



IBM OS/390 Version 2 Release 8 Availability and Release 9

Overview

The Web has created unprecedented ways to deliver products to customers, to develop inter-relationships with suppliers, and provide information to employees.

The result? More demands on information systems and applications. They must process unpredictable transaction volume and more automated, complex data analysis. In response, S/390® has evolved the online transaction processing (OLTP) model into e-transaction processing (e-tp) for mission-critical e-business transactions.

e-tp supports more than publishing and accessing information on the Web. With e-tp, you can integrate Internet technology with your billing, inventory, and order-fulfillment systems. Then leverage what you know about customers, transactions, buying patterns, traffic flow and more, to transform the way you conduct your business, and become more competitive! e-tp retains and advances all of the characteristics you've depended upon in the OLTP model:

- Positioned for growth and usable capacity
- Ability to manage transactions across the entire system
- Robust security and security management
- High availability
- High data throughput
- Transaction level accounting
- Interoperability of applications

The basic infrastructure for e-tp resides in prior releases of OS/390® and the S/390 Parallel Enterprise Server™ —series and is further enhanced in Releases 8 and 9. Even if your business is not yet positioned for e-tp, Releases 8 and 9 have enhancements and new capabilities to support your traditional environment.

Key Prerequisites

For a complete description of OS/390 Version 2 Release 8 hardware and software prerequisites, refer to the *OS/390 Planning for Installation* (GC28-1726) publication at URL:

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

Planned Availability Dates

- September 24, 1999 — Release 8
- March 31, 2000 — Release 9

At a Glance

Release 8 includes:

- Centralized management of digital certificates
- Ability to non-disruptively refresh encryption keys
- Adoption of the Internet Key Exchange (IKE) protocol
- Lightweight Directory Access Protocol (LDAP) is distributed fully enabled at no charge
- Higher availability of TCP/IP in a Parallel Sysplex® environment
- SNA users can take advantage of Triple DES security
- Improvements to how Web-initiated transactions are prioritized
- New automatic data stream transforms are available
- Ability to print ASCII datastreams on AFP™ printers
- Easier porting of UNIX® shell scripts

Plans for OS/390 Version 2 Release 9 include:

- Native file and print serving for Windows™ clients
- Text Search support for XML documents and Unicode data
- Higher standards compliance for the WebSphere™ server and support for VisualAge® for Java™ Tooling and WebSphere Studio Tooling
- New functions and RAS enhancements in the UNIX environment
- Improved monitoring of Coupling Facility structure full conditions

For ordering, contact:

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800-IBM-CALL

Reference: ME001

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Description

Integrating Internet technology with your business processes poses daunting business issues. The type of work that needs to be processed is unpredictable. A transaction could be launched from a traditional green-screen-based application but just as often from a Web browser, multi-media kiosk, or voice-activated device. Today, it might be initiated from a supplier with a direct network connection, or from a consumer using an Internet Service Provider. The system must be able to handle this with limited downtime and uncompromised security.

New and enhanced functions in OS/390 Releases 8 and 9 support:

- An e-business transaction environment that securely processes your data and business logic
- An application environment to support new technologies that have evolved from the Internet
- Ways to optimize existing IT investments so that new business applications can be deployed

OS/390 Version 2 Releases 8 and 9

e-business

IBM continues to provide enterprise-class universal connectivity and information access for cost-effective network computing in the S/390 e-business environment. Enhancements to security, network usability, performance, and interoperability of mixed networks are all delivered in Release 8.

Building Blocks for Secure e-business

The core enabling technology for secure e-business is digital certificates, which provide a basis for establishing secure sessions between partners in an e-business transaction.

Improvements to Server Digital Certificates: The RACF® component of the OS/390 Release 4 Security Server provides the ability to store digital certificates in the RACF database, and to associate a digital certificate with a RACF user ID; typically, this is used to map a browser user certificate to a RACF user ID for controlling access to S/390 resources.

A crucial part of implementing digital certificates is managing the certificates used by server applications, and ensuring there is an uncompromised chain of trust. These certificates also have associated encryption keys that are private and must not be revealed.

In OS/390 Release 8, the SecureWay™ Security Server for OS/390 provides functions to help manage server certificates and to help protect server private keys in a uniform and secure way. The primary application interface to these new functions is provided by Open Cryptographic Enhanced Plug-ins (OCEP), a new component of Security Server. The functions are incorporated into two plug-ins: one for data library services, and one for a trust policy manager. OCEP functions are to be used by applications complying with Common Data Security Architecture (CDSA) standard interfaces. This will help make it easier for application developers and independent software vendors (ISVs) to develop and port applications to the S/390 platform. It will also help customers apply consistent security rules to e-business applications that use digital certificates.

Improvements to Client Digital Certificates: The Security Server previously provided the ability to map digital certificates to a RACF user ID. Users could enter the system to logon using their certificate and access server resources using their RACF user ID. This support has been enhanced such that each user certificate does not need to be installed individually in RACF. You can now have the ability to map groups of certificates to a RACF user ID based on criteria such as an application or system variable. This function is available on Release 8 via APAR OW40129 and APAR OW40130.

Improvement to User-Identity Mapping: In Release 8, the Security Server provides the ability to associate RACF user IDs to:

- **Lotus® Domino™ user IDs** — This will be used in the OS/390 WebSphere HTTP Connector to Domino function of Lotus Domino for S/390; it allows a Web user who has been authenticated with a certificate or RACF user ID by IBM HTTP Server for OS/390 to access Lotus Domino for S/390 without the need for a separate logon to Lotus Domino.

Improvements to Directory Services: Also in Release 8, the LDAP client and server will be distributed as fully enabled (no charge) portions of the Security Server. LDAP is a fast-growing technology for new network application development. It is a standards-based directory capability implemented with both LDAP Client and LDAP Server components on OS/390. In Release 8, the LDAP Server is being enhanced to support the LDAP Version 3 protocol. The OS/390 Release 8 LDAP Server is able to interoperate with LDAP clients on OS/390 and other platforms which support the V3 protocol. Highlights:

- Applications are able to interrogate a server to determine whether desired operations are supported by that server.
- Multiple servers are able to manage different parts of the LDAP namespace in a standardized and seamless way. This allows multiple LDAP servers, perhaps in multiple geographic locations, to appear as one server to an application. This can greatly simplify LDAP application design and configuration.
- Applications will be able to authenticate themselves to an LDAP server using an X.509 digital certificate via Secure Socket Layer (SSL). Optionally, certificates can be stored in RACF. Digital certificates can now be used to provide strong authentication of LDAP application users.
- The LDAP server can now handle UTF-8 data. This allows storage and retrieval of any international character data without data loss. This is essential to cross-platform and cross-geography interoperation of LDAP servers and clients.

Additional enhancements for your e-business enterprise can be found in the **Supplemental Information** section of this announcement. Some highlights are:

- Network Usability and Performance
- Security Improvements
- System Management Improvements
- Availability Improvements
- Web Serving and Java Enhancements
- OS/390 Text Search Improvements

Applications

The OS/390 operating system is a dependable and secure operating system for business applications. With the industry move to e-business application development,

new applications are created that require that same traditional security. You want to access existing business logic and data that reside on your enterprise servers regardless of the environment in which they currently execute. You want the option to choose the proper execution environment for new applications without being forced into one specific environment. OS/390 offers the required flexibility to move traditional applications into the next millennium and to grow new applications on a solid infrastructure.

User Security Administration

In Release 8, enhancements to OS/390 UNIX System Services ensure that your growth applications are running on a secure environment. UNIX System Services SuperUser Controls allow for selective assignment of UNIX System Services security. RACF access control can be used to grant limited (or selected) subsets of superuser privileges to specific users, rather than having to grant complete superuser authority. Also, limits that were previously set at a system level (such as the maximum number of threads per process) can now be assigned at a user level. These new controls improve system security by limiting the number of users who require system-wide superuser authority.

Easier Application Porting

There are numerous enhancements to OS/390 UNIX System Services delivered in Release 8:

- **Porting of ASCII-based UNIX applications to OS/390** has been simplified through the placement of libascii into the base of OS/390 Language Environment®. The libascii package helps you port ASCII-based C and C++ applications to the EBCDIC-based OS/390 UNIX environment.
- **Native support of sprintf() and vsprintf()** functions will improve your performance in ASCII-based UNIX applications.
- **Interoperability of (ASCII) and (EBCDIC) data** will be supported through data converters to and from UTF-8 and UCS-2, so more applications can access your data.
Note: This support will not work for DB2® and CICS® in Release 8.
- **The Magic Number “#!” is now recognized** and allowed as the first two characters in an executable file. Support of magic number processing eliminates the need to change your application which uses #! to run on OS/390. It also allows ported applications that support “#!”, a commonly used UNIX function, to work without having to revise the program.
- **The porting of shell scripts from other platforms will be made easier** through added shell support for double-square-bracket conditional testing, and autoloading function. These functions are considered to be commonly used functions in UNIX and will enhance the use of UNIX System Services for your UNIX programmers.

In Release 9, porting of C and C++ applications to OS/390 will be simplified through new Language Environment and OS/390 UNIX System Services support. Language Environment will support **printf()** and **scanf()** formatting of 64-bit integers, and the OS/390 UNIX System Services debugger will support 64-bit integers. Additionally, UNIX System Services will support shared object libraries, a UNIX fuser utility, and signal queueing.

Additional enhancements in Releases 8 and 9 will improve your work with applications. Refer to the

Supplemental Information section of this announcement for more information on the following:

- Debugging Improvements
- Greater Usability
- Installation and Maintenance Enhancements

Printing Power

OS/390 Print Server was introduced in Release 5 to allow you to consolidate print work loads from LAN servers onto S/390. In Release 8, Print Server has been renamed to Infoprint® Server for OS/390, to reinforce its membership in IBM's flagship family of printing solutions for the enterprise.

Release 8 includes additional support for print server consolidation. It also introduces datastream transforms and new state-of-the-art support for e-business applications that require printing over the Internet.

Automatic Datastream Transforms and Printing over the Internet (Format and Protocol Support)

Printers on OS/390 don't always support the datastreams generated by popular PC-based or UNIX applications. And installing special drivers requires additional workstation management and user training. Infoprint Server now supports the use of datastream transforms to translate data from one printer format to another. The transforms are delivered separately as Infoprint Server Transforms (5697-F51). This product is available at no additional charge for customers of Infoprint Server for OS/390. The initial release of this product provides transforms that convert PCL, Postscript, and PDF files, and output from SAP R/3 applications into AFP datastreams for printing on high-speed or departmental AFP printers. The Postscript and PDF transforms will be available via a PTF for APAR OW40194 in the fourth quarter of 1999. For more information, refer to Software Announcement 299-235, dated August 24, 1999.

Infoprint Server provides a callable API to its transform services. Any application program can invoke the transforms directly for datastream conversion. Customers can provide their own datastream transforms through the use of the transform API. This provides the flexibility and capability to draw on many sources for datastream transformations, and provides investment protection for your existing installed printers.

Note: Transforms are offered at no additional charge but must be ordered separately (with ServerPac-capable delivery) as Infoprint Server Transforms for OS/390 (5697-F51). Refer to Software Announcement 299-235, dated August 24, 1999, for details.

As your company embraces new e-business processes and applications to position itself for the next millennium, you will need an integrated, reliable, secure method for printing over the Internet. Internet Printing Protocol (IPP) is emerging as the open standard for printing from any computer to any printer or server via the Internet. Infoprint Server includes both an IPP Server and an IPP client. Print jobs can be submitted over the Internet for printing on OS/390, or routed from OS/390 over the Internet to a printer or server. At least twenty-six vendors have developed printing solutions using IPP, including operating system software and printers with imbedded IPP. To view a list of these vendors visit the following URL and select the IPP topic:

<http://www.pwg.org/ipp/testing/bakeoff2.html>

Other Infoprint Server for OS/390 enhancements can be found in the **Supplemental Information** section of this announcement:

- Single Printer Inventory for all OS/390 Printer Definitions
- Distributed Printer Management
- Support for Enterprise Resource Planning (ERP) Systems
- Seamless printing from Windows to OS/390

Additional Information

Version 2 Release 8

The basic infrastructure for e-tp resides in prior releases of OS/390. Enhancements in Release 8 help make the transition to e-tp even smoother. Even if your business is not yet positioned for e-tp, Release 8 has enhancements and new capabilities to support your traditional environment. For a complete list of Release 8 items and enhancements, refer to the *OS/390 Introduction and Release Guide (GC28-1725)*. You can view it online right now by visiting the following URLs:

For the BookManager® bookfile format, go to:
<http://www.s390.ibm.com/bookmgr-cgi/bookmgr.cmd/BOOKS/E0Z1A130/CCONTENTS>

For the Adobe Acrobat PDF file format, go to:
<http://www.s390.ibm.com/ftp/books/os390/pdf/e0z1a130.pdf>

Version 2 Release 9

For an early look at some new or enhanced items in Release 9, refer to the **Supplemental Information** section of this announcement.

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.

Hardware and Software Support Services

SmoothStart™ /Installation Services

SmoothStart Services, an on-site implementation and training startup services designed to help accelerate a customer's productive use of their IBM solution, is provided by IBM Global Services or the customer's IBM Business Partner at an additional cost. For more information on IBM 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.

Reference Information

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

- Software Announcement 299-042, dated February 22, 1999, (OS/390 Version 2 Release 7 Availability)
- Software Announcement 298-278, dated August 18, 1998, (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, (OS/390 Version 2 Release 4 Availability)
- Software Announcement 297-194, dated June 9, 1997, (OS/390 Version 2)

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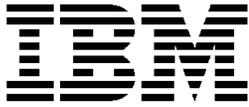
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IBM US Announcement Supplemental Information

August 24, 1999

e-business

Network usability is improved in Release 8 for optimal use of your resources. Enhancements increase your flexibility to make a more effective S/390® e-business environment. Improvements to Web-serving and an advanced search engine enable you to run a more efficient business. Release 8 enhancements:

SecureWay™ (formerly eNetwork™) Communication Server for OS/390® provides the enterprise-class network computing infrastructure for OS/390 e-business environments. You can locate resources such as people, information and applications throughout the enterprise. It connects users and applications to these resources across multiple systems with secure communications of data and transactions.

Security Improvements

- **Internet Key Exchange (IKE)** is an Internet Engineering Task Force-endorsed key and security association management protocol for IPSec. With the IKE support available in the Security Server, CS OS/390 can automatically create and securely distribute encryption keys for dynamic IP clients. This will help to reduce efforts to manage and distribute encryption keys. The availability of non-disruptive key refresh makes it much more practical to change keys frequently. This practice fortifies your protection against brute-force attacks on the network.
- **Security against unauthorized access to SNA applications** by TCP/IP clients is improved with the addition of Secure Sockets Layer (SSL) client authentication. This capability requires end-users to present a valid certificate before accessing the TN3270 server.
- **TN3270 Exploitation of RACF® Certificates** provides an additional security checking mechanism to ensure an end-user is authorized to use the TN3270 server. This pre-login access control is exclusive to S/390. It is provided by mapping an SSL-authenticated client certificate to a RACF user ID.
- **SNA users can now take advantage of Triple DES** session level encryption for improved encryption capability. These enhancements combine Internet-based technology and mainframe strengths to provide a more secure access to mission-critical SNA applications.

Note: The SNA Triple DES function is delivered via the base element, SecureWay Communications Server for OS/390, when run on a S/390 Parallel Enterprise Server™. This particular encryption is enabled by the hardware.

- **Protected User IDs** are introduced. Many internal OS/390 processes are assigned RACF user identities which allow auditing and authorization, but are not intended for users (or other systems). In today's e-business environment, protecting such system

resources from unauthorized use is imperative. In Release 8, RACF user IDs that are defined for OS/390 UNIX®, UNIX daemons, and other important subsystems or started tasks can be protected from being used for other purposes. You can now define RACF user IDs that cannot be used for activities such as logging on to TSO, or signing on to CICS®. This change provides you with further protection from hackers or malicious users.

Management Improvements

- **Service Policy enhancements** improve your ability to monitor and manage Service Level Agreements (SLA) and allow non-disruptive dynamic updating for service policy changes whenever needed.
- **Managing mixed TCP/IP and SNA network environments** is easier with an enhanced VTAM® display. Network personnel improve end-user support by identifying the DNS name of a connecting TN3270 client, IP address and SNA LU resource status.

Availability Improvements

- **Virtual IP Addressing (VIPA) Takeover** offers higher availability in Parallel Sysplex® environments. VIPA allows an end point in a network connection to be a pseudo (virtual) IP address. If a routing failure occurs, IP traffic is automatically and transparently routed over an alternate connection associated with the same VIPA. VIPA Takeover further enhances high-availability during system software failures, by allowing VIPA end-points to be moved dynamically to a backup image in the sysplex. This helps to avoid the typical timeout downtime by establishing new connections rapidly.
- **Enhanced Multipath Load Balancing** improves network throughput by balancing IP network traffic loads across multiple equal-cost routes and applications on the S/390 server.
- **Adjust your hierarchical file system** parameters and socket parameters without re-IPLing the system through filesyste on the **setomvs** command. This allows for greater flexibility in the system and avoids time consuming IPLs.
- **Enhance your performance of CICS running with Language Environment®** with a Storage Tuning Exit in Release 9. This will help to improve the performance of applications running under Language Environment.

Notes

1. For more information related to CS OS/390 enhancements, visit:

<http://www.ibm.com/software/network/commserver/about/csos390.html>

2. eNetwork Host on Demand (HOD) Version 1 does not support the Euro currency symbol. OS/390 customers currently using HOD Version 1 who require this support should obtain the HOD euro-compliant level

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product, HOD-Entry. HOD-Entry is being made available to current HOD Version 1 customers from the Web at no additional charge, including ongoing maintenance. The URL:

<http://www.software.ibm.com/enetwork/hostondemand/downloads/entry/>

3. OMPRoute is the IBM strategic routing daemon. All future enhancements to the routing daemon will be to OMPRoute only.

Web Serving and Java™

The WebSphere™ Application Server Enterprise Edition for OS/390 is the platform of choice for deployment of mission critical e-business applications. It is made up of the following components:

- **WebSphere Application Server** — an integrated component of OS/390. The WebSphere Application Server is a Java-based application environment for building, deploying and managing Internet and intranet Web applications.
- **IBM HTTP Server for OS/390** — an Internet standards compliant Webserver that exploits the S/390 “Qualities of Service”. The IBM HTTP Server is also an integrated component of OS/390.
- **Java for OS/390** — delivered separately from OS/390. This component provides the development and enabling tools and execution environment for Java applications deployed on S/390.
- **OS/390 Enterprise Java Bean (EJB) enablement** — provided with the operational environment and toolset needed to generate code with the necessary qualities of service. This functionality is provided via the Component Broker technology that will be an integrated component of the Web Application Server or is provided via CICS Transaction Server, which is a complementary product. Customers can develop WebSphere EJB applications now by participating in IBM’s Build and Deploy Program for component based applications. CICS Transaction Server supports Java applications today; a beta release which supports EJB is planned for the first half of year 2000.

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

WebSphere Application Server Enterprise Edition for OS/390 expands to fit your Web application server needs. It ranges from simple Web page serving to complex Web transaction processing.

Enhancements provided in Release 8 focus on the following areas:

- Continued HTTP standards compliance
- Persistent Connections support — a performance enhancement where one “browser to server” connection is provided per server
- Problem determination and debugging improvements in the following:
 - DUMP processing
 - Diagnostic messages
 - Logging and reporting
- More integration with OS/390’s Workload Manager (WLM), providing classification at the request-level (versus connection level). Request-level processing is mandatory for many critical commerce applications in

order to provide priority workload management of Web-initiated transactions.

Java for OS/390 (part of the WebSphere Application Server Enterprise Edition for OS/390) is now available at the JDK 1.1.8 level and contains significant performance enhancements over the product at the JDK 1.1.6 level. In addition to improvements in base Java performance, Java for OS/390 at the JDK 1.1.8 level offers much better scalability for multi-threaded applications. Like Java for OS/390 at the 1.1.6. level, the 1.1.8 level of the product provides native support for the IEEE floating-point hardware shipping with S/390 G5 and G6 machines. Using this support, some Java floating-point-intensive applications on OS/390 could run 100 times¹ faster.

¹ Results obtained in a controlled environment. Actual customer results may vary.

Java for OS/390 at the JDK 1.1.8 level includes functional enhancements such as:

- Migration Aid for Java 2 Security Framework
- Remote Method Invocation/Internet Inter-ORB Protocol (RMI/IIOP)
- SWING from Java 2
- Java Record I/O (an IBM exclusive for S/390)
- Additional security support

The Java 2 backport items (Migration Aid, RMI/IIOP, and SWING) will help OS/390 customers to begin using some Java 2 functions as they bring their Java for OS/390 at the JDK 1.1.8 level into production. The Java Record I/O support allows Java application programs to access Virtual Storage Access Method (VSAM) and non-VSAM data.

Security enhancements provide support for Java resource access authorization checking through the OS/390 System Authorization Facility (SAF) interfaces. They are designed to work with the Security Server (RACF) or equivalent. These enhancements, described on the Java for OS/390 Web site, are the first installment of support that integrates Java security with our existing base system security.

Java for OS/390 at the JDK 1.1.6 level continues to be supported for a limited time, as described on the Java for OS/390 Web site. Java for OS/390 is available both from the IBM Software Distribution Center (5655-A46) and from the Java for OS/390 Web site at URL:

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

While Java for OS/390 at the JDK 1.1.8 level is expected to be customers’ primary production vehicle, Java for OS/390 at the Java 2 level is planned for the first half of 2000.

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

VisualAge® for Java Enterprise Edition for OS/390 (5655-JAV) is available separately from OS/390. This product delivers a cooperative Windows NT® and OS/390 visual application development environment for Java applications. VisualAge for Java enables execution of fully bound high-performance Java applications running under the OS/390 UNIX shell or the CICS Transaction Server for OS/390. VisualAge for Java also provides native support for the IEEE floating-point hardware shipping on S/390 Generation 5 and 6 machines. This support enables developers to build enterprise e-business applications for OS/390.

OS/390 Component Broker (CB) is composed of industry-leading technologies that ease the development and deployment of distributed object applications. OS/390 CB helps programmers who use object-oriented programming techniques, including Enterprise Java Beans, to build enterprise-level, transactional applications. If you are ready to begin using CB now, you can do so through a newly developed customer focus delivery and support model.

If you are not positioned to take advantage of CB on S/390 today, you can begin working with CB technology on the supported workstation platforms. This approach will give you a head start on CB education and skills, as well as an opportunity to begin development and test activities.

Component Broker is available through the IBM Build and Deploy Program for Component Based Applications. To learn more about this program:

- Contact your local IBM representative.
- In the United States, you can call 800-IBM-7777 and mention priority code IC8AA001.
- Or visit the following Web sites:
<http://www.software.ibm.com/ad/cb>
<http://www.s390.ibm.com/cb>

Release 9 will offer additional enhancements to the WebSphere Application Server Enterprise Edition for OS/390. Both the WebSphere Application Server and the IBM HTTP Server for OS/390 will have improvements to aid you in conducting e-business.

In Release 9 the IBM HTTP Server for OS/390 will add significant Improvements in RAS, Problem Determination, and Debugging.

In Release 9, the WebSphere Application Server will deliver:

- **Higher levels of standards compliance:** This level of the WebSphere Application Server will support new industry standards for Java Server Pages and Servlets. This means that applications developed to these standards can be deployed on any platform supporting the standards, including S/390.
- **Clustering and workload balancing enhancements:** This will be available via exploitation of S/390's Workload Management.
- **Connection Manager support:** This will be added to access DB2® data via the JDBC standard protocol.
- **WebSphere Studio Tooling support:** Deploy applications built on workstations with WebSphere Studio tool onto the S/390 platform.
- **VisualAge for Java Tooling support:** Generate Java Beans for access to CICS, IMS™, and DB2 via the Enterprise Access Builder feature of VisualAge for Java (5655-JAV). It will also support the generation of Data Beans for accessing relational data via the JDBC protocol.

OS/390 Text Search (formerly known as NetQuestion) has two components:

- Text Search Engine is an advanced search engine that can be embedded into sophisticated search applications within an enterprise. It supports many different, state of the art approaches for searching, including:
 - Boolean searches
 - Free text searches
 - IBM-patented hybrid searches
 - Advanced relevance ranking

These functions and others allow you to construct a highly sophisticated search capability within your application.

The Text Search Engine has one of the broadest levels of support for national languages in the industry. You can index, and subsequently search, in a large number of languages. Nineteen single-byte languages are supported that allow linguistic processing (thus one can search on **mice** and find **mouse**). The Text Search Engine also supports double-byte and bidirectional languages.

The Text Search Engine provides thesaurus support so that you can customize your application to a domain. For example, a pharmaceutical company can create a thesaurus specific to the pharmaceutical industry. This allows the creation of a highly integrated, industry-specific, search application.

- The NetQuestion Solution is an application that searches through HTML which is served up by a WebServer. It allows you to search in those documents by using words and phrases exactly as they were written in the documents. It can also use pattern recognition to provide for fuzzy searches in documents for U.S. English.

In Release 9, Text Search will be improved even further.

- The IBM Text Search Engine's national language support is enhanced for DBCS (double-byte character set) languages. With Release 9, it will support the following languages by means of language dictionaries:
 - Simplified Chinese
 - Traditional Chinese

This new function not only allows searching for patterns within documents, but also word and phrase searching.

- Document processing capabilities are also enhanced in Release 9:
 - The Text Search Engine will recognize structures in documents, such as abstract, subject, and author. This allows you to restrict a search to just these specified structures.
 - The new XML document model will be recognized by the Text Search Engine in Release 9. This is an important step towards enabling better support of e-business with the Text Search Engine.
 - Also in Release 9, the Text Search Engine will be able to process documents provided in Unicode UTF-8 or UCS-2 format. Documents in Unicode format allow real multilingual support, since it overcomes code page dependencies. For example, a document written in English can have Greek citations.

Applications

New application execution environments have been added in Release 8 to support the wide range of new technologies that have evolved through the use of the Internet. Improvements in debugging, usability, and installation contribute to solve your new business challenges.

Debugging Improvements Drive Higher Productivity

The addition of version, release, and modification levels to the Language Environment Storage and Option Reports will help you with troubleshooting, thus improving serviceability. Improved debugging support will be provided through detecting and externalizing multiple enclaves within the run-time option POSIX(ON) in a Language Environment process. An additional Language Environment suboption is added on the MSGFILE run-time option that requests the serialization of the message file using ENQ/DEQ services. ENQ helps you avoid conflicts while writing to the shared MSGFILE destination.

Additional debugging improvements will be provided in Release 9:

- Language Environment will introduce the SuperError Handler. This function can help you improve your diagnostics, by allowing you to always receive control first when an error condition arises. It will also help you reduce downtime through quicker problem resolution.
- OS/390 UNIX System Services RAS improvements can help to increase your UNIX programmers' productivity. Standard error messages will be captured in an HFS file in the OS/390 UNIX environment. This file will includeabend system dump messages, allocation messages, and other system status messages. This enhanced capture of RAS data will help in the diagnosis of system issues for UNIX applications.

Greater Usability

New administrative options are designed to simplify the management of your operating system. Your UNIX programmers can perform additional administrative acts without being granted superuser authority. The **su** command will be used to adopt a system administration user ID, similar to the BPX.SUPERUSER function. Also in Release 8, the **cp** and **mv** commands will be able to copy and move data between MVS™ data sets and UNIX files. This interoperability can help your UNIX programmers port their applications to OS/390 by using familiar UNIX commands instead of the TSO commands currently available.

BPXBATCH Return Code Processing is also new with Release 8. You can receive a meaningful error code along with the failed program name on errors returned from unsuccessful BPXBATCH jobs when using spawn or fork/exec.

Enhancement of the Parallel Sysplex environment continues in Release 8 through the introduction of the new System-Managed Rebuild function, which provides a new and simplified, planned reconfiguration capability for Coupling Facility structures.

Enhancements to the base of OS/390 help to increase your efficiency, flexibility and availability in Release 9:

- **XES Structure Full Monitoring** will provide a consistent means of monitoring coupling facility structure full conditions in Release 9. XES will issue a message so that an installation may take an action to avoid a structure becoming full.
- **Transaction Trace** will allow a program to provide a consolidated trace of key events for the execution path of an application or transaction. This will help a system programmer trace the high-level, cross-server and cross-system path of a sysplex transaction. Problem determination will be faster so you can achieve increased productivity in your sysplex environment.

- **JES3 configuration enhancements** will provide the ability to add or delete devices to your sysplex without having to perform a sysplex-wide IPL.

Installation and Maintenance Enhancements

OS/390 UNIX System Services will improve TCP/IP maintenance by providing a controlled way for a Physical File System (PFS) to terminate and restart. This Release 9 enhancement significantly reduces the number of TCP/IP APARS that require a re-IPL of the system.

Printing Power

Release 8 includes additional support for print server consolidation. It also introduces new state-of-the-art support for e-business applications that require printing over the Internet. Along with the new automatic datastream transforms, Infoprint® Server for OS/390 offers the following:

Single Printer Inventory for All OS/390 Print

If you are a current TCP/IP Network Print Facility (NPF) user, or even an OS/390 Print Server user, you have printers defined in more than one place. A new consolidated printer inventory in Infoprint Server allows you to define printers in one place with easy to use definition screens. The NetSpool™, IP PrintWay™ and Print Interface components of Infoprint Server will use the single definition for job validations, assignment of printer default characteristics and routing. Print Services Facility™ (PSF) for OS/390 is enhanced to take advantage of the consolidated printer inventory.

Distributed Printer Management

Now that you've consolidated your distributed print onto OS/390, you'd like to manage those printers from a central location. You need to know immediately if a printer is out of paper, or needs attention so that printers don't stay idle and users don't wait for — or re-print — their jobs. Simple Network Management Protocol (SNMP) is an open standard for managing devices in a network. Network Printer Manager (NPM) workstation software lets you manage your network printers that are SNMP-enabled. In addition, new function in Infoprint Server allows printers driven by Print Services Facility for OS/390 to send intervention required information to NPM, even if they are not SNMP-enabled.

NPM is intended for management of printers in a departmental environment. If management of more than approximately 20 printers is required, then additional instances of NPM should be used. NPM can be downloaded free of charge from the IBM Printing Systems' Web site at the following URL:

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

Support for Enterprise Resource Planning (ERP) Systems

Many businesses are re-engineering to streamline business processes and integrate workflow for greater productivity. ERP application systems are at the heart of this effort. Most ERP applications don't generate output in a format that can be used on your high-speed, high-reliability production printers. Their output is usually formatted for printing in PCL, Postscript, PDF or a format proprietary to the application.

System administrators know that giving PC users access to OS/390 files and OS/390 attached printers is at best, a challenge. Usually it requires installing and managing special software on each user's PC. In Release 9, OS/390 will address this problem by providing Windows networking compatibility on the OS/390 Server. Server Message Block (SMB), also known as Common Internet File System or CIFS, is the protocol used to communicate file and printing requests between workstation clients and file or print servers. It forms the backbone of many LAN systems via integration into Windows operating systems, or as a separately installed application (for example, SAMBA in most UNIX systems). Release 9 will provide Windows file and print services via SMB, so you don't need to install additional software on the Windows clients to give them host access. Users will be able to remotely access files in the OS/390 Hierarchical File System (HFS) and submit, query, or cancel print jobs submitted to OS/390.

Release 9 Highlights

The following list summarizes new and enhanced functions in OS/390 Release 9 that are highlighted in this announcement.

- **BCP**
 - XES Structure Full Monitoring
 - Transaction Trace
- **DFS**
 - SMB File/Print Support for Infoprint Server for OS/390
- **JES3**
 - Configuration Enhancements
- **Language Environment**
 - 64-bit Integer Support for **printf()** and **scanf()**
 - Storage Tuning Exit
 - SuperError Handler
- **OS/390 Text Search**
 - Linguistic Support of DBCS Languages
 - Structured Document Support
 - Support of Unicode Data
 - Support of XML Document Model
- **OS/390 UNIX System Services**
 - DBX (debugger) Support for 64-bit Integers
 - RAS Enhancements
 - Re-IPL Reduction for Set TCP/IP Maintenance
 - Shared Libraries Support
 - UNIX98 Shell and Utilities fuser
 - UNIX98 Sigqueue() Support
- **WebSphere Application Server for OS/390**
 - Higher standards compliance
 - Clustering and workload balancing enhancements
 - WebSphere Connection Manager support
 - WebSphere Studio Tooling support
 - VisualAge for Java Tooling support
 - RAS, Problem Determination, and Debugging improvements in the IBM HTTP Server

Statement of General Direction

IBM announced a statement of direction in the OS/390 Version 2 Release 7 Availability and Release 8 Software Announcement published in February of 1999. IBM wants to remind customers of that previously announced Statement of Direction:

Architectural Level Set

In the release planned to be available in September 2000, OS/390 intends to exploit ESA/390™ architectural enhancements which were implemented on selected IBM S/390 servers.

That OS/390 release 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:

- Models of the S/390 Parallel Enterprise Servers except for Release 1 models
- All models of the S/390 Multiprise™ 2000
- All models of the S/390 Application StarterPak Type 3000
- All PC Server System/390® servers and RS/6000™ with System/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 the OS/390 release scheduled for availability in September 2000:

- 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

Architectural enhancements provide performance enhancements and reliability improvements. To exploit these enhancements, simulations or dual paths within OS/390 were needed to allow OS/390 to run on servers without the enhancements. The benefits of the architectural level set include elimination of this redundant code and potentially greater exploitation of the enhancements by designers and programmers, to deliver new function to the customer more quickly.

IBM is reminding our customers of this statement at this time to provide additional planning time for the September 2000 release. Note that the releases being announced today, Release 8 and Release 9, are not affected by this architectural level set.

The architectural enhancements that will be required by the release scheduled for availability in September 2000 can be found at the following URL:

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

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

Additional Information on OS/390 Version 2 Release 8

Products and Features Related to OS/390

Infoprint Server Transforms complement the Infoprint Server optional feature of OS/390. The initial release of this product will be available at no additional charge to customers who have an OS/390 Version 2 Release 8 license or later release, and also have the OS/390 Infoprint Server feature enabled and licensed with IBM. Customers need to order product number 5697-F51 to obtain the Infoprint Server Transforms function.

The Infoprint Server Transforms product provides datastream transforms that allow you to print output from LAN-based or UNIX applications on AFP™ printers. Transforms in Release 8 are:

- PCL to AFP
- Postscript to AFP
- PDF to AFP
- SAP R/3 to AFP

Note: The Postscript and PDF transforms will be available via PTF for APAR OW40194 in the fourth quarter of 1999.

The ability to print ASCII jobs on departmental AFP printers allows you to improve print reliability by extending the benefits of AFP/IPDS™ architecture to all users in your enterprise. You can also leverage your investment in AFP printers by using them for additional workloads. Consolidating your ASCII printing onto reliable, high-speed AFP printers can result in a lower overall cost of printing.

Tivoli Enterprise for OS/390 offers new enhancements that will help enable customers to effectively manage the enterprise from an OS/390 system. In September 1998, Tivoli made available the Tivoli Management Agent (TMA) for OS/390. The TMA became part of OS/390 V2R7 in March 1999, thus making OS/390 **Tivoli Ready**. The Tivoli Management Framework for OS/390 has recently been expanded to enable OS/390 to act as a server/gateway in Tivoli Enterprise based management of a customer's entire IT environment. This function will be available with the OS/390 V2R8 ServerPac in September 1999.

Now customers will be able to use OS/390 systems as a server in a Tivoli Management Region (TMR) to track and manage all end points in their distributed environment. The new product enables them to take full advantage of core OS/390 management functions including:

- Software distribution
- Distributed monitoring
- Inventory
- Security management
- User administration

The new Tivoli applications exploiting the server/gateway functions on OS/390 include:

- **Tivoli Software Distribution for OS/390**, in conjunction with Tivoli Software Distribution, provides for the distribution and maintenance of operating systems, applications, and data across networks composed of widely distributed cross platform systems.
- **Tivoli Distributed Monitoring for OS/390**, in conjunction with its distributed counterpart, Tivoli Distributed Monitoring, provides the capability to monitor applications and multiple remote computing resources from a central OS/390 location.

- **Tivoli Inventory for OS/390** and the distributed Tivoli Inventory Management application, collect system configuration information that is vital to managing the enterprise. This streamlines and accelerates software deployment, service desk, and asset management efforts.
- **Tivoli User Administration for OS/390** provides the system administrator with centralized control over widely distributed cross-platform systems. It incorporates policy-based management, management by subscription, secure delegation and a platform independent interface.
- **Tivoli Security Management for OS/390** provides a security solution that allows consistent definition, implementation, and enforcement of security policy across the entire network computing environment — from data center to the desktop. Tivoli Security Management for OS/390 leverages the strengths of SecureWay Security Server for OS/390 technology.

With these products, S/390 is now positioned to be the server of choice for enterprise wide systems management. Customers can now leverage the power an strength of the OS/390 platform to perform enterprise-wide systems management functions.

For more information on Tivoli Enterprise for OS/390, refer to:

- Software Announcement 299-173, dated July 6, 1999 (Tivoli Distributed Monitoring for OS/390)
- Software Announcement 299-172, dated July 6, 1999 (Tivoli Inventory for OS/390)
- Software Announcement 299-171, dated July 6, 1999 (Tivoli Software Distribution for OS/390)
- Software Announcement 299-185, dated July 6, 1999 (Tivoli Management Framework, User Administration and Security Management for OS/390)

S/390 Open Systems Adapter Support Facility for OS/390 Version 2 Release 1 (OSA/SF for OS/390 V2R1) has added support for a Windows 95 and Windows NT GUI. Support has also been added for OSA-Express Gigabit Ethernet. For more information, refer to Software Announcement 299-041, dated February 22, 1999.

S/390 Service Update Facility (SUF) Version 2 Release 1.2, made available March 1998, is an internet-based S/390 software service tool that makes ordering and receiving OS/390, VM, and VSE software service quick and easy. SUF allows systems programmers to order both corrective and preventive service via the Internet.

OS/390 and VM service, both corrective and preventive, can be delivered via the Internet or via standard physical media delivery. Where available, Advanced Digital Delivery (satellite) delivery is also an option.

Currently, VSE corrective service may also be delivered via the Internet or physical media delivery. VSE preventive service (for example system refresh) can be delivered only via physical media delivery.

A common "GUI" interface is provided via the SUF "Customer Application Server." This server supports multiple systems programmers supporting multiple S/390 servers. OS/390, VM, and VSE servers can be attached to a single SUF server simultaneously.

Enhancements delivered in our most recent code refreshes include:

- Delivery of Year 2000 service
 - OS/390 and VSE Year 2000 PTFs are delivered via the Hiper/PE Fix reach-ahead delivery and optionally as part of the RSU delivery.
 - VM Year 2000 PTFs are automatically delivered as part of the VM Service bucket delivered with monthly RSU deliverables.
- Additional service

For details regarding prerequisites, entitlement, and how to obtain SUF refer to the S/390 SUF Web site at the following URL:

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

SUF is also an available option when ordering an e-business SystemPac package. For more information on SystemPac, refer to the Web site at URL:

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

Note: Version 1 is no longer supported.

Installation Enhancements

Installation enhancements for Release 8 are the result of changes to OS/390. For a description of function added to SystemPac for OS/390 Release 8, refer to **Fee-Based Software Services Offerings** section.

The LDAP Client component of base element DCE Base Services is merged into the LDAP Server component of optional feature Security Server. In addition, to help ensure that LDAP functions are always available to OS/390 applications, the LDAP Server is now licensed with the base operating system (even though it is part of an optional feature) and thus does not require that Security Server be ordered or enabled. Security Server does, however, have to be installed in order to make LDAP Server functional.

To help you better validate the installation of SecureWay Communications Server, samples and installation verification procedures (IVPs) for the IP Services component have been enhanced. Infoprint Server (formerly Print Server) now uses a single value for dynamic enablement. You no longer have to enable each of the Infoprint Server components separately. Infoprint Server has also restructured and consolidated target and distribution libraries, eliminating numerous data sets.

Euro Sign Support

OS/390 Version 2 Release 8 includes support for the EuroSign. Where applicable, this support is now available via PTFs. This support is provided for MVS/ESA™ SP™ 5.2 and 5.2.2 and all OS/390 releases. Refer to Euro PSP bucket — EURO390 — for specific maintenance information.

OS/390 provides:

- Support of Latin 1 countries via IBM-114x (ECECP) code pages
- Support of euro-enabled locales for the 114x code pages
- Data conversion support between the EBCDIC 114x code pages and ASCII code pages IBM-858 and the euro-enabled version of IBM-1252 (CCSID 5348). This conversion support will be provided via additional Universal Code Character Set (UCS-2) converters.

Year 2000

When used in accordance with its associated documentation, OS/390 is capable of correctly processing, providing, and receiving date data within and between the twentieth and twenty-first centuries, provided all other products (for example, software, hardware, and firmware) used with the product properly exchange accurate date data with it.

S/390 Year 2000 Initiative: The Year 2000 presents many challenges and customers may be faced with different approaches and decisions in order to complete their Year 2000 project. Tools are an essential part of helping customers meet that challenge and, while there are many tools available, most are designed to work on source code. In July 1998, IBM announced Runtime Analyzer for OS/390 and MVS. Refer to Software Announcement 298-269, dated July 28, 1998. This execution-time-based software audit tool that helps identify Year 2000 date exposures in OS/390 and MVS applications. The Runtime Analyzer:

- Designed to work on load modules, it can be used with or without source code.
- Provides an efficient run-time analysis and remediation environment, enabling user-written filter and postprocessing programs.
- Handles online and batch applications, to cover many different types of applications an installation may have.
- Can run on any existing S/390 Year 2000 ready processor.
- Supports Batch, Started Tasks (STCs), CICS, and IMS applications.

An optional hardware assist is available on the 9672 Generation 4, 5, and 6 servers which can enhance the ability to address Year 2000 date problems by avoiding the overhead of handling program interruptions for instructions that require fixing.

The Runtime Analyzer can be included in ServerPac.

SecureWay Branding

IBM SecureWay software provides integrated directory, connectivity and security between users and applications for e-business in a networked world. Every e-business application requires the ability to: locate resources, such as people, information and applications in the network; connect customers, partners, and employees to those resources across multiple systems and; address the concern of how to secure communications, data and transactions. SecureWay integrates these infrastructure requirements to provide the secure network platform needed for e-business. IBM SecureWay software is supported on multiple platforms including OS/390.

With Release 8, the eNetwork Communications Server for OS/390 has been renamed the SecureWay Communications Server for OS/390 and the OS/390 Security Server is renamed to the SecureWay Security Server for OS/390. Both have been branded SecureWay.

UNIX98 Branding

OS/390 has already delivered certain key functions meeting immediate customer needs that are associated with UNIX 98 branding. Additional UNIX98 functions which deliver customer and application vendor value are planned for roll out over multiple future OS/390 releases.

Product Positioning

OS/390 has enjoyed outstanding success in the marketplace. Version 1 fulfilled the promise of transforming MVS into an integrated product. Version 2 has extended this promise with sustained leadership in support of new workloads, together with technological invention and extension. Releases 8 and 9 of OS/390 provide additional value with improved ease-of-use, greater integration, and enablement of new workloads in order to meet tomorrow's e-business needs.

Other improvements found in Release 8 are:

- Firewall enhancements
- New JAVA Security Thread Authentication
- WebSphere Application Server Enterprise Edition Enhancements and Additional Support for WebSphere caching
- Server consolidation has also been improved by the new Infoprint Server for OS/390.
- Enterprise Applications on S/390 have also been enhanced with new Parallel Sysplex function such as System-Managed Rebuild for Coupling Facility Structures.

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

Education Support

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

- System Services enhancements including system-managed coupling facility structure rebuild, enhancements to the Time of Day Clock, and WLM JES3 Batch management
- Cryptographic Services enhancements
- SecureWay Security Server for OS/390 enhancements to RACF, LDAP, Firewall Technologies and OCEP
- Application Enablement Services enhancements to the C/C++ Runtime Library
- OS/390 UNIX System Services enhancement including management of BPXPRMxx control, shell and utilities, and data movement between OS/390 data sets and UNIX files
- Distributed Computing Services enhancements to Infoprint Server for OS/390
- SecureWay Communications Server IP enhancements including VIPA takeover and multipath support
- LAN Services enhancements to OSA/SF, support for OSA-Express and queued direct I/O
- Network Computing Service enhancements to the IBM HTTP Server and Text Search

The OS/390 Update Information Service will be available in three delivery formats: CD-ROM, Web download and play and Web online. Customers can subscribe to this service and automatically receive training when each new OS/390 release is made available. This DL training lets you ask questions via e-mail to an IBM instructor. Answers to frequently asked questions will be available via a FAQ.

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 instructor 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 Distance Learning (DL) Training?

Distance Learning 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 8 will be available October 22, 1999 via CD-ROM only. (Future updates will be available on the Web.) This CD-ROM will be in English only. To order a copy, contact your local IBM representative or Business Partner, or in the U.S. and Canada call, 800-IBM-TEACH (426-8322)

A Design for the Total User Experience: OS/390 Ease Of Use

S/390 has adopted a user-centered design (UCD) process to identify improvements to the total S/390 user experience. UCD is an industry accepted process that places customers at the center of an iterative design and development process. Understanding the total user experience — ordering, installation, customization, maintenance, migration, system administration, and execution — is key to the success of any development project.

In selected areas, we are working directly with customers and have formed teams with representatives from all product development disciplines — from architecture to marketing, information development and interface design to evaluate and develop solutions for improving ordering, planning, installing and configuring of S/390. The result: information and web-site redesign and our first set of Web-based wizards to simplify and guide customers through key S/390 tasks.

Web Site Redesign: Using a UCD process, we have made major changes to our S/390 and OS/390 Web sites. For Release 8 you will find it easier to navigate through the pages and locate information about S/390 and OS/390 elements and features.

We have made some topics more visible, such as the list of vendor products that support OS/390, and minimum level of IBM products that run on specific OS/390 releases. These products help you solve specific problems and maximize the overall management of your system. We have also added a topic called "How to buy." This provides helpful information about products that you are considering purchasing.

Installation Planning Made Easier: IBM is enhancing the previously announced Web-based wizard for installation planning. At the following URL you will find "OS/390 Planning for Installation: Interactive Edition."

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

In addition to the enhanced "OS/390 Planning for Installation" you will be able to use the "OS/390 Planning and Migration Assistant". This interactive offering creates reports that will identify what is currently on your OS/390 system and what changes you can expect when migrating to a future release.

More Help from the Web: NEW for Release 8 of OS/390 is the "ServerPac Ordering Assistant." You can use it to complete the ServerPac checklists. The checklists are presented in an easy to use format and the wizard generates a concise summary of the products/features that were select. This list can then be e-mailed to IBM for processing. You can find the new ServerPac Ordering Assistant at the following URL:

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

Parallel Sysplex Configuration Made Easier! Nothing beats the commercial processing power of a Parallel Sysplex cluster. Such power brings with it a certain amount of complexity. But help is coming your way: a Web-based wizard that allows you to create a Parallel Sysplex configuration interactively. Using this S/390 Parallel Sysplex Configuration Planning wizard, you provide input to the tool, and then follow steps to build the Parallel Sysplex configuration.

What's Next?: Using the UCD process and working directly with our customers has resulted in our initial set of wizard-like offerings for Release 8. IBM will continue to work directly with our customers to understand and design solutions for the total user experience. For example, it is IBM's intent that future wizards provide you with a "fast path" road map to planning and installing e-business on S/390.

Documentation Information

What's New for OS/390 Version 2 Release 8

New and Improved S/390 and OS/390 Web sites: If you haven't visited us lately, take a look at our S/390 and OS/390 Web sites at URLs:

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

We took these sites to our "human factors" shop and asked for a complete overhaul. What we got was more consolidated and concise information, and more consistency in the way information is displayed and retrieved. Extensive contact with customers helped us validate our decisions.

You'll find it easier to navigate through the pages and locate information about S/390 and OS/390 elements and features. Some topics we've made more visible, such as the list of vendor products that support OS/390, and the minimum level of IBM products that run on specific OS/390 releases. These products help you solve specific problems or maximize the overall management and running of your system.

We've also added a topic called "How to buy." This will provide helpful information about products that you are considering purchasing. Although you cannot order S/390 products directly from this Web site, many of your

questions can be answered. You can find out important information such as who to call when you are ready to order, where you can find information about S/390 terms and conditions, who to call for OEM hardware purchases, and how to track the status of a software order or order IBM publications.

Interactive Information on the Internet: In addition to new and improved Web sites for OS/390, we are introducing our first set of Web-based wizards for Installation Planning and Parallel Sysplex Configuration. Both of these wizards provide a new level of interactive product information. Check out the OS/390 Ease of Use section of this announcement for more information.

SoftCopy Librarian Enhanced: Significant changes have been made in Version 3.2 of the SoftCopy Librarian (5648-032) that is now available from the SoftCopy Librarian Web site at:

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

Version 3.2 of the SoftCopy Librarian will also be available in the September 1999 editions of the IBM Online Library CD collections.

Version 3.2 creates descriptor files automatically for non-IBM CDs. Previously, you had to create these manually.

The method for defining host repositories that use OS/390 sequential data sets has been significantly revised. If you are migrating from a previous version of the SoftCopy Librarian to Version 3.2 and you have host repositories in sequential data sets, you should review the information in the SoftCopy Librarian User's Guide, describing the new default settings and the effect they might have on your repository definitions.

You can transfer BookManager® bookshelves and books to a host or LAN server repository and manage them there. You can define one or more repositories on an OS/390 host, accessible through FTP, or on a PC or LAN hard drive, accessible using Copy commands. The SoftCopy Librarian runs on a Windows 95 or later, or a Windows NT 4.0 or later, workstation.

To use the SoftCopy Librarian, you define a repository for the bookshelves and books that you want to manage. You then create a catalog for the repository. When you want to transfer bookshelves and books from a CD or from the hard drive on your workstation to your repository, the SoftCopy Librarian compares what you want to transfer with the catalog. The SoftCopy Librarian then lists the items that you do not have in your repository and the items that have changed since the last time you transferred bookshelves and books to the repository.

The SoftCopy Librarian also helps you maintain your repository. It lists everything that is currently in your repository and lets you delete items that have been replaced or that are no longer needed.

September CD Collections to Contain Try-and-Buy

The September 1999 editions of the IBM Online Library CD collections will contain a try-and-buy version of BookManager Build for Windows NT. This try-and-buy version of BookManager Build for Windows NT is in the OS/390 Collection (SK2T-6700), an entitled product to OS/390 Licensees.

OS/390 Hot Topics Newsletter: Starting with Release 8 of OS/390, be sure to take a look at a newsletter that will be provided with the "OS/390 Installation Planning Kit." It will highlight information about OS/390 that you might not easily run across in the regular documentation. The newsletter will also direct you to new or improved Web sites that provide answers to specific questions. It will also tell you about the latest improvements to the OS/390 library, whether content, media, or delivery.

Announcement References

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

- 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 (OS/390 Version 2)

Other announcements referenced in this document include:

- Software Announcement 299-235, dated August 24, 1999 (Infoprint Server Transforms for OS/390)
- Software Announcement 299-173, dated July 6, 1999 (Tivoli Distributed Monitoring for OS/390)
- Software Announcement 299-172, dated July 6, 1999 (Tivoli Inventory for OS/390)
- Software Announcement 299-171, dated July 6, 1999 (Tivoli Software Distribution for OS/390)
- Software Announcement 299-185, dated July 6, 1999 (Tivoli Management Framework, User Administration, and Security Management for OS/390)
- Hardware Announcement 199-115, dated May 3, 1999 (S/390 Parallel Enterprise Server — Generation 6)
- Hardware Announcement 199-048, dated February 22, 1999 (Introducing Gigabit Ethernet for the S/390 Parallel Enterprise Server — Generation 5 Plus FICON™ Enhancements)
- Software Announcement 299-041, dated February 22, 1999 (S/390 Open Systems Adapter Support Facility for OS/390 V2R1)
- 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, dated May 7, 1998 (Generation 5 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 8 Product Content

OS/390 Version 2 Release 8 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 SP²
 - Base Control Program (BCP)²
 - JES²
- ESCON® Director support²
- MICR/OCR support²
- Bulk Data Transfer (BDT) base^{2,3}
- DFSMSdftp™ Version 1 Release 5
- EREP/MVS Version 3 Release 5
- High Level Assembler Version 1 Release 3
- ICKDSF Release 16
- ISPF²
- TSO/E²
- 3270 PC File Transfer Program Version 1.1.1
- FFST™/ESA Version 1 Release 2
- TIOC²

Systems Management and Security

- HCD²
- SMP/E²
- Tivoli Management Framework for OS/390 (Tivoli Management Framework level 3.6)
 - Tivoli Management Agent

Cryptographic Services

- Cryptographic Services
 - ICSF²
 - Open Cryptographic Services Facility²
 - System SSL²

Application Enablement Services

- C/C++ Open Class™ Library⁴
- Language Environment²
- SOMobjects™ for MVS Runtime Library²
- VisualLift® RTE²
- DCE AS²
- Encina Toolkit Executive²

Distributed Computing Services

- Network File System Feature²
- DCE Base Services (OSF DCE level 1.1)²
- Distributed File Service (DFS support at OSF DCE level 1.2.2)²

- **Communications Server**
 - SecureWay Communications Server for OS/390^{2,5}
 - SNA/APPN® Services (Includes VTAM)²
 - Multiprotocol/HPR Services (Includes AnyNet®)²
 - TCP/IP Services (Includes TCP/IP for MVS)²
- **e-business Services**
 - WebSphere Application Server for OS/390
 - WebSphere Application Server for OS/390 V1.1
 - IBM HTTP Server for OS/390 V5.2
 - Text Search (formerly NetQuestion)⁶
- **LAN Services**
 - LANRes²
 - LAN Server²
 - OSA Support Facility for OS/390 Version 2 Release 1
- **OS/390 UNIX System Services**
 - OS/390 UNIX System Services Application Services²
 - OS/390 UNIX System Services Shell and Utilities²
 - OS/390 UNIX System Services Debugger²
- **Softcopy Publications Support**
 - BookManager READ R3²
 - OS/390 Softcopy Print²
 - BookManager BookServer Version 2.2
 - 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 which 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**
 - JES3²
 - Bulk Data Transfer (BDT) File-to-File²
 - BDT SNA NJE²
- **Systems Management**

Note: The DFSMS™ features are packaged in combinations. Refer to the **Ordering Information** section for the available combinations in Software Announcement 297-355, dated September 9, 1997.

- DFSMSdss™ Version 1 Release 5
- DFSMSHsm™ Version 1 Release 5
- DFSMSrmm™ Version 1 Release 5
- RMF™²
- SDSF²
- HCM²
- **Cryptographic Services**
 - Open Cryptographic Services Facility France^{2,5,7}
 - Open Cryptographic Services Facility Security Level 1 (RC2/RC4/RC5)^{2,5,7}
 - Open Cryptographic Services Facility Security Level 2 (DES, RC2/RC4/RC5)^{2,5,7}

- Open Cryptographic Services Facility Security Level 3 (TDES, RC2/RC4/RC5)^{2,5,7}
- System SSL Security Level 2 (DES)^{2,5,9}
- System SSL Security Level 3 (TDES)^{2,5,9}
- **Security Server**
 - DCE Security Server at OSF DCE level 1.2.2^{2,5}
 - Open Cryptographic Enhanced Plug-ins²
 - RACF^{2,5}
 - Firewall Technologies²
 - LDAP Server-(RC2/RC4) with 40 bit Crypto^{2,5,9}
- **Application Enablement Services**
 - C/C++ with Debug Tool^{2,4}
 - C/C++ without Debug Tool^{2,4}
 - DFSORT™ Release 14
 - GDDM-PGF Version 2 Release 1.3
 - GDDM REXX Version 3 Release 2
 - HLASM Toolkit Version 1 Release 3
 - Language Environment Data Decryption (DES)^{2,5}
 - SOMobjects for MVS Application Development Environment (ADE)²
 - VisualLift ADE Version 1.1.2²
 - Infoprint Server for OS/390²
 - IP PrintWay² and NetSpool²
 - OS/390 Print Interface²
- **Distributed Computing Services**
 - DCE User Data Privacy DES^{2,5}
 - DCE User Data Privacy DES/CDMF^{2,5}
- **Communications Server**
 - SecureWay Communications Server Security Level 1 (RC2/RC4, CDMF)^{2,5,10}
 - SecureWay Communications Server Security Level 2 (DES, SnMPV3)^{2,5,10}
 - SecureWay Communications Server Security Level 3 (SnMPV3, TDES)^{2,5,10}
 - SecureWay Communications Server Network Print Facility²
- **e-business Services**
 - IBM HTTP Server NA Secure (TDES, RC2/RC4)^{2,5,11}
 - IBM HTTP Server Export Secure (DES, RC2/RC4)^{2,5,10}
 - IBM HTTP Server France Secure (RC2/RC4)^{5,11}
- **Softcopy Publications Support**
 - BookManager BUILD Release 3²
- **PC Server or RS/6000 with System/390 Server-on-Board Preconfigured System for OS/390 Version 2.7.0 CD**

² 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.

³ 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.

- 4 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.
- 5 Items have export considerations.
- 6 Periodic updates will be made via an FTP site.
- 7 Only one of the Open Cryptographic Services Facility France or Open Cryptographic Services Facility Security Level 1, 2, 3 features needs to be ordered to obtain additional security function over what is provided in the OS/390 base.
- 8 The System SSL Security Level 2 and System SSL Security Level 3 features are mutually exclusive. Only one needs to be ordered to obtain a security function over what is provided in the OS/390 base.
- 9 The LDAP Server component of Security Server Optional Feature is licensed with the OS/390 base operating system and can be used without enabling the Security Server Optional Feature.
- 10 The SecureWay Communications Server Security Level 1, 2, 3 features are mutually exclusive. Only one needs to be ordered to obtain additional security function over what is provided in the OS/390 base.
- 11 The IBM HTTP Server features are mutually exclusive. Only one needs to be ordered to obtain additional security function over what is provided in the OS/390 base.

- DFSMSdss
- DFSMSShsm
- DFSMSrmm
- DFSORT
- GDDM PGF
- GDDM REXX
- HCM
- High Level Assembler Toolkit
- JES3
- Infoprint Server for OS/390
- RMF
- SDSF
- Security Server¹³
- SOMobjects ADE

¹² 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.

¹³ The LDAP Server component of the Security Server Optional Feature is licensed with the OS/390 base operating system and can be used without enabling the Security Server Optional Feature.

Preconfigured CD-ROM

With the GA of previous releases of OS/390, Entry Support Licensees (customers with either PC Server S/390 or RS/6000 with S/390 Server-on-Board) have had the option of requesting a CD-ROM containing a preconfigured base image of that release as a feature. A preconfigured CD-ROM will not be made available for OS/390 Release 8. The Release 7 preconfigured CD-ROM will continue to be available until March 2000. Effective March 2000, the preconfigured CD-ROM feature will no longer be orderable. In place of the preconfigured CD-ROM, customers can use the standard 4-mm tape delivery of OS/390 to install Release 8 on their PC Server S/390 and RS/6000 with S/390 Server-on-Board systems.

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 URL:

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

The OS/390 priced features which support this enablement capability in OS/390 Version 2 Release 8 are:

- BookManager BUILD
- BDT File to File
- BDT SNA NJE
- C/C++ (with Debug Tool)¹²
- C/C++ (without Debug Tool)¹²

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 IBM's portfolio of fee-based services.

Service Policy

It is IBM's current intention 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, 2, and 3, and Version 2 Release 4 extend beyond three years of service currency. These OS/390 Releases will be considered as current until at least January 31, 2001, with IBM providing maintenance during this period.

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 IBM's future direction and intent 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. ++HOLDDs 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's 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 URL:

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

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

Fee-Based Software Services Offerings

Note: OS/390 Version 2 Release 8 is also available through the SystemPac and SoftwareXcel Installation Express (SIE) fee-based offerings.

Enhancements for OS/390 Version 2 Release 8 SystemPac Orders: SystemPac offers the capability of building a system with integrated subsystems in both copy 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 DFSS 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 the customer's selection at ordering time.

Customers ordering the OS/390 Version 2 Release 8 SystemPac are now able to take advantage of the following new enhancements:

- SystemPac is further enhanced with the option of having basic function of SecureWay Communications Server for OS/390 and WebSphere Application Server enabled. These features, coupled with the earlier SystemPac enhancement of having UNIX System Services enabled in full function mode, allow customers to easily tailor the default set up provided to match their standard for internet access when the system is restored and IPL'ed. In addition, selected portions of Network File Services (NFS) and Infoprint Server will also be customized with their default customization if either of the two products are selected.
- 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 URL:

<http://www.can.ibm.com/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 URL:

<http://www.can.ibm.com/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 the URL:

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

SoftwareXcel Installation Express

All enhancements listed above, including the full volume dump enhancements are applicable for SoftwareXcel Installation Express (SIE). In addition, customers can send their PARMLIB, PROCLIB and VTAMLST via the internet. For details, access the URLs:

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

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

For more information on SIE or SystemPac, contact IBM at 800-IBM-4YOU (426-4968).

Technical Information

Specified Operating Environment

Hardware Requirements: Any processor that supports Enterprise Systems Architecture (ESA) enables you to run basic OS/390. Some examples are listed below.

- All models of the S/390 Parallel Enterprise Servers or S/390 Parallel Transaction Servers (IBM 9672)
- All models of the S/390 Multiprise 2000
- All models of the ES/9000 Processor Unit 9021, the 9121, or the 9221
- An ES/3090-9000T processor (Models 15T, 17T, 18T, 25T, 28T) that supports IBM Enterprise Systems

Architecture/370™ (ESA/370) and can have optional ESA/390 facilities

- An ES/3090 Model E, S, J, or JH processor at the appropriate engineering change (EC) level that supports the IBM Enterprise Systems Architecture/370
- An ES/4381 Model Group 90E, 91E or 92E processor that supports the IBM Enterprise Systems Architecture/370
- Enhanced LPAR mode operation is supported on all PR/SM™-capable IBM processors in hardware configurations of two or more CPs with the exception of the ES/9000 Processor Unit 9221 Model 200
- PC Server System/390 or RS/6000 with System/390 Server-on-Board

Additional hardware may be required for certain, specific functions.

- **Coupling Facility** — A Coupling Facility (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 Coupling Facility 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, the ES/9000 9021 711-based and the ES/9000 9121 511-based systems. For the latest information on the 9672 S/390 G6 Servers, refer to Hardware Announcement 199-115, dated May 3, 1999.

- **Sysplex Timer®:** A Sysplex Timer is required to synchronize the time-of-day (TOD) clocks in all the CPCs attached to the coupling facility (except for a single CPC Parallel System).
- **ICSF:** The Triple DES function requires at least a 9672 R5 Server. If you have a S/390 Parallel Enterprise — Generation 4 Server and you plan to use the Triple DES support in ICSF, you will need the appropriate LIC code, the Triple DES feature, and a new enablement diskette that supports Triple DES. For the Generation 4 Server, you will need driver 98 and LIC codes EC F10640 or EC F10667. For Generation 5 and 6 Servers, the Triple DES support is included in the product.

Note: Triple DES is export controlled and restricted to certain industries abroad. It may not be exported except pursuant to an appropriate license.

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

For related S/390 G6 information, refer to Hardware Announcement 199-115, dated May 3, 1999.

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 8, refer to *OS/390 Planning for Installation* (GC28-1726). This publication is also available at the URL:

<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 8, the minimum required level is PSF for OS/390 Version 3 (5655-B17).

Java for OS/390: With OS/390 Version 2 Release 8, you should be running Java for OS/390 at the 1.1.8 level. Included in it is 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.s390.ibm.com/java/>

Virtual Storage Requirements: Virtual storage requirements will be provided at general availability. Your IBM marketing representative should be consulted at general availability.

Compatibility

OS/390 Coexistence: Coexistence considerations apply to multisystem configurations in which there is resource sharing; this includes non-Parallel Sysplex and Parallel Sysplex multisystem configurations. To give you optimum compatibility and flexibility as you migrate systems in a multisystem configuration, OS/390 supports the coexistence of up to four consecutive OS/390 releases. For example, OS/390 Releases 5, 6, and 7 can coexist with OS/390 Release 8. Since OS/390 allows the JES element to be separately staged, OS/390 also supports the coexistence of certain lower-level OS/390 JES releases with the JES release provided with OS/390 R8.

Note: OS/390 Version 2 Release 4 customers should be sure to order OS/390 Version 2 Release 7 during its availability, which ends September 9, 1999. (IBM recommends that all Release 7 orders be submitted no later than September 1, 1999, to allow for adequate order processing time.)

For information on the general OS/390 coexistence policy, as well as the specific OS/390 and JES releases that can coexist in a multisystem configuration, refer to *OS/390 Planning for Installation*. This publication is also available at the URL:

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

Customers running OS/390 in a multisystem configuration need to ensure they are appropriately positioned for supported software migrations. Some customers may have elected to freeze their software due to Year 2000 considerations. Since each OS/390 release is normally orderable for only a six-month window, it is very

important that OS/390 users be positioned for a supported migration path in the Year 2000 and beyond. A *Planning Guide for Multisystem Customers: OS/390 Coexistence and Planning Considerations Through the Year 2000* is available on the Internet to help customers make informed decisions about their software levels with complete understanding of the IBM supported coexistence and migration scenarios. The URL is:

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

The planning guide contains information that is vitally important for every OS/390 customer, whether freezing for Year 2000 or not.

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

OS/390 Coexistence with MVS: Currently, OS/390 and supported MVS releases (including certain MVS JES releases) can coexist in a multisystem configuration. IBM plans to discontinue this support effective with OS/390 Release 9. IBM recommends that if you are currently running:

- MVS (or MVS JES) releases along with OS/390 in a multisystem configuration, or
- MVS (or MVS JES) releases in a multisystem configuration and have not yet migrated to OS/390,

that you plan to upgrade your MVS systems to OS/390 Release 8 or an interim OS/390 release (on your way to the most current release). If you are currently running OS/390 with MVS (or MVS JES) in a multisystem configuration, make sure that the OS/390 release you migrate the MVS systems to falls within the four consecutive releases period.

Customers should note that There is a Difference™ between how long a release is serviced and how long IBM will ensure toleration and coexistence within a multisystem configuration. The plan to withdraw coexistence for supported MVS or MVS JES releases with OS/390 will not affect service support for these MVS or MVS JES releases.

For information on the MVS and MVS JES releases that can coexist with any release of OS/390, refer to **OS/390 Planning for Installation**. This publication is also available on the Web at the URL:

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

Customers running MVS with OS/390 in a multisystem configuration, as well as customers who are running MVS in a multisystem configuration and have not yet migrated to OS/390, need to ensure they are appropriately positioned for supported software migrations. Since each OS/390 release is normally orderable for only a six-month window, it is very important that OS/390 users be positioned for a supported migration path in the Year 2000 and beyond. **A Planning Guide for Multisystem Customers: OS/390 Coexistence and Planning Considerations Through the Year 2000** is available on the Internet to help customers make informed decisions about their software levels with complete understanding of IBM's supported coexistence and migration scenarios. The URL is:

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

The planning guide contains information that is vitally important for every OS/390 customer.

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

For information on the releases of JES2 or JES3 that are supported with OS/390 and information on compatibility PTFs that may be required, refer to **OS/390 Planning for Installation**. This publication is also available at the URL:

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

OS/390 General Migration Considerations: Because the components of OS/390 are integrated into a single package with compatible service levels, customers must install and migrate to an OS/390 release in its entirety before entering into production on that release. For the JES2 or JES3 component, the migration can be staged to remain compatible with other systems.

Customers using the CBPDO delivery option, will only have to install those elements and features of OS/390 which are at a higher level than their existing system. For example, MVS/ESA SP 5.2.2 customers with DFSMS/MVS 1.5 installed, must install the new OS/390-level of the Base Control Program (BCP), but do not have to reinstall DFSMS/MVS.

Note: Customers will need to perform *usual* release-to-release migration activities for any element that they install.

JES Migration Considerations: JES2 pre-Release 4 mode (not "\$ACTIVATED") will be supported by the JES2 element available with OS/390 Release 4 through Release 9. However, the JES2 element of OS/390 after Release 9 will not support running in pre-Release 4 mode. To avoid a cold start, customers wishing to migrate directly to any release of JES2 after Release 9 must migrate to JES2 Release 4 mode (available in OS/390 Release 4 JES2 through OS/390 Release 9 JES2) prior to installing any JES2 element of OS/390 beyond Release 9. For further migration information about JES2 pre-Release 4 mode, refer to the **OS/390 JES2 Migration Notebook**.

For information about JES2 and JES3 migration considerations refer to *OS/390 Planning for Installation*. This publication is also available at the URL:

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

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 411 requirements have been either fully or partially satisfied by the first seven releases of OS/390. This announcement of OS/390, Version 2 Release 8, satisfies or partially satisfies another 99 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. Requirements satisfied include:

- **DFSMS/MVS**
 - REQ00070659 — Allow PDSE to reside on SYSRES volume maintaining cloning

- **Infoprint Server for OS/390**
 - REQ00067719 — NetSpool use of DNS
 - REQ00070561 — Wild card for classes/forms in IP PrintWay
 - REQ00071989 — SAP to AFP transform on OS/390
 - REQ00072312 — Eliminate Netspool and PrintWay™ duplicate printer definitions
 - REQ00072482 — Improve IP PrintWay ISPF Dialog panels
- **ISPF DM**
 - REQ00053124 — 3270 mode for edit when running client/server
 - REQ00053703 — NEXT/PREV on 7.4 for modify option — already completed for Display Row option, but overlooked for Modify option
 - REQ00055678 — Print utility exit is not used during ISPF EXIT/LIST cmds
 - REQ00057237 — Improved entry to ISPF GUI interface — allow GUINIT from GUINIT from any command line, not just from settings; WS connect/disconnect (return to settings) service
 - REQ00059985 — ZSCRNAME modifiable SHARED variable containing current screen name
 - REQ00064768 — ISPF TPUT buffer size flexibility
 - REQ00065650 — Notification/automatic download of WSA if maintenance hits it
 - REQ00065788 — Workstation connect (without GUI) and use of split-screen
 - REQ00066058 — ISPF Panel cursor controls
 - REQ00067983 — ISPSPROF without defaults (SUGG OW27015)
 - REQ00067658 — Change cursor placement in DTLC dialog
 - REQ00068395 — Document the use of ZDEL to get the command delimiter
 - REQ00068447 — Update ISPF DTL edit models to currency
- **ISFP PDF**
 - REQ00056303 — Convert the ISPF configuration table (ISRCONFIG) and the ISPF defaults (ISPDFLTS) to a member of a PDS
 - REQ00064768 — Convert the ISPF configuration table (ISRCONFIG) and the ISPF defaults (ISPDFLTS) to a member of a PDS
 - REQ00067983 — Convert the ISPF configuration table (ISRCONFIG) and the ISPF defaults (ISPDFLTS) to a member of a PDS
 - REQ00069626 — Convert the ISPF configuration table (ISRCONFIG) and the ISPF defaults (ISPDFLTS) to a member of a PDS
 - REQ00029323 — Add edit CUT and PASTE commands
 - REQ00024495 — Add edit CUT and PASTE commands
 - REQ00013918 — Add edit CUT and PASTE commands
- REQ00030343 — Add edit CUT and PASTE commands
- REQ00023769 — Add edit CUT and PASTE commands
- REQ00024018 — Add edit CUT and PASTE commands
- REQ00004420 — Add edit CUT and PASTE commands
- REQ00039249 — Provide attribute retrieval for load modules
- REQ00060713 — Change memblist list “CHANGED” heading to YY/MM/DD CHANGE
- REQ00066466 — Change ISRFINDD to use prefix and userid on temporary data sets
- REQ00066097 — Data set information retrieval for multivolume data set with less than 20 volumes
- REQ00063581 — Straighten out edit member and data set delete confirmation processing
- REQ00004420 — Make edit MOVE/COPY accept parameters like the compare command
- REQ00039239 — Make edit MOVE/COPY accept parameters like the compare command
- REQ00038861 — Make edit MOVE/COPY accept parameters like the compare command
- REQ00038823 — Make edit MOVE/COPY accept parameters like the compare command
- REQ00038812 — Make edit MOVE/COPY accept parameters like the compare command
- REQ00068459 — Make edit MOVE/COPY accept parameters like the compare command
- REQ00039235 — Dynamically create the target data set in Edit Move/Copy and the Move/Copy utility
- REQ00037945 — Dynamically create the target data set in Edit Move/Copy and the Move/Copy utility
- REQ00038810 — Dynamically create the target data set in Edit Move/Copy and the Move/Copy utility
- REQ00038868 — Add a member list REFRESH command
- REQ00053576 — Add a member list REFRESH command
- REQ00069127 — Add a member list REFRESH command
- REQ00070272 — Add a member list REFRESH command
- REQ00066725 — Display the VSAM creation date by ISPF: Add the VSAM creation date to option 3.2 confirm delete panel
- REQ00061579 — Set *PATH* for AIX® paths (GFL type R) in option 3.4
- REQ00024028 — Investigate VSAM editor for ISPF (for example, DITTO, Insync Software)
- REQ00035695 — Investigate VSAM editor for ISPF (for example, DITTO, Insync Software)
- REQ00043129 — Investigate VSAM editor for ISPF (for example, DITTO, Insync Software)
- REQ00048750 — Investigate VSAM editor for ISPF (for example, DITTO, Insync Software)

- REQ00053700 — EDIT/VIEW/BROWSE command from command line
- REQ00013469 — ISREDIT service to retrieve volume
- REQ00024045 — Edit macro command RECFM only returns F or V
- REQ00051306 — Data set list filter exits needs more precise error indications
- REQ00040329 — Ignore stats mode for sequential files
- REQ00062846 — Give SCLM warning message in PDF edit if SCLM bit is ON in the ISPF member statistics
- REQ00060713 — Provide 132 character member list display (or perhaps just PF 10/PF11 for more data)
- REQ00070818 — Provide ISREDIT function to return EDIT/EDIF/VIEW
- REQ00061335 — Change LMMDISP to allow selecting members not displayed in the list
- REQ00070839 — Change SIRT VOLUME in option to sort on both volume and MVOL columns
- REQ00071213 — Allow CURSOR and FIND highlighting in ISPF edit for data wider than 256 bytes
- **ISPF SCLM**
 - REQ00008847 — Expand the SPROF panel to deal with more than 30 languages
 - REQ00057239 — Expand the SPROF panel to deal with more than 30 languages
 - REQ00066440 — Expand the SPROF panel to deal with more than 30 languages
 - REQ00063852 — Make ISPLNK valid for non-build translators
 - REQ00062720 — Make DTL parser and translator available as a sample
 - REQ00030819 — Make DTL parser and translator available as a sample
- **JES3**
 - REQ00007703_1 — Allow the control of SDEPTH by job class via command
 - REQ00030483 — Need ability to delete by JOBNAME during JES3 startup/analysis
 - REQ00031151 — GMS/SRM Interface
 - REQ00031445 — Allow User Input in GMS Scheduling
 - REQ00031452 — JES3 Should Allow Inquiry/Modify of MDEPTH, TDEPTH & SDEPTH
 - REQ00031453 — Enhance Inquire Backlog Command
 - REQ00031472 — JES3 Scheduling of Auxiliary Storage (obsolete)
 - REQ00032189 — JES3 Should Provide OP/Scheduler with Better Control Of Jobs (partial — run job command)
 - REQ00032213 — Inquiry Command For Backlogged Jobs By Group/Class
 - REQ00032228 — Inquire And Modify GMS Class Scheduling Parameters
- REQ00032277 — Should Provide the Ability to Force a Job to Schedule (partial — will not work if the class is disabled)
- REQ00032302 — JES3 Support for ASM Limits (obsolete)
- REQ00045544 — JES3 Proclib Disabling Logic
- **Language Environment**
 - REQ00061056 — Detect and externalize multiple POSIX (ON) enclaves
- **Security Server (RACF)**
 - REQ00014979 — Revoke-proof userids
 - REQ00029970 — Started Task must never be revoked
 - REQ00030931 — Add “EVOKE” to ALTUSER for Started Tasks
 - REQ00064798 — OpenEdition®: More granularity on user authentication
 - REQ00072546 — Provide the RACFICE tool via SAMPLIB member
 - RUGR95002 — Surrogated-only userids
 - RUGR96033 — Revoke-proof “no password” userids
 - RUGR96043 — Enhance OpenEdition Security
- **SecureWay Communication Server for OS/390**
 - REQ00071714 — Support of 650 IP addresses in the home list
- **Additional Requirements (no REQ number associated)**
 - Command to show slowdown and slow polling
 - Enhanced UNIX System Services message support for outboard TN3270 and 3270E servers
 - NetView® Full PIU Trace receives truncated PIU
 - Supply UNIX Shell commands with correct Names
 - Support for TN3270E client reconnect to our TN3270E Server

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: Infoprint Server Transforms for OS/390, program number 5697-F51, is available at no additional charge to customers who have OS/390 Version 2 Release 8 license or later release, and also have the Infoprint Server for OS/390 feature enabled and licensed with IBM. To use the transforms described in this announcement, program number 5697-F51 must be ordered and installed. For details, refer to Software Announcement 299-235, dated August 24, 1999 (Infoprint Server Transforms for OS/390).

When ordering OS/390 Unpriced Optional (**encryption controlled**) features, IBM recommends that you order the highest level of encryption available for your geography.

To obtain encryption support (security) for WebSphere Application Server for OS/390, you **must** specify one of the following security features:

- IBM HTTP Server North America Secure
- IBM HTTP Server France Secure
- IBM HTTP Server Export 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 the URL:

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

System Integrity

IBM will accept APARs where the installation of OS/390 introduces an exposure to system integrity. Refer to IBM Software Announcement P81-174, dated October 21, 1981.

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 OS/390 Security Server 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. 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.

Customer Financing

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>

Ordering Information

Current Licensees

Notes

- The last date for ordering OS/390 Version 2 Release 7 is September 9, 1999.

To allow for adequate order processing time, we recommend that all OS/390 Version 2 Release 7 orders be submitted no later than September 1, 1999, so that they can meet the process deadline of September 9, 1999.

- The first date for ordering OS/390 Version 2 Release 8 is September 10, 1999.

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

Any new or changed ordering information for OS/390 Version 2 Release 9 will be made available by its planned availability date: March 24, 2000.

For OS/390 Version 2 Release 8 price proposals, the CFSW configurator stand-alone path for 5647-A01 will be updated to support Release 8 on August 24, 1999.

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 8 will be available beginning September 10, 1999, and continue until Version 2 Release 9 becomes orderable during March 2000.

Production of OS/390 Version 2 Release 8 orders will begin on the general availability date, September 24, 1999. 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

Current licensees of OS/390 Version 2 (5647-A01) will be sent a memo and Program Reorder Form (PRF). The mailing of these PRF forms is scheduled to be completed by October 1, 1999.

The PRF is 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.

The PRF can be activated by one of the following methods:

- Ordering OS/390 Version 2 Release 8 via one of the OS/390 Customized Offerings will automatically initiate the PRF without the need to return the form.
- Returning the PRF to Software Delivery Fulfillment, who will process it within ten (10) work days of receipt. The customer may wish to do this if they want earlier delivery of these materials prior to the OS/390 Customized Offering
- Calling Software Delivery Fulfillment at 800-879-2755.

The PRF method REMOVES the need to cancel/reorder (MES) multiple feature numbers for current licensees to obtain materials refreshed from previous releases within Version 2 that are not delivered with the OS/390 Customized Offerings.

Current licensees who wish to order a feature that is NEW to OS/390 between their Version 2 Releases 4, 5, 6, and 7 and Version 2 Release 8 need to order these features (via ADD MES action).

- In addition to the new OS/390 Release 8 feature numbers (refer to the **Optional Machine-Readable Material** section), OS/390 Release 4, 5, and 6 customers will need to consider the following additional feature numbers offered between their release of OS/390 and OS/390 Release 8:

OS/390 Function	9/6250 Tape	3480 Cartridge	4-MM DAT
SecureWay Communications Server Security Level 1 ^{14,15} (RC2/RC4, CDMF support)	5786	5787	5788
SecureWay Communications Server Security Level 2 ^{14,15} (DES, SnMPV3 support)	5789	5790	5791
SecureWay Communications Server Security Level 3 ^{14,15,16} (DES, Triple DES, SnMPV3 support)	5792	5793	5794
IBM HTTP Server NA Secure ^{16,17} (R2/R4, DES, Triple DES support)	5507	5508	5509
IBM HTTP Server Export Secure ¹⁷ (R2/R4, DES support)	5510	5511	5512
IBM HTTP Server France Secure ¹⁷ (RC2/RC4)	5513	5514	5515

OS/390 Function	9/6250 Tape	3480 Cartridge	4-MM DAT
Open Crypto Services Facility Security Level 1 ¹⁸ (RC2/RC4/RC5)	5516	5517	5717
Open Crypto Services Facility Security Level 2 ¹⁸ (RC2/RC4/RC5, DES support)	5798	5701	5702
Open Crypto Services Facility Security Level 3 ^{16,18} (RC2/RC4/RC5, DES Triple DES Support)	5795	5796	5797
Open Crypto Services Facility France ¹⁸ (RC2/RC4/RC5)	5718	5719	5720
System SSL Security Level 2 (DES support)	5043	5044	5045
System SSL Security Level 3 ^{16,19} (DES, Triple DES support)	5731	5753	5506
Infoprint Server ²⁰	5040	5041	5042
Infoprint Server JAPAN ²⁰	5111	5112	5337
Infoprint Server SPANISH ²⁰	5525	5526	5398

¹⁴ Includes feature number content formerly known as eNetwork Communications Server Security Levels 1, 2, 3 in Release 7 and prior to Release 7 known as TCP/IP Kerberos, IP Security.

¹⁵ The SecureWay Communications Server Security Level 1, 2, 3 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.

¹⁶ Triple DES encryption can now be shipped outside US/CANADA, if customer is: financial institution, bank, subsidiary of U.S. company, insurance company, healthcare provider (but not pharmaceutical company), on-line commerce (browsers). For geographies other than U.S. and Canada, A special export license is required and must be obtained and provided to your IBM representative BEFORE order submission.

¹⁷ The IBM HTTP Server 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.

¹⁸ Only one of the Open Cryptographic Services Facility France or Open Cryptographic Services Facility Security Level 1, 2, 3 features needs to be ordered for you to obtain additional security function over what is provided in the OS/390 base.

¹⁹ System SSL Security Level 3 was formerly known as System SSL Crypto.

²⁰ Infoprint Server is formerly known as OS/390 Print Server, which includes IP Printway, Netspool and OS/390 Print Interface

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

For Firewall Technologies support, customers need to order Security Server with one of the above SecureWay Communications Server Security feature numbers.

- OS/390 Version 2 Release 7 customers need only consider OS/390 Version 2 Release 8 new feature numbers beyond the Program Reorder Form they receive. These features must be ordered an via ADD MES:

OS/390 Function	9/6250 Tape	3480 Cartridge	4-MM DAT
Infoprint Server ²¹	5040	5041	5042
Infoprint Server Japan ²¹	5111	5112	5337
Infoprint Server Spanish ²¹	5525	5526	5398
System SSL Security Level 2 (DES support)	5043	5044	5045

²¹ Infoprint Server is formerly known as OS/390 Print Server, which includes IP Printway, Netspool and OS/390 Print Interface.

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

New Licensees

Notes

- The last date for ordering OS/390 Version 2 Release 7 is September 9, 1999.

To allow for adequate order processing time, we recommend that all OS/390 Version 2 Release 7 orders be submitted no later than September 1, 1999, so that they can meet the process deadline of September 9, 1999.

- The first date for ordering OS/390 Version 2 Release 8 is September 10, 1999.

For OS/390 Version 2 Release 8 price proposals, the CFSW configurator stand-alone path for 5647-A01 will be updated to support Release 8 on August 24, 1999.

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 8 will be available beginning September 10, 1999, and continue until Version 2 Release 9 becomes orderable during March 2000.

Production of OS/390 Version 2 Release 8 orders will begin on the planned availability date, September 24, 1999. Shipment dates for orders will be based on order sequence, Customized Offering selected, production capability, and customer-requested arrival date. Due to the amount of customization of ServerPac orders, shipments will begin approximately two weeks after planned availability. Due to the amount of additional customization of SystemPac orders, shipments will begin approximately four weeks after order and data input verification. For CBPDO orders, shipments will begin one week after planned availability. In all cases, no delivery commitments are to be made to the customer until confirmed arrival dates are in AAS.

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 date will receive OS/390 Version 2 Release 7.
- Orders that ship after the planned availability date will receive OS/390 Version 2 Release 8.

New users of OS/390 should specify:

Type	Model
5647	A01

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

Refer to:

- 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 8 is available, OS/390 Version 2 Release 7 will no longer be available.

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

Version-to-Version Upgrade Credit: To upgrade from a prior program acquired for a one-time charge (OTC) to a replacement program using a version-to-version upgrade credit, the customer must notify and identify to IBM the applicable prior program and replacement program participating in the upgrade credit.

Basic Machine-Readable Material: There are no changes from previously announced information regarding basic machine-readable material.

For more information, refer to:

- 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 (OS/390 Version 2)

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 998-294, dated September 29, 1998 (One-Time Charge (OTC/GOTC) Option for S/390)
- Software Withdrawal 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)

Optional Machine-Readable Material: To order, select the feature number for the desired distribution medium:

Distribution Medium for OS/390 Version 2 Release 8 Optional Features

Media feature number information remains unchanged from the previous announcements of OS/390 Version 2 Releases 4, 5, 6, and 7, except for the following additions and withdrawals from marketing:

Feature numbers added:

OS/390 Function	9/6250 Tape	3480 Cartridge	4-MM DAT
Infoprint Server (formerly OS/390 Print Server, priced)	5040	5041	5042
Infoprint Server Japan (formerly OS/390 Print Server)	5111	5112	5337
Infoprint Server Spanish (formerly OS/390 Print Server)	5525	5526	5398
System SSL Security Level 2 (new, unpriced)	5043	5044	5045

Notes

- System SSL Security Level 3 (formerly System SSL Crypto), will use the same feature numbers as previously announced.
- Charges for Infoprint Server remain the same as previously announced for Print Server.

Triple DES Feature Information

Triple DES encryption can now be shipped outside U.S./CANADA, if a customer is a financial institution, bank, subsidiary of a U.S. company, insurance company, healthcare provider (but not a pharmaceutical company), or an online merchant.

For geographies other than U.S. and Canada, a special export license is required and must be obtained and provided to your IBM Marketing Representative PRIOR to order submission.

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 (formerly eNetwork Communications Server Level 3)
- System SSL Security Level 3 (formerly System SSL Crypto)

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

For feature number withdrawn from Release 8 marketing effective end of day September 9, 1999:

OS/390 Function	9/6250 Tape	3480 Cartridge	4-MM DAT
OS/390 Print Server (called Infoprint Server in R8)	5772	5773	5774

OS/390 Function	9/6250 Tape	3480 Cartridge	4-MM DAT
OS/390 Print Server Japan (called Infoprint Server in R8)	6150	6151	6152
OS/390 Print Server Spanish (called Infoprint Server in R8)	6706	6707	6708
Security Server LDAP Server-DES	5778	5779	5780

NLS Features

New media feature number information is shown above, in addition 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 Publications

Title	Order Number
HLASM Toolkit Feature Installation	GC26-8711
OS/390 Licensed Program Specifications	GC28-1728
OS/390 MVS Product Management	GC28-1730
OS/390 LAN Server Installation Guide	GC28-1733
OS/390 LANRES Installation Guide	GC28-1736
OS/390 MVS Conversion Notebook	GC28-1747
OS/390 HCD Planning	GC28-1750
OS/390 MVS JCL Reference	GC28-1757
OS/390 MVS Planning: Workload Management	GC28-1761
OS/390 MVS Routing and Description Codes	GC28-1778
OS/390 MVS System Codes	GC28-1780
OS/390 MVS System Commands	GC28-1781
OS/390 MVS System Messages, Volume 1 (ABA-ASA)	GC28-1784
OS/390 MVS System Messages, Volume 2 (ASB-EZM)	GC28-1785
OS/390 MVS System Messages, Volume 3 (GDE-IEB)	GC28-1786
OS/390 MVS System Messages, Volume 4 (IEC-IFD)	GC28-1787
OS/390 MVS System Messages, Volume 5 (IGD-IZP)	GC28-1788
OS/390 JES2 Commands	GC28-1790
OS/390 JES2 Messages	GC28-1796
OS/390 JES2 Migration Notebook	GC28-1797
OS/390 JES3 Commands	GC28-1798
OS/390 JES3 Conversion Notebook	GC28-1799
OS/390 JES3 Messages	GC28-1804
OS/390 HCD Messages	GC28-1849
OS/390 Security Server(RACF) Planning: Installation and Migration	GC28-1920
OS/390 Installation and Planning Kit	GK2T-6710
OS/390 Infoprint Server Introduction	G544-5696
OS/390 C/C++ Compiler Run-Time Migration Guide	SC09-2359
DFSMS/MVS Access Method Services ICF	SC26-4906
DFSMS/MVS Program Management	SC26-4916
DFSMS/MVS Planning for Installation	SC26-4919
DFSMS/MVS DFSMSdfp Storage Administration Reference	SC26-4920

Title	Order Number
DFSMS/MVS Utilities	SC26-4926
OS/390 NFS Customization Operations	SC26-7253
OS/390 ISPF Users Guide	SC28-1239
OS/390 ISPF Planning and Customizing	SC28-1298
OS/390 DCE Planning	SC28-1582
OS/390 DCE Configuring and Getting Started	SC28-1583
OS/390 DFS Configuring and Getting Started	SC28-1722
OS/390 SMP/E Messages and Codes	SC28-1738
OS/390 MVS Initialization Tuning Reference	SC28-1752
OS/390 JES2 Initialization Tuning Reference	SC28-1792
OS/390 JES3 Initialization Tuning Reference	SC28-1803
OS/390 SMP/E Commands	SC28-1805
OS/390 SMP/E Reference	SC28-1806
OS/390 HCD User's Guide	SC28-1848
OS/390 UNIX System Services Planning	SC28-1890
OS/390 Language Environment Customization	SC28-1941
OS/390 Language Environment Run-Time Migration Guide	SC28-1944
OS/390 RMF User's Guide	SC28-1949
OS/390 SecureWay Communication Server: IP Planning and Migration Guide	SC31-8512
OS/390 SecureWay Communication Server: IP Configuration Guide	SC31-8513
OS/390 SecureWay Communication Server: IP Messages Volume 1	SC31-8517
OS/390 SecureWay Communication Server: SNA Network Implementation	SC31-8563
OS/390 SecureWay Communication Server: SNA Source Definition Reference	SC31-8565
OS/390 SecureWay Communication Server: SNA Operations	SC31-8567
OS/390 SecureWay Communication Server: SNA Messages	SC31-8569
OS/390 SecureWay Communication Server: IP Messages Volume 2	SC31-8570
OS/390 SecureWay Communication Server: IP and SNA Codes	SC31-8571
OS/390 SecureWay Communication Server: SNA Planning and Migration Guide	SC31-8622
OS/390 SecureWay Communication Server: IP Messages Volume 3	SC31-8674
HTTP Server Planning, Installation and Using for OS/390	SC31-8690
GDDM Sys Customization and Administration	SC33-0871
DFSORT Installation and Customization R14	SC33-4034
IBM BookManager Read/MVS Installation Planning and Customization	SC38-2035
OS/390 Printing Softcopy Books	S544-5354

Note: *OS/390 Installation Planning Kit* (GK2T-6710) will be available at general availability and is included in the OS/390 Release 8 new licensee package. Individual publications in the kit will be available to order shortly after the announcement date. The kit consists of the following hardcopy publications:

Title	Order Number
OS/390 Planning for Installation	GC28-1726
OS/390 Introduction and Release Guide	GC28-1725
OS/390 Information Roadmap	GC28-1727
OS/390 Hot Topics Newsletter	GA22-7431

Optional Publications

The following optional publications will be available at planned availability.

Library Title	Feature Number
OS/390 Hardcopy Licensed Publications	8006
OS/390 Hardcopy Unlicensed Publications	8007
OS/390 HLASM Toolkit Publications	8008
OS/390 C/C++ Publications	8009
OS/390 DFSMSrmm Publications	8010
OS/390 DFSMSHsm Publications	8011
OS/390 JES3 Publications	8012
OS/390 RMF Publications	8013
OS/390 Security Server Publications	8014
OS/390 DFSORT Publications	8021
OS/390 SDSF Publications	8023
OS/390 DFSMSdss Publications	8024
OS/390 Infoprint Server Publications (formerly Print Server Publications)	8028
OS/390 HCM Publications	8029

Notes

- Specifying the 8xxx feature number will supply additional hardcopy books for the applicable OS/390 elements or optional features. The books that you will receive are those that are available in hardcopy and not already part of the basic set for the listed OS/390 element or feature. All of these books are also supplied in softcopy displayable format (both BookManager and PDF) as part of the basic softcopy publications. All of the unlicensed OS/390 documentation (for example, except for feature number 8006) is also available from the OS/390 Internet Library at announce time. 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), and in the Sales Manual description for OS/390 on HONE.
- The price for each 8xxx documentation feature number is approximately the sum of the costs of the individual books in that feature number. If all of the books are ordered individually, the total cost might be slightly different. You can order the 8xxx documentation feature numbers for this release only while the release itself is orderable.
- If the 8xxx feature is chosen an OTC is incurred.

Optional Unlicensed Publications

Specifying the 8xxx feature numbers below will supply the following optional unlicensed material, which will be available from IBM at product general availability for a fee.

List of Hardcopy Unlicensed Publications

This feature number contains all of the books, for all of the OS/390 product base elements, that are available in hardcopy and not already part of the basic set of books.

(feature number 8007)

Title	Order Number
OS/390 SOMobjects Getting Started	GA22-7248
OS/390 Parallel Sysplex Recovery	GA22-7286
OSA Planning for S/390	GC23-3870
OS/390 ICSF Overview	GC23-3972
DFSMS/MVS General Information	GC26-4900

Title	Order Number	Title	Order Number
HLASM General Information	GC26-4943	OS/390 JES2 Commands Summary	GX22-0041
OS/390 ISPF Messages and Codes	GC28-1326	OS/390 Open System Adapter Support	SA22-7403
OS/390 MVS Programming: Resource Recovery	GC28-1739	Facility Express Customer's Guide and Reference	
OS/390 MVS Dump Output Messages	GC28-1749	Standard Packaging Rules for MVS-based Products	SC23-3695
OS/390 MVS IPCS Commands	GC28-1754	OS/390 ICSF Application Programmer's Guide	SC23-3976
OS/390 MVS IPCS Customization	GC28-1755	OS/390 ICSF Messages	SC23-3977
OS/390 MVS IPCS User's Guide	GC28-1756	OS/390 Encina Toolkit Executive Guide and Reference	SC24-5832
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