IMS Version 8

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IMS Continues to Address Challenges of a Rapidly Changing World

Providing Quality through

- **Information Integration with New Application Development/Connectivity**
  - ✓ Ease/broaden user access
  - ✓ Web, Java, XML and Linux access
  - ✓ Ease application developer effort
  - ✓ Auto-application-generation tools
- **Manageability**
  - ✓ Ease installation and operations efforts
  - ✓ High levels of security
  - ✓ End-to-end transaction integrity
  - ✓ Real time data currency
  - ✓ Highest code quality
- **System Scalability in Performance/Capacity/Availability/Recovery**
  - ✓ Handling increasing workload
  - ✓ Handling unpredictable volumes
  - ✓ More hours for workload
  - ✓ Continuous up time for applications and user access
- **e-business with IMS extends the investment**

IMS Version 8: Providing Integrated e-business Solutions

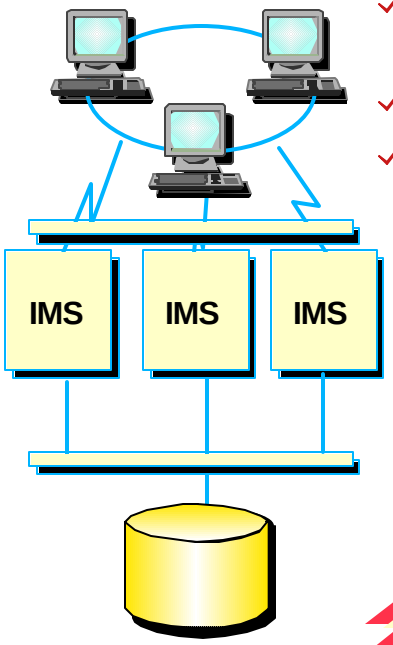
e-business

IMS

the world depends on it

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 JAVA and XML

Strategic Open Access S/390 Enterprise Servers

Benefits

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

IBM

IMS V8 Database Manager Enhancements

Information Integration with Appl. Devt and Connectivity

- Java and XML enhancements
- Dynamic LE Runtime Parameters

Manageability

- Coordinated Online Change
- Single Image Operations Manager
- Syntax Checker
- Fast Path Shared VSO CF enhancements

Scalability in Availability/Recovery/ Performance/Capacity

- IMS/DB2 Coordinated disaster recovery support
- DBRC Enhancements
- DB Image Copy 2 Enhancements
- Parallel Database Processing
- Fast Path DEDB Enhancements
- CSA/VSCR Enhancements

IMS V8 Transaction Manager Enhancements

Information Integration with Appl. Devt and Connectivity

- Java and XML enhancements
- Dynamic LE Runtime Parameters

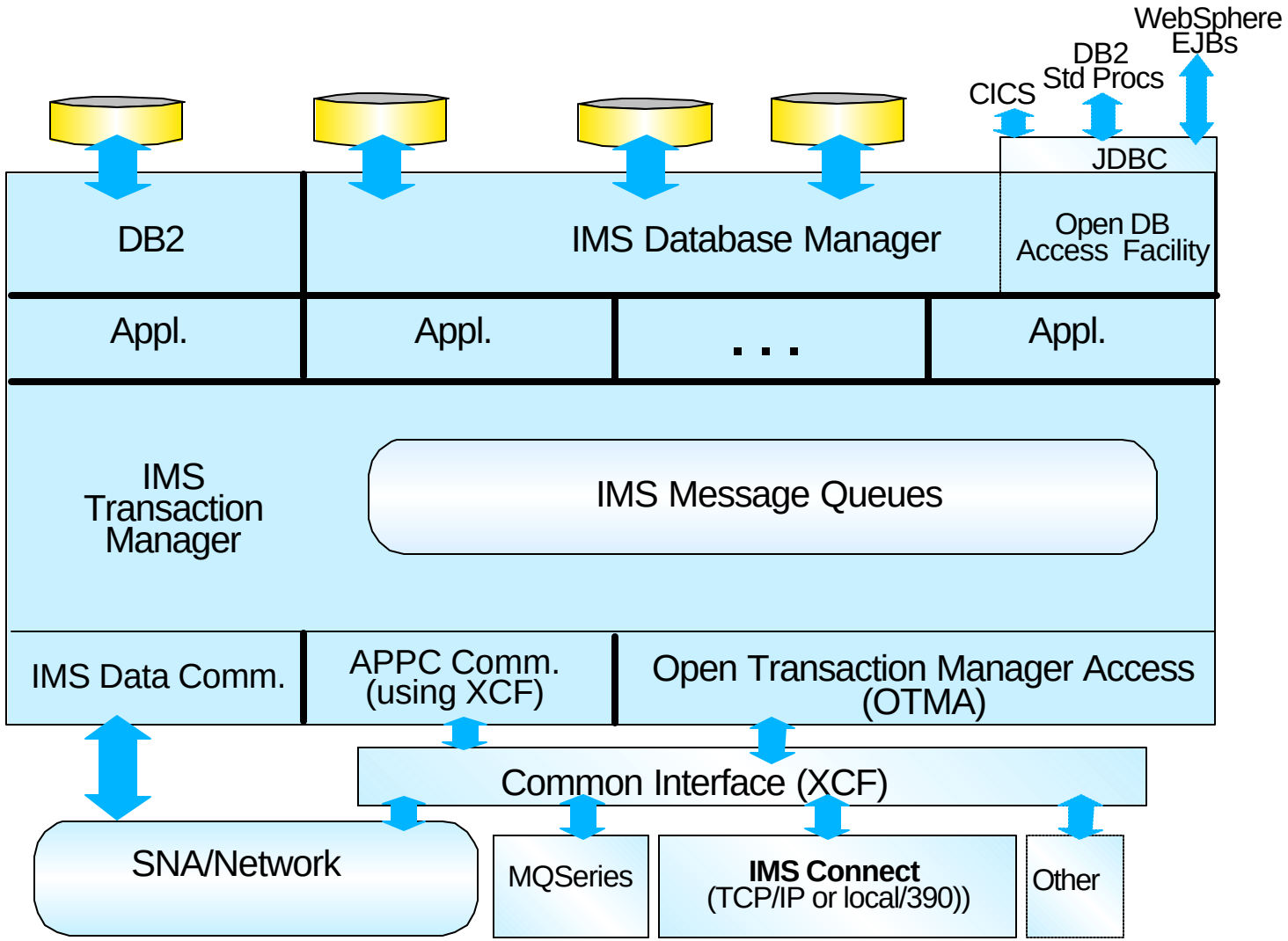
Manageability

- Sysplex Wide Resource Manager
- Coordinated Online Change
- Single Image Operations Management
- Sysplex Terminal Mgmt
- Transaction Trace
- Syntax Checker

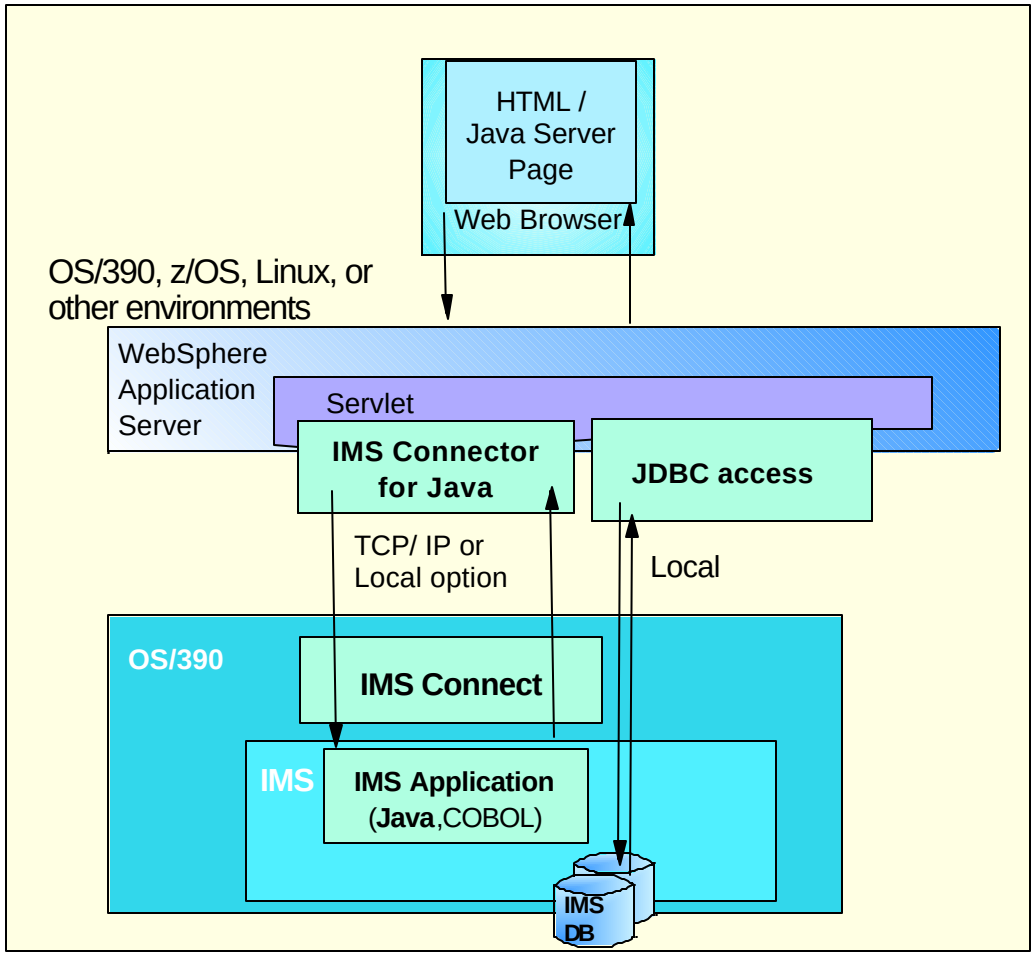
Scalability in Availability/Recovery/ Performance/Capacity

- APPC/OTMA Synchronous Shared Queues support
- APPC enhancements
- CSA/VSCR enhancements

Information Integration with Middleware Subsystem Access



IMS e-business Application Development/Enablement



IMS Java for Integrated e-business Application Development

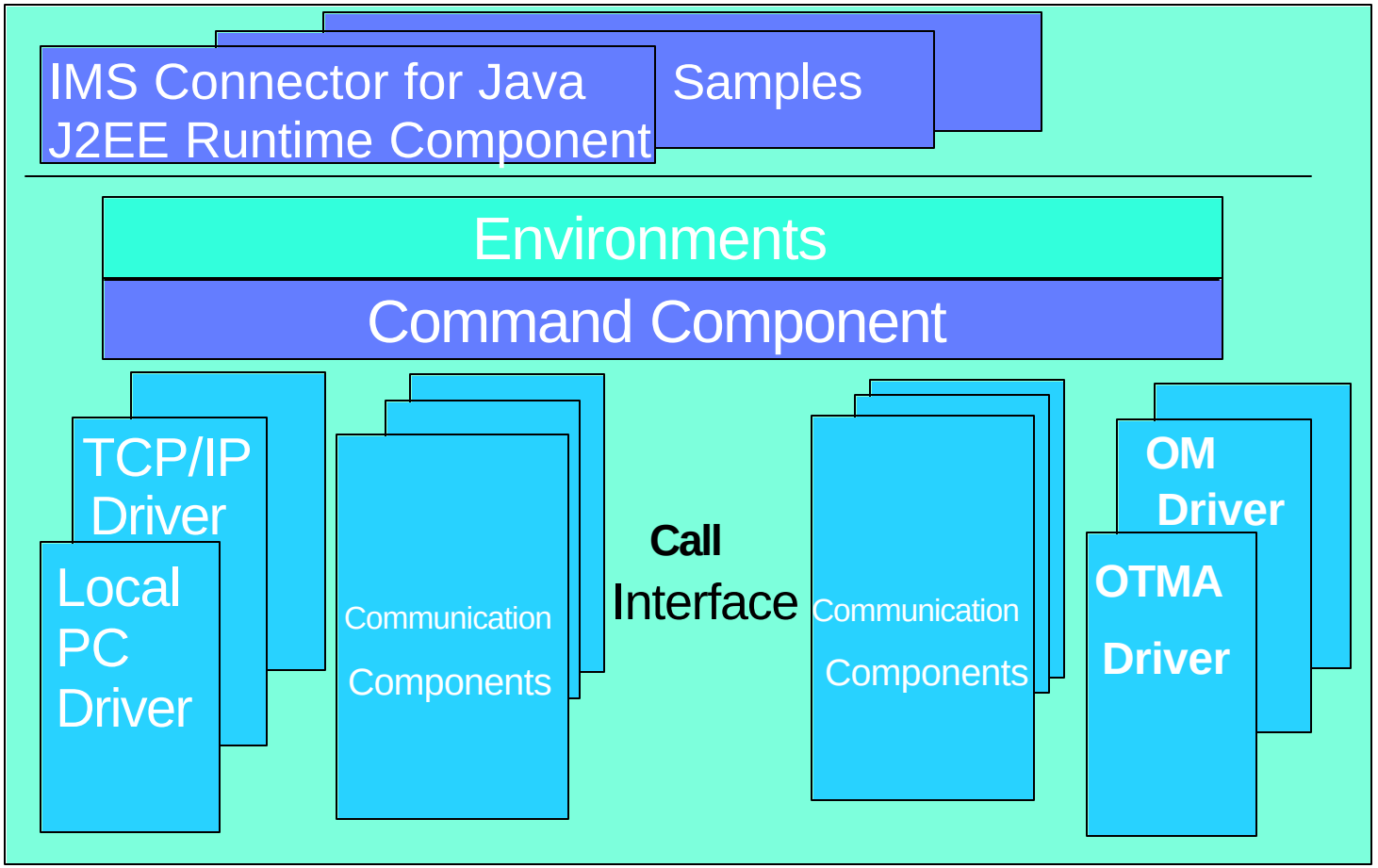
✓ Application programmer productivity

- Java access to IMS input/output message queues
- JDBC to access IMS DB and DB2 data
- Java Compiler support in VisualAge for Java, Enterprise Edition/390 Version 2
- Uses VisualAge tools for development

✓ New Enhancements

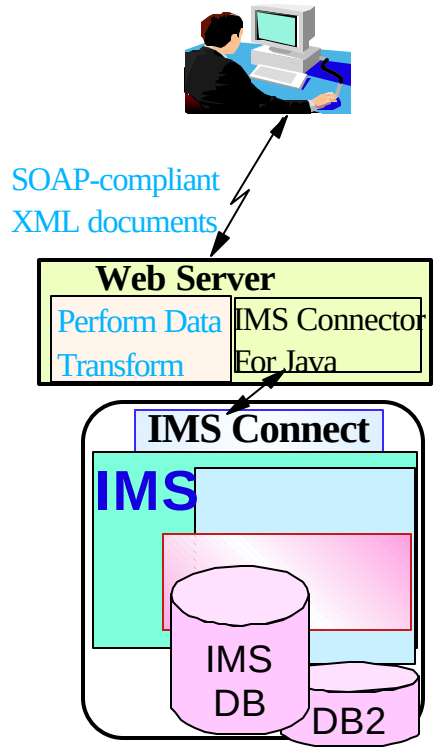
- Java Dependent Region support for Scaleable Java Virtual Machine in IBM Developer Kit/390, Java 2 Technology Edition
- JDBC access from additional environments
- **Java Standards enhancements in IMS V8**

IMS Connect Internal Structure Provides Connectivity Base for the Future



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 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**
  - **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**

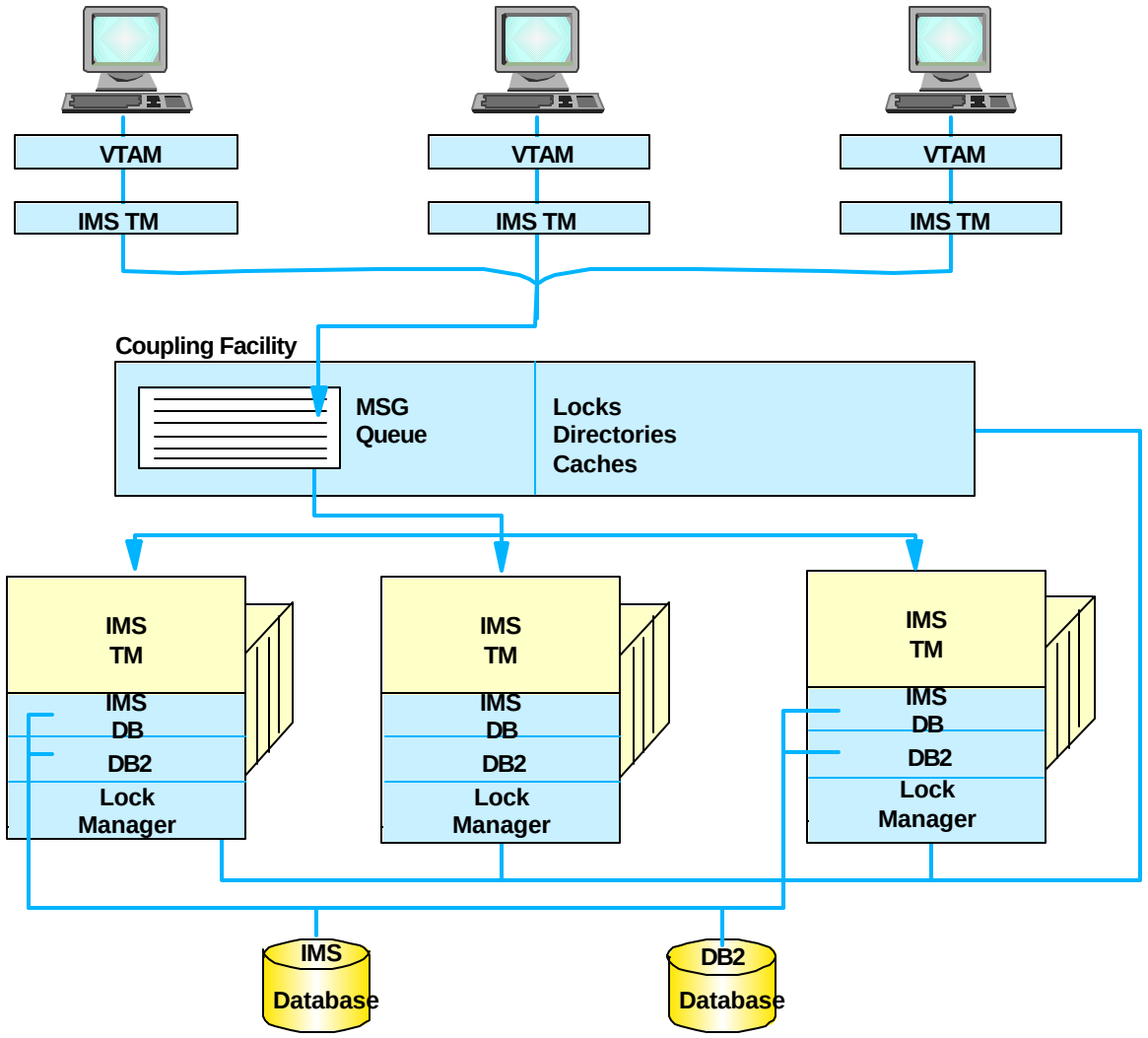


IMS V8 Dynamic LE Runtime Parameters

Eases Application development

- Dynamically updates Language Environment (LE) runtime parameters for an IMS Transaction or Batch Message Program
- Makes it easier to use Debug Tool for application testing
- Done without requiring CEEROPT and CEEUOTP to be changed, reassembled, and relinked when parameters need to be changed

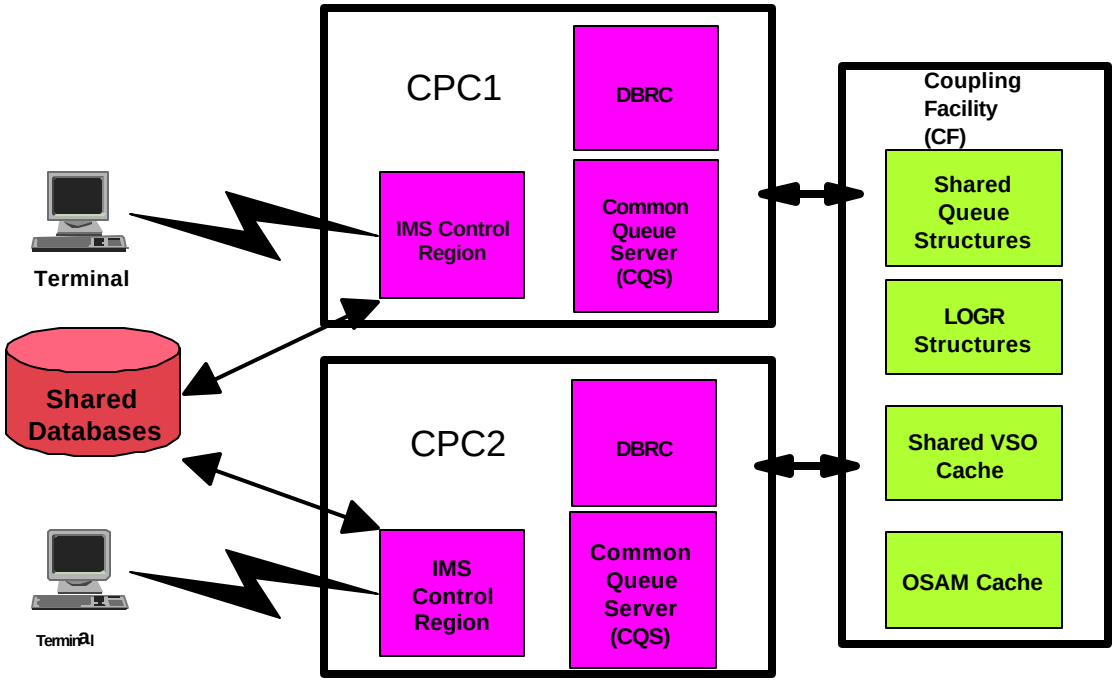
IMS in a Parallel Sysplex



- **Allocation of workstations**
- **Dynamic Workload Balancing**
- **Data Sharing**
  - IMS DB
  - DB2

Easier access and management of enterprise applications and data

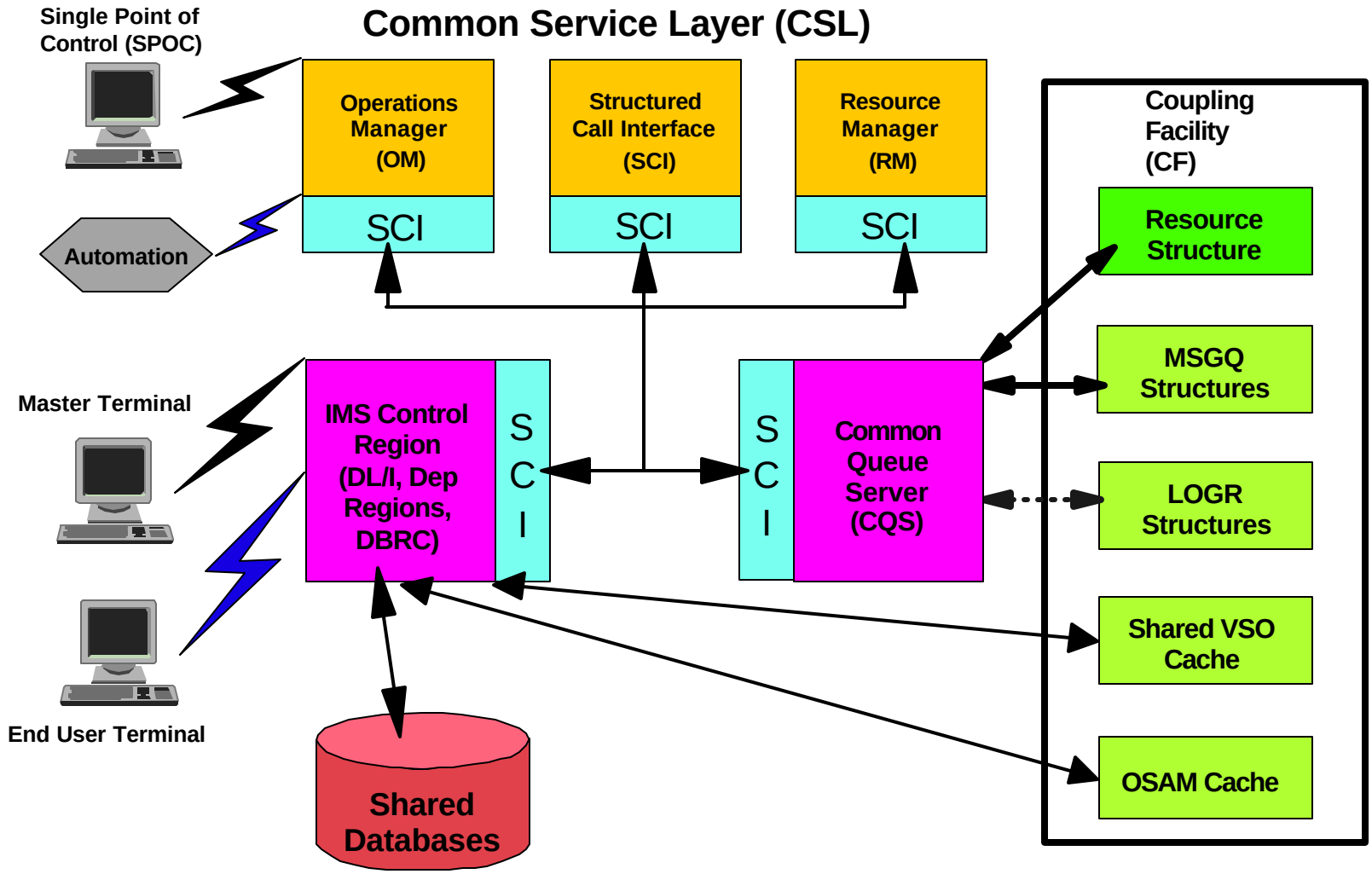
IMS Sysplex Manageability



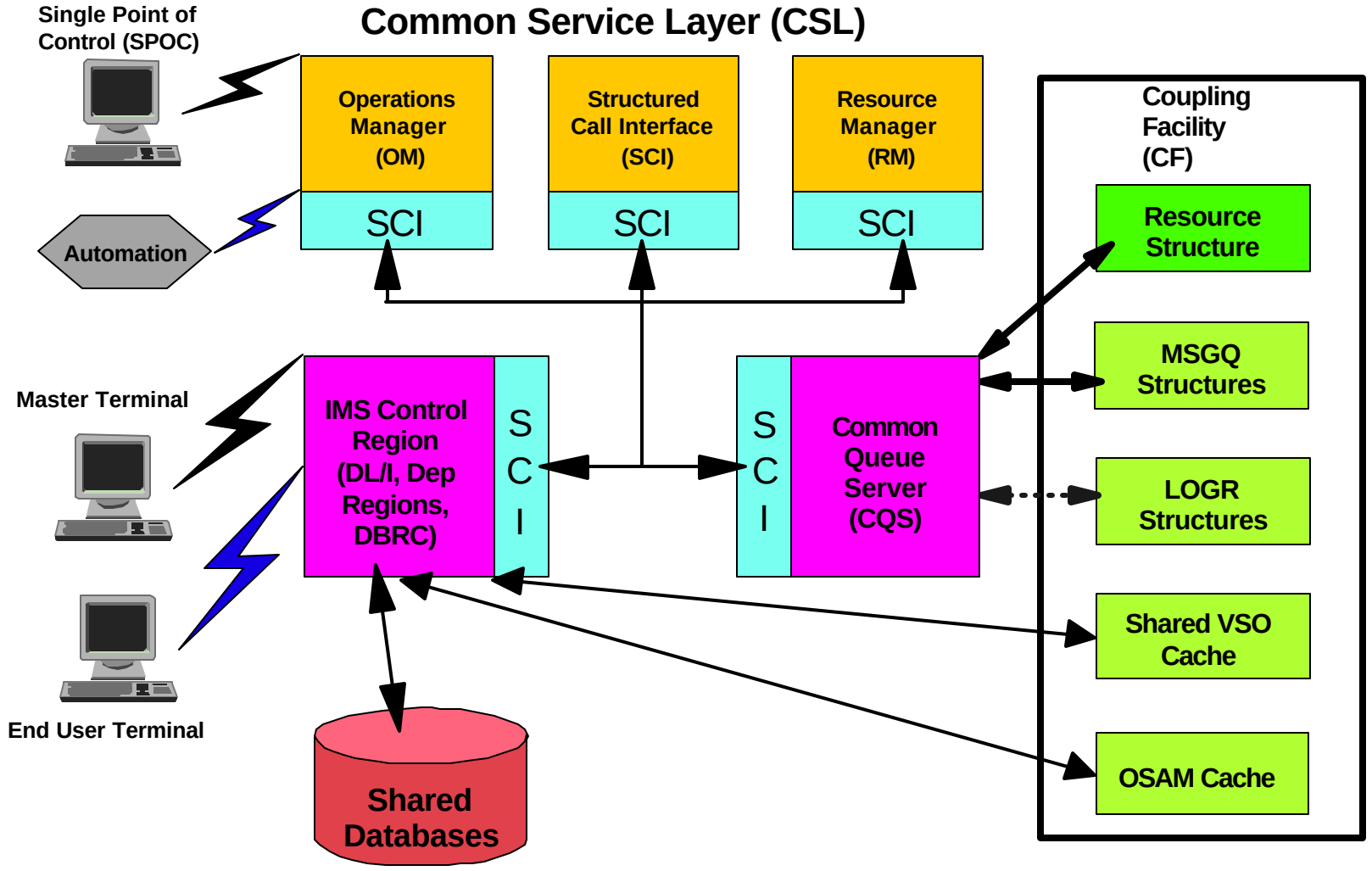
SYSTEMS MANAGEMENT REQUIREMENTS

- PRESENT A SINGLE SYSTEM IMAGE AND PROVIDE EASE OF USE THROUGH A SINGLE POINT OF CONTROL ACROSS THE SYSPLEX
- ENABLE USERS TO RESUME STATUS ON ANOTHER IMS IN IMSPLEX
- COORDINATE/MANAGE ONLINE CHANGE ACROSS THE IMSPLEX
- ADDITIONAL REQUIREMENTS

IMS V8 Sysplex Management



IMS V8 Sysplex Management Enhancements

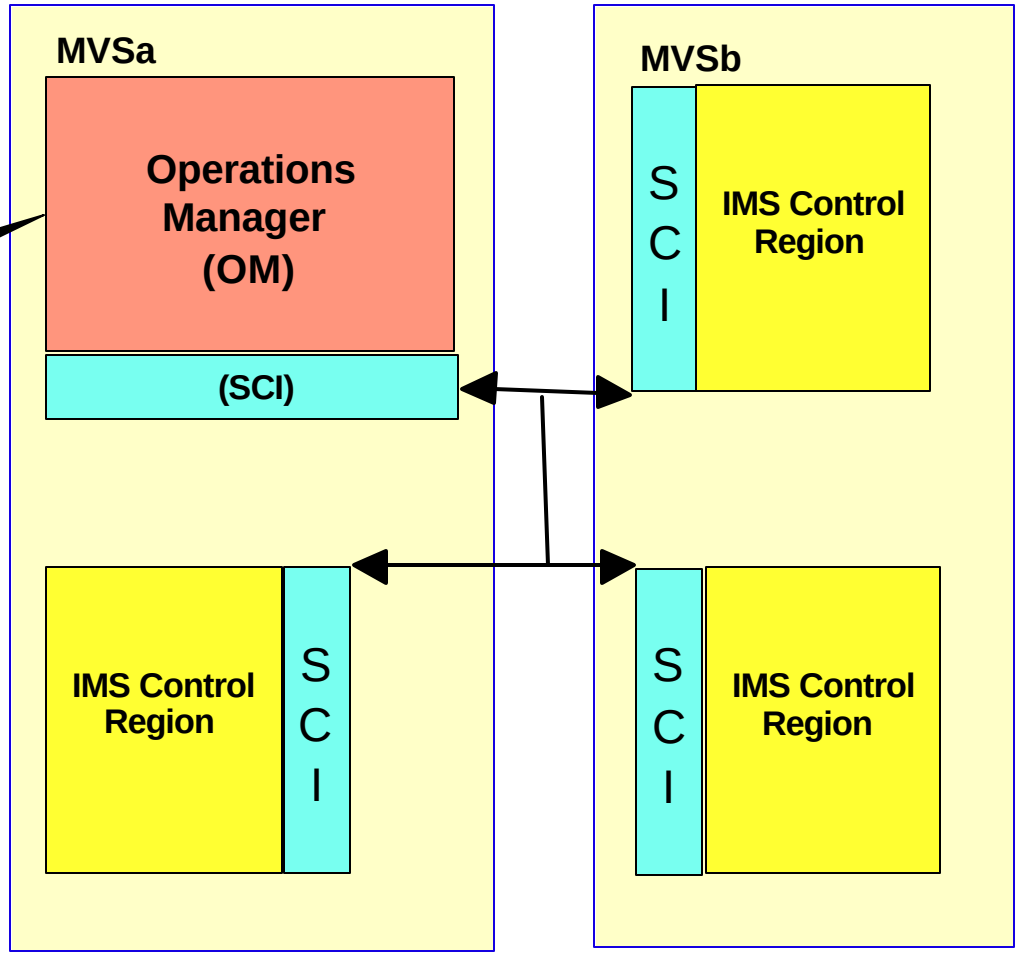


Structured Call Interface provides communication interface between IMS address spaces on same or across CPCs using XCF

IMS V8 Sysplex Operations Manager

Single Point of Control (SPOC) using

- **TSO/ISPF Application, or**
- **DB2 V8 Control Center through Connect to IMS**



Operations Manager

- Routes Commands
- Provides an API
- Provides a SPOC and supporting TSO/ISPF Application and IMS Control Center code for entering commands

IMS V8 Resource Manager

Provides a new IMS address space for

- **Coordination of online change across the IMS Sysplex**
- **Global management of IMS Terminal resources**
  - Enables a user to resume work on another IMS and to enforce single active user
  - Enforces single user signon in IMS Sysplex, if requested
  - Enables name uniqueness enforcement for message destinations

IMS V8 Coordinated Online Change

Eases, manages, and automates change across the IMS Sysplex.

- Commands can be entered on one IMS
- Requests can be handled for coordinating change across all the IMSs in the IMS Sysplex
- Replaces manual coordination

IMS V8 Sysplex Terminal Manager

Recovers terminal state information after a session reconnect, and allows the terminal user to log back onto another IMS after a failure.

- Allows VTAM to manage Generic Resource affinity while IMS can maintain VTAM terminal and user state data, if requested
- Enforces resource type consistency for message destinations and resource name uniqueness
- Supports global callable services for terminals/users, allowing user exits to obtain node and user information across IMS Sysplex
- Uses the Resource Manager to share VTAM terminal-related resources in the IMS Sysplex
- Autologons can be initiated from a single IMS in the Sysplex

IMS V8 Transaction Trace

Eases serviceability

Utilizes OS/390 and z/OS Transaction Trace facility for

- **Tracing a unit of work** through subsystems
- **Enabling show of flow** through components
- **Providing a consolidated place** to store tracking information
- **IMS Trace points** provided for
  - IMS Entry
  - IMS Exit
  - DL/I Entry
  - DL/I exit

IMS Resource Definition Manageability

Current System Generation Process

- **Two stage, Batch, Assembler process**
  - **Cold Start**
  - **Online Change**
    - Databases, Trans route codes, Appls, Security
    - Quiesces whole system

Requirements

- **Reduce system generation time/effort**
- **Improve availability during change**

IMS Resource Definition Manageability Staging

Reducing IMS System Generation effort

- **IMS V4 stopped using sysgen to support new function**
- **IMS V5/6 removed conditional assembly modules**
- **IMS V7 put non-conditional link-edit modules under SMP control**
- **IMS V8**
  - Removed RSR RLT/DLT feature install checking
  - Resource Manager/Coordinated Online Change
  - Syntax Checker
  - Packaging/Installation/IVP enhancements

IMS V8 Syntax Checker

Helps Reduce System Generation effort

- **New IMS ISPF application** which assists Systems Programmers in defining and maintaining the IMS parmlib members residing in the IMS PROCLIB
- **Parameter and value checking and detailed help text** at the parameter level tailored to the IMS version
- **Assists in moving from release to release** by identifying new parameters and obsolete parameters
- **Provide ability to ensure parameters are valid** prior to shutting down and restarting your IMS Control Regions.

IMS V8 Packaging, Installation and IVP Enhancements

New IMS Packaging and Installation Process

- **SMP/E jobs removed from Install/IVP Dialog Process**
- **SMP/E Receive, Apply, Accept processing**
- **New Target and Distribution datasets**
- **No DFSJCLIN Job provided**

Installation Verification Program Enhancements

- **OM, RM, SCI, SPOC Sample Application**
- **Syntax Checker Sample Application**

IMS V8 Parallel DB Processing

Helps Reduce Recovery time for increased availability

- Exploits Parallel TCB for Full Function DBs
  - Dynamic allocation, OPEN, CLOSE, EOV
  - Faster processors with more engines
  - Provides for elapsed time improvement
  - Faster steady state response time

IMS V8 Fast Path Data Entry Database Enhancements

- **DEDBs Greater than 240 Areas**
  - ► Increases capacity
  - ► Greater design flexibility
- **Non-recoverable DEDBs**
  - ► For use as work databases where recovery not required
  - ► Reduces log record/checkpoint info, thus improving IMS performance

IMS V8 Database Recovery Control Enhancements

- **Automatic Recon Loss Notification** for quicker loss recovery
- **Eliminate abends** when authorizing database
- **RECON Command Authorization** controls RECON access/update via DBRC batch commands
- **16M RECON Record Size** helps users avoid problems caused by Recon Record size exceeding VSAM record size max
- **Prilog Compression** reduces overhead, improves performance

IMS V8 Image Copy 2 Enhancements

Eases Image Copy coordination and management

- **Multiple utility control statements** can be copied per execution
- **Group name support** names the datasets in one execution so can start and/or stop as a group
- **Single output data set** can be created for mulitiple image copies
- **DFSMSdss Optimize option** supported

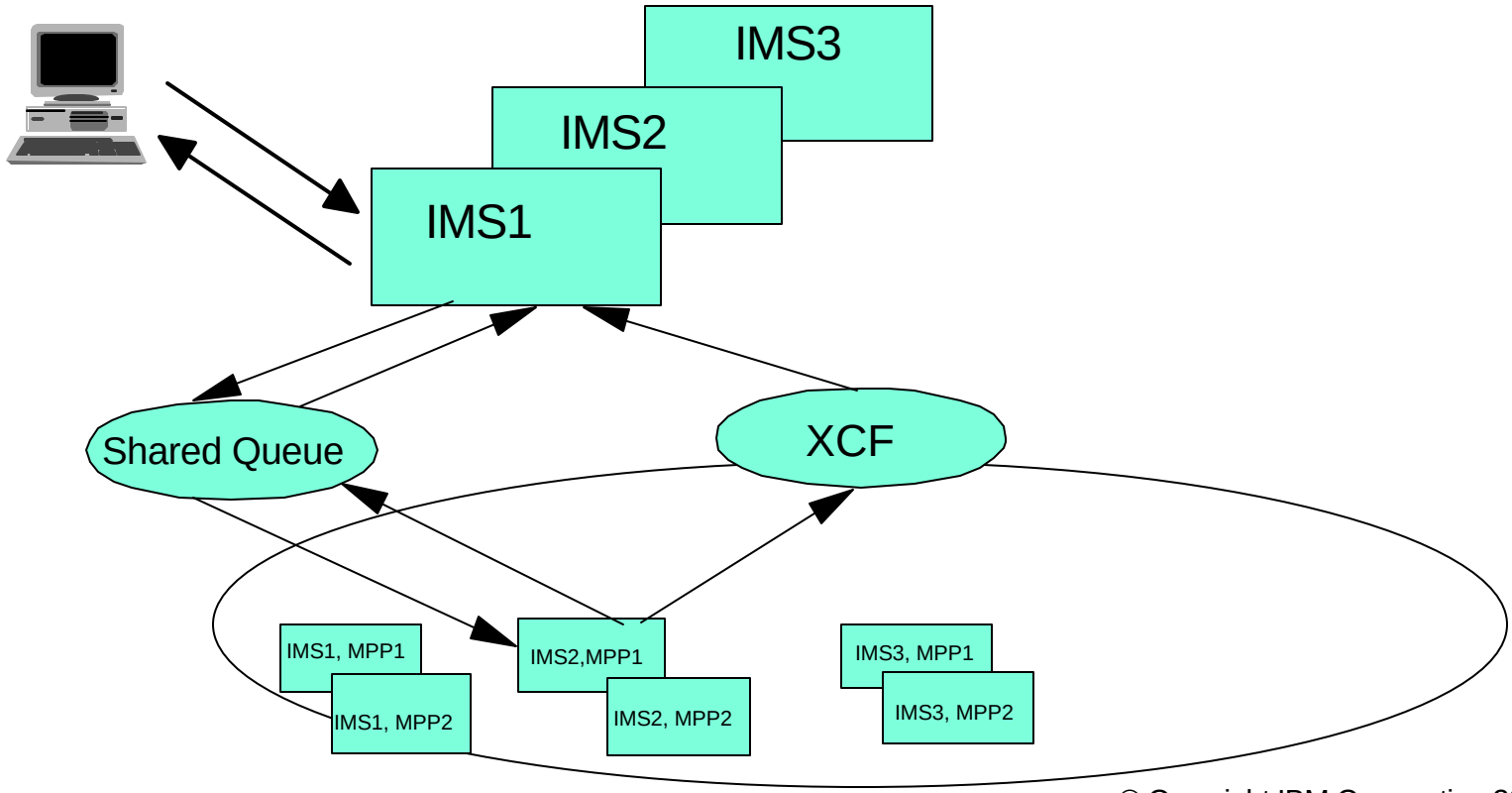
IMS V8/DB2 Coordinated Disaster Recovery

Aids in disaster recovery coordination in installations accessing DB2 via IMS

- **'eXtended Recovery Copy (XRC) tracking' added to IMS RSR**
- **Eases task synchronizing IMS and DB2 logs for disaster recovery**
- **Supports**
  - **IMS RSR For logs and (optionally) Databases**
  - **XRC for DB2 logs and boot strap data sets (BSDSs)**

IMS V8 Synchronous Shared Queues support

- **Provides for Sharing Messages between Sysplex Systems through IMS Queue Manager**
  - MVS APPC programs
  - OTMA Clients (MQ, IMS Connect, ...)



IMS V8 APPC Enhancements

Improves APPC availability

- **Dynamically add/delete LU 6.2 descriptors** for online change
- **Use of another Logical Unit (LU) as an outbound LU** for rerouting where resources are disabled
- **Use a CPU-time limit for CPI-C (explicit) transactions** to help prevent tying up of resources
- **Synchronous Shared Queues support** for enhanced workload distribution

IMS V8 Common Storage Area (CSA)/Virtual Storage Constraint Relief (VSCR)

Relieves storage constraints with IMS using less local and common storage below 16M

- **Moves from local to above the 16M line:**
  - ✓ **System Program Status Tables**
  - ✓ **Code paths**

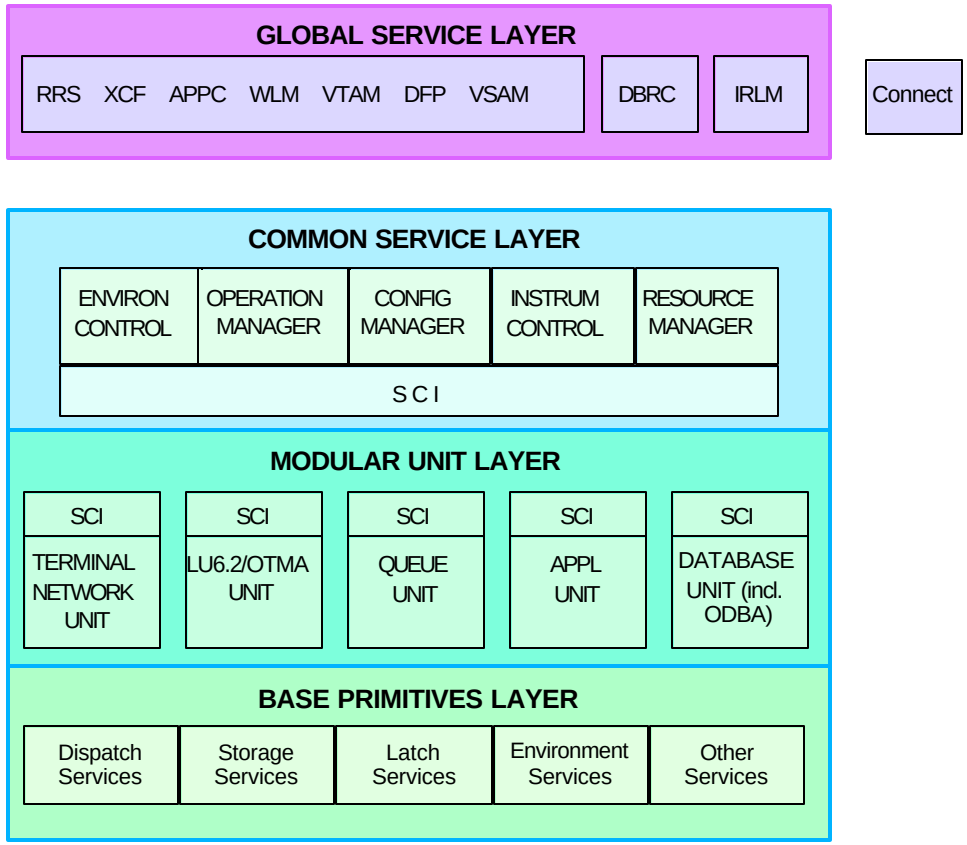
Enabling Migration

Provide on a regular schedule, staged, more frequent, deliverables of key customer function to:

- Ease customer
  - planning for the new deliverables,
  - installation of and migration to the new releases,
  - integration into your system,
  - manageability of the new releases
  - maintenance on these deliverables,
- Ensure timeliness, minimized disruption, and quality through enhanced testing of the smaller enhancements delivered through the shorter release cycle, rather then through the service process.
- Improve integration and quality through staged delivery of the larger enhancements
- Provide opportunity for higher quality and more timely IBM and vendor tools
- Increase opportunity for integration and visibility of IMS support for new technologies

Strategic IMS Architecture

- **Goals:**
  - Integration with open interfaces from and between IMS parts
  - Manageability with Restructured IMS components into independent units
  - Scalability through allowing multiples of units (mix and match different multiples of each) in a Sysplex environment



(BPE in V5, CQS in V6, ... and SCI in V8 ties it all together)

IMS V8 Software Prerequisites and Migration SPEs

IMS V8 MINIMUM RELEASE LEVELS

- OS/390 V2R10 (5647-A01) with DFSMS
  - RACF (included in separately orderable SecureWay Security Server), or equivalent, if security is used.
  - High Level Assembler Toolkit
- z/OS V1R2
  - Required for APPC/OTMA Synchronous Shared Qs
  - Required for MSC Ficon CTC support
  - Required for Shared Qs/EMH CF Duplexing support
  - Required for System Mgd Duplexing of VSO structures
  - Recommended for Resource Mgr and Coordinate OLC
  - Enhances usability for Sysplex Terminal Manager

DBRC Migration/Coexistence SPE

- **on IMS V6**
- **on IMS V7**

e-business

IMS: Providing Leadership in the Marketplace

Simplifying Information Integration through Connectivity and New Application Development

Easing Manageability Reducing the Cost of Computing

Enabling System Scalability with Availability/Recoverability Performance/Capacity

IBM