3480 Cartridge	4-mm DAT
Release 10 Base	6113	6112

**Features Withdrawn from Release 10 Marketing, effective end of day September 14, 2000.**

**Basic Features**

OS/390 Function	Feature Number	
	3480 Cartridge	4-mm DAT
Base (V2R4-R9)	5802	5700

**Licensing Features Withdrawn**

The 6250 licensing features are all being withdrawn with Release 10, effective May 16, 2000. The 6250 media type will still be available in OS/390 Customized Offerings (ServerPac, CBPDO, SystemPac).

**Note:** Customer orders should be configured using the 3480 licensing features.

A list of these feature numbers and their corresponding elements is below.

**Base Features**

**6250**

Licensing Feature	Element Name
5801	Base

For more information, refer to:

- Software Announcement 200-030, dated February 29, 2000
- Software Announcement 299-234, dated August 24, 1999
- Software Announcement 299-042, dated February 22, 1999
- Software Announcement 298-278, dated August 18, 1998
- Software Announcement 298-049, dated February 24, 1998
- Software Announcement 297-355, dated September 9, 1997
- Software Announcement 297-194, dated June 8, 1997 (the initial OS/390 Version 2 announcement)

**Optional Machine-Readable Material**

**Feature Numbers Added to Release 10 Marketing, effective May 16, 2000.**

**NLV Features**

OS/390 Release 10 NLV Function	Feature Number	
	3480 Cartridge	4-mm DAT
R10 Brazilian/Portuguese Base (PTB)	6079	6080
R10 Canadian French Base (FRC)	6099	6135
R10 Danish Base (DAN)	6108	6109
R10 Dutch Base (NLD)	6111	6110
R10 French Base (FRA)	6117	6116
R10 German Base (DEU)	6118	6119
R10 Italian Base (ITA)	6154	6155
R10 Japanese R10 Base	6124	6125
R10 Upper Case English Base (ENP)	6115	6114
R10 Korean Base (KOR)	6156	6123
R10 Norwegian Base (NON)	6127	6126
R10 Spanish Base (ESP)	6129	6128
R10 Swedish Base (SVE)	6130	6131
R10 Swiss German Base (DES)	6133	6132
R10 Simplified Chinese Base (CHS)	6102	6138
R10 Traditional Chinese Base	6106	6134

**Feature Numbers Withdrawn from Release 10 Marketing, effective end of day September 14, 2000.**

**Priced Optional Features**

OS/390 Function	Feature Number	
	3480 Cartridge	4-mm DAT
DFSMS dss, hsm, rmm	5976	5713
DFSMS dss, rmm	5017	5723
VisualLift® ADE		5010

**Feature Numbers Withdrawn from Release 10 Marketing, effective end of day September 14, 2000.**

**Unpriced Optional Features**

OS/390 Function	6250 Tape	Feature Number	
		3480 Cartridge/ Compressed	4-mm DAT
IBM HTTP Server Export Secure <sup>10</sup>		5511	5512
IBM HTTP Server France Secure <sup>10</sup>		5514	5515
System SSL Security Level 2 <sup>10</sup>		5044	5045
Product Library on Tape 7003		7004/7005	7006

<sup>10</sup> The above features are withdrawn because the function is now in the base.

**Feature Numbers Withdrawn from Release 10 Marketing, effective end of day September 14, 2000.**

**NLV Features**

OS/390 Version (2 Rel 4-9) NLV Function	Feature Number	
	3480 Cartridge	4-mm DAT
Brazilian/Portuguese Base (PTB)	6728	6729
Canadian French Base (FRC)	6794	6796
Danish Base (DAN)	6701	6702
Dutch Base (NLD)	6746	6747
French Base (FRA)	6755	6756
German Base (DEU)	6704	6705
Italian Base (ITA)	6713	6714
Japanese Base	6768	6769
Upper Case English Base (ENP)	6094	6095
Korean Base (KOR)	6749	6750
Norwegian Base (NON)	6737	6738
Spanish Base (ESP)	6716	6717
Swedish Base (SVE)	6740	6741
Swiss German Base (DES)	6725	6726
Simplified Chinese Base (CHS)	6743	6744
Traditional Chinese Base	6752	6753

**Optional Media Features Withdrawn (Including NLV)**

The 6250 licensing features are all being withdrawn with Release 10, effective May 16, 2000. The 6250 media type will still be available in OS/390 Customized Offerings (ServerPac, CBPDO, SystemPac).

**Note:** Customer orders should be configured using the 3480 licensing features.

A list of these feature numbers and their corresponding optional elements is below.

**Priced Optional Media Features Withdrawn**

Element Name	6250 Licensing Feature
BDT FTF	5871
BDT SNA NJE	5881
BookManager Build	5891
C++ With Debug	5962
C++ Without Debug	5036
DFSMS dss, hsm, rmm	5975
DFSMS dss, rmm	5016
DFSMS dss, hsm	5024
DFSMS rmm	5026
DFSMS dss	5028

**Element Name**

DFSORT	5949
GDDM-PGF	5012
GDDM-REXX	5988
HCM	5754
HLASM Toolkit	5503
Infoprint Server	5040
JES3	5000
RMF	5034
SDSF	5735
SOMobjects™ ADE	5002
SecureWay Security Server	5030
VisualLift ADE	5010
R6 Print Server	5772

**Unpriced Optional Media Features Withdrawn**

**Element Name**

IBM HTTP Server NA Secure	5507
IBM HTTP Server Export Secure	5510
IBM HTTP Server France Secure	5513
OCSF Security Level 3	5795
IBM Communications Server Security Level 1	5786
IBM Communications Server Security Level 2	5789
IBM Communications Server Security Level 3	5792
IBM Communications Server Network Print Facility	5851
System SSL Security Level 2	5043
System SSL Security Level 3	5731
R6 DCE User Privacy CDMF	5018
R6 DCE User Privacy DES/CDMF	5831
R6 Domino Go Webserver NA	5766
R6 Domino Go Webserver Export	5769
R6 Domino Go Webserver France	5775
R6 IP Security CDMF	5747
R6 IP Security DES/CDMF	5744
R6 IP Security TDES	5782
R6 LE Data Decryption	5821
R6 OCSF France	5718
R6 OCSF Security Level 1	5516
R6 OCSF Security Level 2	5798
R6 Print Server Spanish	6150
R6 Print Server Japan	6706
R6 Security Server LDAP (DES)	5778
R6 TCP/IP Kerberos Non-DES	5841
R6 TCP/IP Kerberos DES	5861

**NLV Optional Media Features Withdrawn**

**Element Name**

Brazilian/Portuguese Base (PTB)	6727
Brazilian/Portuguese BookMgr Build	6733
Canadian French Base (FRC)	6763
Canadian French BookMgr Build	6764
Danish Base (DAN)	6700
Dutch Base (NLD)	6745
French Base (FRA)	6754
French BookMgr Build	6760
German Base (DEU)	6703
German BookMgr Build	6709
Italian Base (ITA)	6712
Japanese Base	6767
Japanese C++ Debug	6776

Japanese C++ No Debug	6779
Japanese SOM ADE	6782
Japanese SDSF	6087
Japanese DFSORT	6090
Japanese RMF	6791
Japanese Security Server	6788
Japanese Infoprint Server	5111
Upper Case English Base (ENP)	6093
Korean Base (KOR)	6748
Norwegian Base (NON)	6736
Spanish Base (ESP)	6715
Spanish BookMgr Build	6721
Spanish Infoprint Server	5525
Swedish Base (SVE)	6739
Swiss German Base (DES)	6724
Simplified Chinese Base (CHS)	6742
Traditional Chinese Base (CHT)	6751

**Release 6 Features Withdrawn from Marketing, end of day September 14, 2000.**

OS/390 Version 2 Release 6 Function	Feature Numbers		CD-ROM
	3480 Cartridge	4-mm DAT	
R6 DCE User Privacy CDMF	5019	5724	
R6 DCE User Privacy DES/CDMF	5832	5704	
R6 Domino Go Webserver NA	5767	5768	
R6 Domino Go Webserver Export	5770	5771	
R6 Domino Go Webserver France	5776	5777	
R6 IP Security CDMF	5748	5749	
R6 IP Security DES/CDMF	5745	5746	
R6 IP Security TDES	5783	5784	
R6 LE Data Decryption	5822	5703	
R6 OCSF France	5719	5720	
R6 OCSF Security Level 1	5517	5717	
R6 OCSF Security Level 2	5701	5702	
R6 Pre-Configured CD-ROM			5819
R6 Print Server	5773	5774	
R6 Print Server Spanish	6151	6152	
R6 Print Server Japan	6707	6708	
R6 Security Server LDAP (DES)	5779	5780	
R6 TCP/IP Kerberos Non-DES	5842	5705	
R6 TCP/IP Kerberos DES	5862	5707	

**Triple DES Feature Information**

Triple DES encryption can now be shipped outside the US and Canada to all customers except governments. For government customers, a special export license is required which must be obtained and proved to your IBM Representative **PRIOR** to order submission.

The definition of a government customer does **NOT** include:

- Utilities (including telecommunications companies and Internet service providers)
- Banks and financial institutions
- Transportation
- Broadcast or entertainment
- Educational organizations
- Civil health and medical organizations

- Retail or wholesale firms
- Manufacturing or industrial entities not engaged in the manufacture or distribution of items or services related to munitions

This is pertinent to the following elements:

- IBM HTTP Server NA Secure
- Open Cryptographic Services Facility Security Level 3
- SecureWay Communications Server Security Level 3
- System SSL Security Level 3

**NLS Features**

There are no new media feature numbers for NLS, refer to the previous announcement of OS/390 Version 2.

**Unlicensed Documentation**

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

**Basic/Unlicensed Hardcopy Publications**

Title	Order Number
MVS Conversion Notebook	GC28-1747
MVS JCL Reference	GC28-1757
MVS Planning: Workload Management	GC28-1761
MVS System Codes	GC28-1780
MVS System Commands	GC28-1781
MVS System Messages V1	GC28-1784
MVS System Messages V2	GC28-1785
MVS System Messages V3	GC28-1786
MVS System Messages V4	GC28-1787
MVS System Messages V5	GC28-1788
JES2 Commands	GC28-1790
JES2 Messages	GC28-1796
JES2 Migration	GC28-1797
JES3 Commands	GC28-1798
JES3 Migration	GC28-1799
JES3 Messages	GC28-1804
Security Server Planning & Migration	GC28-1920
C/C++ Comp Run Migration	SC09-2359
DFSMS Acc M. Serv. for Catalogs	SC26-7326
DFSMS Migration	SC26-7329
ISPF Planning & Customization	SC28-1298
DCE Planning	SC28-1582
SMP/E Messages	SC28-1738
MVS I&T Reference	SC28-1752
JES2 I&T Reference	SC28-1792
JES3 I&T Reference	SC28-1803
UNIX System Services Planning	SC28-1890
Language Environment Migration	SC28-1944
Communications Server IP Migration	SC31-8512
Communications Server Messages IP V1	SC31-8517
Communications Server SNA Migration	SC31-8622
Communications Server SNA Messages	SC31-8569
Communications Server Messages IP V2	SC31-8570
Communications Server Codes	SC31-8571
Communications Server Messages IP V3	SC31-8674

**Notes**

1. OS/390 Licensed Program Specifications (GC28-1728) is available in PDF format on the OS/390 PDF Library Collection on CD-ROM (SK2T-6718), and also on the Web at:

<http://www.s390.ibm.com/os390/bkserv/r10pdf/>

under the "OS/390 System-Level Books" heading.

2. *OS/390 Installation Planning Kit* (GK2T-6710) will be available at general availability and is included in the OS/390 Release 10 new licensee package. Individual publications in the kit will be available to order on September 15, 2000. The kit consists of the following hardcopy publications:

- Installation Planning Kit Memo (GA22-7304)
- OS/390 Hot Topics Newsletter (GA22-7431)
- OS/390 Introduction and Release Guide (GC28-1725)
- OS/390 Planning for Installation (GC28-1726)
- OS/390 Information Roadmap (GC28-1727)

**Optional Unlicensed Hardcopy Publications:** Specifying the appropriate feature number will supply the following optional unlicensed material. These products will be available from IBM at general availability for a fee.

and Codes	
Security Server Messages and Codes	SC28-1918
Language Environment Programming Guide	SC28-1939
OS/390 Language Environment Customization	SC28-1941
Language Environment Debug Messages	SC28-1942
OS/390 RMF User's Guide	SC28-1949
OS/390 Communications Server SNA Network Implementation	SC31-8563
OS/390 Communications Server SNA Res Def	SC31-8565
OS/390 Communications Server SNA Operations	SC31-8567
OS/390 Communications Server IP Configurator Guide	SC31-8725
OS/390 Communications Server IP Configurator Reference	SC31-8726

Library Title	Feature Number
OS/390 Hardcopy Unlicensed Publications	8007

**List of Hardcopy Unlicensed Publications**

Title	Order Number
HLASM Toolkit Installation Guide	GC26-8711
ISPF Messages & Codes	GC28-1326
OS/390 MVS Product Management	GC28-1730
OS/390 LANRES Installation Guide	GC28-1736
MVS Dump Output Messages	GC28-1749
OS/390 HCD Planning	GC28-1750
OS/390 MVS Routing & Descriptor Codes	GC28-1778
OS/390 HCD Messages	GC28-1849
RMF Messages & Codes	GC28-1948
TSO/E Messages	GC28-1978
OS/390 Infoprint Server Introduction	G544-5696
ICSF Messages	SC23-3977
OS/390 Distributed File Service SMB Administration Guide and Reference	SC24-5882
OS/390 DFSMSdftp™ Advanced Services	SC26-7330
OS/390 DFSMS Storage Administration Reference	SC26-7331
OS/390 DFSMS Macro Instructions for Data Sets	SC26-7337
OS/390 DFSMSdftp Using Data Sets	SC26-7339
OS/390 DFSMS Utilities	SC26-7343
OS/390 DFSMSrmm Guide & Reference	SC26-7333
OS/390 DFSMSrmm Implementation and Customization	SC26-7334
HLASM Programming Guide	SC26-4941
DFSORT Messages & Codes	SC26-7050
OS/390 NFS Customization and Operations	SC26-7253
OS/390 DFSMS Program Management	SC27-0806
OS/390 DCE Configuring and Getting Started	SC28-1583
DCE Messages and Codes	SC28-1591
OS/390 Distributed File Service (DFS) Configuring and Getting Started	SC28-1722
OS/390 Distributed File Service Messages and Codes	SC28-1724
BDT Messages & Codes	SC28-1745
OS/390 SMP/E Commands	SC28-1805
OS/390 SMP/E Reference	SC28-1806
OS/390 HCD User's Guide	SC28-1848
OSA/SF User's Guide	SC28-1855
UNIX System Services Messages	SC28-1908

Title	Order Number
GDDM Messages	SC33-0869
GDDM V3R2 Customization	SC33-0871
DFSORT R14 Installation and Customization	SC33-4034
OS/390 ISPF User's Guide Vol1	SC34-4791
OS/390 ISPF User's Guide Vol2	SC34-4792
BookManager Read/MVS Installation and Customization	SC38-2035
OS/390 DFSMS Installation Exits	SC26-7392

**Notes**

1. Specifying this feature number will supply additional hardcopy books (about 50) for the applicable OS/390 elements or optional features.

This feature number contains:

- OS/390 books with messages and codes that are not already included in the set of hardcopy books that you automatically receive with your order
- Some additional installation-related books

A complete list of the titles (and whether each book is basic, softcopy-only, or optionally available in hardcopy as well as softcopy) can be found in *OS/390 Information Roadmap* (GC28-1727).

2. If the set of OS/390 publications above are chosen, a one-time-charge (OTC) is incurred.
3. The price for the documentation feature number is approximately the sum of the costs of the individual books in the feature number. If all of the books are ordered individually, the total cost might be slightly different. You can order the Optional Unlicensed Hardcopy publication feature numbers for this release only while the release itself is orderable.

You can also obtain books through the Publication Ordering System on the Web. You can select the appropriate country and order books online. The prices for the books are displayed in your local currency. The Publication Ordering System can be found at:

<http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>

Additional copies of the unlicensed publications (those in the basic set, 8007, and some others as well) will be available for a fee after general availability. These copies may be ordered from your IBM representative, or by direct order.

## Displayable Softcopy Publications

OS/390 publications are offered in displayable softcopy form, in both BookManager and PDF format. 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.

Displayable publications on the OS/390 Collection (SK2T-6700) and the OS/390 Version 2 Licensed Product Library (LK2T-2499) can be used with:

- The new IBM Softcopy Reader
- BookManager READ or BookServer in any of the supported environments
- The IBM Library Readers for DOS, OS/2, and Windows

The IBM Readers are included at no charge on the CD-ROMs.

Beginning in June 2000, the new IBM Softcopy Reader is available on various IBM Online Library CD-ROMs. The code is included in a zip file, along with instructions for installing the code and information about where to get help. The latest level of the code is also provided for downloading as a self-extracting zip file from URL:

<http://booksrv2.raleigh.ibm.com/homepage/new.html>

The Infoprint Server for OS/390, with the Infoprint Server Transforms, allows you to print high quality copies of the PDF format books.

Displayable publications on the OS/390 V2R10.0 PDF Library Collection (SK2T-6718) can be used with one of the Adobe Acrobat readers to view and print high-quality hardcopy books that look very similar to the printed books ordered from IBM. This collection contains PDF files for unlicensed Version 2 Release 10 books for the OS/390 base and optional features.

The OS/390 V2 Licensed Product Library (LK2T-2499) contains PDF files as well as BookManager files for the current OS/390 Version 2 licensed books.

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