Secure Your e-business Transactions with IMS and S/390

There are significant advantages to selecting S/390 for enterprise computing. A few years ago, the trendy thing among industry watchers was to say that the mainframe was dead, done in by the faster, cheaper, more open client/server model. Today, the trendy thing to say is that the mainframe is dead—again—done in this time by the faster, cheaper, more open internet model. In reality, neither of these statements is true nor accurate.
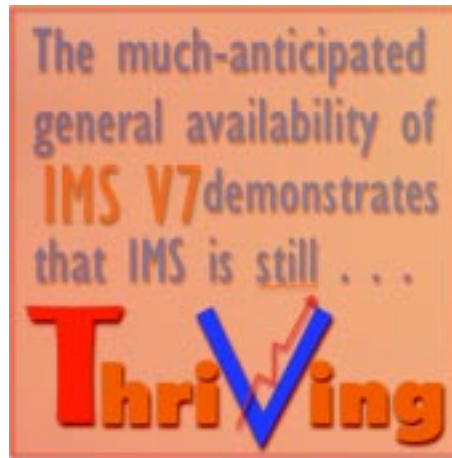
The reality is that S/390 enterprise servers, and the mission-critical data and applications residing on them, are a critical part of today's successful e-business systems. A number of recent announcements, particularly the availability of LINUX on S/390, will help ensure that S/390 remains the platform of choice for e-business transaction processing.

Before discussing the advantages of IMS V7, let's review the advantages of S/390 in an e-business environment. In an e-business environment, there are two critical qualities of service: scalability and availability. Many competitors claim "mainframe-like" capabilities in these two areas. But S/390's self-configuring attributes provide scalable performance to handle unpredictable e-business workloads. And S/390's self-healing attributes offer the continuous availability e-business demands. These are just a few of the many ways that S/390 demonstrates the very real difference between true mainframe performance and "mainframe-like" performance.

For example, S/390's self-configuring attributes include fine-grained resource sharing, on-demand resource delivery, simultaneous connectivity to data and unbounded operating system support. The competition offers none of these. In the same way, S/390 offers advanced self-healing attributes—computational integrity, fault-tolerant cache hierarchy, transient error recovery, memory chip sparing, CP sparing and zero outage hardware

The much-anticipated general availability of IMS V7 demonstrates that IMS is still . . . ThriVing

repair—totally eclipsing the competition. IMS inherits all of the S/390's qualities of service.

IMS has been a proven performer for critical line-of-business applications for over 30 years, and almost everybody with a S/390 depends on it. IMS has not only kept pace with the rapidly changing demands of the e-business environment, but with IMS V7, IMS establishes itself as a leader in providing state-of-the-art solutions. In response to the demands of its largest customers, IBM continues to invest in IMS enhancements, including both traditional IMS functions and new e-business functions.

Some of us might remember the initial announcement of IMS; or, a little later, associate IMS with the first message out of the NASA Houston Flight Control Center ("IMS ready…"). In all probability, many of us were not yet born. However, if you have a mainframe, you probably also have IMS. IMS has been, and remains, the system of choice for your business-critical applications. This axiom has never been more true than it is today. With IMS you can enter the e-business cycle at any point and leverage existing applications, data and skills; or you can choose to transform your core business processes and build, at warp speed, exciting new applications to compete in today's internet world.

To accomplish this you need to be running a high performance, available, scalable, and secure environment (the same environment your business has required for the past 30 years). You must add to this environment the ability to build new reusable applications, integrate those applications with existing ones, use your existing data in new ways to sharpen decision making … and then deploy these solutions on secure platforms.

IBM is continuing to invest heavily in IMS development to ensure that IMS continues to lead the industry in meeting these very stringent demands of its enterprise computing customers.

IMS V7 provides the means for you to quickly and safely extend the reach of your existing applications and data via e-business. IMS V7 also enables you to maintain the enterprise computing qualities of service that you and your users have come to expect—and that the world of e-business demands. IMS V7 is also rich with leading-edge, current day function and traditional

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enhancements. In short, IMS is an integral part of the end-to-end e-business solution that only IBM can provide.

IMS V7 offers almost unlimited capacity for database growth and permits virtually near-continuous availability with HALDBs (High Availability Large Databases Bases), which support over 40 terabytes of data, and over 1000 independent partitions. While HALDB is very good for customers with large databases, HALDB is excellent for customers with small and medium-sized databases. With HALDB, secondary indices and logical relationships are disconnected from the database. Thus, when a database is reorganized, it is no longer necessary to run the prefix resolution and prefix update utilities. For databases without secondary indices and logical relationships, it will be advantageous to define a database with at least one HALDB partition as future IMS enhancements will be based on the HALDB architecture.

You can utilize the new IMS Online Recovery Service (ORS) product with IMS V7, to greatly reduce the time your data is off-line for recovery, update, or reorganization. Many other functions—such as Rapid Network Reconnect (automatic reconnection of terminal sessions), Shared Queues and Fast Path sharing enhancements in a Parallel Sysplex environment, Data-base Recovery Control, and being made Tivoli-Ready—all reflect IBM's renewed and expanded commitment to delivering new IMS function to the marketplace, faster.

With the general availability of IMS V7, all of the IMS applications and data that you've invested in for 30 years can be accessed from any terminal or workstation on the Internet, by using the new IMS Connect product. With IMS V7, you can write new IMS applications in write-once-run-anywhere Java™ as well as in XML—and integrate those new IMS applications with your existing IMS applications. If you want to develop or port the new IMS applications in an open, cost-effective LINUX environment, you can readily do so by using LINUX for System/390—then accessing your IMS data via IMS Connect. When you are ready to deploy your e-business applications, you can do so with the confidence that IMS V7 has been laboratory tested and tuned, with outstanding resultant performance, in end-to-end solutions with OS/390, S/390 Parallel Enterprise Servers G5, G6 and the Enterprise Storage Server (ESS or "Shark"). IMS V7 has also been customer-stressed and customer-proven in our Quality Partnership Program.

If you can feel the demands of the e-business market-place tugging at you, and you haven't already done so, you can download the *IMS V7 Release Planning Guide* from the Web at: http://www.ibm.com/ims. There are also "fast start" consultant services available to help you truly get a fast start with IMS V7. Then, working with your IBM representative or certified IMS business partner, you can place your order for IMS V7 now and get ready for its arrival in the fourth quarter of 2000.

Joe Kreitz
IMS Worldwide Marketing Manager

Introducing Bob Gilliam, the New IMS Family Product Manager

I would like to take the opportunity to introduce myself. I joined the IMS team in July of this year, succeeding Beth Smith as the IMS Family Product Manager. I look forward to meeting and working with you in the upcoming months.

My background with IBM has been in the area of networking and data applications. I was the product manager of Domino S/390 over the past six months. Prior to that assignment, I was the product manager for EDMSuite (Enterprise Document Management Suite), a document management, production imaging, and workflow solution. While I was with EDMSuite, the mission transferred from North Carolina to IBM's Silicon Valley Lab (formerly known as IBM Santa Teresa Lab) in the spring of 1999.

The earlier part of my career was based at Research Triangle Park, North Carolina, with the Networking Systems Division. I held a variety of management positions within the Personal Communications Family of products, including PCOMM and Communications Manager. While working with PCOMM, my team and I developed a set of portable protocols and device drivers that could be shared across numerous IBM hardware and software products. Our common code was put into more than twelve networking products.

I am extremely pleased to be working with the IMS team. As you know, the IMS product is well respected in the marketplace and has a solid future. My immediate focus will be on increasing customer responsiveness and service, improving product quality, and delivering product advancements to continue our position as a database and transaction management leader in the industry.

We are getting near the general availability announcement and shipment of IMS V7 this fall. The IMS release team is very focussed on the delivery of this major IMS milestone. Preliminary feedback from the QPP (Quality Partnership Program) customers is extremely positive. The base product and tools built around IMS V7 enable IMS to integrate well in the e-business and e-collaboration era. With IMS V7, you will now have much easier access to your IMS data through connected applications. And, with all of the new functions in IMS V7, IMS has once again set the standard for very high performance within your database applications.

This year's IMS Technical Conference, which is being held from October 23-26 in Anaheim, California, promises to be an informative and exciting three days. There will be many presentations on all of the new functionality in IMS V7. I hope you will take the opportunity to join us in Anaheim.

Best Regards,

Bob Gilliam
IMS Family Product Manager

Introducing IMS Java

IMS Java, which is a new component of IMS V7, enables IMS shops to take advantage of the growing pool of Java™ trained programmers. With IMS Java, you can extend existing IMS transactions to e-business, use Java with high-performance server solutions, and reduce the complexity of IMS application development.

IMS Java supports both your present and future application programming needs. A key component of IMS Java is an API (application programming interface), which experienced Java programmers can use right away. The IMS Java API also supports robust code generation tools, such as those found in VisualAge for Java.

IMS Java is delivered in a layered set of class libraries, as shown in Figure 1. High-level classes focus strongly on ease-of-use, and

tion itself, rather than on the nuances of the database. You access the database (perform reads, writes, and updates) using SQL statements. The IMS Java class libraries currently support a subset of SQL 98.

Although we recommend that you write applications using the JDBC API, more complex programs can easily use one of the lower layers for complete access to IMS services when needed—all within the same application.

The IMS Java class library comes as a set of three packages, each package containing several Java classes. The three packages are the *base* Package, the *application* Package, and the *database* Package.

The base Package is the lowest layer and is built directly on top of the CEETDLI interface for the C programming language. The base Package uses the Java Native Interface (JNI) to call the C methods in the CEETDLI interface. This package contains virtually a one-to-one mapping of all of the C functions.

The application Package contains the classes to initialize and begin the application, interface with the IMS message queues (get input messages from the queue and place output messages on the queue), and request sync point services (for example, commit and rollback).

The database Package contains the JDBC API as well as the middle layer (the layer between the JDBC API and base Package) of classes that you use to access the IMS DL/I databases.
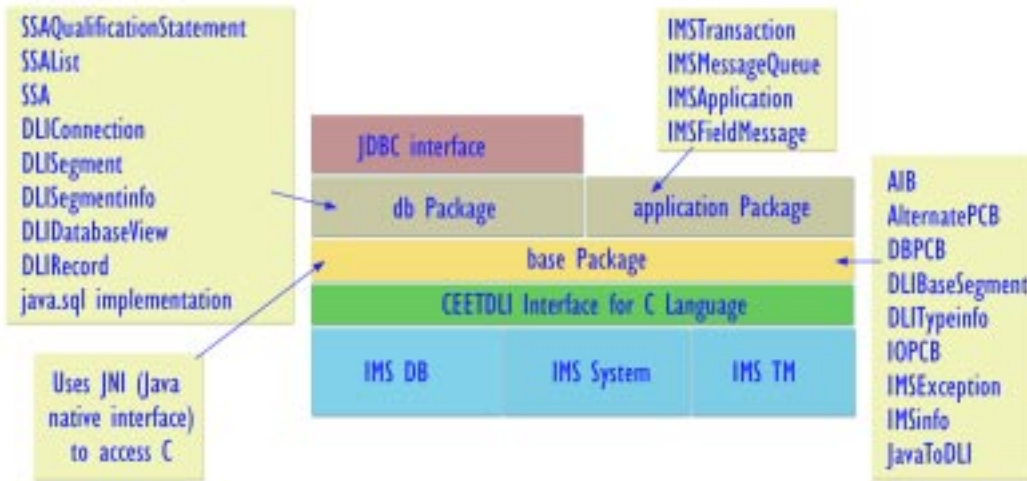

Figure 1. IMS Java Class Libraries

low-level classes provide complete access to IMS services, and serve as the implementation vehicle for the higher-level classes. At the highest layer is the implementation of the JDBC API. JDBC is the common programming interface for database connectivity for Java.

The JDBC support enables experienced Java programmers to code IMS applications easily—without knowledge of IMS DL/I hierarchical databases. The JDBC API is a standard set of classes and interfaces, which every database vendor with a JDBC driver supports. With JDBC, the database itself is taken out of the picture, and the application developer can focus on the applica-

Using IMS Java, experienced Java programmers can code IMS applications without in-depth knowledge of IMS. To support experienced IMS programmers, IMS Java also includes all major IMS capabilities.

Kyle Charlet
IMS Developer

The IMS V7 Library Enhancements

In addition to describing the new and changed features and functions of IMS V7, the major change to the IMS V7 library is that it is available not only in hardcopy and softcopy on BookManager, but also in softcopy Portable Document Format (PDF). The complete library is available in BookManager and PDF on the IMS V7 product kit CD-ROM (LK3T-3526). The unlicensed IMS V7 softcopy library is available (in both formats) on the Web at: http://www.ibm.com/ims/. The unlicensed IMS V7 library is available in BookManager only on the Transaction Processing and Data CD-ROM (SK2T-0730) and the OS/390 Collection CD-ROM (SK2T-6700).

Other changes include these to the following books:

* *IMS Version 7 Common Queue Server and Base Primitive Environment Guide and Reference*
The book formerly titled *IMS/ESA Common Queue Server Guide* and Reference in the Version 6 library is called *IMS Version 7 Common Queue Server and Base Primitive Environment Guide and Reference.*

  The *IMS Version 7 Common Queue Server and Base Primitive Environment Guide and Reference* is now an unlicensed book.

* *IMS Version 7 Command Reference*
The book formerly titled *IMS/ESA Operator's Reference* in the Version 6 library is called *IMS Version 7 Command Reference.*

* *IMS Version 7 Utilities Reference: Database and Transaction Manager*
The books formerly titled *IMS/ESA Utilities Reference: Database Manager* and *IMS/ESA Utilities Reference: Transaction Manager* in the IMS V6 library have been combined into one book called *IMS Version 7 Utilities Reference: Database and Transaction Manager.*

* *IMS Version 7 Application Programming: Database Manager* and *IMS Version 7 Customization Guide*
The chapter titled "IMS Adapter for REXX Exit Routine" has been moved from the I*MS Version 7 Application Programming: Database Manager* to the *IMS Version 7 Customization Guide.*

* *IMS Version 7 Sample Operating Procedures*
For IMS V7, this book is available only in BookManager and PDF softcopy on the product kit (LK3T-3526), and on the Web at: http://www.ibm.com/ims/. It is available in BookManager only on the OS/390 Collection CD-ROM (SK2T-6700), and on the Transaction Processing and Data CD-ROM (SK2T-0730).

A new addition to the IMS V7 library is the *IMS Version 7 IMS Java User's Guide*. This new book is unlicensed. As a new book, it is available only in BookManager and PDF softcopy on the product kit (LK3T-3526), and on the Web at:
 http://www.ibm.com/ims/

The Adobe Acrobat Reader is required to view or print the PDF files. You can download it for free at: http://www.adobe.com.

We Want to Know What You Think!

Your feedback is important in helping us provide the most accurate and highest quality information. If you have any comments on any of the IMS documentation, you can do one of the following:

* Go to the IMS home page at: http://www.ibm.com/ims. There you will find an online feedback page where you can enter and submit comments.

* Send your comments by e-mail to imspubs@us.ibm.com. Be sure to include the name of the book, the part number of the book, the version of IMS, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).

* Fill out one of the "Readers' Comment" forms, which can be found at the back of all IMS books, and return it by mail, by fax, or by giving it to an IBM representative.

We hope you can join us at the IMS Technical Conference this October in Anaheim—IMS User Technology will be out in force in the IBM IMS Expo area.

Sherry R. Gordon
Software Engineer, IMS User Technology

Built for Speed: IMS V7 Fast Path

Once again, the IMS Performance group has enhanced the IMS Fast Path performance benchmark to test with IMS V7—in a Parallel Sysplex environment—to prove that data sharing in a sysplex is the solution for high-end transaction processing systems and servers.

The Workload

We changed the current workload to convert our MSDBs (Main Storage Databases) to shared VSO (Virtual Storage Option) areas, using the IMS Resource Lock Manager (IRLM) to allow full data sharing. We also enabled the shared EMHQ (Expedited Message Handler Queue), and increased the size of the Data Entry Database (DEDB) areas to accommodate the large number of SDEPs (Sequential Dependents) generated during the run.

Since we used CQS (Common Queue Server) for the shared EMHQ, we decided to have one CQS serve multiple IMSs (a new IMS V7 facility), to demonstrate that a single CQS could handle the load of multiple IMS systems. Then, we used two CQSs to serve four IMS systems, two IMS systems for each CQS.

The workload consisted of four transactions and four databases to perform a basic debit/credit service for retailers. The databases are all DEDBs, two of which are shared VSO areas.

A single COBOL application program was used to process four different transactions, each with a varying level of processing. All transactions were IMS Fast Path exclusive.

The Environment

The environment for this benchmark used IMS V7 and IRLM V2.1 running on OS/390 R2.8. Two 9672-ZZ7 (G6) processors were connected to form a two-way Parallel Sysplex, each processor having an ICF (Internal Coupling Facility) and a single LPAR. A third G6 processor was used solely to drive TPNS.
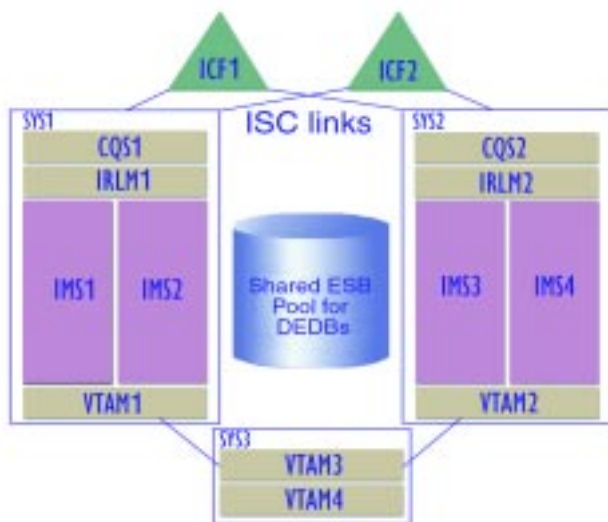

Figure 1: The Fast Path Benchmark Environment

IBM Enterprise Storage Server (ESS, also known as "Shark") DASD was used extensively in the environment to host the sysplex couple data sets, RECONs, OLDS, WADS, CQS checkpoint data sets, and all of the database data sets. We used ESS 2105 Model E20 (V1.0) with PAVs (Parallel Access Volumes) enabled.

Figure 1 shows the hardware and software components that were used to run this benchmark.

Here are the allocations we used for the processor cp:

- G6 - system 1; 2 cps dedicated to ICF (at CF level 8), 10 cps for a single LPAR.

- G6 - system 2; 2 cps dedicated to ICF (at CF level 9), 10 cps for a single LPAR.

- G6 - system 3; 5 cps for a single LPAR (for TPNS), 7 cps off-line.

The Shared EMHQ Configuration

- The shared EMHQ was active and was used for 11% of the transactions processed.

- Of the 11,246 tps (transactions per second), 1245 tps were processed from the shared EMHQ.

As a testament to the resiliency of IMS and the shared EMHQ, the transaction rate dropped as low as 6704 tps during concurrent IMS system checkpoints, but was able to accommodate the queued workload by processing at over 11,000 tps until the balancing group queues were empty again. Because of the IMS Fast Path Local-First scheduling algorithm, IMS was able to drain the EMHQ and resume a more comfortable 10,000 tps rate.

The Data Sharing Configuration

Four systems were concurrently accessing data in this benchmark. The data sharing relied heavily on the devices hosting the data and the database lock manager.

With PAV active, the ESS DASD hosting the DEDBs processed a total rate of 12,814 I/Os per second with only a three millisecond response time, with no IOSQ time and no device busy delays.

IRLM processed an observed peak of 44,584 requests/second with a service time of only 47.3 microseconds.

The following tables list the structures and their access times during the benchmark.

What's New in Database Tools?

Quite a lot! IBM has announced a strengthened focus on Database Tools that complements both IMS and DB2 UDB for OS/390 engines. Yes, DB2 Tools too….IBM is in the tools business for both IMS and DB2 products. IBM seeks to be your preferred supplier of tools by providing competitive, high performance, and functionally rich products. Additionally, IBM is repositioning existing products and introducing new products to help add shape to IBM's Database Tools strategy.

IBM's strategy is to focus on Database Tools by doing the following:

- Defining areas of importance to our customers
- Consolidating existing product offerings
- Providing a consistent set of Terms and Conditions
- Standardizing on an industry consistent price methodology
- Being responsive to customer needs

IBM has provided high-performance utilities and tools in response to customer needs for over twenty years. Today, these products are becoming essential to daily operations. IBM has responded to this need by sharpening its focus on Database Tools. Database Tools have been broken down into the following four areas, which you, our customers, have said are most important:

- Administration
- Performance Management
- Recovery and Replication Management
- Application Environment

All of the products described in this article include support for either IMS V7 or DB2 V7!

Administration Tools

Database Administration Tools address the most common tasks required to service and support database operations. These tasks include unloading, reloading, reorganizing, copying, and catalog management. Many of these tasks are operations where performance is critical in meeting your company's availability commitments. Here are the new and repositioned tools that IBM has announced in this area:

IMS High Performance Unload
IMS High Performance Load
IMS High Performance Pointer Checker
IMS High Performance Prefix Resolution
IMS Index Builder
IMS Fast Path Basic Tools
IMS Fast Path On-line Tools

Structure name	Req/sec.	Sync service time	Async service time*
IRLMLOCKTBL1	44,484	47.3	No async requests
EMHQ	9,336	49.6	204.8
EXCEPTA (VSO)	1,439	46.2	199.3
STOREDB (VSO)	10,026	45.2	217.2

* Service time shown in microseconds
** The CF utilization for the 4 cps was 61.3% at this time

Data set	I/O/sec	Average Response time*	Device busy delay*	IOSQ time*
OLDS (each IMS)	126	3	0	0
DEDB (ACCT area)	149 (each area)	3	0	0
WADS (each IMS)	93	6	0	0

* Times shown in milliseconds
** The total DASD I/O rate was 13,733/sec with overall average response time of 3 milliseconds

The Benchmark Results

In 1978, the IMS Fast Path benchmark reached 100 tps on a state-of-the-art IBM 3033UP class CPU with IMS V1. In 1988, the IMS Fast Path benchmark increased tenfold to 1000 tps on an IBM 3090-400 CPU with IMS V2. This year, the IMS Fast Path benchmark increased elevenfold and reached an unparalleled 11,000 tps on IBM's high-end CPU, 9672-ZZ7, with IMS V7 and further assisted by IBM ESS DASD.

Here are the specific numbers:

- The average transaction rate for the measurement is 10,008 tps (peak of 11,246 tps).

- The average CPU utilization for the measurement period is 72.8% (sysplex peak of 93.5%).

- The average CF utilization (CF busy) for the measurement period is 44.0% (peak of 61.3%).

- The average region occupancy for the 160 IFPs (40 per IMS) is 57.25%.

- The average transaction transit time: 173.12 milliseconds.

11,000 transactions per second—it's not a projection, it's a measured reality. That translates to nearly a billion transactions per day, and that's a lot of business!

Mike Gonzales
IMS Performance Specialist

IMS Data Base Repair Facility
IMS Sequential Randomizer Generator
IMS Library Management Utilities
IMS Advanced ACB Generator
IMS ETO Support
IMS Hardware
Data Compression - Extended
DB2 Administration
DB2 Forms
DB2 High Performance Unload
DB2 Automation Tool

Performance Management Tools

While Administration Tools cover most of your maintenance and service operations, Performance Management Tools are equally important in keeping your database environment operating at peak performance. Here are the new and repositioned tools that IBM has announced in this area:

IMS Performance Analyzer
IMS Queue Control Facility
DB2 Performance Monitor
DB2 SQL Performance Analyzer
DB2 Query Monitor

Recovery and Replication Management Tools

Normal backup and recovery operations are handled by your choice of image copy and recovery tools. But many customers also have additional requirements, or situations requiring special solutions. These might include: archiving data, point in time recovery, on-line recovery, and added image copy capabilities. Replication of data among sites as a backup strategy might also be desirable. Here are the new and repositioned tools that IBM has announced in this area:

IMS DEDB Fast Recover
IMS Recovery Saver
IMS Image Copy Extensions
DB2 Recovery Manager
DB2 Row Archive Manager
DB2 DataPropagator

Application Environment Management Tools

Tools that are helpful in the development, test, operation, and connectivity of database applications are equally important. The ability to build simple reporting applications, provide e-business connections, examine and change data, and control checkpoint activities are useful to effectively create and operate your application subsystem.

These are the new and repositioned tools that IBM has announced in this area:

IMS Connect
IMS Program Restart Facility
DB2 Bind Manager
DB2 Web Query Tool

Watch this space—more products are coming and they'll be described in future *IMS Newsletters*.

For more information on the tools mentioned in this article as well as the many other IMS and DB2 tools and utilities that are available from IBM, visit the Data Management Tools web site at: http://www.ibm.com/software/data/db2imstools.

For information about the IBM Database Tools Migration Team, please contact Helen Trollman, Business Unit Executive, at (650) 966-6600 or send a note to: trollman@us.ibm.com.

Look for us in the IBM expo area at the IMS Technical Conference beginning October 23, 2000, in Anaheim, California.

We are offering something different this year—personalized, live IMS product demonstrations in our demonstration suites! If you are interested in seeing one of our tools in action, you can schedule a product demonstration before you get to the conference! Contact either Janet Leblanc, at (613) 860-1383 (leblancj@ca.ibm.com) or Mark Schimansky, at (415) 545-2146 (mansky@us.ibm.com).

Elmer Rohde
IMS Database Tools Marketing Specialist

Mark Schimansky
Senior Software Specialist, IBM Database Tools Migration Team

Janet Leblanc
Senior Software Specialist, IBM Database Tools Migration Team

Summary of Repositioned and New Products

The following products have been repositioned with Terms and Conditions changes:

Repositioned IMS Products

Replaced Product		New Product	
Order No.	Product	Order No.	Product
5685-093	IMS System Utilities Data Base Tools (all features)		
	IMS DBT-Library Management Utilities	5655-E04	IMS Library Management Utilities
	IMS DBT-Fast ACBGEN	5655-E05	IMS Advanced ACBGEN
	IMS DBT-Space ManagementUtilities	5655-E09	IMS High Performance Pointer Checker
	IMS DBT-Image Copy Extensions	5655-E10	IMS Image Copy Extensions
	IMS DBT-Sequential DAM Optimizer	5655-E11	IMS Sequential Randomizer Generator
	IMS DBT-DEDB Unload/Load	5655-E30	IMS Fast Path Basic Tools
	IMS DBT-DEDB Pointer Checker	5655-E30	IMS Fast Path Basic Tools
	IMS DBT-DEDB Tuning Aid	5655-E30	IMS Fast Path Basic Tools
	IMS DBT-High Speed Sequential Retrieval	5655-E06	IMS High Performance Unload
	IMS DBT-Fast Reorganization Reload	5655-E07	IMS High Performance Load
	IMS DBT-Fast Prefix Resolution	5655-E08	IMS High Performance Prefix Resolution
	IMS DBT-VSAM Zapper	5655-E03	IMS Data Base Repair
5655-085	IMS Compression- Extended	5655-E02	IMS Compression-Extended
5655-D68	IMS ETO Support	5655-E12	IMS ETO Support
5697-F18	IMS Program Restart Facility	5655-E14	IMS Program Restart
5697-F02	IMS Performance Analyzer	5655-E15	IMS Performance Analyzer
5655-A68	IMS Recovery Saver	5655-E16	IMS Recovery Saver
5655-109	IMS DEDB Fast Recovery	5655-E32	IMS DEDB Fast Recovery
5697-C33	IMS Index Builder	5655-E24	IMS Index Builder Facility

Repositioned DB2 Products

Order No.	Product	Order No.	Product
5645-DB2	Selected Features of DB2		
	DB2 Administration Tool	5655-E70	DB2 Administration Tool
	DB2 Performance Monitor	5655-E61	DB2 Performance Monitor
	DB2 DataPropagator	5655-E60	DB2 DataPropagator
	DB2 Forms	5655-E64	DB2 Forms
5688-515	DB2 Administration Tool V1	5655-E70	DB2 Administration Tool
5655-D52	DB2 Administration Tool V2	5655-E70	DB2 Administration Tool
5655-A31	DB2 Row Archive Manager	5655-E65	DB2 Row Archive Manager
5697-F44	DB2 High Performance Unload	5655-E69	DB2 High Performance Unload
5697-F09	DB2 Forms V1	5697-G52	DB2 Forms
5697-G16	DB2 Forms V2	5697-G52	DB2 Forms
5799-GJA	DB2 Bind Wizard	5655-D38	DB2 Bind Manager
5799-GJE	DB2 Batch Undo	5655-E66	DB2 Log Analysis Tool
5799-GJC	DB2 Query Monitor	5655-E67	DB2 Query Monitor
5799-GJD	DB2 Web Query Tool	5655-E71	DB2 Web Query Tool

The following new products have been announced:

Order No.	Product
5655-E31	IMS Fast Path On-line Tools
5655-E51	IMS Connect
5697-E99	IMS Queue Control Facility
5697-F61	IMS Data Base Integrity Control Facility Version 7
5697-F56	DB2 Recovery Manager
5697-F57	DB2 SQL Performance Manager
5655-E72	DB2 Automation Tool

IMS Services from IGS Integrated Technology Services

The Integrated Technology Services IMS National Practice Team of IBM Global Services (IGS) provides a wide range of fee-based IMS planning, installation, migration, and support services to help you complete your company's IMS projects and provide daily IMS support. Our IMS specialists each have over 20 years of hands-on experience and skills to assist you with IMS and IMS-related product planning, installation, implementation, new feature/function enablement, and ongoing support requirements. Our services can be general in nature or can be tailored to a specific set of activities in order to meet your needs.

Integrated Technology Services IMS National Practice provides these services:

Migration and Maintenance Services—Many of our service requests have been for version-to-version migration services as most customers begin the catchup process after software freezes for the year 2000. Our migration services help new IMS staff learn the installation and migration process for version-to-version upgrades. Migration projects address training new staff in planning and researching IMS-related maintenance requirements for other products, identifying and retrofitting user exits and USERMODs, performing the SMP/E and IMS IVP customization and install with training in the IMS sysgen process, upgrading and testing IMS products for proper integration, and planning and performing the software migration through all customer environments. Version-to-version migration services include migration to IMS V5 and IMS V6 (optionally including conversion to an IMS DBCTL environment) and our staff is already preparing for IMS V7 migration services.

IMS maintenance upgrade and migration services are also being performed in preparation for IMS V7. Maintenance upgrade services for all currently supported IMS levels now include research for IMS V7 migration and coexistence maintenance in order to bring the existing IMS system software up to a level that will support fallback, data sharing, and IMS MSC system connections among existing IMS versions and IMS V7. Like IMS version-to-version migration services, our IMS maintenance upgrade migration services can be customized to include whatever combination of planning, research, installation, customization, and implementation you need for your specific environment.

Performance and Tuning Services—IMS performance and tuning is another service we offer that is customized to your specific environment. In some instances, we work with you on a specific performance bottleneck and identify root causes and corrective actions; in other cases, the entire IMS system (or portions of IMS online, BMP, and/or batch environment) are reviewed and changes recommended to improve overall response time and throughput and/or decrease your batch window requirements.

IMS Tools Services—IMS Tools services are available for software installation, planning, setup/configuration, and migration separately or combined with IMS migration services. We can additionally assist with a review of your IMS toolset, perform benchmarking of IBM IMS Tool products against your current tools/utilities, assess the effort to convert and migrate to IBM IMS Tool products, and perform the conversion and migration.

IMS System Support—We can also provide coverage for your normal IMS support activities during temporary personnel shortages, or you need to work on special projects, or need additional IMS skilled staff to support your system. Our support activities range from sysgens, DBD/PSB/ACB gens, and IMS problem resolution to assisting with VSAM to OSAM database conversions.

For information on any of the above or other IMS services, call Winston Tobias at (216) 664-7271 or e-mail an information request to: wtobias@us.ibm.com.

Winston Tobias
Principal, IBM Global Services

IMS Worldwide Product Affinity Services

As part of the IBM Data Management Software Development organization at IBM's Silicon Valley Laboratory, the IMS Worldwide Product Affinity Services team offers formal services designed to accomplish these goals:

- Tailor a solution to address your individual service and support needs.

- Work with you to implement new IMS functions in a timely manner.

- Give you a seamless, total support solution that leverages our wide range of capabilities, using a combination of local and remote services.

The IMS Services team is made up of highly experienced software engineers from around the world, and is supported by the IMS Development and Customer Support teams at IBM's Silicon Valley Laboratory.

We have many service offerings available to provide technical assistance in managing immediate and future IMS business needs. The IMS Services team is available for hourly, daily, or fixed price contracts. Our services can be provided by telephone consultations, remote access, or on-site engagements.

IMS Worldwide Product Affinity Services at a Glance

Proactive Assistance—Determine how system resources are being used and provide recommendations. Optimize resources to improve performance and availability. Understand and plan for the effects of new technologies and applications. You can receive our proactive, consulting assistance locally or remotely. Specific services that we offer include:

- Technical Consulting

- Disaster Recovery Consulting

- Performance Analysis & Tuning

Systems Monitoring—Provide on-site or remote monitoring of systems, configuration, capacity and performance, and notify you of high-risk exposures. Specific services that we offer include:

- High/Continuous Availability Management

- System Health Check

Product Enhancement Support—Provide consulting services to assist with new IMS functionality. Specific services that we offer include:

- Parallel Sysplex Data Sharing/Shared Queues Migration and Consulting Support

- IMS e-business Connectors Consulting

- IMS Product Tool Consulting and Migration Assistance

Educational Services—Provide standard or customized IMS training in classes at an IBM education facility, or locally at your organization.

A sample of standardized training offerings include:

- IMS Parallel Sysplex Workshop

- IMS Installation & Maintenance

- IMS Diagnostic Approaches

IMS Worldwide Product Affinity Services Details

Technical Consulting—Provides consultative services on customer IMS situations and provide recommendations.

Disaster Recovery—Provides consultative services for backup and recovery of IMS systems, databases and networks.

Performance Analysis and Tuning—Performs analysis of systems, applications, databases and communications performance and provides tuning recommendations.

High/Continuous Availability Management—Provides recommendations on improving processes, infrastructure and systems to drive higher systems availability.

System Health Check—Provides a "snapshot" of critical system resources, and identifies bottlenecks.

Parallel Sysplex Data Sharing/Shared Queues Migration and Consulting Support—Provides planning services for migration to more current release of IMS and exploitation of Sysplex data sharing and shared queues and other technologies.

IMS e-business Connectors Consulting—Provides technical consulting for design and implementation of the strategic IMS e-business Connectors.

IMS Product Tool Consulting and Migration Assistance— Evaluates your current usage of IMS tools, and assists you in identifying suitable replacement IBM tools for your existing Independent Software Vendor tools. Provides information on the usage of IBM IMS tools.

Educational Services—Provides courses in the following topics: IMS Parallel Sysplex Workshop, IMS Installation and Maintenance, and IMS Diagnostic Approaches. The IMS Services team can also create courses that are tailored to your needs.

IMS Worldwide Product Affinity Services is committed to providing you with world class software support services to: resolve today's complex IMS problems and issues, increase system availability, bolster productivity, and enhance your satisfaction with IMS family products and solutions.

For more information about IMS Worldwide Product Affinity Services, contact Paul Carey at (408) 463-3493, or e-mail an information request to: dmservices@us.ibm.com.

Paul Carey
Manager, IMS Product Affinity Services

And the Winner is . . .

What would an IMS Technical Conference be without a contest? Check out the IMS random drawing demonstration at the upcoming Anaheim, California, IMS Technical Conference. You will get to use the latest IMS V7 e-business capabilities—and a chance to be a winner!

The demonstration application is a total Java language implementation that shows the following IMS V7 capabilities:

• **IMS Java** - An IMS MPP (Message Processing Program), written in Java, that processes XML datastreams.

• **IMS Connect** - An IMS TCP/IP connector that supports access to IMS via OTMA.

• **HALDB** - High Availability Large Database, which is a new IMS type of partitioned database. The demonstration application uses a HALDB database for storing contestant entries.

To provide Web-enabled access to IMS V7, the application uses the following technology:

• **IMS Connector for Java** - Java code to access IMS that is shipped with Visual Age for Java V3.5.

• **Visual Age for Java V3.5** - An e-business tool for creating applications.

• **WebSphere Application Server** - An e-business runtime environment.

The Processing Flow Starts with You!

Here is how the IMS demonstration application works:

1. Using a Web browser, you complete and submit an HTML contest entry form.

2. The Web browser sends the form to the WebSphere Application Server for processing.

3. The WebSphere Application Server gives control to a Java Servlet to process the completed HTML contest entry form.

4. The Java Servlet activates an Enterprise Access Builder (EAB) Command to access the host IMS application program that is written in Java.

5. The IMS Java application program uses JDBC to access an IMS HALDB partitioned database to enter your HTML contest entry form data.

6. During the IMS 2000 Technical Conference, a random drawing will be used to retrieve contestant entries from an IMS HALDB partitioned database. The IMS Java application program will return an XML data stream, providing a list of lucky winners.

Figure 1: Developing a Servlet

Figure 1 is an example of the demonstration application's processing flow.

How Is the Demonstration Application Built?

VisualAge for Java Enterprise Edition V3.5 was used to build the EAB Command and the IMS Java MPP. High Performance Java
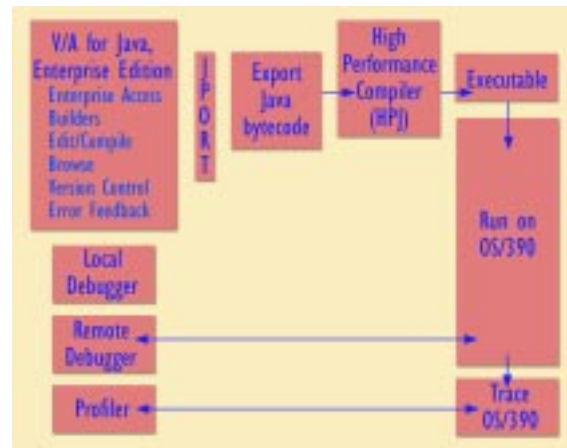

Figure 2: IMS Java Development Scenario

(HPJ) for S/390 was used to build the IMS Java application program runtime code.

Figure 2 shows the tools used to build the demo application.

Ken Blackman
IMS Advanced Technical Support Specialist

IMS Technical Conferences

IMS has two upcoming technical conferences scheduled: one in the USA, and one in Europe.

October 23 - 26, 2000
Anaheim Marriott
Anaheim, California

The IMS Technical Conference in Anaheim, California, is coming up soon—enroll today to take advantage of the latest technology! Find out about the latest and greatest enhancements with IMS V7, examine critical IMS TM and DB issues, and learn more about Business Intelligence. You will learn how to build e-business applications, exploit the IMS Connect facility for IMS TCP/IP support, and see how to use the IMS Connector for Java.

You'll also get the opportunity to explore what's new and exciting in the industry. Learn about Rapid Network Reconnect (RNR), the new IMS Transaction Management enhancement, and the IMS Online Recovery Service (ORS) facility, which provides improved database recovery processing. This will be your opportunity to hear directly from Bob Gilliam, the new IMS Family Product Manager, on the role of IMS in the 21st Century!

March 6 - 9, 2001
Hamburg, Germany

In 3 ½ days you can explore the full range of IMS technologies through informative elective sessions, an eye-opening keynote address, one-on-one interactions with product developers, demonstrations of new technologies at the Product EXPO, networking opportunities at every turn, plus a special evening social event.

For more information about the IMS Technical Conference, or to enroll, visit the IMS Technical Conference Web site at: http://www.ibm.com/services/learning/conf/ims or call (800) IBM-TEACH (426-8322). If you are calling from outside North America, please call our international number, 001.770.858.5902.

Tracy Johnston
IBM Marketing Specialist

The Latest IMS Redbooks for IMS V7

The ITSO has been working with IMS V7 since December 1999, and we have had some very experienced IMS professionals —both customers and IBM personnel— work with the code. The results of our efforts are the following new IMS redbooks.

IMS Version 7 Release Guide (SG24-5753)

This book is an overview of all of the new features in the new version. We have documented each of the new features and provided some suggestions and guidance about how to use each feature. The first chapter in the book is a management overview describing each feature and some practical details about how to implement it.

Here are just some of the new features in IMS V7:

- A new database structure, HALDB (High Availability Large Database), which removes many of the restrictions on the physical size of full function databases.

- IMS online programs using Java.

- Many enhancements in the IMS Transaction Manager and Database Manager functions.

- The IMS ORS (Online Recovery Service) facility, which enhances how databases recoveries are done. IMS ORS provides high-speed recovery of multiple databases with a single pass of any IMS log data sets. It also provides a fully supported point-in-time recovery function.

Estimated to be available in September, 2000.

IMS Version 7 High Availability Large Database Guide (SG24-5751)

This book is for the IMS DBA and IMS Systems Programmer using the new HALDB (High Availability and Large Database) structure. The book provides a detailed look at the migration process from full function databases to HALDBs. It also provides details of how the HALDB databases are defined and used in the online system. This book provides examples of migrating stand-alone and logically related databases to HALDB. If you intend to use HALDB, this book is a must-read.

Estimated to be available in September, 2000.

A DBA's View of IMS Online Recovery Service (SG24-6112)

This book provide the IMS DBA with an overview of the IMS Online Recovery Service facility (ORS). The book contains a series of presentations on IMS ORS.

It also provides a general overview of the IMS ORS facility: what it is and how it works. The book takes you through an example of how to use IMS ORS to run database recoveries. IMS ORS changes the interface a DBA uses in performing recovery functions, and helps the DBA understand the new interface to take advantage of the simplified recovery process that IMS ORS provides.

Estimated to be available in October, 2000.

Rick Long and Bill Arkins
ITSO IMS Specialists

The Latest in IMS Education

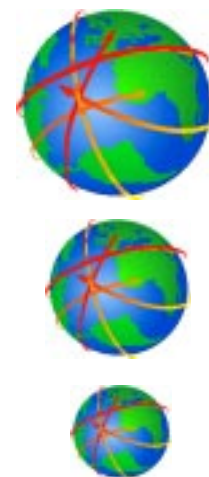The following courses are the newest offerings in the IMS training curriculum:

- CM010 - IMS Fundamentals (replaces U3700); 3 days

- CM220 - IMS Physical Organization of Databases Workshop (replaces U3722) 4 days

- CM430 - IMS Security; 3 days

- CM700 - IMS V7 Product Enhancements; 3 days

- CM750 - IMS Data Access Workshop for e-business; 3 days

The following two popular courses have also been updated:

- CM621 - IMS Parallel Sysplex Workshop; 4 days

- CM651 - IMS Connectivity and Web Enablement Workshop; 3 days

For the most up-to-date information and further details, check our IMS curriculum spotlight at http://www.ibm.com/services/learning/spotlight/ims.html.

Amiet Goldman
Senior Direct Marketing Strategist

HOT Web Sites

IMS Home Page
http://www.ibm.com/ims
http://www.ibm.com/software/data/ims

IMS Library and Adobe Acrobat Reader
http://www.ibm.com/ims/software/data/ims/library.html
http://www.adobe.com

IBM Redbooks
http://www.redbooks.ibm.com

IBM Database Tools
http://www.ibm.com/software/data/db2imstools
http://www.ibm.com/software/data/ims/about/imstools

IBM Enterprise Storage Server (Shark ESS)
http://www.storage.ibm.com/hardsoft/products/ess/ess.htm
http://www.storage.ibm.com
http://www.ibm.com/support/techdocs

IMS Connector for Java
http://www.ibm.com/software/data/ims/jitoc.html

IMS Connect
http://www.ibm.com/software/data/ims/imstoc.html

VisualAge for Java
http://www.ibm.com/software/ad/vajava/

WebSphere Application Server
http://www.ibm.com/software/webservers/ appserv/

WebSphere Studio
http://www.ibm.com/software/webservers/studio/index.html

Customer Success Stories
http://www.s390.ibm.com/customer/

Year 2000 Technical Support
http://www.ibm.com/software/year2000
http://www.s390.ibm.com/stories/tran2000.html

IBM Global Services
http://www.ibm.com/services/

IBM Learning Services
http://www.ibm.com/services/learning
http://www.ibm.com/services/learning/roadmaps/imsidx.html
http://www.ibm.com/services/learning/spotlight/ims.html

Enterprise Connection Conference Call Series
http://www.s390.ibm.com/events

S/390 Application Development Solution (ADS)
http://www.s390.ibm.com/ads

Share Proceedings
http://www.share.org

IMS Technical Conferences
http://www.ibm.com/services/learning/conf/ims

IMS Jacket Winner!!!

Bill McKenna from Army & Air Force Exchange Service (AAFES) won the IMS jacket competition (which ran in the Spring 2000 *IMS Newsletter*) for his organization. He submitted an article describing how AAFES depends on IMS for e-business to serve the men and women of the US armed forces. You can read AAFES's e-business story on the internet at: http://www.informationweek.com/765/aafes.htm

Be a Featured Customer!

In IMS, we are always eager to hear and read IMS customer success stories. IBM prints these stories in various publications (including the *IMS Newsletter*). IMS runs businesses. The IMS product is currently used by 90% of the Fortune 1000 custom-ers. And, of course, it is also being used by many small and medium-sized customers.
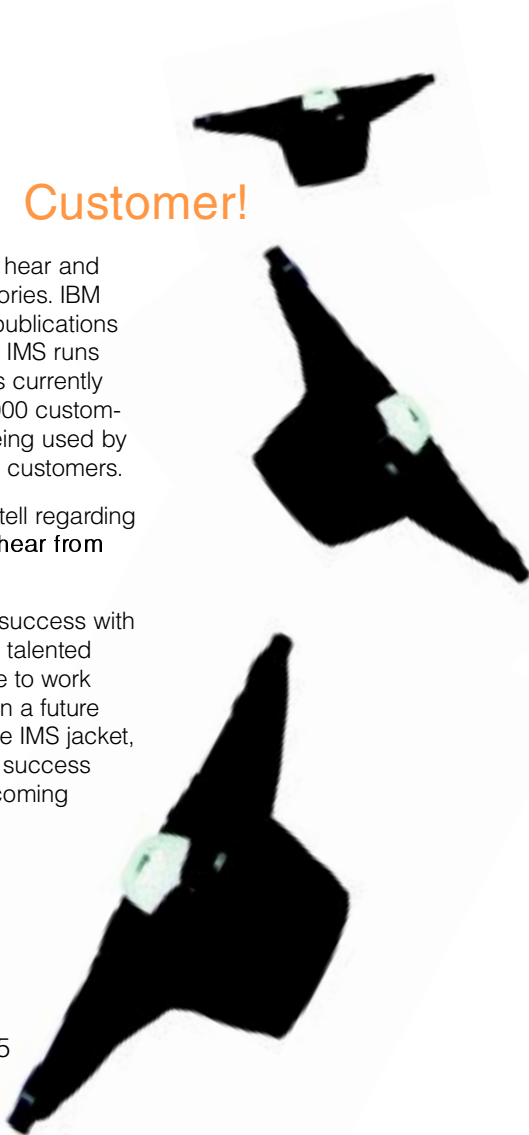
If you have a success story to tell regarding your use of IMS… **we want to hear from you.**

If you would like to share your success with an audience of thousands, our talented *IMS Newsletter* staff is available to work with you to present your story in a future *IMS Newsletter.* We will give one IMS jacket, shown here, to each customer success story that is suitable for an upcoming *IMS Newsletter.*

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