



E07

What's New with IMS Since General Availability of IMS V7

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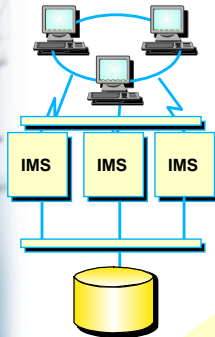
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IMS - Version 7

Ideal for e-business

- ✓ Information Integration with Application Development and Connectivity
- ✓ Manageability
- ✓ Scalability in Performance, Capacity, and Availability



Strategic Open Access for
S/390 and z/Series
Enterprise Servers



Enhancements

- Extended Large DB support
- Enhanced DB recovery
- Faster Restart with Multinode Persistent Sessions
- IMS Java Application support
- Enhanced Connectivity
- Enhanced Systems Mgmt Tools

Benefits

- ✓ Enable Customer Growth
- ✓ Enhance Workload Balancing
- ✓ Increase Availability; Ease of Use
- ✓ Preserve Current Application Investment
- ✓ Enable New Applications

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IMS V7 Database Manager Enhancements



Integration with Applic Devt/Connectivity

- ◆ IMS Java and XML support
- ◆ Open Database Access (ODBA)

Manageability

- Installation enhancements
 - ▶ Usability enhancements
 - ▶ HALDB samples
- Logger enhancements
 - ▶ Administration and Control
- External Subsystem Attach Facility diagnostic enhancements
- IMS systems parameter display
- Fast Path Enhancements
 - ▶ I/O toleration enhancements
 - ▶ Performance monitoring support
 - ▶ Multiple Area Data Set I/O Timing
 - ▶ Expansion of compressed data for Single dependent segment Scan
 - ▶ IMS Monitor enhancements for FP

Scalability in Performance, Capacity and Availability

- High Availability Large Database
- Application Control Block Generation (ACBGEN) enhancements
 - ▶ increased number of program limits
 - ▶ time/version info added
- DBRC Enhancements
 - ▶ Recovery Control (RECON) online upgrade, online access, large record warning, loss notification, improved diagnostics
 - ▶ Image Copy Genmax and Recovery enhancement
 - ▶ DB administration enhancements
- Forward Recovery enhancements
 - ▶ Change accumulation spill record handling for smaller, faster change accums
- Image Copy 2 Enhancements
 - ▶ compression option added for space savings
- I/O Performance enhancements
 - ▶ Ficon support
 - ▶ ESS support
- CSA Constraint relief



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IMS V7 Transaction Manager Enhancements



Integration with Application Devt and Connectivity

- IMS Java and XML support
- OTMA Callable Interface
- ETO Enhancements
 - ▶ Associated Printer support
 - ▶ Autologon enhancements
 - ▶ LTERM assignment flexibility
 - ▶ ETO descriptor record limit removed
 - ▶ Command Compatibility

Manageability

- Sysplex Queue Sharing Enhanced
 - ▶ CQS enhancements for Shared Queues
 - ▶ Asynch APPC/OTMA for Shared Queues
- Routing Exit enhancements
- RACF Pass Ticket Support
- Clarified USERID for applications
- External Subsystem Attach Facility (for DB2) Trace enhancements
- Installation enhancements
 - ▶ Usability enhancements
 - ▶ Java samples
- IMS systems parameter display

Scalability in performance, capacity, and availability

- Rapid Network Reconnect
- Deferred VTAM ACB Open to prevent time-outs
- Improved checkpoint frequency control
- SLUP Finance Session Coldstart capability
- VTAM Generic Resources enhancement for VTAM to manage the affinity
- Queue Space Notification Exit
- I/O SPOOL usability and performance enhancements
- SLU2 exception response enhancement



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IMS V7 High Availability Large DB



Highlights

- **Database records are grouped into partitions**
 - A single database consists of 1 or more partitions
 - Hierarchic structure is maintained within a partition
 - A partition is selected based on High Key or Partition Selection Exit
- **Partition independence is maintained**
 - Each partition can be managed independently -- commands, scheduling, utilities
- **V7 extends capacity significantly**
 - Each partition can be size of non-partitioned DB
 - Up to 10 Data Set Groups per partition, 1001 partitions maximum

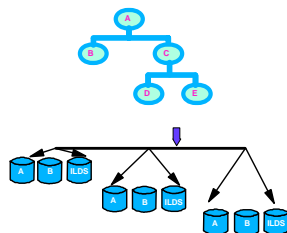
Benefits

- **High availability (not just for large databases)**
 - Partition independence for operator commands, reorganization, recovery, and scheduling
 - Parallel Partition processing offers shorter total recovery and admin times
- **Larger capacity**
 - Each partition can be size of non-partitioned database
- **Manageability**
 - Smaller partitions are easier to manage
- **Usability**
 - Partition definition is via an ISPF Partition Definition Utility

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IMS V7 HALDB for IMPROVED CAPACITY & DATA AVAILABILITY



- ✓ Extends IMS Full Function database size
 - ⇒ 1001 Partitions x 10 data set groups x 4G = 40 Terabytes
- ✓ Provides data availability through partition independence
- ✓ Provides easier manageability with smaller partitions of the database
- ✓ **Enhancements since IMS V7 GA:**
 - **Performance enhancements**
 - **Manageability enhancements**

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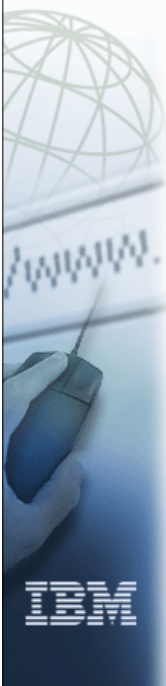


IMS HALDB Enhancements since V7 GA



- **Performance Improvements in**
 - ▶ Secondary index migration
 - ▶ Indirect list data sets (ILDS) creation
 - ▶ DFSMAIDO
 - ▶ Secondary index option during Load
- **Management Improvements with**
 - ▶ Recon Partition List Command support
 - ▶ Batch command initialization and change/delete of HALDB and associated partitions
 - ▶ Limit BMP/Batch/JBP Calls to one partition
 - ▶ Unload Reload status enhancement

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Assicurazioni Generali implementing HALDB



Challenge:

- Partition DB Support solved the database size limit back in 1997, but availability issues also needed to be addressed.

Solution:

- IMS V7 HALDB

Benefits:

- Secondary Index Partitioning
- Concurrency
- IMS code
- Availability with Parallel IC/REORG/RECOVERY
- Capacity for planned 30GB DB with 9 partitions

The insurer without frontiers



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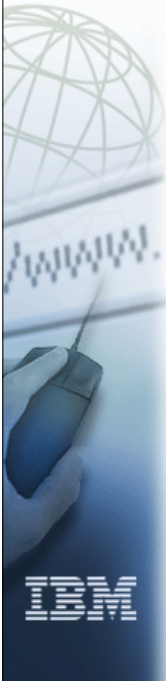


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Data Base Recovery Control Facility Enhancements



- ▶ **DBRC Concurrent RECON Upgrade**
 - ▶ RECON can be upgraded without stopping pre-IMS V7 systems
- ▶ **RECON Loss Notification**
 - ▶ MVS console message for RECON loss
 - ▶ Benefit - automation aid
- ▶ **DBRC Support for PROCOPT=L/LS**
 - ▶ Image Copy required at initial database load
 - ▶ Benefit - improved data integrity
- ▶ **DBRC Image Copy GENMAX**
 - ▶ GENMAX no longer automatically increased when number of image copies specified is exceeded
 - ▶ Benefit - usability
- ▶ **Large RECON record warning**
 - ▶ Warning message
 - ▶ Benefit - automation aid, increased availability
- ▶ **RECON Access improvement**
 - ▶ Change to scheme to serialize accesses to RECON
 - ▶ online system favored over batch jobs
 - ▶ Benefit - reduced I/O bottlenecks that impact online systems
- ▶ **DBRC serviceability**
 - ▶ LIST.DBDSEGRP, LIST.HISTORY enhancements
- ✓ **Enhancements since IMS V7 GA:**
 - ▶ Support of HALDB performance/management enhancements
 - ▶ List History timeline - can just point to the timeline only
 - ▶ DD Cards - alt DD for Sysin
 - ▶ Genjcl user partition support



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IMS V7 Java supports Integrated e-business Application Development



- **Providing the capability to write, compile and run IMS Java programs**
 - Provides a set of packages (groups of classes) for input-output message handling and access to IMS services, and support APIs familiar to Java programmers
 - Applications written in Java can run in IMS as MPPs, BMPs, IFPs
- **Using the APIs/Tools familiar to Java programmers**
 - JDBC for data access to IMS DB and/or DB2
 - Host and VisualAge tools for development
 - Compile using High Performance Java Compiler or Persistent Reusable Java Virtual Machine
 - ▶ Create VisualAge projects and do Remote Build
 - ▶ Edit using VisualAge editor
 - Remote debugging using VAJava Remote Debug tool
 - Performance Tracing



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IMS V7 Java for Integrated e-business Application Development/Connectivity



✓ Application programmer productivity

- Java access to IMS input/output message queues
- JDBC access to IMS DB and DB2 data for IMS TM Java applications
- Uses VisualAge tools for development

✓ Enhanced since IMS V7 GA

- New Java Dependent Region support for Persistent Reusable Java Virtual Machine
- JDBC access to IMS DB from CICS/390 Java applications and DB2 for OS/390 and z/OS Stored Procedures
- New Java Tool support
- Java Installation and Usability Enhancements
- Java-Cobol Interoperation



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New Java Dependent Region Types



▶ New Environment

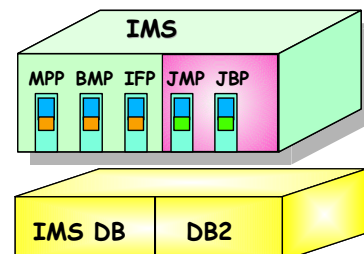
- ▶ IMS TM with JVM -- no HPJ needed!

▶ Two new IMS dependent region types

- ▶ JMP, JBP using the resettable JVM
 - Saves over 2,000,000 lines of code per transaction
 - Use is no different for user
 - JDK 1.3.1S (JDK 1.3 with Persistent Reusable JVM)
 - Environment Variables (no more hardcode during compile)
 - JDBC 2.0 support

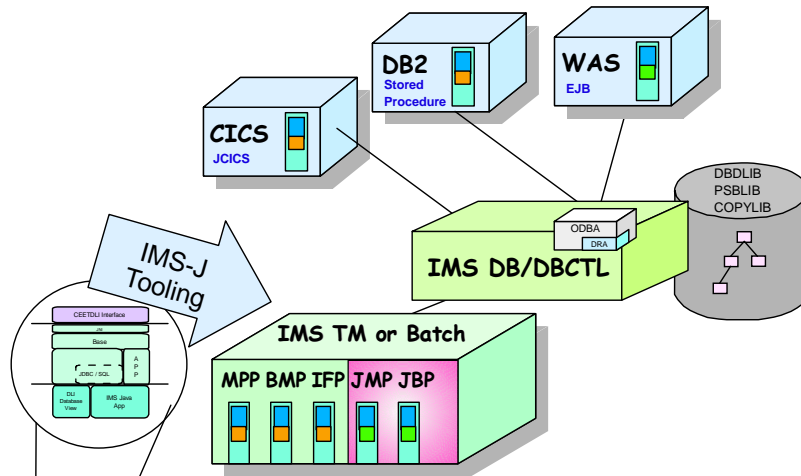
▶ Java-Cobol Interoperation

- ▶ Cobol routines in JMP or JBP for Java use
- ▶ Cobol MPP accessing Java for JDBC access



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The Big Picture: JDBC Access to IMS Data

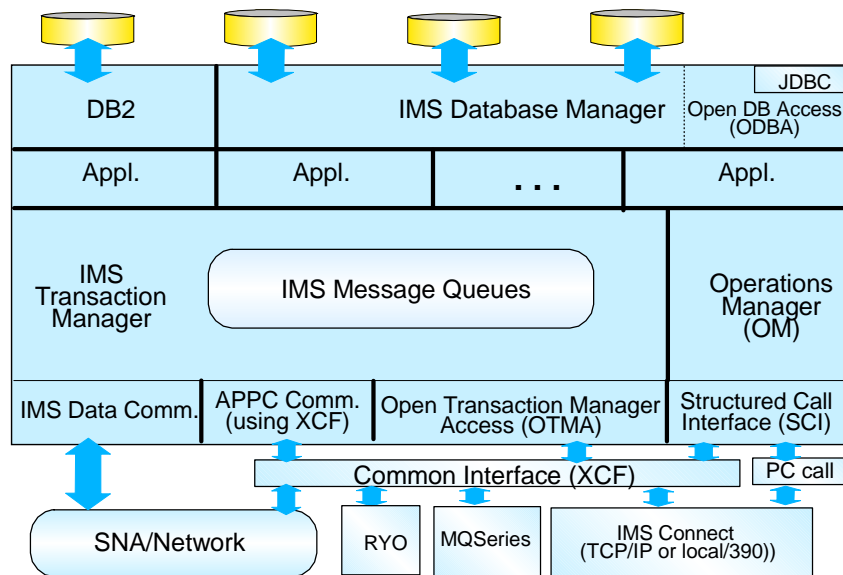


```

"SELECT CheckingAcct.Balance,
SavingAcct.Balance,CheckingAcct.Name" +
"FROM MyBankPCB.Accounts " +
"WHERE CheckingAcct.Balance > 10000" +
"AND SavingAcct.Balance > 20000 "
    
```

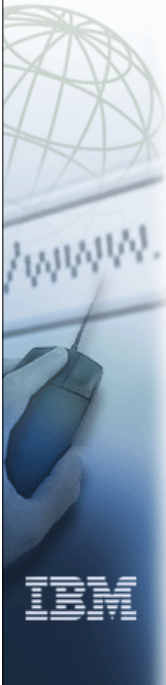
- Installation and Usability enhancements
- Expanded samples/examples
 - IVP and install program improvements
 - Expanded documentation

Middleware Subsystem Access





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What is Open Database Access?



- **Open Database Access (ODBA) is a callable interface for accessing data managed by IMS DB**
 - Based on the DRA interface provided for CICS applications
 - Also provided through the IMS V6 service process
- **ODBA allows IMS DB and OS/390 application programs to be developed, installed, and maintained independently of each other**
- **ODBA provides for failure isolation and independent resource recoverability**
 - Requires OS/390 Resource Recovery Services (RRS)

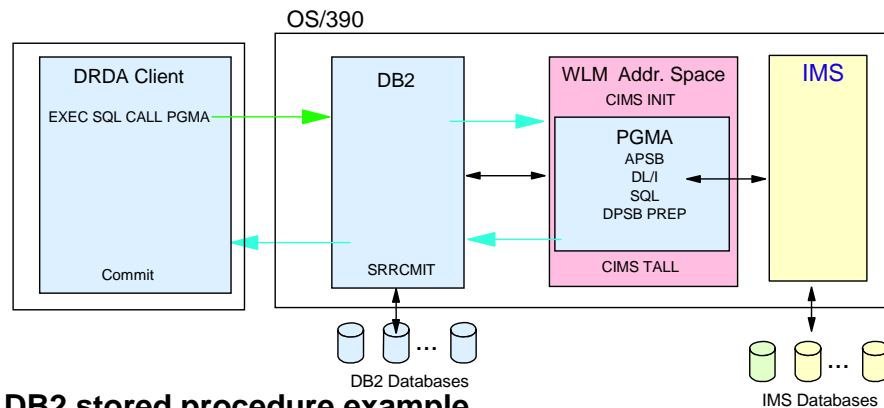
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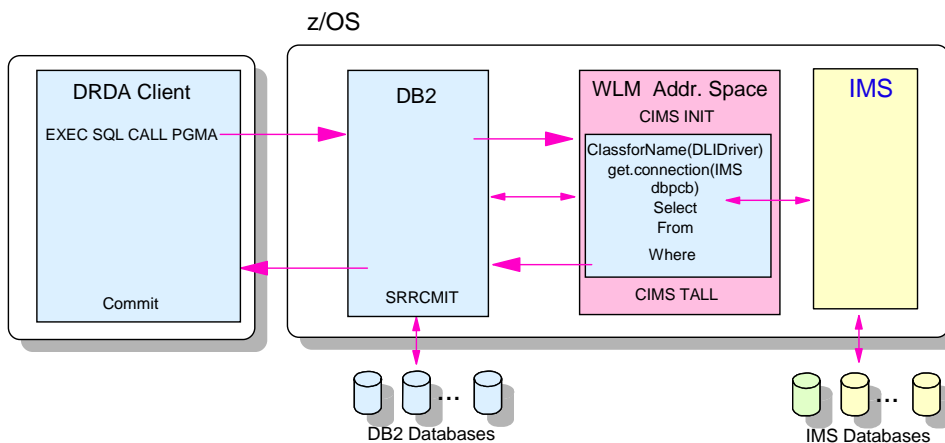
DB2 Stored Procedure Example



- **DB2 stored procedure example**
 - DL/I calls to IMS DB
 - Client program does commit when stored procedure returns or DB2 can issue SRRRCMIT
- **Enhancements since IMS V7 GA**
 - JDBC calls to IMS DB from DB2 for z/OS Java Stored Procedures and from CICS/390 Java applications

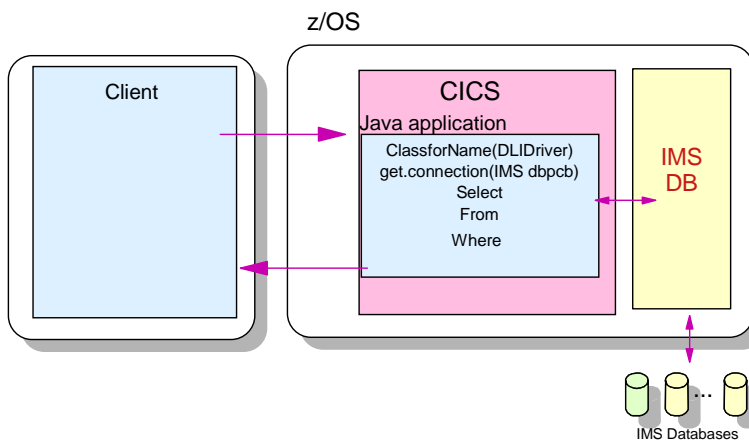
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DB2 Stored Procedure Example (Using IMS V7 Java JDBC interface)



- **DB2 Java stored procedure example**
-IMS Java Classes can be used to access IMS DB

CICS Example (Using IMS V7 Java JDBC interface)

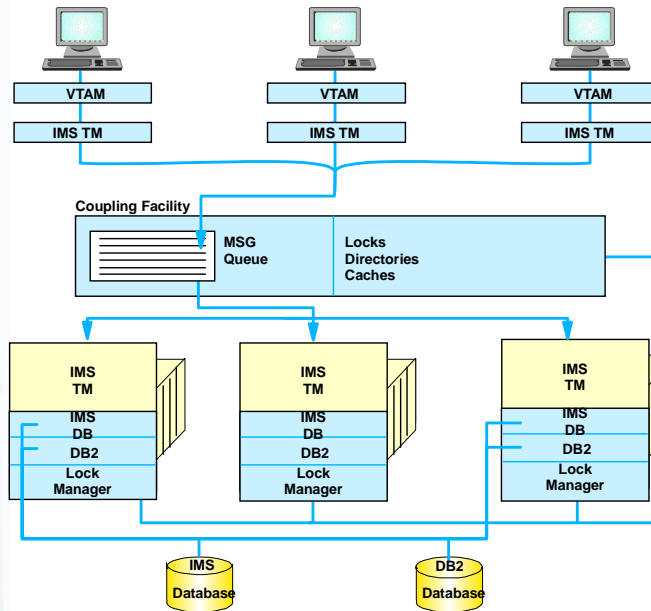


- **CICS Java Application example**
-IMS Java Classes can be used to access IMS DB



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IMS in a Parallel Sysplex



Allocation of workstations

Dynamic Workload Balancing

Data Sharing
 - IMS DB
 - DB2

Easier access and management of enterprise applications and data



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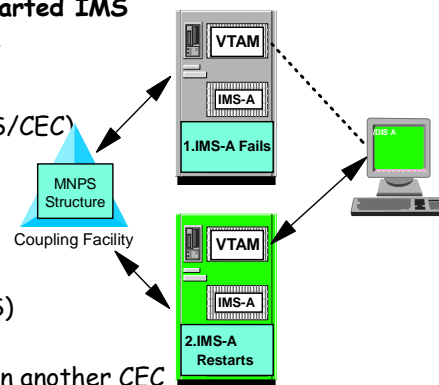
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Rapid Network Reconnect Highlights and Benefits



Highlights

- **Terminals automatically reconnect to restarted IMS**
 - end user signs on again after IMS restart
- **VTAM maintains persistent session**
 - Single node persistent session (single IMS/CEC)
 - after IMS restart of failed IMS
 - network reconnects to restarted IMS in same CEC
 - Coupling Facility not required
 - Multinode-persistent session (>1 CEC/IMS)
 - After IMS restart of failed IMS
 - Network reconnects to restarted IMS in another CEC
 - IMS application must register in Coupling Facility MNPS structure
- **If MNPS, all VTAMs with MNPS must be connected to Coupling Facility structure**



Benefits

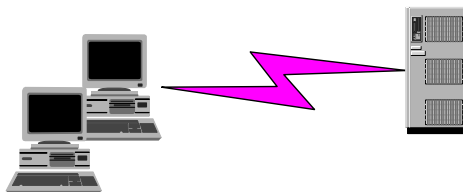
- **Faster reconnect of terminal network after IMS restart**



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IMS V7 Rapid Network Reconnect for IMPROVED AVAILABILITY



- ✓ Provides reduced network reconnect time after IMS, MVS, or VTAM failure in a sysplex environment
- ✓ Permits IMS TM to automatically reconnect terminal sessions following any kind of IMS failure and subsequent IMS restart

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Common Queue Server Enhancements



Highlights

- Support for multiple clients
 - ▶ Achieves better utilization of the CQS address space
 - Storage
 - Problem determination
 - Operations
- Security checking during CQS registration
- Interface enhancements
 - ▶ Diagnostics
 - ▶ CQS requests

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Security Enhancements



Highlights

- **Enhanced PassTicket Support (uses RACF or equivalent)**
 - New keyword parameter on the /SIGN ON command
/SIGN ON userid PassTicket APPL applname
 - Provides greater flexibility for the end-user/program
 - PassTicket creation can use IMSID (same as before)
 - PassTicket creation can use the IMS application name
 - Allows the creator of PassTickets to specify the value by which it knows IMS
- **New system-wide default SAPPLID=applid in DFSDCxxx**
 - Enables the use of PassTickets for VGR connections to IMS
- **USERID Clarification**
 - An indicator associated with the *userid* field that defines its content
 - Provides a method that allows IMS application programs and exits to determine whether a user was signed on at the time a transaction was entered



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IMS V7 Enhancements through YE2001 via the Service Process



- Enhanced HALDB and DBRC Performance/Management
- 64-bit real support
- 255 OSAM Database Buffer Subpools
- Additional Sense Codes/Message Information for use with the z/OS Communications Manager
- External Subsystem Support enhanced for DB2 MVS group support



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IMS 64-bit Real Support



- ▶ OS/390 V2R10 or zOS support 64-bit real addresses on z900
 - ▶ Addresses above the 31-bit address limit of 2 gigabytes are "above the bar"
 - ▶ IMS V7, V6, and V5 are enabled for 64-bit
- ▶ OSAM supports real addresses above the 2GB bar
 - ▶ I/Os may be done with buffers above the bar
 - ▶ Database buffers may reside in real storage above the bar
 - ▶ Log buffers may reside in real storage above the bar
 - ▶ In previous releases of IMS, data in buffers which are above the bar must be moved below the bar before I/O is done
- ▶ Fast Path storage moved above the 2GB bar

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250 OSAM Database Buffer Subpools



- ▶ Up to 250 OSAM database buffer subpools may be defined
 - ▶ Previous limit was 100
 - ▶ Provides additional buffer pool tuning possibilities
 - ▶ Also available in IMS V6

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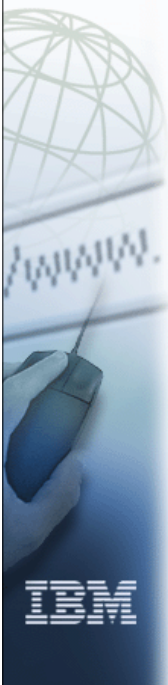


IMS Sense Code/Messages Enhancements



Additional Information for use with z/OS Communications Manager

- ▶ Providing Signon screen after LUSTAT x"082b'
- ▶ Including the TCP/IP address in IMS messages

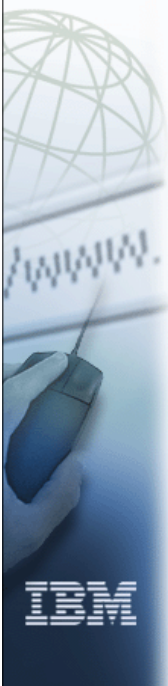
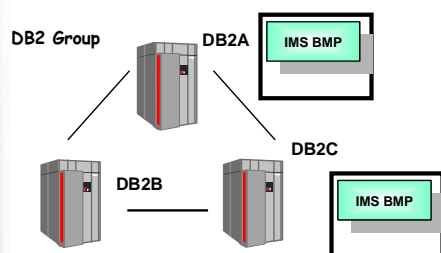


IMS External Subsystem Attach for DB2 Groups



Allows easy movement of BMPs between data sharing systems

- ▶ For all IMS online region types
 - ▶ SSM members do not have to be changed
- ▶ IMS dependent region may attach to any DB2 using the DB2 group attach name
 - ▶ DB2 group attach name is specified as the subsystem name in the dependent region IMS SSM member (instead of DB2 subsystem name)
- ▶ Restart 'resolve in-doubt' processing automatically uses the specific name
 - ▶ Emergency restart must have 'original' DB2 available





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IMS V7 Enhancements in 2002 via Service process



- Enhanced HALDB and DBRC Performance/Management
- New Java Region Types, JDBC access, and Tooling
- Fiber Channel support
- Remote Recovery Service (RRS) enhancements
- System Log Data Set (SLDS) Read Support
- Remote Site Recovery (RSR) Enhanced Statistics
- APPC and OTMA Message enhancements
- OTMA Security and Management Enhancements
- Enhanced Sysplex Coupling Facility support
- JDBC access to IMS DB from WebSphere/z/OS V4

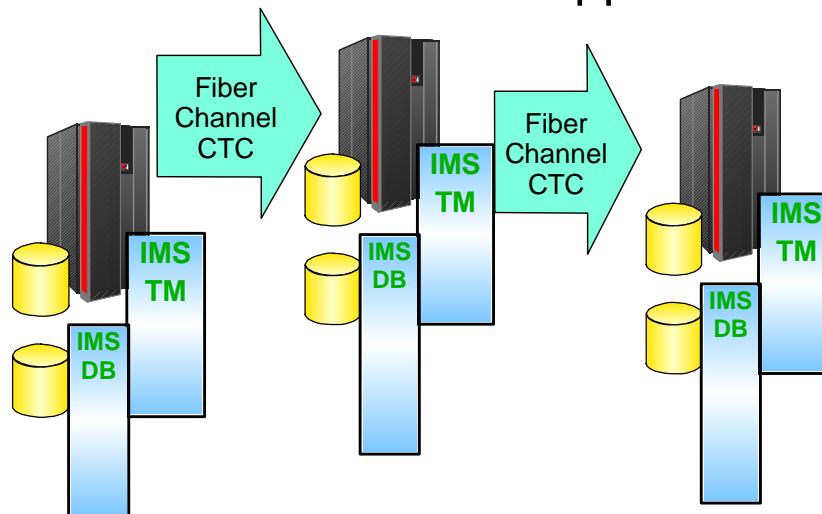
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IMS Multiple Systems Coupling Fiber Channel CTC Support



Providing Reliable, High Bandwidth Host-to-Host
Communications Support between IMS systems.

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Remote Recovery Service (RRS) Enhancements



Batch RRS Support

- ▶ Allows batch programs to use MQ with coordinated commit
- ▶ Provides for a full two phase commit for batch programs accessing DB2 and IMS DB
 - Today's Batch Attach from DB2 does not support coordinated commit
- ▶ Allows for work which captures data and propagates it to another system (ex. DPROP for IMS -> DB2) to participate in the 2-phase syncpoint process

RRS = Y/N

- ▶ Provides option for whether you want to use RRS to avoid any unnecessary overhead



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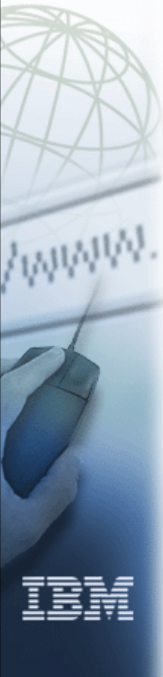
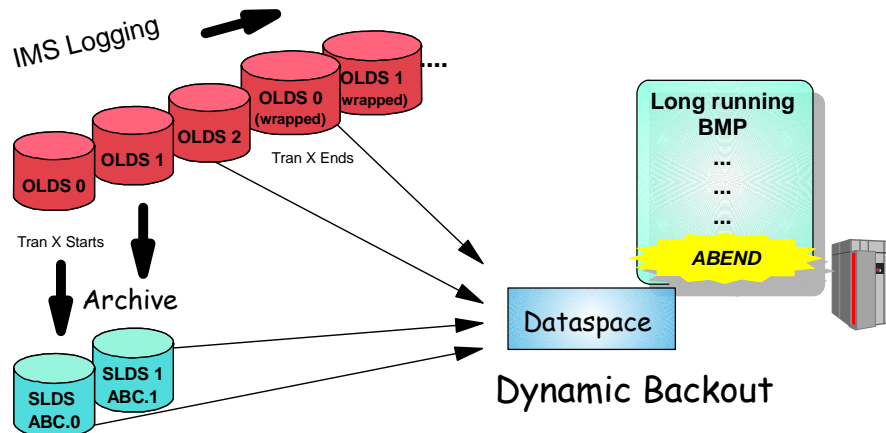


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System Log Data Set (SLDS) Read Support



- ▶ The IMS Logger is now able to read SLDSs for Dynamic Backout, avoiding the need for batch backout in some cases
 - ▶ Example -- A long running application requires uncommitted updates on the SLDS after the OLDS have wrapped
- ▶ In a Shared Message Queue environment SLDS will now be dynamically mounted when /CHE is issued and the messages are only available on SLDS

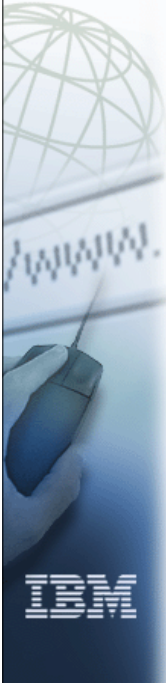


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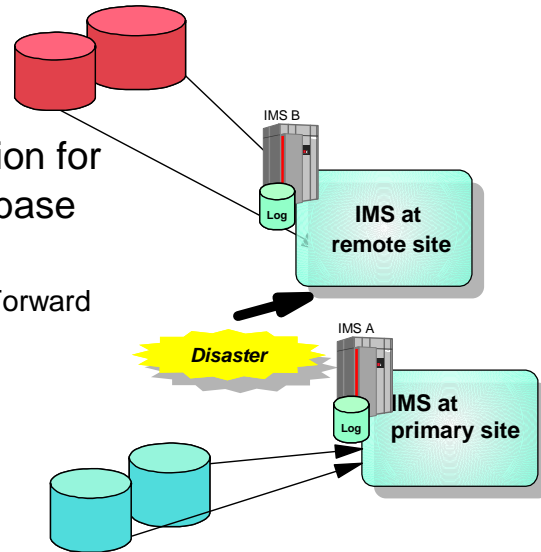


Remote Site Recovery (RSR) Enhanced Statistics



New statistical information for better analysis of Database Trackers performance

- ▶ Primarily during the Online Forward Recovery process



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APPC and OTMA Message Enhancements



- /DIS QCNT APPC MSGAGE command to include destination LUNAME and TPNAME
- /DIS QCNT OTMA MSGAGE command to include outbond message TMEMBER and TPIPE



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OTMA Security/Management Enhancements



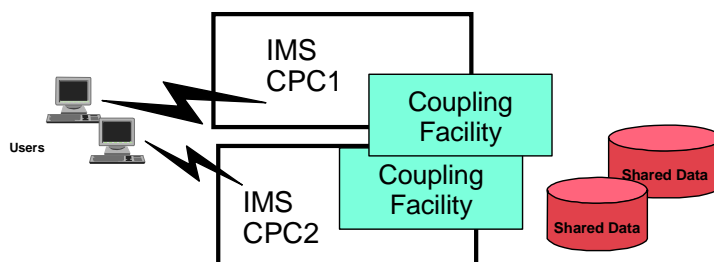
- ▶ Enhanced Message Control
- ▶ Use the OTMA ACEE hash table for the CHNG or AUTH call
- ▶ Additional Requirements
 - ▶ OTMA member-specific security level support
 - ▶ Expand the OTMA ACEE hash table size
 - ▶ Dynamically refresh the aging value for OTMA ACEEs hash table
 - ▶ Support the OTMA timeout



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IMS Sysplex Management Coupling Facility Enhancements



- CF Duplexing for IMS Shared Queues and Fast Path (FP) Expedited Message Handler (EMH)
- CF Duplexing for IMS Data Sharing through IMS Resource Lock Manager (IRLM)
- IMS Fast Path Virtual Storage Option (VSO) CF support
 - System Managed Duplexing
 - Automatic Altering
 - System Managed Rebuild

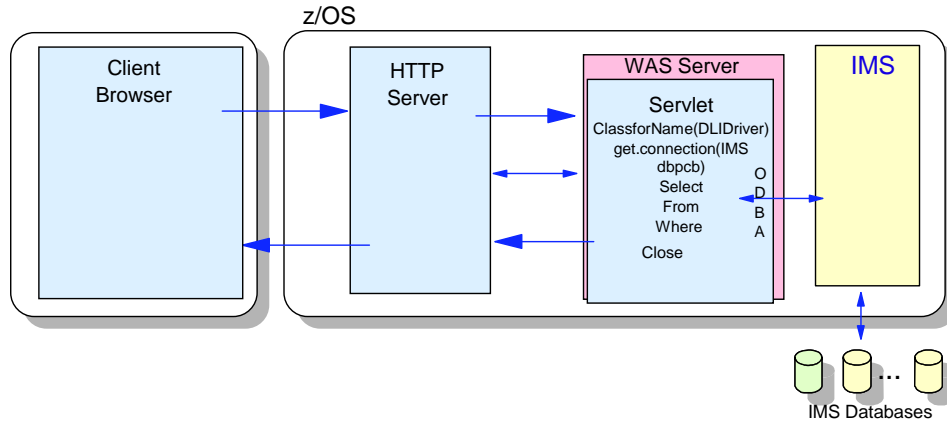


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OS/390 (z/OS) WebSphere Application Server (Using IMS V7 Java JDBC Interface)



**Providing OS/390 WebSphere Application Server
JDBC access to IMS DB resources**

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IMS Tools Portfolio



Database Administration

- ▶ **IMS High Performance Unload 5655-E06**
- ▶ **IMS High Performance Load 5655-E07**
- ▶ **IMS High Performance Prefix Resolution 5655-E08**
- ▶ **IMS Index Builder 5655-E24**
- ▶ **IMS Parallel Reorganization V2 5655-F74**
- ▶ **IMS High Performance Pointer Checker 5655-E09**
- ▶ **IMS Data Base Repair Facility 5655-E03**
- ▶ **IMS High Performance Sysgen Tool 5655-F43**
- ▶ **IMS Command Control Facility 5655-F40**
- ▶ **IMS ETO Support 5655-E12**
- ▶ **IMS Library Management Utilities 5655-E04**
- ▶ **IMS Advanced ACBGEN 5655-E05**
- ▶ **IMS Sequential Randomizer Generator 5655-E11**
- ▶ **IMS Compression - Extended 5655-E02**
- ▶ **IMS Data Base Control Suite 5655-F76**
- ▶ **IMS Fast Path Basic Tools 5655-E30**
 - DEDB Unload/Reload
 - DEDB Pointer Checker
 - DEDB Tuning Aid
- ▶ **IMS Fast Path Online Tools V2 5655-F78**
 - Online Pointer Checker
 - Online Data Extract
 - Online Area Extend
- ▶ **IMS HALDB Conversion Aid 5655-I01**
- ▶ **IMS Batch Backout Manager 5697-H75**

**Manage
Automate
Monitor
Tune...**



Performance Management

- ▶ **IMS Performance Analyzer 5655-E15**
- ▶ **IMS Network Compression Facility 5655-E41**
- ▶ **IMS Queue Control Facility 5697-E99**
- ▶ **IMS Dynamic Resource Control Facility 5697-D14**
- ▶ **IMS Workload Router 5697-B87**
- ▶ **IMS Buffer Pool analyzer 5697-H77**

Recovery / Replication

- ▶ **IMS Image Copy Extensions 5655-E10**
- ▶ **IMS DEDB Fast Recovery 5655-E32**
- ▶ **IMS Recovery Saver 5655-E16**
- ▶ **Application Recovery Tool for IMS and DB2 Databases 5697-F56**
- ▶ **Online Recovery Service 5655-E50**
- ▶ **IMS Data Propagation 5655-E52**
- ▶ **IMS High Performance Change Accumulation 5655-F59**

Application Management

- ▶ **IMS Connect 5655-E51**
- ▶ **IMS Message Format Services Reversal Utilities 5655-F45**
- ▶ **IMS Program Restart Facility 5655-E14**
- ▶ **Batch Terminal Simulator 5655-A14**

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New/Enhanced IMS Tools

Announced first half of 2001:

January 2001

- ▶ IMS Command Control Facility
- ▶ IMS High Performance Sysgen Tools
- ▶ IMS MFS Reversal Utilities

March 2001

- ▶ IMS Dynamic Resource Control Facility V1 R2
- ▶ IMS WorkLoad Router V2 R2

April 2001

- ▶ IMS Online Recovery Service

May 2001

- ▶ IMS HP Pointer Checker Enhancements
- ▶ IMS Image Copy Extensions Enhancements
- ▶ IMS Connect Enhancements

June 2001

- ▶ IMS Database Control Suite V2

July 2001

- ▶ IMS Fast Path Online Tools V2
- ▶ IMS Database Repair Facility Enhancements



In Addition To
Tools
Available in
2000



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Administration, Performance, Recovery, and Application Management...



NEW and
enhanced
Tools

IMS Database Control Suite

- ▶ Supports IMS Base Utilities and Data Management IMS Utilities
- ▶ Intuitive, easy to manage, task-oriented design saves time and increases DBA productivity

IMS Command Control Facility

- ▶ Processes IMS commands across all regions in a sysplex using the batch command processor
- ▶ Executes IMS Commands from a batch utility or from a TSO session via an ISPF interface
- ▶ Synchronizes Online Change and database commands across all regions in a Sysplex

IMS High Performance Pointer Checker

- ▶ Performance and report improvements delivered via PTF UQ52963
 - ▶ Space Monitor Feature new Threshold values
 - ▶ HD Pointer Checker

IMS Fast Path Online Tools Ver 2

- ▶ Online Pointer Checker support
- ▶ Online Data Extract
- ▶ Pointer Checker output can be used by IMS Fast Path Online Reorg Utility

IMS High Performance System Generation Tools

- ▶ Perform IMS sysgens for application resource changes (transactions, programs, databases and route codes) in a single job step -or online
- ▶ Create and maintain IMS Sysplex sysgen configurations

IMS Message Format Services Reversal Utilities

- ▶ Convert Message Format Services MID/MOD/DIF/DOF control blocks back into Message Format Services utility control statements
- ▶ Compare Message Format Services source libraries



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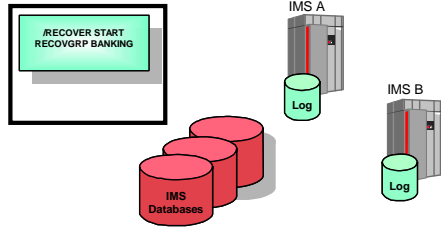


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Recovery and Replication Management...

IMS Online Recovery Service

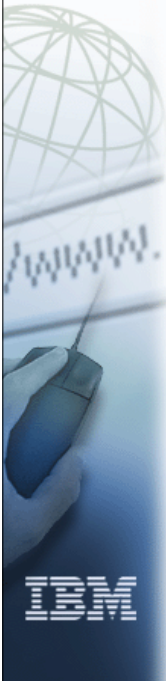
for IMPROVED AVAILABILITY



Separately priced Tool for IMS V7

- ✓ **Increased performance in recovery situations**
 - Reduce the time that critical databases are unavailable
- ✓ **Increased flexibility in recovery options**
 - Perform 'logical recoveries' - true Point-In-Time recovery
- ✓ **Increased simplicity of the recovery process**
 - IMS manages the recovery
- ✓ **Additional enhancements to ORS V1R1 since GA**
 - Stacked image copy support
 - Compressed Image copy support
 - Stacked log data set support

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New/Enhanced IMS Tools



Announced September 2001:

September 2001

- ▶ **IMS Network Compression Facility for zOS**

October 2001

- ▶ **IMS DataPropagator for zOS V3.1**

November 2001

- ▶ **IMS Connect for zOS V1.2**
 - VAJava's IMS Connector for Java J2EE Runtime Support
- ▶ **IMS Fast Path Basic Tools for zOS V1.2**
- ▶ **IMS Parallel Reorganization for z/OS V2R1**

December 2001

- ▶ **IMS High Performance Change Accumulation Utility for zOS**
- ▶ **IMS Extended Terminal Support for zOS V2.2**

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IBM



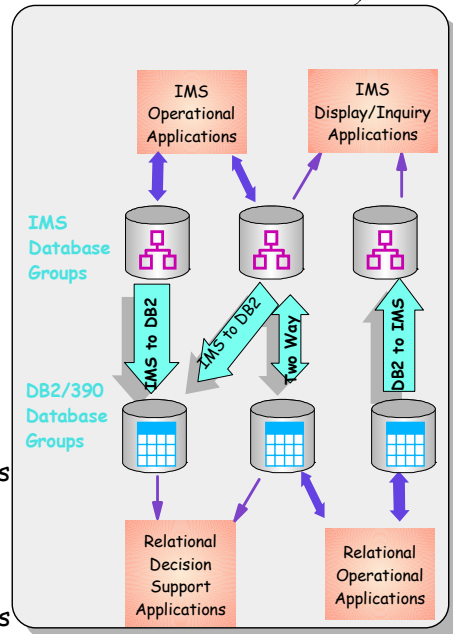
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Recovery and Replication Management...



IMS DataPropagator for Broader Application Integration

- ▶ **Decision Support - Data Warehouse**
 - ▶ User access to stable data
 - ▶ Propagate only data of interest
 - ▶ Exploit relational query tools
- ▶ **Application coexistence**
 - ▶ Two masters with applications in both systems accessing data
 - ▶ Data in both systems synchronized
- ▶ **IMS DPROP V3** enhancements offer:
 - ▶ Asynchronous near real-time propagation improves performance
 - ▶ Operations/administration simplified/less error prone use
 - ▶ A new capture component captures the IMS DB changes performed by IMS Batch, BMP, and TM application programs



No Change to Existing Applications

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New/Enhanced IMS Tools



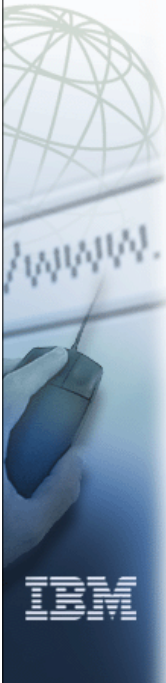
Announced March 2002:

- IMS Index Builder V2 R2 - includes SCAN performance fix
- IMS Queue Control Facility V1 R2 - Queue space user exit - freed up, Dynamic QCF table manipulation, Heavy user identification and action (threshold) support
- IMS HP Prefix Resolution V2 - Eliminates Batch Pipes prerequisite
- IMS HALDB Conversion Aid - Utilities to assist in FF to HALDB conversion:
 - An easy to use ISPF Front-end
 - Automatic Data Base Definition (DBD) conversion
 - Test database conversion
 - Index pointer healing
 - Partition modeling tool
- Service Stream enhancements delivering 1H2002
 - HP Pointer Checker - Dynamic Allocation Support
 - Parallel Reorg
 - HALDB Support
 - DBD Reversal Support
 - HISAM/SHISAM Support
 - DB Repair - FP support
 - Control Suite - Monitor and HALDB support
 - Checkpoint Wrapper (prpq) IMS V8 support/repackage
 - Connect - 2 phase commit support

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New/Enhanced IMS Tools

Announced September 2002:



- **Application Recovery Tool for IMS and DB2 Databases V1R2** - HALDB and Sysplex Sharing enhancements
- **IMS Index Builder V2 R3** - availability/usability enhancements
- **IMS Batch Backout Manager V1** - enhances database availability
- **IMS Buffer Pool Analyzer V1** - provides information and helps determine impact of buffer pool changes
- **IMS Database Control Suite V2R2** - performance, usability, productivity, recovery, and Tools integration enhancements
- **IMS DEDB Fast Recovery V2R2** - shortens the recovery time
- **IMS Performance Analyzer V3R2** - enhances reporting, dialog and documentation.
- **IMS Batch Terminal Simulator V3** - enhanced auditing and support for Java and new technologies
- **IMS Image Copy Extensions V2** - creates new copy data sets from the IMS Image Copy data set.
- **Service Stream enhancements delivering 2H2002**
 - **IMS Connect V1R2 enhancements**

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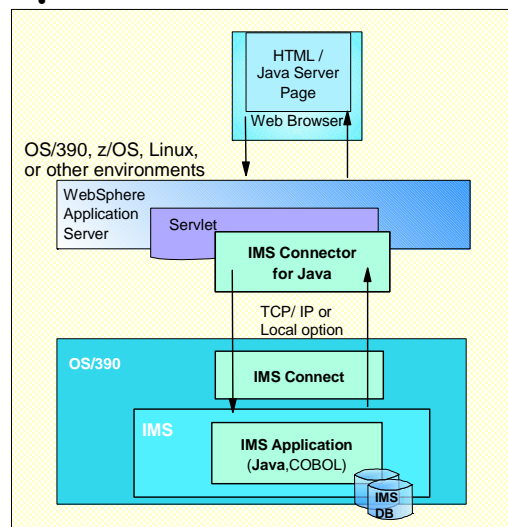


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Application Management...

IMS e-business Application Development/Enablement

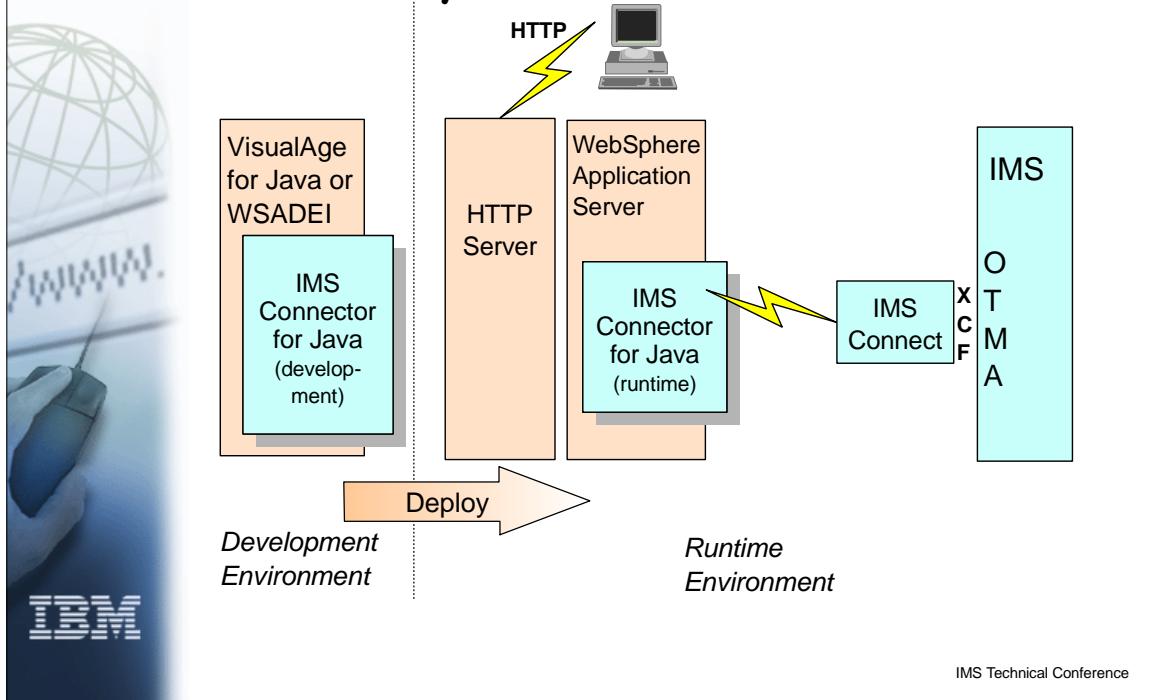


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Application Management...

IMS e-business Connectivity Environment



Application Management...

IMS Connect for Broader e-business Connectivity

IMS Connect V1R1



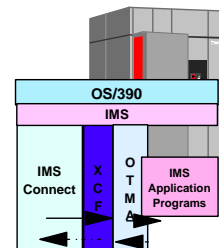
- ✓ Provides enhanced TCP/IP access to IMS
- ✓ Improved Performance with Persistent Sockets
- ✓ Enhanced Usability with user exit, command improvement, and asynchronous output support
- ✓ Ease Serviceability with Dump formatting enhancements
- ✓ Enhance Manageability with SMP/E Install/Maintenance
- ✓ Base function runs with IMS V6 TM
- ✓ Asynch output and future enhancements require IMS V7

IMS Connect V1R1 Enhancements

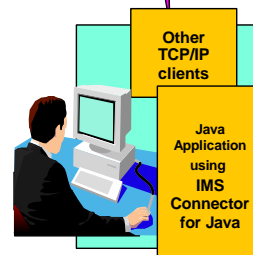
- ✓ Local/390 support
- ✓ Unicode
- ✓ ACK/NAK required notification support
- ✓ Output message structure change

IMS Connect V1R2

- ✓ IMS Connector for Java J2EE Runtime support for WebSphere access
- ✓ Used with VAJava/WASADIE's IMS Connector for Java J2EE Development support



TCP/IP or Local Option





Application Management... IMS Connect for Broader e-business Connectivity

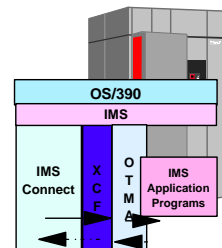


IMS Connect 2002 Enhancements

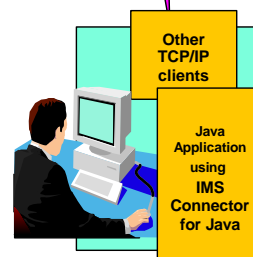
- ✓ Two-phase Commit Support in Local 390 environments
- ✓ Security enhancements
 - Passticket support
 - IMS Connector for Java Container-managed Sign-on support for local option
- ✓ ipv6 support
- ✓ IMS V8 Operations Manager distributed interface

IMS Connectivity Requirements

- ✓ Two-phase Commit Support in Distributed TCP/IP environments and across Sysplex
- ✓ More Granular timeout (eg. by transaction)
- ✓ Security items
 - IMS Connector for Java Container-managed Sign-on support for distributed environments
 - User Message Exits
 - Security environment controls
 - Trusted user support
 - SSL support



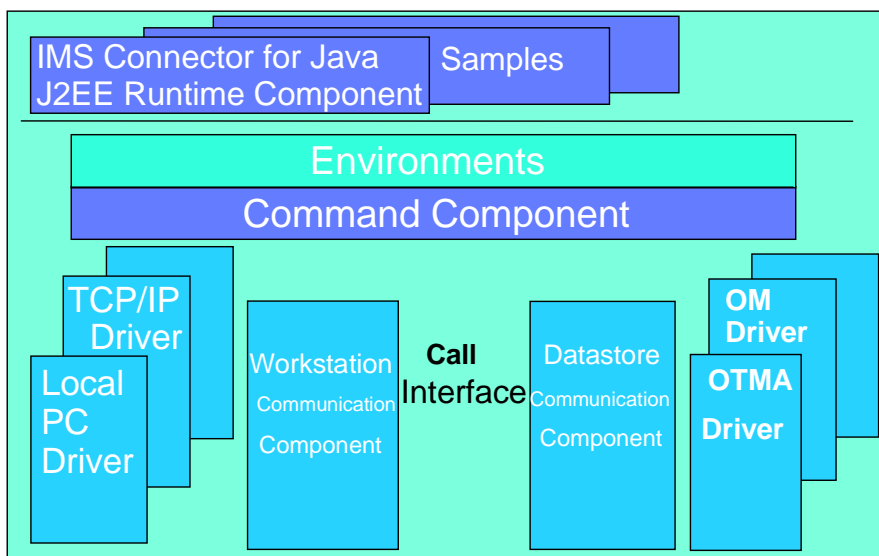
TCP/IP
or
Local
Option



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Application Management... IMS Connect Internal Structure Provides Connectivity Base for Future

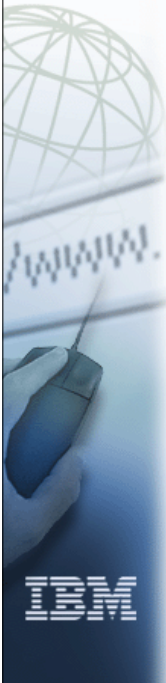


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Merita Bank in Finland replaces SNA gateways by IMS Connect



Challenge:

- To eliminate complex and error prone protocol conversion between TCP/IP based branch office network and SNA based host connection to IMS.

Solution:

- IMS Connect



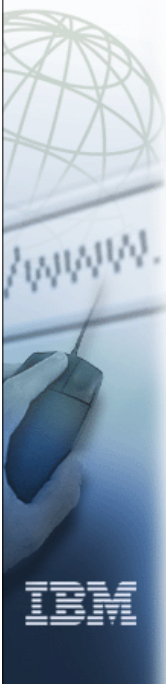
Benefits:

- Simplified network connections to IMS
- SNA Servers can be given up
- Increased availability and efficiency
- No changes needed in IMS applications

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The Bekins Company



Challenge:

- Quickly develop new ways to provide services to customers and authorized agents

Solution:

- Publish parts of Web-based shipping and tracking system as web services and integrate the services with existing workflow
- Create private e-marketplace to broker shipping orders to authorized agents
- Offer customers automated access to available capacity

Benefit:

- "The potential benefits from extending our business capabilities through Web services will make the \$10.3 million payback we attributed to our first B2B e-business application seem like a drop in the bucket."

-- Randall Mowen, Director of Data Management & e-business Architecture



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XML and IMS for Transparent Application Integration



Processing XML Documents in New IMS Applications Today

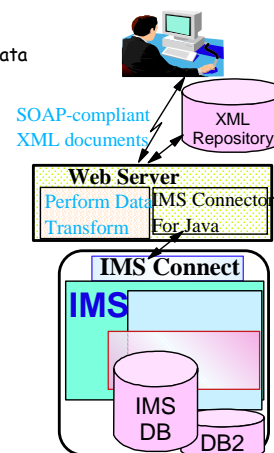
- Customers can write IMS C++ or IMS Java applications using the XML Toolkit for OS/390
- Customers can write IMS Cobol or PL/I application using XML support for COBOL and PL/I
 - Tran code still must be EBCDIC, rest of data can be XML
 - The IMS program can invoke XML parser to convert to non-tagged data

Bridging XML and Existing IMS Applications Today

- Using MQSeries Integrator
 - Dictionary support for messages
 - Routing and processing based on message content
 - US Utility built cost-effective e-business infrastructure to IMS
- Customers can enable existing IMS applications as Web Services via WAS

XML and IMS Requirements

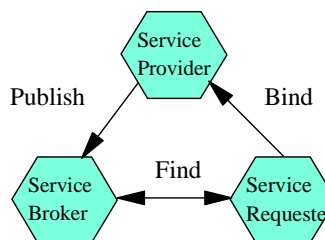
- Generate XML doc for outputs from new COBOL and PL/I applications
- Enable MFS-based IMS application programs as web services
- Transform XML for existing IMS applications using IMS Connect
- Using XML as an IMS Data Definition language



Web Services - The Next Step In The Evolution of the Web

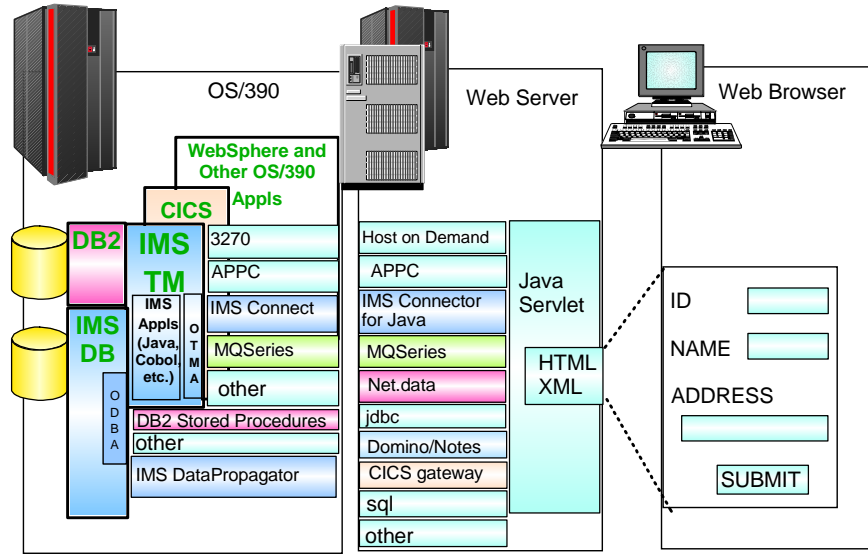


- ▶ Allow programmable elements to be placed on web sites where others can access distributed behaviors
 - ▶ Web Services are emerging as building blocks for constructing B2B applications that integrate business processes over the Internet
- ▶ Applications can use XML to expose their features while remaining neutral with respect to any operating system, programming language or backend server
- ▶ Typically transactional, requiring integration with existing systems





Leveraging IMS Applications and Data



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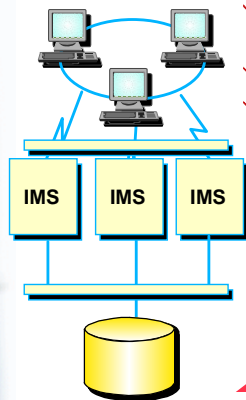


What's Next in IMS Providing Integrated e-business Solutions: IMS Version 8



Ideal for e-business

- ✓ Integration with Application Development/Connectivity
- ✓ Manageability
- ✓ Scalability in Performance, Capacity, and Availability



Enhancements

- Sysplex Terminal Management
- Sysplex-wide Resource Mgmt
- Sysplex-wide Operations with Single Point of Control
- Enhanced DB Recovery Ctrl
- Simplified Installation Process
- Enhanced Systems/Data Mgmt Tools
- Enhanced XML

Benefits

- ✓ Enable Customer Growth
- ✓ Enhance Workload Balancing
- ✓ Increase Availability; Ease of Use
- ✓ Preserve Current Application Investment
- ✓ Enable New Applications

Strategic Open Access
S/390 Enterprise Servers



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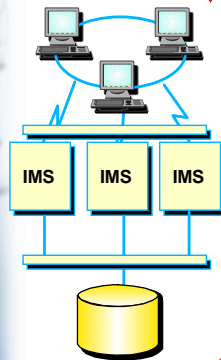


IMS Follow-on

Ideal for e-business



- ✓ Integration with Application Development and Connectivity
- ✓ Manageability
- ✓ Scalability in Performance, Capacity, and Availability



Enhancements

- HALDB Online Reorganization
- Eased Sysplex Manageability
- Enhanced Recovery/Control
- System and Connectivity Growth
- Simplified Installation Process
- Enh Systems/Data Mgmt Tools
- Broadened Java/XML Tooling

Benefits

- ✓ Enable Customer Growth
- ✓ Enhance Workload Balancing
- ✓ Increase Availability; Ease of Use
- ✓ Preserve Current Application Investment
- ✓ Enable New Applications

Strategic Open Access
S/390 and z/OS
Enterprise Servers

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IMS Information



- **IMS Information is available at**
<http://www.ibm.com/ims>
 - Presentations/Papers, Newsletters, Redbooks, Fact Sheets, Announce Letters, Technical Support Info (search on IMS), documentation, etc.
- **IMS Redbooks/Redpieces**
 - SG24-5753 IMS V7 Release Guide
 - SG24-5751 IMS V7 HALDB Guide
 - SG24-6123 IMS Version 7 and Java Application Programming
 - SG24-6536 IMS Version 7 Java Update
 - SG24-6404 IMS Performance and Tuning Update
 - SG24-6514 IMS e-business Connectors Update
 - SG24-6533 Ensuring Data Integrity Using IMS Tools
 - SG24-6574 IMS Installation and Maintenance Processes
- **IMS Education available at**
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