



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

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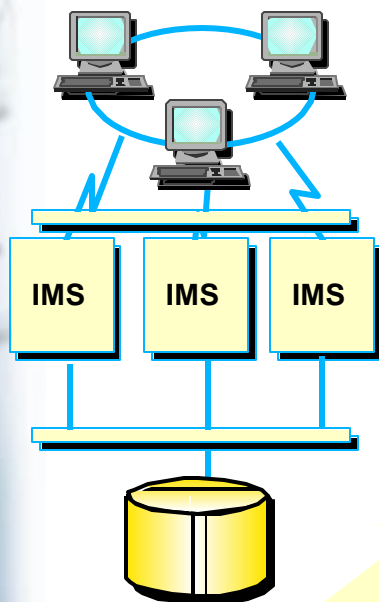


# IMS - Version 7

## *Ideal for e-business*



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



### *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

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

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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 **IVP**
- **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 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



# 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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# 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



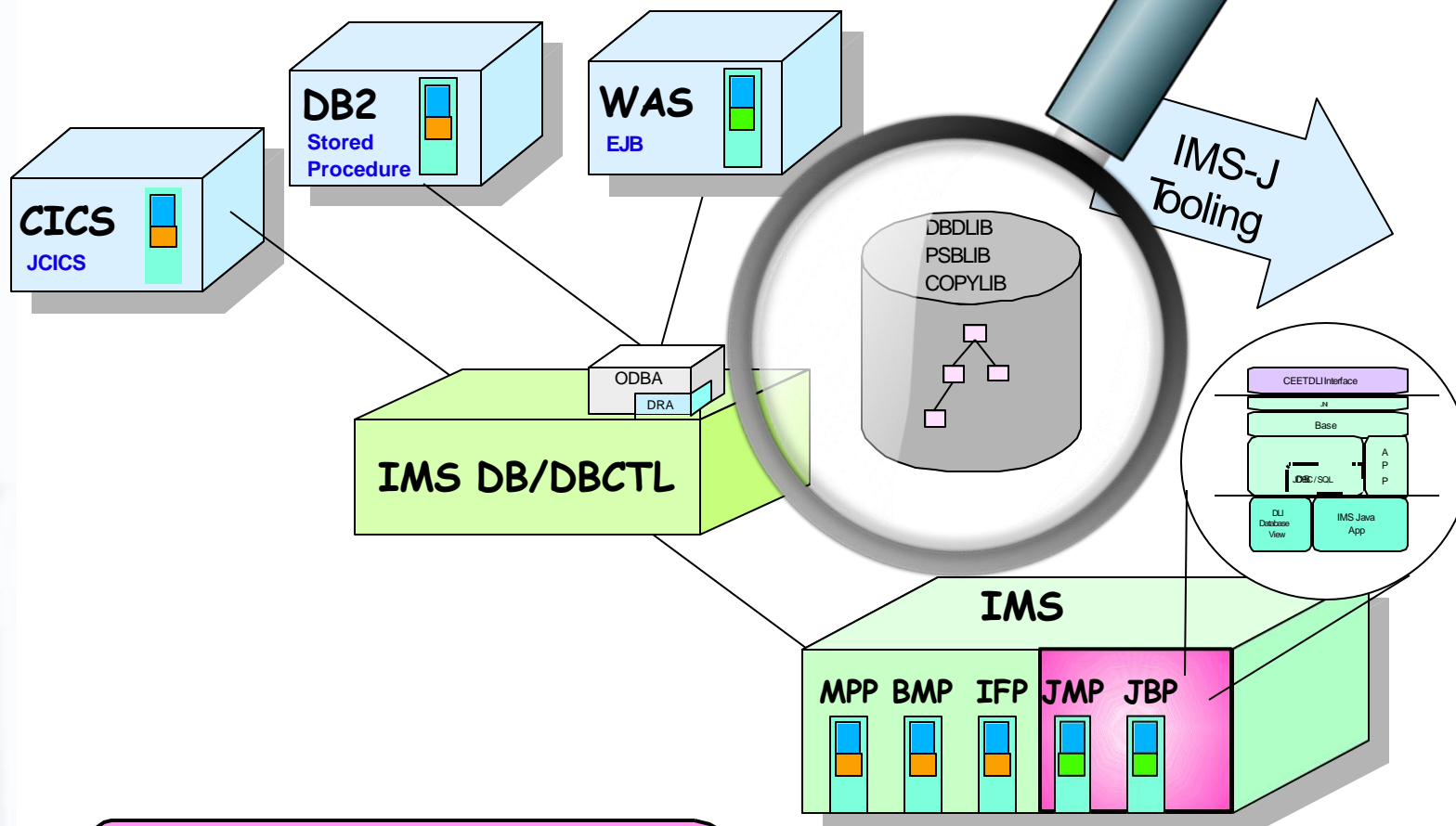
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# The Big Picture: JDBC Access to IMS Data



**Visionary ! (\*)**




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

**(\*) Was ist das unter der Lupe ??** Wenn jemand damals (IMSV7, Oct 2000) die DBDLIB, PSBLIB und COPYLIB in einen Topf packt, dann kann er/sie nur die Vision des IMS CATALOGs vor Augen gehabt haben ! ☺☺

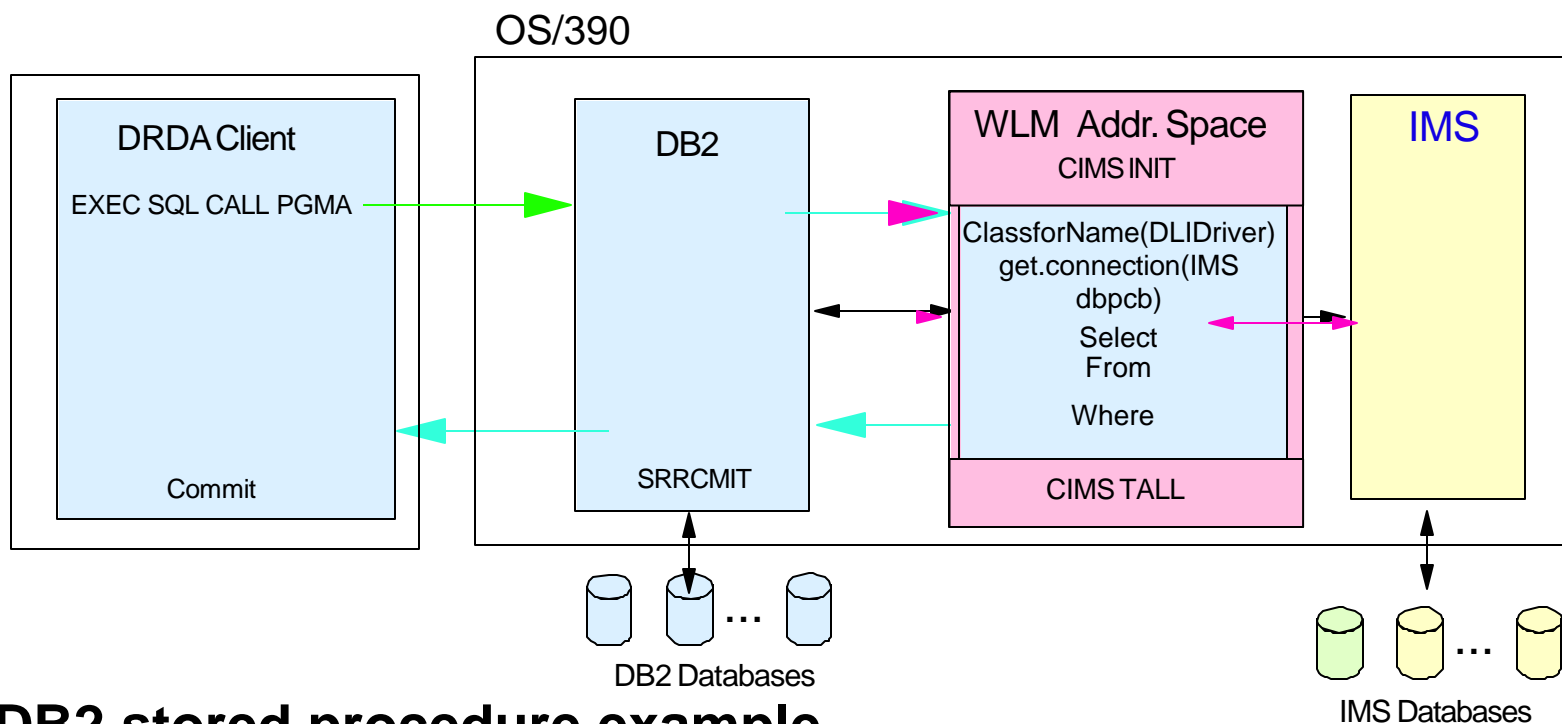
## *What is Open Database Access?*



- **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) 



# DB2 Stored Procedure Example



## • DB2 stored procedure example

### DB2 Java stored procedure example

IMS Java Classes can be used to access IMS DB

## • Example

- JDBC calls to IMS DB from DB2 for z/OS Java Stored Procedures and from CICS/390 Java applications



# ***Positioning IMS Version 7 and IMS Version 8 On zSeries***

*By Robert M. Gilliam  
IMS Family Product Manager*



## **IMS Version 7 answers the e-business challenge.**

State-of-the-art industry standard open application development tools are available in IMS Version 7 now, to quickly and safely extend customers' long-standing investment in existing applications and data and to integrate them with new JAVA applications and programs using XML for next generation e-business deployment. ...

## **The major new attribute of IMS Version 7 is the introduction of High Availability Large Data Base Support (HALDB) support.**

HALDB allows your e-business database to grow to over 40 TERABYTES, more than 4 times the printed material in the Library of Congress and it can be divided into over 1000 independent partitions, thereby providing essentially unlimited growth and near-continuous availability. The 40 terabytes is a major expansion.

... Or the entire database could be taken off-line and each partition could be reorganized in parallel, greatly speeding up the off-line reorganization process.

...

**IMS Connect, a separately priced tool**, provides easy-to-install, easy-to-use, high-performance transparent access to IMS applications and data from any internet application, including LINUX applications. ...

**[ IMS/Connect wurde später in den Basic IMS Code (V9) aufgenommen. ]**



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