G326-3031-00

# ISV Quarterly News

## Delivery of Key Apps Enhances S/390 Value for Customers

Over the last 18 months, more than 1000 new or modernized applications, tools, and middleware have become available on the S/390 platform and an additional 700 are expected in the next six months.

Many of these deliveries have come as the result of efforts by the S/390 Partners in Development (PID) Association, which has grown at a phenomenal rate to include more than 850 Solution Providers in 31 countries. By year end, membership is expected to top 1000.

J.D. Edwards, and The Baan Company are among the vendors who have recently announced hot new business applications for S/390. And, in the first half of 1996, in recognition of S/390′s networking capabilities, more than a dozen ISVs, including Sterling Software, and Beyond Software, have introduced applications that leverage S/390′s formidable networking capabilities. In addition, key business apps from PeopleSoft, American Software, and others are now taking advantage of Parallel Sysplex processing, and IBM and BMC just announced SmartBatch, which will allow customers′ batch jobs to take advantage of Parallel Sysplex processing.

### Highlights

Here are some of the hottest 1996 announcements:

- **J.D. Edwards & Company** plans to deliver its enterprise-wide OneWorld software applications on OS/390 on October 1, 1996.
- **The Baan Company** and IBM are working together to extend BAAN IV, Baan′s enterprise business applications, to OS/390.
- **Lotus** and IBM announced a feasibility port of Lotus Notes Release 4 to OS/390 with the goal of delivering a product in 1997.
- **Oracle Corporation** delivered Oracle7 for MVS Parallel Server Option, which takes advantage of the IBM Parallel Sysplex′s performance, availability, and lower total cost-of-computing.
- **PeopleSoft**, Inc. certified that its current business applications take advantage of Parallel Sysplex technology, using DB2 for MVS/ESA Version 4.
- **Bristol Technology** and IBM announced a relationship that will result in the availability of Bristol′s Wind/U development environment on the S/390 platform. This relationship will enable C and C++ programs written to the Windows NT APIs to be ported to OS/390.
- IBM and **BMC Software** announced SmartBatch for OS/390, which will allow batch jobs to be processed concurrently across multiple processors and may allow customers to cut batch processing time by as much as 50 to 75 percent.
- **Beyond Software Inc.** and IBM announced a joint marketing agreement for Beyond′s web server product, EnterpriseWeb/VM. This agreement gives IBM the ability to market a complete Internet/Intranet solution to mainframe customers who need to make their mainframe information and applications available through the Internet and World Wide Web.
- **Sterling Software** and IBM enhanced their current business partner relationship by adding Sterling′s VM:Webserver product to their existing marketing agreements. VM:Webserver is a VM-based web server product that allows businesses to make their VM-based information and applications available through the Internet and World Wide Web.

The Appendix includes press releases with for many the above announcements.

### Applications Delivered in 1996

Over 350 new or modernized products were delivered this year, including:

- New Business Applications
- Internet/Network Computing Software
- Parallel Sysplex-Enabled Applications
- Application Development Tools
- Middleware
- Systems Management Applications

## New Business Applications

Taking advantage of OS/390's UNIX interfaces, key vendors announced hot new business application ports:

- J.D. Edwards & Company and IBM announced that **OneWorld**, J.D. Edwards' suite of enterprise-wide software supporting configurable network computing, is planned for availability on OS/390 on October 1, 1996.
- At BaanWorld in Berlin, The Baan Company and IBM announced that they are working together to extend **BAAN IV**, Baan's enterprise business applications, to OS/390. The companies currently intend to deliver BAAN IV's database server on System/390 in the fourth quarter, 1996, with a port of the application server to OS/390's UNIX interfaces to follow in 1997.
- SAP AG and IBM announced a joint development effort to deliver the **SAP R/3** database server on S/390. SAP R/3 integrates business processes and provides real-time financial and business information for enterprises. Its set of client/server applications cover a comprehensive range of business activities and industries.

In addition, key software vendors introduced critical business management products that take advantage of recent S/390 performance improvements for client/server applications.

- Alltel Healthcare delivered **CareMinder** and **Monitored Care Application (MCA)**, two new client/server applications to enhance medical care quality and caregiver efficiency. CareMinder is an online patient care management application that records a patient's medical orders, interventions, and outcomes and generates patient care events and provider-specific worklists. MCA manages critical care environments by automating the collection of monitoring device and flowsheet data and making it available to Alltel's TDS 7000 Series applications for access by clinicians.
- Biscom introduced **FAXCOM Least-Cost Routing**, which provides the ability to route faxes over corporate wide area networks (WANS) and, thus, helps businesses reduce long-distance telephone costs.
- Computer Credit Inc announced the availability of **CCI Interface to MediPac**, which provides HealthQuest's MediPac customers with an integrated collection letter service comparable to a third-party collection agency but at significantly less cost. The interface allows health care organizations to retain control of accounts receivable assets and payments and assists with the collection of past-due accounts by sending a series of third-party collection letters.
- Concentric Data Systems, Inc. announced the availability of two business-related tools that provide connectivity to DRDA-enabled and ODBC-enabled data sources. **ARPEGGIO Viewer** allows the user to view, customize or drag-and-drop the data into spreadsheet applications, such as Excel or Lotus 1-2-3.

  **ARPEGGIO for the Desktop** is a business information publisher that allows advanced business users and system administrators to access, format, and exchange enterprise information with colleagues.
- I&S Informationstechnik & Services GmbH made available **Indemnity Management System**, an interactive application that allows insurance companies to process a wide variety of claims.
- SetNet Corp. introduced **SetNet Mail Enterprise**, which enables database management systems to interact with the mail server to provide database-initiated messaging, automatic generation of mailing lists, and online backup and restore of the E-mail database. The product supports most leading relational database management systems.
- Software Daten Services introduced **Customer Relationship Management**, which helps financial advisors take a proactive approach to counseling by making available such information as customer financial status, preferences, and previous sales activities.
- TSI International introduced **Mercator for R/3**, software to integrate SAP R/3 with external applications. SAP AG has certified the product for Application Link Enabling (ALE), its strategic direction for integrating loosely-coupled applications with SAP R/3. Mercator R/3 eliminates the need to write custom programs for ALE.

To help give new OS/390 customers a jump-start on the platform, the following four solution developers participated in the initial release of Entry Server Offering for OS/390 -- IBM's low-cost packaged solution comprised of hardware, software, and services.

- Walker′s **Tamaris Client/Server** enterprise series business solutions support organizations′ decision making, financial analysis, accounting, cost allocation, forecasting, and modeling and budgetary activities.
- SDM International has introduced **On-line Cardholder Management 24 Hours (OCM24)**, a CICS-based electronic funds transfer application that manages EFT networks. OCM24 includes automatic teller machine (ATM) and point-of-sale software solutions.
- Quality Software Products, Inc. has provided **Universal Series**, a client/server financial accounting product which includes modules for general ledger, accounts payable, and accounts receivable.
- IBM Enterprise Resource Planning Solution Services has introduced **SynNova**, an order-to-delivery system that provides assessment and feasibility studies, migration consulting, conversion programming and other related migration activities.

## Internet/Network Computing Software

In recognition of S/390′s strengths in the network computing area, software vendors have announced and delivered Internet products that provide such functions as workflow management, intranet security, and access to existing applications.

- IBM and Lotus announced a feasibility port of **Lotus Notes** Release 4 to OS/390, with the goal of delivering a product in 1997. Lotus Notes on S/390 will build upon already-existing, critical capabilities of OS/390, such as message queuing and workflow and data management, which are critical to the future of collaborative, network computing.

  By year end 1996, IBM S/390 Divsion employees are targeted to be running their day to day operations on a S/390 Lotus Notes server.
- Beyond Software Inc. introduced **Enterprise Web/VM**, software that runs on a corporate intranet and allows an entire enterprise to access information, applications, and mainframe functions.
- Dimensional Insight made available two products that allow businesses to take advantage of corporate intranets. **Data Fountain** allows organizations to deploy EIS applications on their Web Servers. **Cross Target** allows data mining and data access.
- IDEA introduced **Internet Terminal Server**, an application to deliver WorldWide Web browsing and E-mail capabilities to SNA terminal users, enabling their integration into corporate intranets through a single user interface.
- Information Builders announced two products, **Web390** and **Web3270**, to make MVS data and applications available to Intranet and Internet browser users. The products eliminate many internet limitations and security concerns, and make mainframe-based data and applications available through easy-to-use tools. Web390 provides full access to Web functionality, with CGI support for building complete, scalable Web applications. Web3270 is available now. Availability for Wed390 is planned for 4Q96.
- Intelligent Environments announced the availability of **AMAZON**, which includes a development tool to connect corporate applications and databases to the World Wide Web. AMAZON also provides support for corporate database access to DB2 and CICS applications.
- OpenConnect Systems introduced **OC///WebConnect**, a new, internet- style Java-enhanced technology that allows users to access mainframe data from the desktop using Web browsers.
- Oracle Corporation delivered **Oracle Web Server**, which provides internet access to Oracle′s database products on the S/390. Oracle Web products can be used with IBM Internet Connection Server or as standalone products.
- Simware made available **Salvo Server Edition**, which dynamically translates 3270 data streams to HTML, and vice-versa. The product does not require user programming or changes to host applications.
- Sterling Software released its VM-based web server product, **VM:Webserver**. This product allows VM data and applications to be made available, via the Internet and the World Wide Web, to a company′s customers and employees.

- Teubner & Associates introduced **Corridor**, which connects web users to applications that use 3270 terminals, enabling them to access information and applications.
- WRQ made available **Reflection for IBM**, which gives Windows′ users (Windows 3.1x, Windows 95, and Windows NT) access to applications and data on S/390 systems. For enhanced TCP/IP performance, the product uses TN3279E, a new Internet Engineering Task Force standard for 3270 terminals over TCP/IP.

## Parallel Sysplex-Enabled Applications

Significant new applications that take advantage of Parallel Sysplex performance, availability, and lower total cost of computing have become available in 1996, including:

- American Software announced that its suite of business management solutions, including **Supply Chain Planning, Logistics, Manufacturing,** and **Financial** applications now take advantage of Parallel Sysplex technology.
- Computer Associates made available **CA-IDMS** 14.0 and **CA-Datacom** 9.0. These versions provide both multi-tasking and Parallel Sysplex support. Through facilities, such as, dynamic transaction routing and buffer sharing between regions, CA-IDMS and CA-Datacom customers can take now advantage of the increased availability and scalable capacity provided by the Parallel Sysplex.
- Oracle Corporation delivered **Oracle 7 for MVS Parallel Server Option**, which allows customers to combine Oracle′s client/server, parallel database technology with the open S/390 architecture in a Parallel Sysplex environment. The Parallel Server provides a solution for large mission-critical database applications.
- Peoplesoft, Inc. certified that their current business applications take advantage of Parallel Sysplex technology using DB2 for MVS/ESA Version 4. Testing and benchmarking results indicated improved performance, most dramatically for large enterprise applications. Peoplesoft′s **Human Resource, Financial,** and **Distribution** packages is available now.
- SMS announced the availability of two products that together can enable customers to distribute INVISION(R) or SIGNATURE(R) processing across multiple processors in the S/390 environment. SMS announced the availability of **Delivery Systems** Version 22.1 (DS 22.1) and the new **Delivery Systems Multi-CICS**(DS/MC) processing option on July 12, 1996. The primary benefits offered by DS/MC are that it gives customers an option to take better advantage of lower-cost, multiprocessor systems and it can improve availability by reducing the impact of some unscheduled outages.

## Parallel Processing for Batch Jobs

- BMC Software and IBM announced a technology agreement to bring the benefits of Parallel Sysplex processing to customer doing batch processing. The product, **SmartBatch for OS/390** is intended to allow batch jobs to be processed concurrently across multiple processors and may allow customers to cut batch processing time by as much as 50 to 75 per cent.

### Parallel Sysplex Tools

- BMC Software introduced three systems management applications. **FAST PATH REORG/EP** analyzes databases for fragmentation and reclaims available space. The speed of this utility minimizes downtime and allows database administrators to perform routine maintenance without impacting overall database availability.

  **FAST PATH ANALYZER/EP** provides rapid and comprehensive statistical reporting and error detection of IMS Fastpath data bases.

  **PATROL** allows an installation to manage the overall health of its systems by monitoring for exception conditions and initiating corrective actions. to cut batch processing time by as much as 50 to 75 percent. BMC Software has also recently announced the delivery of products to extend PATROL′s capabilities to Internet/Intranet environments.
- Compuware made available two tools that take advantage of Parallel Sysplex technology. **Conversion-XPERT**, simplifies the movement and conversion of data between mainframe and client/server database environments by enabling data migration, reformatting and conversion for more than 60 data file formats, including VSAM, sequential, DB2, ADABAS, IDMS, ORACLE, SYBASE, and INFORMIX.

**XPEDITER/CICS** is a testing and analysis tool that allows CICS applications programmers to resolve errors interactively. XPEDITER/CICS Release 6.8 supports the CICS Transaction Server/390, including record level sharing and shared temporary storage.

- Software AG provided **ENTIRE NET-WORK XCF**, which supports XCF links defined through a Coupling Facility or across CTCs.

## Application Development Tools

Vendors introduced a broad range of tools for application development, including tools to support client/server environments, object-oriented applications, and business applications.

- Cincom made available **Total Framework**, which allows developers to assemble C++, Smalltalk, and Visual Basic components in cross-platform, enterprise-wide application development environments.
- Clear Communications introduced **Clearview Legacy Gateway**, a toolset that extracts data from telecommunications legacy databases and translates it into information objects for immediate use by UNIX-based network management applications.
- Command Technology Corporation introduced **SPF/Professional**, a PC-based Integrated Development Environment for CICS, IMS, and DB2 applications. The product operates on Windows-95 and Windows-NT and provides an environment for refacing, rehosting, maintaining or enhancing legacy COBOL applications. Enterprise Developer Edition provides custom dialogs for direct operational control of MVS, DB2, XDB, Micro Focus, and CA-Realia-II components.
- Concentric Data Systems, Inc. introduced **ARPEGGIO for the Developer**, a set of tools to integrate data access and publishing into applications. ARPEGGIO developer tools work with other ARPEGGIO products to provide business users with customized information.
- DPE & Associates announced the availability of **CICS Program Analyzer**, which allows CICS programmers to analyze their programs in batch mode.
- Ernst & Young RE announced the availability of **Cleopatra for PL/I to COBOL Conversion**, a tool that supports the conversion of business PL/I programs to COBOL.
- Essential Software & Services made available **Essential Information Retrieval for RACF**, a set of RACF functions implemented as RACF dialogs.
- JBA International made available **GUIDE-LINES**, a software development environment for creating industrial strength, enterprise-wide application systems. It provides a high-level integrated tool set that generates native C++ client/server applications that exploit object-oriented environments.
- Open Environment Corp. made available **OLEnterprise**, a tool for developing and deploying multi-tiered, object-based applications across a broad range of networked platforms.
- R.O.S.E. GmbH announced the availability of **OPC/Graph C/S**, a new client/server version of OPC/Graph. The new version synchronously analyzes and graphically represents MVS batch productions under OPC.
- Software AG introduced **NATURAL Light Storm**, which provides a development environment for building server applications that extend existing enterprise applications and enable a new class of client/server applications. Applications written in NATURAL Light Storm are both portable and scalable and are compatible across Windows, UNIX, OpenVMS, VSE, VM/CMS and OS/390 operating systems.
- Software Computing Power Limited made available **ASSISTWARE**, a tool that enables non-technical users to add support services, such as online help, documentation, and training procedures, to GUI applications, without changing the application service code.
- Sybase introduced **Replication Toolkit**, which helps replicate relational and non-relational MVS data sources.
- Texas Instruments made available **TI Arranger** 1.1, a suite of software assembly component tools that enhance TI's object-oriented Composer family of enterprise-development tools. Composer applications enable both business users and developers to build and reuse client and server applications.

- V/Soft Software made available three new VM-based applications. **ADM2PLOT** outputs GDDM standard graphics files on a wide variety of hardcopy plotting devices; **PCR** makes available to application developers some of VM's powerful REXX and CMS functions by allowing them to be coded in PL/I; **CMS Pipeline Stages** uses the federal Data Encryption Standard (DES) to encrypt and decrypt records.

New application development tools for OS/390's UNIX interfaces were introduced to assist developers of UNIX-based, distributed, and object-oriented applications.

- IONA Technologies Ltd. and BellSouth have teamed to provide IONA's CORBA implementation, **Orbix**, on the MVS OpenEdition operating system. Orbix is IONA's implementation of the Object Management Group's CORBA (Common Object Request Broker Architecture) specification. With Orbix, programmers can rapidly develop distributed, object-oriented applications following a consistent and straightforward, standards-based model.
- SAS Institute shipped its **SAS/C Compiler** Release 6.0 for IBM's Open Edition MVS Version 5. The SAS/C Compiler allows users to develop and run C programs in the MVS or CMS mainframe environments. Freely redistributable runtime libraries eliminate the need for users of applications developed with SAS/C to purchase a C Compiler or library to run those applications.

## Year 2000 Tools

To help usher in the new century, a number of vendors announced the availability of Year 2000 tools.

- DPE and Associates introduced **SIM2000**, which provides a testing environment to identify changes required to enable an application for Year 2000. SIM2000 works in the Batch and CICS environments of MVS and VSE.
- Intersolv made available **Manage2000**, a comprehensive set of tools and services for managing Year 2000 date transitions in computer programs and applications.
- LexiBridge provided **Bridge 2000**, a tool to allow CICS/COBOL applications to handle dates for the upcoming century.
- MiraSoft Inc. introduced a suite of tools, **VM/ESA Timing Facility Monitors**, to assist VM customers in upgrading their VM applications with support for Year 2000.
- Tech-Beamers announced its **YR 2000 S/390 Workstation/Center** solution, a combination of hardware and software to assist VM, VSE and MVS customers in enhancing their applications for Year 2000 by providing a stand-alone environment in which to develop and test changes without impacting production systems.
- VIASOFT Inc. made available **Estimate 2000**, a product to help an organization assess the scope of its Year 2000 data-based conversion project.

## Middleware

New middleware offerings introduced this year include:

- Apertus Technologies, Inc. introduced **MQView**, a tool to simplify the configuration and operation of the MQSeries family of products. MQView is an SNMP-based systems management application that provides configuration, operations, monitoring and fault/alert management, and reporting for distributed, heterogeneous MQSeries systems -- all from a central site.
- Connectivity Systems announced the availability of **TCP/IP for VSE**, a native implementation of TCP/IP for VSE, FTP, Telnet, LPR, Sockets API and others.
- Eno Software, Inc made available **Application Express Offloader for MVS (MVS/AEO) Workstation** which allows users to offload applications (including CICS, DB2, and IMS applications) to the workstation and to work in a GUI environment.
- HOB Electronic GmbH & Co KG provided **HOBPACK**, a data compression program that runs both on host computers and PCs and allows data compressed on one system to be used on the other. HOBPAK includes the subroutine source code and, thus, can be integrated into user-written programs.
- Killary Software introduced **KixSNA**, a product suite that provides mainframes access to clients using the TCP/IP protocol over a high speed channel adapter. The solution allows for the

elimination of front-end processors, cluster controllers, and 3270 terminals.

- Micro Focus announced the availability of **Visual Basic Extension (VBX)** an interface to the Micro Focus Application to Application Interface for Windows (AAI/Win). VBX allows an application to communicate with another AAI-enabled program on the same machine or on other machines on the network, using a client/server architecture.

- NCR announced that its TOP END client/server middleware now runs on MVS. **TOP END Remote Server for MVS** enables transparent access between UNIX and Windows NT systems and applications and services that reside on MVS systems. The product protects investment in existing applications and simplifies the integration of mission-critcal, legacy systems and open client/server solutions.

- Open Environment Corporation has made available a beta release of their client/server middleware product, **Entera**, for OS/390. This runtime-only version enables customers to integrate OS/390 as the middle tier in a three-tiered DCE environment, combining the power and security of OS/390 with the flexibility and openness of client/server systems. General availability of the runtime-only version is planned for year end.

- StarQuest Software introduced **StarPipes**, which enables client-based applications to access IBM databases using TCP/IP. The product operates with StarQuest′s StarSQL Pro, and ODBC-to-DRDA driver for Windows, OS/2, and UNIX to provide database access to remote databases from ODBC-enabled client applications.

## Systems Management Applications

Vendors introduced applications to help ease systems management tasks across a broad spectrum of areas, including operations, workload, database, security, and testing.

Support grew for IBM′s Messaging and Queuing Series (MQSeries), the set of products and standards developed jointly by IBM and Apertus Technologies for the development of industrial-strength, multi-platform OLTP.

- Candle made available **Candle Command Center** for MQSeries Version 100, which provides a consolidated view of the performance of MQSeries resources and allows users to monitor and tune the MQSeries environment.

- Boole and Babbage announced **MainView for MQSeries**, which allows users to monitor the entire MQ network from a single screen and provides access tools that monitor MQSeries statistics related to OS/2, AIX, and other platforms.

Additional systems management applications include the following:

- Barnard Software Inc. introduced **Opti-Workload**, which can help manage the workload of a central processor.

- BETA Systems Software AG made available two systems management applications. **BETA 55 Media Manager** Version 3, is a tape data management system that provides services, such as tape stacking, data access across tape and other media, media refreshes, and online reporting.

  **BETA 85 HSM online** Version 1 is an interface for DFSMhsm that displays information on HSM-managed volumes.

- Data 21 announced the availability of **CICS Notes for CICS/ESA**, an electronic ″sticky notes″ product that allows CICS applications users to create and display notes that relate to the contents of key fields.

- Enterprise Research Inc. introduced **CICS-SSO**, which provides menu access to all CICS applications on the VTAM network. Eliminates redundant CICS sign-on/sign-off. Includes customizable, secure menu facility. Supports external security for menus, transactions, and programs.

- Hudson Williams introduced **Enterprise Chargeback for CPE**, the industry′s first enterprise-wide chargeback system that runs on MVS and UNIX platforms. The product provides charges for some MVS subsystems and resources, including batch, TSO/E, CICS, DB2 and DASD, as well as for UNIX and LAN/WAN networks.

- ICL Inc. introduced **Access Manager 4**, an enterprise network security product that controls user access to information throughout an organization. ICL provides support for RACF

PassTickets to enhance security and reduce administrative overhead.

- I&S Informationstechnik & Services GmbH made available **DB2-RESCUE**, an ISPF application providing centralized data administration and data management functions for DB2.
- MAXM Systems Corporation made available **MAX/Value Plus**, a set of customized options for their MAX/Enterprise product.
- New Dimension Software introduced two systems management tools. **Control-M/Analyzer** is an automated production setup and analysis tool that allows operations personnel to implement pre-defined rules to guide the production process. Control-M/Analyzer invokes rules at any point during the production process to analyze the output of application jobs and verify the accuracy of the results.

  **Control-M/Links** is an automation tool to integrate elements of the operations environment into the production schedule. The product eliminates the need for manual intervention or programming and allows production administrators to control the production environment.
- Operations Control Systems announced the availability of **EXPRESS for UNIX/390 Agent**, which provides job scheduling functions for UNIX, MVS, and NT.
- Panorama Software Corp. made available **SUNRISE Xtract2**, which enhances the functions of their data recovery product, SUNRISE, by providing further analysis of SUNRISE-generated information and presenting it on the workstation.
- Platinum technology made available **AutoAction**, which helps manage distributed tasks by providing automated message response and allowing system activity to be monitored from a single system.
- Positron GmbH introduced **HICS-HSM Information Control System**, a storage administrator tool to help manage Data Facility Storage Management Subsystem (DFSMS).
- SISRO made available **CORTEX-PMS**, an integrated application set that industrializes and automates data processing centers organized around MVS/ESA. For production carried out under MVS/ESA and heterogeneous systems, CORTEX-PMS provides a single production view.
- Sterling Software announced the availability of four new systems management applications.

  **VM:Vantage** is a client/server application that uses a Windows-based PC to monitor and analyze storage subsystems on VM/ESA and report potential problems to the operations staff.

  **VM:Operator** is enhanced to provide operations automation for VSE systems running as guests on VM/ESA. In addition, VM:Operator now provides automation for VSE system regression and applications testing when running as a guest on VM.

  **SOLVE:Operations for SNA**, can streamline network management and reduce operational costs by integrating real-time status monitoring with desired-state automation of network resources.

  **CONNECT:Mailbox**, facilitates secure information exchange between dial-up desktop or laptop computers and MVS or VSE server systems.
- TargetFour Ltd. provided **Flex/MVS**, which allows you to set up and tailor a test environment on your production system. The test system can be used for stress testing, benchmarking, capacity management, capacity planning, and application sizing.
- Tone Software Corporation announced the availability **OMC-VNI**, which routes output destined for a specific print device directly to the JES spool for printing by their OMC-PRINT product.

All names are trademarks or registered trademarks of their respective companies.

### Counting Applications

The method used here to count applications is consistent with that used throughout the industry. In the case of vendors that offer product suites, each application in the suite counts as one. For example, Oracle offers forty-three applications in six modules. Oracle Applications for Finance include: Financial Analyzer, General Ledger, Purchasing, Payables, Receivables, and Assets.

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Information concerning non-IBM products was obtained from the suppliers of those products, their published announcement, or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the supplier of those products.

# 1996 Press Releases

## American Software

**AMERICAN SOFTWARE ANNOUNCES SUPPORT OF IBM′S PARALLEL SYSPLEX**

***ATLANTA (April 2, 1996) --*** Continuing its support for IBM′s* System/390* servers, American Software has announced that its DB2* suite of client/server supply chain solutions now support IBM′s Parallel Sysplex*. Customers will now be able to run American Software′s proven business management applications in a Parallel Sysplex - an environment of up to 32 S/390* servers that can share data workloads yet appear as one computing complex.

″We are pleased to offer our Parallel Sysplex-enabled supply chain management solutions to customers who want the latest in IBM technology,″ stated Mike Edenfield, executive vice president and chief operating officer of American Software. ″By combining our supply chain solutions with IBM′s Parallel Sysplex, we can provide our customers with one of the most robust enterprise solutions available in the marketplace today.″

″We are happy to have American Software join the growing number of solution developers that are exploiting Parallel Sysplex technology,″ said Barbara McDuffie, program director of IBM′s System/390 Solutions Provider Programs. ″This will provide our customers with another business management application that can take advantage of Parallel Sysplex′s availability, scalability, and cost- effectiveness.″

American Software′s supply chain planning and management solutions help companies optimize their supply chains by increasing customer satisfaction, reducing cycle times and eliminating inefficiencies. Architected around core business processes, American Software′s products provide extensive decision support capabilities and hands-on tools that enhance forecasting, distribution and manufacturing.

IBM′s Parallel Sysplex is one logical computing facility composed of up to 32 S/390 servers. The computing resources of all the servers appear to the user as a single machine. This offers customers the largest single-image computing system available. At its maximum size and using only CMOS (complementary metal oxide semiconductor) based processors, the IBM Parallel Sysplex can provide computing capacity more than five times that of the largest general-purpose mainframe. When bipolar processors are included, the computing capacity is even greater. The Parallel Sysplex provides near continuous availability and significant cost reductions in environmental (i.e. utilities, floor space), monthly maintenance, and systems management.

American Software develops, markets and supports the industry′s most comprehensive offering of integrated supply chain management and financial control systems. As a leading provider of multi-platform enterprise software solutions, the Atlanta-based firm offers state-of-the-art business solutions across a wide range of industries internationally. Its product line encompasses integrated business applications, such as demand forecasting, logistics planning, warehouse management, order management, manufacturing, financial control and outsourcing services. The company′s common shares are listed on the NASDAQ stock market under the symbol AMSWA.

*Indicates trademark or registered trademark of the International Business Machines Corporation.

## IBM and BAAN

**IBM and BAAN PROVIDE HIGH-PERFORMANCE BUSINESS SOLUTIONS FOR ENTERPRISE CUSTOMERS**

***BERLIN, GERMANY, June 26, 1996....*** IBM and The Baan Company today announced that the two corporations are extending Baan′s enterprise business applications, BAAN IV**, to IBM′s DATABASE2 (DB2)* for AIX*. Baan and IBM are also engaged in a joint project to port BAAN IV to the IBM System/390* platform with the intent to deliver the database server in the fourth quarter of 1996 and the application server in 1997.

BAAN IV provides a dynamic enterprise modeling framework that enables companies to adapt their business applications to changing organizational structures and business and operational processes. Baan′s three-tiered client/server architecture enables the application and database components and user interface of BAAN IV to run on different platforms, including IBM′s System/390 and RISC System/6000* servers.

By integrating Baan′s advanced solutions with DB2, users throughout an enterprise can benefit from the high performance and reliability of this award-winning relational database management system.

″IBM and Baan share a common goal of global leadership in delivering open architecture solutions, said Doug Sallen, vice president, Corporate Marketing, The Baan Company. ″BAAN IV customers with complex, multi-site requirements will be able to leverage the scalability and replication strengths of DB2 and IBM′s hardware platforms to achieve exceptional information management across the supply chain. Baan sees System/390 as critical for managing information across the supply chain as it provides the capability to have a super server as a network solution.″

″Baan is an innovative company. It understands today′s users are not bound by geography, time or technical constraints and designs its solutions accordingly,″ said Tim Negris, vice president, Marketing, IBM Software. ″IBM′s customers will benefit from Baan′s multinational approach to the business of doing business.″

**Dynamic Enterprise Modeling**

The BAAN family includes feature-rich applications for manufacturing, distribution, finance, service, and project management, as well as solutions for speedy implementation and continuous improvement of the applications. Baan′s key differentiator is Orgware**, which enables companies to dynamically model these applications to reflect changing business processes across the enterprise.

For example, a manufacturing company may want to start a second- or third-shift. Baan software can help ensure raw inventory is available 24 hours per day, without significant cost increases. It can also ensure that each shift is appropriately staffed with employees and managers and that adequate transportation exists to take finished goods to distribution points.

**DB2 for AIX Integration**

DB2 for AIX brings the power and scalability of IBM′s flagship relational database system to one of the most pervasive UNIX** platforms on the market today. With DB2 for AIX, customers can choose between running business applications in a client/server environment or seamlessly integrating these applications with their existing host systems.

As an early customer for BAAN IV on DB2 for AIX, UARCO Incorporated′s technology group is impressed with the products and level of commitment of IBM and Baan. ″IBM is leading its competition in the relational database arena,″ said Steve Balow, senior vice president, Technology, UARCO. ″DB2 has features that are important to our business, including platform compatibility and the ability to handle images and other data types. IBM and Baan have done a great job developing this solution.″

UARCO, based in Barrington, Illinois, is a leading provider of paper-based and electronic systems to improve business processes and reduce document costs.

BAAN IV on DB2 for AIX is expected to be available in the fourth quarter, 1996. Pricing will be announced at the time of general availability.

**Baan on System/390**

IBM and Baan are working together to extend BAAN IV to DB2 for MVS/ESA* on OS/390*, which is the strategic operating system for the System/390 platform. BAAN IV on System/390 will allow customers to take advantage of and leverage Baan′s client/server business applications with DB2 and System/390′s continuous availability, high scalability, and system management strengths.

The companies currently intend to deliver BAAN IV′s database server on System/390 in fourth quarter, 1996, with a port of the application server to OS/390′s UNIX interfaces to follow in 1997.

″Our customers are asking for open, high-performance business solutions for the enterprise. BAAN IV is one of the most important. The System/390 platform is open to give our customers the greatest array of software choices,″ said Hermann Lamberti, vice president, Marketing, System/390.

**Background Information**

IBM, the world′s largest software provider, creates, develops and manufactures the industry′s most advanced information technologies, including computer systems, software, networking systems, storage devices and microelectronics.

Complete information about IBM, its products, services and technologies is available to Internet users through the World Wide Web. The IBM home page is at www.ibm.com. The fastest, easiest way to get information about IBM Software is to go to the IBM Software home page at www.software.ibm.com.

System/390 is one of IBM′s four server platforms. It is the leader in providing large scale commercial, continuous computing solutions at the least incremental cost for customers today and in the evolving collaborative, client/server, network computing market of tomorrow. Information about System/390 can be found at www.s390.ibm.com.

The Baan Company is a leading provider of enterprise-wide business software applications and consulting services. Companies in the hybrid manufacturing, automotive, electronics, project, and process industries use its products to streamline processes across the enterprise. The company offers the Baan family of integrated, open-systems based applications and tools developed for the client/server architecture.

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* Indicates trademark or registered trademark of International Business Machines Corporation.

** Indicates trademark or registered trademark of their respective holders.

## Beyond Software

**BEYOND SOFTWARE, INC. BRINGS GRAPHICS AND EASE OF USE TO MAINFRAME USERS WITH INITIAL ENTERPRISE WEBSERVER RELEASE**

**Silicon Valley Trend-Setter Blends Mainframe and Internet Expertise to Create Solutions for Integrating Dynamic Enterprise Computing Environments**

***SAN JOSE, California April 11, 1996 --*** Beyond Software, Inc., the emerging leader for integrating dynamic enterprise computing environments, today announced the general availability of its initial software release said to bring Internet ease of use and functionality to mainframe users, and dramatically reduce the cost of client-server implementation.

EnterpriseWeb/VM(TM), the powerful enterprise web server solution, liberates mainframes to act as a super data pump to provide large numbers of users access using simple, relatively inexpensive web browsers. It is the first of a comprehensive set of products founded on proven shareware technology, which Beyond acquired the rights and re-engineered.

″The migration to client-server has been far more costly and complex than pundits originally predicted,″ stated Brian Reaves, President, CEO and co-founder of Beyond Software. ″The technology is often unreliable and difficult to manage. Many client-server projects have failed or been entirely abandoned″ and Mr. Reaves continued, ″Information Technology executives are rethinking their existing strategies.″

The one-year-old Beyond Software intends to address this opportunity head-on by developing products that lower cost and reduce complexity of client-server environments, while still providing all the benefits. Beyond management envisions a critical element in creating extensive enterprise computing environments is the mainframe, whose unparalleled power and capacity to handle mission-critical applications, when coupled with Internet solutions, brings graphical and intuitive information access to thousands of users. ″To integrate dynamic enterprise computing environments, Beyond Software will draw upon its Internet and mainframe expertise to deliver technically-superior, yet easy-to-use, cost-effective solutions. This combined with Beyond partnerships will provide graphical access to existing legacy applications which run the business of many corporations,″ Reaves said.

The first fruit of this effort, EnterpriseWeb/VM, is powerful mainframe software designed to run on a corporate intranet (an internet protocol network running behind a corporate firewall). This makes it possible for the entire enterprise to easily access information, applications, and the power of the mainframe while saving time and money. EnterpriseWeb/VM provides a level of security unmatched by typical Internet installations.

EnterpriseWeb/VM saves time by leveraging proven browser technology, which is easy to install, configure, and use, thereby reducing installation, training, and maintenance costs. Corporate IT managers are not required to set up a three-tier architecture, because the mainframe assumes the responsibility for serving the data to users, avoiding the need to buy additional equipment, recode applications, and add support staff. Additional systems administrators, database administrators and new application developers typically required to migrate to client/server solutions are unnecessary when EnterpriseWeb/VM is used. EnterpriseWeb/VM can serve data such as text, binary files, images, soundclips, video, and Java applets stored on the mainframe.

Through the use of CGI (Common Gateway Interface), EnterpriseWeb/VM can be linked to existing applications. These scripts can be constructed to launch applications, routines, other programs, protocols other than HTTP (HyperText Transfer Protocol), and user-provided extensions.

EnterpriseWeb/VM has been thoroughly beta-tested with leading corporations, and is available now. Corporations such as Pacific Bell have been using EnterpriseWeb/VM for their Intranets and are very pleased with the features and applications available. ″EnterpriseWeb/VM gives our legacy applications a boost with a familiar graphical interface requiring minimal re-development investment,″ raves Grahame Perry, an Information Systems professional at PacBell. "It's an added benefit that the foundation product was built by the industry as shareware and has been re-engineered and enhanced by Beyond, a fully-committed commercial enterprise. Best of all," Perry said, "the product is here -- now!"

EnterpriseWeb/VM and its enabling software will run on a minimal IBM or compatible mainframe hardware platform. The only requirements needed are TCP/IP and VM. Prices start at $6,500 per CPU and are based on CPU group.

Headquartered in Santa Clara, California, Beyond Software, Inc. is the emerging leader for integrating dynamic enterprise computing environments. Combining both mainframe and Internet expertise, Beyond Software delivers technically-superior, yet easy-to-use and cost-effective solutions.

Beyond Software, EnterpriseWeb and EnterpriseWeb/VM are trademarks of Beyond Software Incorporated. All other company and product names are registered trademarks of their respective owners.

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**BEYOND SOFTWARE ANNOUNCES ENTERPRISEWEB/VISION; INTEGRATING IBM OFFICEVISION WITH CORPORATE INTRANETS**

**New Product Uses Web Technology to Provide PC Desktop Look and Feel to 2 Million Mainframe Users; Extends Customer Investments in the IBM Large Server Platform**

***SAN JOSE, California June 20, 1996 --*** Beyond Software, Inc., an IBM Business Partner and the emerging leader for integrating dynamic enterprise computing environments, today announced a World Wide Web interface for IBM.

VM-based OfficeVision e-mail and calendaring environment, code named EnterpriseWeb/Vision.

EnterpriseWeb/Vision enables standard Web browsers, like those from Netscape, Microsoft, and IBM, to be used as client front-ends for sending and receiving e-mail and attachments from within the OfficeVision host. It can replace PC-based terminal emulation programs, which are non-intuitive and difficult to use. As a result, OfficeVision users can be more productive, with less training and support.

"With EnterpriseWeb/Vision, companies that have made major investments in OfficeVision and the host platform can leverage those investments even further, by using their mainframes as Intranet super servers for mail and calendaring," said Brian Reaves, Beyond Software's President, and CEO.

IBM's OfficeVision product is currently used by more than 2 million users around the world, many in large global enterprises such as IBM with over 200,000 users, Ford Motor Company with well over 100,000 users, and Exxon with over 60,000 users. There are more than 4,000 host platform licenses worldwide. "As super servers for corporate Intranets, mainframes have many advantages over LAN-based servers, notably milli-second response times, 99.7 percent uptime, and the capacity to handle up to thousands of simultaneous users," commented Erik Woodward, Beyond's Senior Vice President.

EnterpriseWeb/Vision exploits the EnterpriseWeb server and uses Internet standards, specifically, HTTP, HTML, and MIME. The product delivers many powerful features such as global time zone support, binary attachments, and a complete web interface to Office Vision's Notelog files. Using this methodology, mobile PC users can leave their mail on the host where it will be reliably backed up and available from any work-station. An added benefit is that unlike SMTP mail, EnterpriseWeb/Vision mail cannot be forged or "spoofed", ensuring greater mail security.

EnterpriseWeb/Vision also supports enterprise wide calendars and scheduling, an important feature of OfficeVision. By keeping their calendars on the host, employees can note each other's availability for meetings and conferences on a global scale. Employees can then schedule meeting rooms and send notification to those attending.

Beyond Software recently successfully demonstrated EnterpriseWeb/Vision at IBM Technical Conferences to enthusiastic Office Vision users. Based on the demonstrations, the company will establish a beta program for EnterpriseWeb/Vision prior to general availability, scheduled for third quarter of this year. Pricing will be announced at the time of general availability.

With headquarters in San Jose, California, Beyond Software is a year-old, privately-held firm specialized in bringing Internet ease-of-use and functionality to Intranet mainframe users, while dramatically reducing the cost of client-server implementation. As an IBM Business Partner, the company extends the capabilities of the Internet to large scale servers running VM, MVS, and OS/390 operating systems.

Other products from Beyond Software include EnterpriseWeb/VM (TM), a high performance Internet/Intranet web server software for IBM′s VM operating system, and EnterpriseWeb/MVSTM, a high performance Internet/Intranet web server for IBM′s MVS and OS/390 operating systems.

Beyond Software, EnterpriseWeb/Vision, EnterpriseWeb, EnterpriseWeb/VM, and EnterpriseWeb/MVS are trademarks of Beyond Software Incorporated. All other company and product names are registered trademarks of their respective owners.

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**Beyond Software Extends Web Capabilities to Broader Mainframe Environment**

**MVS Users to Benefit from Internet-Style Capabilities Via EnterpriseWeb/MVS**

***SAN JOSE, California -- May 23, 1996*** -- Beyond Software, Inc., the emerging leader for developing software solutions that integrate dynamic enterprise computing environments, announced introduction of EnterpriseWeb/MVS, a high performance Internet/Intranet Web Server for IBM′s MVS operating system.

EnterpriseWeb/MVS is designed for corporate Intranet applications, making it possible for users to access a wide-range of information on MVS-class mainframes in a cost effective manner. Users will be able to view text, binary files, images, sound clips, video and Java applets stored on MVS mainframes.

The MVS operating system is the most prevalent of IBM and IBM compatible mainframe computers, with installations exceeding 17,000 on a worldwide basis.

″EnterpriseWeb/MVS opens a whole new world of data access for corporations and organizations depending on mainframes running the MVS operating system. We feel our product is timely because there is a fifty five percent annual growth in mainframe MIPS and a thirty three percent annual shipment growth. Most of this growth is in the MVS arena,″ said Brian Reaves, President and co-founder of Beyond Software, Inc. ″Users won′t find any hidden costs associated with the product.″

EnterpriseWeb/MVS and its enabling software runs natively and does not require software or hardware upgrades. EnterpriseWeb/MVS shares the core functionality of Beyond′s EnterpriseWeb/VM product, so most customers will be able to move Common Gateway Interfaces (CGIs) between the MVS and VM platforms with little or no modification. To facilitate multi-platform interoperability of EnterpriseWeb/MVS and EnterpriseWeb/VM, Beyond Software has also ported some of the VM command set to MVS. EnterpriseWeb/MVS will also run with IBM′s Internet Connection Server. In addition, EnterpriseWeb/MVS provides a level of security unmatched by typical Internet installations since it interfaces with existing MVS security mechanisms.

Initial implementation of EnterpriseWeb/MVS is underway with a Fortune 500 company, which is utilizing the product within their corporate Intranet to access production systems. General availability for EnterpriseWeb/MVS is scheduled for the third quarter of this year.

Beyond Software, EnterpriseWeb, EnterpriseWeb/VM, and EnterpriseWeb/MVS are trademarks of Beyond Software Incorporated. All other company and product names are registered trademarks of their respective owners.

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## IBM and BMC SOFTWARE

**IBM and BMC Software Enter Joint Technology Agreement to Deliver Enhanced Batch Processing through Parallel Sysplex Technology**

***Fishkill, New York, June 24, 1996.***.IBM and BMC Software today announced a joint technology agreement to bring the benefits of parallel processing and System/390′s* Parallel Sysplex* computing technology to customers doing batch processing.

Under the terms of the agreement, BMC Software′s DATA ACCELERATOR** and BATCH ACCELERATOR** application performance technologies will be integrated with IBM′s BatchPipes* and BatchPipePlex* batch processing solutions to produce SmartBatch for OS/390*.

SmartBatch for OS/390 will run on S/390′s strategic operating system -- OS/390 -- and the most recent versions of MVS* (4.3 or higher). Using SmartBatch for OS/390, customers may be able to cut batch processing time by as much as 50- to 75-percent. Batch jobs can be processed concurrently across multiple processors within a single server, or among multiple servers in a S/390 Parallel Sysplex configuration.

A Parallel Sysplex is a way of linking up to 32 S/390 servers. The servers can be based on either CMOS or bipolar technology. All of the linked servers can be managed as if they were a single system or image. Parallel Sysplex helps provide continuous computing and high scalability at the least incremental cost.

Often batch workloads consist of multiple jobs that must be run in sequence -- each being completed before the next can start. The work is usually executed on a single processor. Such processing is time intensive, which is a growing problem for companies conducting business 24-hours a day.

SmartBatch for OS/390 will transparently and dynamically split batch jobs into individual steps that will then be routed for parallel execution among the processors in a single S/390 server or among the processors in multiple servers in a Parallel Sysplex.

SmartBatch for OS/390 will use BMC Software′s automation technology to intelligently determine how jobs should be divided and distributed among the processors. In addition to completing the work much faster, SmartBatch for OS/390 will handle larger volumes of data within the allotted batch processing window.

″When companies miss their deadlines due to late batch processing jobs, it can cost them money and customer satisfaction,″ says Charles Lickel, vice president, System/390 software development. ″SmartBatch for OS/390 offers customers the ability to better exploit their servers′ capacity and processing capabilities to meet their business demands.″

In addition to saving considerable time, SmartBatch for S/390 gives customers an opportunity to save costs by adopting the newer CMOS S/390 Parallel Enterprise Servers. CMOS-based servers provide significant reductions in environmental costs such as floor space, electricity and cooling, monthly maintenance, and system management. The new CMOS servers retain all of the classic mainframe strengths of reliability, availability, security, data integrity, and scalability.

IBM is collaborating with BMC Software to produce SmartBatch for OS/390 due to BMC Software′s expertise in automating the management of applications and data residing in S/390 environments, and optimizing the performance of that data.

″This agreement is an excellent example of BMC Software′s Cooperativ e Enterprise Management Strategy in action. We are leveraging our recent experience in developing technology partnerships by executing a technology integration agreement with IBM that takes advantage of our expertise in data and application management,″ said Max P. Watson, Jr., president and chief executive officer, BMC Software. ″This technology integration enables BMC Software and IBM together to preserve customers′ investments in S/390 technology by dramatically improving the availability and performance of mission-critical applications.″

**Availability and Pricing**

SmartBatch supports OS/390 and prior versions of MVS (4.3 and higher). It will be formally announced in September 1996. IBM plans to make SmartBatch for OS/390 available in the first quarter of 1997. Pricing will be announced in September.

IBM customer financing provides an array of convenient and flexible financing options to support customers′ acquisition of S/390 offerings. Customers should contact their local IBM Marketing Representative or IBM customer Finance Representative.

BMC Software, Inc. is a worldwide developer and vendor of more than 100 software solutions for automating application and data management across host-based and open systems environments. A Forbes 500 company with annual revenues exceeding $400 million, BMC Software is the world′s 12th largest independent software vendor and is headquartered in Houston, Texas. For more information on BMC Software, access the World Wide Web at http://www.bmc.com or call 1-800-341-2031 or 713-918-8800.

S/390 is one of IBM′s four server platforms. It is the leader in providing large scale commercial, continuous computing solutions at the least incremental cost for customers today and in the evolving collaborative, client/server, network computing market of tomorrow.

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* Indicates trademark or registered trademark of the International Business Machines Corporation.

** Indicates trademark or registered trademark of BMC Software, Inc.

## IBM and BRISTOL

**IBM and Bristol Technology to Enable Porting of Windows NT Applications to OS/390**

***FISHKILL, New York, May 28....*** IBM and Bristol Technology today announced a relationship that will result in the availability of Bristol′s Wind/U** development environment on IBM′s System/390* enterprise computing platform.

This relationship will enable C and C++ programs written to the Windows NT** APIs (application programming interfaces) to be ported to System/390's strategic operating system - OS/390*. Now, for the first time, customers and independent solution developers will be able to leverage OS/390's unique scalable and robust strengths for their Windows NT applications.

This relationship is the latest demonstration of IBM's commitment to provide open, client/server application capabilities on S/390. "With more and more companies using the S/390 as an enterprise and network server to run their business, OS/390 must be able to support widely accepted application interfaces," said Charles Lickel, vice president, S/390 Software Development.

"We first demonstrated our commitment to openness and interoperability by providing UNIX** interfaces on OS/390," continued Lickel. "In February, OS/390 was X/Open XPG4 Base Branded. We will apply for X/Open UNIX Branding later this year. Supporting Windows NT programming interfaces on OS/390 is another logical step."

Keith Blackwell, president of Bristol Technology, said, "We are excited to be joining IBM in this effort. Our Wind/U technology is a proven winner in providing a common development environment for Windows and UNIX platforms. Adding OS/390 to the list of systems we support allows our mutual customers and ISVs to further leverage their enterprise development investments."

Bristol Technology's Wind/U enables developers of Windows NT applications to port their applications to UNIX environments, including OS/390. Developers can recompile and link their application source code with the Wind/U Library using IBM's development tools on OS/390 to generate a native UNIX version of their application. The Wind/U-ported applications have the same functionality as the original Windows NT programs. These applications can be further enhanced by exploiting OS/390 interfaces and middleware.

Windows NT programming interface support on OS/390 will also give IBM customers who have Windows NT as part of their distributed architecture, greater flexibility to deploy their applications on the appropriate platform for their computing needs. For those applications that must scale with availability and execute in a secure environment, S/390 is an ideal platform choice.

In addition, customers whose Windows NT programs access S/390 transactions and data will now be able to house these applications and data on the same server. Associated benefits include improved application availability and reduced network overhead and complexity.

"We are a major S/390 shop, but we are also committed to the Windows NT application interfaces as part of our distributed application architecture," said Ashleigh Tanner, IT technical architect, National Westminster Bank (NatWest). "We need the flexibility to be able to develop our applications on the optimal platform. Being able to run our Windows NT-based server applications locally on S/390 in close proximity to our corporate data and with the characteristics we have come to expect of S/390 has great appeal to us."

Bristol Technology is a licensee of Microsoft's Windows Interface Source Environment** program. This licensing agreement provides Bristol with source code for Windows 3.1, Windows 95, and Windows NT on an ongoing basis. This ensures maximum application consistency and compatibility between the Windows and Wind/U environments and enables Bristol Technology to continually evolve their product in step with Microsoft's enhancements.

Joint customer studies are scheduled to be conducted in the 4th quarter of 1996.

S/390 is IBM's enterprise server and is the leader in providing large scale commercial computing solutions for customers today and in the evolving collaborative, network computing market of tomorrow. S/390 servers offer customers open, client/server capabilities, continuous computing reliability, scalability, and low total cost of operation.

Bristol Technology Inc. develops, markets, and supports the Wind/U family of Windows and UNIX cross-platform development products. Founded in 1991 and based in Ridgefield, Conn., the company has posted an operating profit for 16 consecutive quarters. In addition to Wind/U, its products include HyperHelp**, software for creating UNIX-based on-line help systems with WinHelp** functionality; and Xprinter**, software for adding sophisticated printing capabilities to UNIX-based applications.

Editor′s Note: IBM news releases are available on the Internet, via the IBM Home Page, located at http://www.ibm.com. The System/390 Home Page is located at http://www.s390.ibm.com.

For more information on Bristol′s Wind/U development tool, contact Bristol Technology at 203-438-6969 or http://www.bristol.com.

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## IBM and CINCOM SYSTEMS

**IBM and Cincom Systems announce strategic global partnership; technology, service and marketing initiatives to increase customer satisfaction worldwide**

***Business Wire, March 12, 1996, Tuesday...*** Cincom Systems Inc.(R) and IBM(R) today jointly announced a strategic global partnership comprised of technology, service and marketing initiatives to deliver manufacturing solutions to joint customers worldwide.

The global partnership will enable the two companies to better provide industry-leading solutions to IBM customers implementing Cincom′s Enterprise Resource Planning (ERP) software.

**Supporting the Highly Engineered Marketplace**

Under the terms of the agreement, Cincom and IBM will offer their combined strengths and products to manufacturers of highly engineered products. Highly engineered products are those configured or assembled to meet individual client requirements and are frequently developed on a client-specific project basis. Highly engineered industries include: aerospace, defense equipment, complex electronics, instrumentation and control, machinery, heavy equipment, telecommunications, power engineering, transportation, and repair and refurbishment. Cincom now becomes IBM′s partner in the highly engineered products marketplace.

″We realize IBM can choose any partner it wishes; therefore, this choice by IBM of Cincom as a strategic partner for highly engineered markets confirms to us what hundreds of very successful customers have already proven,″ said Tom Nies, president of Cincom Systems Inc. ″Since IBM is determined to provide ′best of breed′ solutions to every market it serves, Cincom is pleased with this selection of Cincom′s CONTROL(TM) as a solution for highly engineered manufacturing companies. More and more companies are implementing IBM and Cincom to help them face global competition, dramatically lower costs, and become more responsive to the demand for shorter product cycles. Working closely together, IBM and Cincom will now jointly offer a comprehensive solution for these companies.″

″IBM′s commitment to ′best of breed′ solutions makes this selection of Cincom′s CONTROL especially appropriate,″ said John Sarsgard, director, Worldwide BMS/ERP Solutions at IBM. ″Cincom is a leader in the highly engineered segment of the ERP market because of its commitment to provide its large-scale, leading multinational customers with flexible, well-designed products and outstanding customer service. Similarly, IBM has many years of experience providing customers with solutions to support their core and mission-critical applications. We offer a comprehensive range of software, middleware and hardware options, and CONTROL broadens our ability to deliver highly scaleable, industrial-strength solutions.″

**Technology Initiatives to Enhance Product Integration**

To accelerate product integration efforts, the two companies are working together in Austin, Texas and Cincinnati. IBM and Cincom are working to optimize CONTROL on the IBM RISC System/6000(TM) and System/390(TM) Parallel Server platforms.

**Cincom and IBM to Deliver Worldwide Consulting and Services**

The service initiatives included in the global partnership will build upon the two companies′ extensive experience in providing comprehensive services to manufacturing customers implementing Cincom′s ERP applications. IBM will provide expert Cincom application consultants to perform accelerated implementations utilizing Cincom tools and implementation strategies. IBM will also offer client/server architecture consulting, Cincom user training, integration services, project management and operations consulting.

**Cooperative Marketing and Sales Initiatives in Cincom′s Strategic Markets**

Cincom and IBM will implement cooperative marketing and sales programs in Cincom′s target market of highly engineered manufacturers. The programs will build on the tradition of supporting hundreds of joint customers over the past four decades, including such major clients as Aerojet, Alcatel, Allied Signal, Allison, Boeing, Emerson, Lockheed-Martin, Rexnord, Rolls Royce, Siemens, Timken and Trane. This demonstrated capability, combined with the commitment to cooperative programs, results in a powerful alliance that delivers superior pre- and post-sales services to a growing base of customers worldwide.

**Cincom′s Suite of Manufacturing Software Applications**

Cincom′s suite of applications, CONTROL, is a portfolio of business applications that addresses the complete business cycle of companies who build highly engineered products. Supporting assemble-to-order, make-to-order and engineer-to-order environments, CONTROL encompasses activities such as business planning, business acquisition, order management, engineering, procurement, manufacturing, costing, financial accounting and customer service. CONTROL is based around business processes that address critical issues such as configuring products to customer specifications, managing engineering changes, tracking materials and costs by contract/project and reporting to regulatory agencies. In addition, CONTROL supports the needs of multinational companies by offering distributed multisite implementation options, multiple currencies, regulations and languages.

Cincom′s CONTROL has an open client/server architecture that allows applications to be deployed to maximize the use of computer resources, whether on a mainframe, PC or UNIX server. All CONTROL components have a common graphical user interface and are available on leading computer platforms including the IBM RISC System/6000 and System/390 Parallel Server, Hewlett-Packard and Digital.

**About the IBM Corporation**

IBM is the world′s leading supplier of information technology solutions in the areas of hardware, software, networks, consulting, integration services, maintenance and post-implementation services. To support each market segment and deliver solutions, IBM has established Industry Solutions Units (ISUs), comprised of experienced professionals focused on the unique issues and solutions of each industry, i.e., manufacturing, process, health, insurance and utilities. IBM has 3,000 professionals dedicated to delivering 70 IBM product and service offerings to its worldwide manufacturing client base.

Select offerings include: RISC System/6000 Server, System/390 Parallel Server, ERP services, MES (Manufacturing Execution Systems) and SCADA (Supervisory Control and Data Acquisition) systems, industrial computers and data collection hardware, product data management software, CAD/CAM solutions, as well as a wide range of consulting services and customized offerings. IBM′s World Wide Web address is http://www.ibm.com.

**About Cincom Systems Inc.**

Cincom has been developing and marketing quality software for more than a quarter of a century and is now among the world′s largest independent software companies, serving clients in 72 countries. Cincom software applications integrate the information needs of business to support individual and enterprise-wide decision making. The company provides flexible, scaleable applications for the complete business cycle from initial inquiry through configuration, estimating, quotation, proposal, manufacture, assembly and installation to post-sale activities.

Cincom′s portfolio of business applications, products and services supports business needs of companies who manufacture highly engineered products -- especially those that assemble, build or engineer to customer specifications. CONTROL supports manufacturing, distribution, and financial management around a common base of business information and management procedures. For more information about Cincom and its products, please visit the company′s World Wide Web site at http://www.cincom.com. -0-

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## IONA and BellSouth

**IONA and BellSouth to co-operate on Orbix for MVS; Market leading CORBA implementation to integrate Windows, Unix and mainframe applications**

***March 26, 1996...*** IONA Technologies Ltd., and BellSouth have teamed to provide IONA′s CORBA implementation, Orbix, on the MVS Open Edition operating system (now integrated into OS/390).

Orbix is IONA′s market leading implementation of the Object Management Group′s CORBA (Common Object Request Broker Architecture) specification. With Orbix, programmers can rapidly develop distributed, object-oriented applications following a consistent and straightforward, standards-based model.

In collaborating to produce Orbix on MVS, BellSouth and IONA push distributed object technology and CORBA further up the enterprise ladder on to the mainframe. Orbix for MVS interoperates with Orbix on 20 other platforms enabling programmers to bring mainframe applications in the client/server frame.

″Through the use of internally developed middleware, MVS has held a central position in the BellSouth distributed systems environment for several years,″ says Tom Walton, director of BellSouth′s Advanced Technology Group. ″As we explore the potential of standards-based distributed objects within our computing environment, it is extremely important that MVS be able to play its role as a scaleable host.″

Carol Burt, BellSouth Technical Director (and BellSouth′s representative in the OMG) is the program manager for Distributed Systems Development within the Advanced Technology Group and the BellSouth technical lead in the joint development with IONA. ″We realize that it is time to address distributed objects and that proprietary ORB and Object Services are not the best solution,″ says Burt. ″Our relationship with IONA offers us the opportunity to ensure that commercially available object software will meet our needs, enabling us to reap the benefits of standards based development.″

″This joint development effort with BellSouth underlines IONA′s commitment to Enterprise computing,″ says Annrai O′Toole, chief technical officer at IONA Technologies, ″Orbix is already supporting desktop and large workgroup applications, this is an excellent opportunity to get into the Enterprise market. Work is well underway. The initial release will provide Orbix on MVS OpenEdition and with BellSouth′s help, we plan to support earlier releases of MVS, COBOL and integrations with CICS and IMS/TM.″

″We are pleased with BellSouth and IONA′s support for distributed object technology on OS/390,″ said Barbara McDuffie, program director of IBM′s System/390 Solutions Provider Programs. ″Orbix on MVS will allow our customers to develop enterprise client/server applications that not only realize the benefits of objects, but also reap the classic mainframe strengths of scalability and reliability. This announcment further illustrates the rapid transformation of the mainframe into an open, large scale server for enterprise computing.″

A significant amount of the world′s information -- estimated at up to 70 per cent -- is held on mainframe systems. The collaboration between BellSouth and IONA is the first step towards IONA′s enterprise solution strategy. Scalability, security, and reliability are important issues for any system, but given the size of any implementation in BellSouth, these issues become key considerations. BellSouth deals with these issues everyday and access to its existing technology and experience will ensure IONA fully understands the requirements for Orbix on MVS.

Based in Dublin, Ireland and Boston, MA., IONA Technologies is the world′s leading provider of CORBA conforming solutions. Its principal product, Orbix was launched in June 1993 as the first full and complete implementation of the Object Management Group′s (OMG′s) Common Object Request Broker Architecture (CORBA) standard. With Orbix, programmers can develop distributed, object-oriented applications following a consistent and straightforward, standards-based model.

BellSouth provides telecommunications services in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. With headquarters in Atlanta, BellSouth serves approximately 21 million local telephone lines and provides local exchange and intraLATA long distance service over one of the most modern telecommunications networks in the world.

Orbix currently runs on 20 operating systems from a single code base. Platforms include: Windows 3.1x, Windows NT, Windows 95, OS/2, Macintosh System 7.5, twelve different UNIX systems, OpenVMS AXP and the real-time operating systems VxWorks and QNX. The product is also language independent with implementations for C++, Java, Ada95 and SmallTalk. Orbix for Windows includes powerful integration allowing full two-way communication between CORBA objects and OLE-enabled applications such as programmes written in Visual Basic.

IONA has integrated Orbix with ODI′s ObjectStore and Versant Object Technology′s Versant object-oriented databases and Isis Distributed Systems′ reliable distributed computing technology together with a variety of third-party middleware and tools. IONA is partly owned by Sun Microsystems subsidiary, SunSoft, Inc.

Availability: Beta release - Q2 1996. Shipping - Q3 1996

Note to Editors: Orbix is a registered trademark of IONA Technologies Ltd. All other trademarks are the property of their respective owners.

## IBM and J.D. Edwards

**IBM AND J.D. EDWARDS GIVE CUSTOMERS INCREASED FLEXIBILITY AND EASE-OF-USE**

**Longstanding IBM Business Partner Expands OneWorld Applications Across IBM Server Line and DB2 Family of Databases**

***White Plains, NY, June 24, 1996 --*** IBM and J.D. Edwards & Company today announced expanded capability of J.D. Edwards′ enterprise-wide OneWorld software applications to run on IBM servers and support IBM′s DB2 family of databases. This new capability is permitted via J.D. Edwards′ recently introduced, Configurable Network Computing (CNC) architecture.

″The breadth of J.D. Edwards′ 18-year Business Partner relationship with IBM has now grown to include not only the AS/400 servers, but also the System/390 and RISC System/6000 servers,″ said C. Edward McVaney, president and CEO of J.D. Edwards. ″Since the OneWorld solution is the same on each platform, customers can now choose the best IBM hardware environment for their needs.″

″Together we currently support over 3500 customers in 94 countries,″ said Gregg A. DeMar, vice president, IBM Channel Strategy and Management North America. ″Customers will now have available a new breadth of hardware and software configurations based on these extended OneWorld applications.

**RS/6000**

The IBM RISC System/6000 fully exploits J.D. Edward′sCNC architecture to provide customers with OneWorld software applications in a wide range of network-based environments.In the open computing environment provided by IBM′s UNIX operating system on RS/6000, customers can share data and resources with all of the platforms supporting the OneWorld applications as well as PCs and other UNIX workstations and servers. Because computing computing performance needs will grow with businesses in industries served by OneWorld applications, customer investment is protected by the scalability of the RS/6000 family of products, which span from entry-level workstation and servers to supercomputing parallel processor systems.

**S/390**

OneWorld for OS/390 opens up a whole new suite of business applications to current System/390 customers. These customers can leverage S/390′s continuous computing and scalability strengths to take full advantage of OneWorld′s wide variety of dynamic and configurable applications. For current OneWorld users -- or new customers needing additional scalability and power--S/390 servers are the obvious choice.

The combination of S/390 and OneWorld will provide businesses with a win/win situation -- key industry applications running on one of the world′s most scalable and powerful, corporate computing environments.

**DB/2**

The DB2 Family, through DB2/400 on the AS/400 platform, has always provided industrial strength and robust database support for J.D. Edwards applications. As J.D. Edwards extends its product suite to run on multiple platforms users can rest assured that they can count on the same level of reliability, security, integrity and manageability with the other members of the DB2 Family. DB2 is supported by OneWorld on all IBM platforms, providing the maximum advantage in scalability and skill portability. In addition to the database itself, IBM also offers a number of complementary products which provide easy-to-use administration and distributed data management. By staying with DB2, the database they know and trust, customers can move forward with OneWorld knowing that their valuable business data assets are safe and secure.

**AS/400**

Over the last 18 years, the AS/400 platform has proven itself as a versatile, scalable and powerful system providing customers with seamless, non-disruptive migration to client/server. J.D. Edwards′ OneWorld application offering raises the bar on ease-of-migration to client/server. With the availability of a new breadth of 64-bit hardware configurations combined with OneWorld, AS/400 customers will benefit from increased performance, flexibility and openness.

The CNC architecture, which will allow interoperability at a business level with all IBM server platforms, is consistent with the IBM strategy of delivering robust enterprise-wide business solutions.

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# IBM and ORACLE

**IBM AND ORACLE ANNOUNCE ORACLE7 FOR MVS PARALLEL SERVER OPTION FOR THE IBM SYSTEM/390 PARALLEL SYSPLEX**

***SAN DIEGO, February 7, 1996....*** International Business Machines Corporation (IBM*) and Oracle Corporation (Oracle**) today announced the availability of the Oracle7** for MVS* Release 7.2 Parallel Server Option**, for use on IBM's System/390* parallel servers. Customers are now able to combine Oracle's proven client/server, parallel database technology with the open S/390* architecture in a Parallel Sysplex* -- an environment of up to 32 S/390 servers that can share data workloads yet appear as one computing complex.

IBM's S/390 Division and Oracle are bringing open, scalable, and cost-effective solutions to help their customers meet their business needs. Now IBM S/390 customers can use Oracle's client/server database technology to meet their information systems requirements in the cost-effective Parallel Sysplex environment. Additionally, they can use the thousands of third party tools and applications supporting Oracle7.

A production workload test was conducted for Information Systems, a South African government bureau. It demonstrated the performance capacity and reduction in the total cost of computing that can be achieved by running the Oracle7 for MVS Parallel Server Option in a S/390 CMOS (complementary metal oxide semiconductor) based Parallel Sysplex environment compared to a mainframe with traditional bipolar technology.

"The results are astonishing. We now expect a 72% reduction in our total cost of ownership by taking advantage of the Parallel Sysplex," says Pieter Coertze, technical support manager for Information Systems. "Using Parallel Sysplex technology and the Oracle7 for MVS Parallel Server Option, we can increase capacity and consolidate all our databases into one large corporate database. We expect the migration to the S/390 Parallel Sysplex and the Oracle Parallel Server to be completely transparent to our 2,700 concurrent Oracle users."

The Oracle7 for MVS Parallel Server Option allows customers to run a single database image that is accessible from multiple nodes in a Parallel Sysplex, maximizing performance for concurrent OLTP (on-line transaction processing) and decision support operations. Near linear scalability is provided to enable organizations to expand their systems. Customers can also enjoy uninterrupted system operation and automatic rerouting of work within the Parallel Sysplex in the event of a disruption in a single system.

"Oracle is pleased that our customers may now run our proven parallel database management technology in the S/390 Parallel Sysplex," said Gary Bloom, vice president of Oracle Mainframe and Integration Technologies. "The Oracle7 Parallel Server running in this environment is an excellent solution for large, mission-critical database applications."

"The System/390 is an excellent, open platform for enterprise relational databases," said Hermann Lamberti, vice president, Marketing, IBM S/390 Division. "This joint announcement between Oracle and IBM is the latest example of the S/390's transformation into a large, scalable server for the client/server environment."

The objectives of Information Systems, a division of the South African Police Service, were to increase processing capacity, reduce total computing costs, and consolidate regional crime statistic databases into a single database. To evaluate its options, over 7,000 transactions were captured from a live Oracle7 production environment. These transactions were replayed on an IBM ES/9000* high-end bipolar system and in a S/390 Parallel Sysplex. The results convincingly demonstrated that comparable throughput and response times can be attained in a Parallel Sysplex while producing significant cost reductions in environmentals (i.e. utilities, floor space), monthly maintenance, and system management.

The CMOS based S/390 Parallel Enterprise Server contains up to 10 microprocessors, and when combined with up to 31 other S/390 servers, forms one logical computing facility called a Parallel Sysplex. All of the servers can be managed as one large system so that the workload can be balanced among all the processors. The Parallel Enterprise Server retains all of the classic mainframe strengths of reliability, availability, security, data integrity, and scalability.

The Oracle7 for MVS Parallel Server Option is immediately available and is uniformly priced on all server platforms on a per-user basis. It qualifies as an Alternative Parallel Database product for Parallel Sysplex License Charges (PSLC). Customers licensed for Oracle7 for MVS Parallel Server Option that meet other hardware and software criteria are eligible for PSLC pricing for their S/390 software.

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* Indicates a trademark or registered trademark of International Business Machines Corporation.

** Indicates a trademark or registered trademark of Oracle Corporation.

## SAS Institute

**Taking advantage of the latest System 390 technology**

**SAS/C COMPILER BETA SHIPS FOR IBM′S OPENEDITION MVS**

***CARY, NC (February 9, 1996) --*** SAS Institute today announced that its beta release of the SAS/C Compiler, Release 6.00, is currently shipping for IBM′s OpenEdition MVS, Version 5.1 or later.

The SAS/C Compiler allows users to develop and run C programs in the MVS or CMS mainframe environments. Freely redistributable runtime libraries eliminate the need for users of applications developed with SAS/C to purchase a C Compiler or library in order to run those applications.

″SAS/C under OpenEdition allows MVS users to port existing UNIX programs to MVS, or to write new programs which can be easily ported to UNIX systems. The SAS/C Compiler draws on these new OpenEdition MVS capabilities to simplify cross-platform applications development, however, OpenEdition is not useful simply for developing UNIX-compatible applications,″ said Alan Beale, Principal Systems Developer of the Compilers & Tools Division at SAS Institute. ″Because OpenEdition MVS is integrated with the rest of MVS, it is possible to write ″mixed-mode″ C applications that combine OpenEdition functionality with more traditional MVS features.″

OpenEdition MVS -- a strategic IBM enhancement to the latest levels of MVS (MVS/ESA 5.1 and later releases)--unlocks MVS, giving applications greater portability and interoperability with UNIX and other POSIX-compliant systems.

Conforming to the ISO POSIX.1 standards, OpenEdition MVS includes the OpenEdition kernel (which provides all the basic MVS programming support), the shell and utilities product (which implements the UNIX korn shell plus a large number of UNIX commands) and the dbx product (an optional UNIX-oriented debugger).

Release 6.00 of the SAS/C Compiler exploits the functionality of the OpenEdition kernel to implement the full API defined by the POSIX.1 standard, as well as some functionality from the draft POSIX.1 standard. SAS/C programs can be compiled, executed and linked under the OpenEdition shell, allowing the use of traditional UNIX development tools with the SAS/C Compiler. The SAS/C debugger has been enhanced to allow debugging under the shell, removing the need for IBM's dbx component.

"OpenEdition MVS provides additional new functionality and increased support of Open Systems application programming interfaces (APIs) for MVS software development. The result is an environment which integrates MVS with other systems better than before," said Mark Gass, MVS Manager of Special Projects at SAS Institute."

"The SAS/C Compiler has always been a leader in integrating Open Systems features with MVS. People who like Unix programming techniques, such as files organized as stream of bytes, or who want to port programs to UNIX and other systems such as MS-DOS that rely heavily on UNIX APIs, have always found the SAS/C environment to be the best choice."

"In the future, as we deliver versions of the SAS System that support distributed object technology, we will see the potential link to the OpenEdition MVS versions of SOM (System Object Model) and DSOM (Distributed System Object Model)."

Support for OpenEdition also brings benefits to other products in the SAS/C Compiler product line. OpenEdition support has also been added to the Institute's SAS/C C++ Development System, making POSIX features available to C++ programmers as well as C programmers. Using the Institute's SAS/C Cross-Platform Compiler, OpenEdition applications can be developed on Sun, HP or RS/6000 workstations. The Remote Procedure Call, X-Windows and Network File System client support provided by the SAS/C Connectivity Support Library can be combined with the OpenEdition support to provide an even greater degree of UNIX compatibility.

With 1995 revenues of $562.4 million, SAS Institute Inc. (Cary, N.C.) is the world's largest privately held independent software company. Since its incorporation in 1976, SAS Institute has consistently led the major software vendors in percentage of revenue reinvested in research and development.

SAS Institute's four market initiatives form the core of its development and marketing efforts, reflecting strengths of the company and its flagship product, the SAS System -- an integrated suite of information delivery software for business decision making. These areas are data warehousing, business intelligence, applied analysis, and targeted solutions. Currently, 29,000 businesses, government agencies and universities worldwide are using the SAS System.

SAS and SAS/C are registered trademarks of SAS Institute Inc., Cary, N.C., USA. All other tradenames referenced are the trademarks or registered trademarks of their respective companies.

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## IBM and Sterling

**STERLING SOFTWARE CONNECTS IBM'S OFFICEVISION/VM WITH THE WORLD WIDE WEB**

**VM:Webserver for OfficeVision Provides Web Access and a Graphical Interface for IBM's Electronic Mail and Calendar System**

***RESTON, VA, July 30, 1996...*** Sterling Software's (NYSE: SSW) VM Software Division, the recognized leader in VM systems management solutions, today announced VM:Webserver for OfficeVision. VM:Webserver is a robust, high-performance World Wide Web server for the VM/ESA operating system. The OfficeVision extension to VM:Webserver provides a web browser interface for IBM's OfficeVision/VM electronic mail and calendar system. VM:Webserver for OfficeVision fulfills the demand for enterprise-wide electronic mail and calendaring, providing global access to users on any computing platform.

Now, in addition to conventional access from their VM userids, customers can access OfficeVision/VM through their preferred web browser. By exploiting popular web browsers, VM:Webserver for OfficeVision provides a user-friendly graphical interface for OfficeVision/VM, replacing the traditional 3270 character-based interface.

VM:Webserver for OfficeVision extends OfficeVision/VM′s electronic mail features by allowing users to attach documents, spreadsheets, and other files to their e-mail so information can be more easily shared. Besides accessing e-mail, VM:Webserver for OfficeVision lets customers use web browsers to access OfficeVision/VM′s calendaring capabilities. This permits users around the world to manage their own calendars, check each others′ schedules, arrange meetings and notify attendees, all through the Web.

Leveraging the Mainframe and the Web With VM:Webserver for OfficeVision, customers capitalize on the benefits of a centralized mainframe environment and, through the web, extend those benefits to a network of heterogeneous client platforms. Organizations can continue to exploit OfficeVision/VM which provides the scalability that is essential for a true enterprise-wide e-mail system -- scalability not found in LAN-based systems. Customers can also leverage their existing investment in VM hardware, software, and people skills.

″VM:Webserver for OfficeVision enables organizations to take advantage of the robustness, scalability, and security that are hallmarks of both the VM/ESA mainframe environment and OfficeVision/VM,″ said Don Annala, president of Sterling′s VM Software Division. ″At the same time, they can leverage their proven systems management tools and skills. And, this centralized mainframe approach minimizes the costs of deployment, administration, and support.″

More About VM:Webserver VM:Webserver is the base component in a family of web products designed to deliver the industry′s most comprehensive solution uniquely tailored to the VM platform. VM:Webserver acts as a repository for home pages and documents created using HTML. It stores, retrieves, and processes information in various formats, including text, graphics, sound, image, video, and Java applets. Using the Common Gateway Interface (CGI), customers can easily write programs called CGI scripts that provide graphical interfaces to existing mainframe applications, without expensive and time-consuming reengineering.

Future Web Products The VM:Webserver architecture provides a solid and extendible base upon which to build and support additional functionality. Future products will address critical areas including interfaces to DB2/VM and other popular applications, data security, and data encryption.

Availability Sterling Software will demonstrate VM:Webserver for OfficeVision at the SHARE Technical Conference and Technology Exchange in New Orleans, Louisiana, this week. VM:Webserver for OfficeVision will be available in October 1996.

About the VM Software Division and Sterling Software Sterling Software′s VM Software Division, with its headquarters near Washington D.C., provides comprehensive solutions for the VM operating environment. The Division has three product families. The VM:Webserver family of Internet/intranet products enable users to tap into corporate information using popular web browsers. VM:Vantage is an automated client/server storage management system that manages VM data storage from a Windows-based desktop. The VM:Manager family is an integrated systems management solution for storage management, automated operations, service level management, security, recovery, and Shared File System management. The VM Software Division′s superlative customer support is available 24 hours-a-day, 7 days-a-week.

Sterling Software and its subsidiaries provide products and services worldwide for electronic commerce, applications management, and systems management, as well as highly technical professional services for the federal government. Sterling Software, with its headquarters in Dallas, is one of the ten largest software companies in the world with more than 3,600 employees, 75 offices worldwide, and an installed base of almost 40,000 customer sites in over 60 countries.

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## STERLING SOFTWARE DELIVERS VM:WEBSERVER FOR ACCESS TO IBM MAINFRAME DATA VIA THE WORLD WIDE WEB

**Company Delivers First in a Family of Web Products**

***RESTON, VA, July 1, 1996 --*** Sterling Software′s (NYSE: SSW) VM Software Division, the recognized leader in VM systems management solutions, today announced the general availability of VM:Webserver, a robust, high performance World Wide Web server for the VM/ESA(TM) operating system. First in a family of web products, VM:Webserver is designed to deliver the industry′s most comprehensive solution uniquely tailored to the VM Platform. Sterling Software has combined its premier position in providing VM systems solutions with its Internet expertise, to produce a true commercial-strength web server for the VM/ESA environment.

VM:Webserver enables organizations to exploit user-friendly web browsers to deliver information to end users on any platform, anywhere in the World. VM:Webserver acts as a repository for home pages and documents created using HTML. It stores, retrieves and processes information in various formats, including text, graphics, sound, image, video and Java applets.

Mainframe Puts Benefits of Client/Server Within Reach With VM:Webserver, organizations take advantage of the World Wide Web to disseminate data and applications while exploiting the benefits of a centralized mainframe environment. When information is centralized, changes are immediately available to all users and data distribution costs are eliminated.

″VM:Webserver enables an organization to execute a client/server strategy without the complexities and expense of distributed systems,″ said Don Annala, president of Sterling′s VM Software Division. ″Users on desktop systems employ popular graphical browsers to communicate with VM:Webserver, providing access to corporate and departmental data and applications. The result is a client/server system that is manageable, cost-effective and available immediately.″

Modernize Existing Application by Exploiting Browser Presentation Capabilities Using VM:Webserver′s Common Gateway Interface (CGI), customers can easily write CGI scripts to provide graphical interfaces to existing applications. CGI scripts extract and reformat requested data to HTML and return it to the end user where the web browser graphically displays the information. In this way, an organization′s mainframe applications can be quickly and easily modernized without expensive and time-consuming reengineering.

A Robust World Wide Web Server Built on Sterling Software′s proven VM Software product technology base, VM:Webserver delivers optimal performance and throughput by exploiting multitasking, multithreading and multiprocess TCP/IP sockets. Multitasking enables VM:Webserver to handle multiple requests at the same time, minimizing response time to multiple concurrent clients. Multithreading enables VM:Webserver to split a single transaction into multiple threads of execution, so each transaction is completed more quickly. Multiprocess TCP/IP sockets enables VM:Webserver to disseminate information to multiple clients simultaneously, which maximizes information delivery.

″In today″s global market, rapid access to corporate information is critical to gain competitive advantage,″ said Rich Evans of the Meta Group. ″By leveraging the strengths of the mainframe and the World Wide Web, VM:Webserver allows organizations to disseminate high-volumne, critical date in an expedient manner to quickly react to changing market demands.″

VM as an Internet/Intranet Platform VM has long-provided TCP/IP Internet services, enabling it to be exploited as a single web superserver or as part of a network of heterogeneous systems. VM guarantees customers benefits that are often lacking in other platforms, including organization-wide access to information, high-capacity data storage, high-volume transaction throughput, and the 24x7 availability of the System/390 platform.

″VM offers organizations the connectivity, reliability, scalability, and proven security and systems management tools that are critical to a successful Internet implementation,″″ said Ronald Thomson, IBM′s manager of VM and VM-related products. ″″With VM:Webserver, organizations can take advantage of VM′′s inherent strengths combined with the benefits of web technology.″

Future Web Product Family Deliverables The VM:Webserver architecture provides a solid and extendible base upon which to build and support additional functionality. Soon to be announced products will address critical areas including data security and encryption, and gateways to popular applications such as OfficeVision/VM and DB2/VM.

Pricing and Availability VM:Webserver is available immediately from Sterling Software. Pricing is based on CPU model groups with a price range of $10,600 to $16,800 in the U.S. for a group 40 processor depending on terms.

Sterling Software′s Internet Expertise Sterling Software has a proven track record as a leader and innovator in both commercial and Federal Government Internet exploitation. Sterling Software personnel have been actively involved in the Internet and ARPANET since the early 1970s. The company is also a model for business use of the Internet; Sterling Software has used the Internet for its worldwide corporate communications backbone for several years.

About Sterling Software

Sterling Software and its subsidiaries provide software products and services worldwide for electronic commerce, applications management and systems management, as well as highly technical professional services for the federal government. Sterling Software, with its headquarters in Dallas, is one of the ten largest software companies in the world with 3,600 employees, 75 offices worldwide, and an estimated installed base of almost 40,000 customer sites in over 60 countries.

Sterling Software′s VM Software Division, with its headquarters near Washington D.C., provides comprehensive solutions for the VM operating environment. The Division has three product families. The VM:Manager family is an integrated systems management solution for storage management, automated operations, service level management, security, recovery, and Shared File System management. VM:Vantage is an automated client/server storage management system that manages VM data storage from a Windows-based desktop. VM:Webserver is the first in a family of Internet/Intranet products enabling users to tap into corporate information using popular web browsers. The VM Software Division′s superlative customer support is available 24 hours-a-day, 7 days-a-week.

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## STERLING SOFTWARE UNVEILS NEW DIMENSION IN STORAGE MANAGEMENT

### VM:Vantage Delivers Desktop Solution for Managing VM Storage

***RESTON, VA, March 4, 1996 --*** Sterling Software′s (SSW-NYSE) VM Software Division, the leading provider of VM systems management solutions, today announced VM:Vantage(TM), a powerful client/server storage management system. Featuring a graphical user interface, VM:Vantage automates VM storage management directly from a Windows-based PC. The product provides comprehensive automation, reporting and analysis of storage resources while monitoring trends, predicting problems and enabling used to resolve problems right from their desktop.

A Highly-automated system, VM:Vantage maintains constant watch over all VM storage subsystems. It detects current or impending problems, records them in a special ″hot List″, and immediately informs the appropriate support personnel. Additionally, VM:Vantage monitors trends and predicts when problems will occur - allowing IS to prioritize corrective actions. The product′s foundation is a powerful VM server which continuously analyzes storage subsystems, gathering and sifting through volumes of data to detect signs of trouble. VM:Vantage constantly compares this data to custom-set thresholds and historical trends that are stored in a sophisticated, integrated relational database.

Storage management typically is denied the attention is deserves because it is very labor intensive. Reduced IS staffs do not have the bandwidth to manage proactively,″ said Michael Kahn, CEO and Co-Founder of the Clipper Group. VM:Vantage will largely automate the process for the System/390 VM environment allowing storage administrators to solve potential problems rather than to simply identify them.″

While hardware and systems errors have dramatically decreased with the introduction of new mainframe technology and the VM/ESA operating system, outages still occur. Even a small outage, such as a DASD volume filling up, can cause significant downtime for users, resulting in lost productivity with bottom line impact. These outages can theoretically be anticipated if IS staff had the bandwidth to develop, run and analyze data storage reports while maintaining trends on everything from minidisk utilization to device failures. But while the ever-increasing stability of VM systems has allowed data centers to streamline staffing, this causes routine vigilance to suffer. VM:Vantage′s proactive approach addresses this situation by automating storage analysis.

″VM:Vantage introduces a new dimension in VM storage management,″ said Steve Drill, vice president of business development at Sterling Software′s VM Software Division. ″While VM is already an extremely cost-effective operating environment, VM″Vantage allows our customers to realize dramatic new savings through reductions in both routine management costs and operational failures.″

VM:Vantage is a companion product to Sterling′s SAMS:Vantage(TM) for MVS storage management. The two products share the same client technology and consequently present a uniform look and feel for managing both VM and MVS storage. This offers customers increased flexibility and efficiency in utilizing their systems personnel. A single storage administrator can now proactively manage both VM and MVS storage with much less training than was previously required and with a greatly reduced risk of errors.

VM:Vantage will be gneerally available in the second quarter of 1996. It can be purchased as a standalone product and will be available through a permanent license of a term license agreement. The pricing structure is based on CPU Model Groups with an average price in the U.S. for a Group 40 of approximately $30,000.

Sterling Software′s VM Software Division, headquartered near Washington D.C., is the leading provider of VM systems management software. The Division′s flagship product, VM:Manager(R), provides solutions for storage management, automated operations, service level management, security, recovery and Shared File System management.

Sterling Software, Inc., headquartered in Dallas, is a worldwide provider of software products and services for systems management, electronic commerce and applications management, as well as highly technical professional services for the federal government. Sterling Software is one of the 10 largest software companies in the world with 3,600 employees, 75 offices worldwide, and an estimated installed base of almost 40,000 customer sites in over 60 countries.

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**STERLING SOFTWARE AUTOMATES VM/VSE OPERATIONS**

**VM:Operator Provides Single Point of Control for VM/VSE Sites**

***RESTON, VA, January 22, 1996 --*** Sterling Software′s (SSW-NYSE) VM Software Division, the leading provider of VM systems management solutions, today announced that it is extending the capabilities of its VM:Operator product to the VM/VSE market. VM:Operator, an automated console and message management system, is the foundation for operations management and automation on VM systems. Many VSE sites leverage the VM platform to manage multiple guest systems and to run their VSE systems faster. Now, VM:Operator can serve as the focal point for managing both VM and VSE operations.

Additionally, VM:Operator automates testing in the VM/VSE environment. VM/VSE sites can automate critical system regression and applications testing through VM:Operator′s unique simulation capabilities. This significantly reduces both the cost and time of ensuring system and application availability.

″Sterling Software is committed to helping organizations deliver higher levels of service to users while keeping costs to a minimum,″ said Steve Harriman, vice president of marketing for Sterling Software′s VM Software Division. ″By automating VM operations, VSE operations, and systems and applications testing, VM:Operator delivers the capabilities of three products in one fully integrated offering.″

VM:Operator allows VM/VSE sites to consolidate and improve their automation processes, reduce systems programming and operations efforts, and enhance their systems regression and application testing, while reducing overall software costs and improving service to end-users. Automation of data center operations ensures that console message traffic, system problems, application and subsystem failures, and other unplanned events are responded to rapidly in a consistent and cost-effective way.

VM:Operator can run as a standalone product or as an integral part of VM:Manager, Sterling Software′s complete package for VM systems management, and is available through a permanent license or a term license agreement. The pricing structure is based on CPU Model Groups with an average price in the U.S. for a Group 40 of $27,400.

Sterling Software′s VM Software Division, headquartered near Washington D.C., is the leading provider of VM systems management software. The Division′s flagship product, VM:Manager, provides solutions for storage management, automated operations, service level management, security, recovery and Shared File System management.

Sterling Software, Inc., headquartered in Dallas, is a worldwide provider of software products and services for systems management, electronic commerce and applications management, as well as highly technical professional services for the federal government. Sterling Software is one of the 10 largest software companies in the world with 3,600 employees, 75 offices worldwide and an estimated installed base of almost 40,000 customer sites in over 60 countries.

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G326-3031-00

System/390 Division
Bld 504 - 94B
1580 Route 52
Hopewell Junction, NY  12533

Printed in the United States of America