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搶先看：雲端，第13版IMS, 跨平台資料處理一手包！

IMS Strategy and Directions, including Enterprise Integration, Clouds, Replication, V13 & Beyond

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IMS runs the world's most critical workloads

2000 enterprises worldwide run IMS

3 of the top 5 Health Insurance companies run IMS

75% of the top 100 banks worldwide run IMS

The top 5 European and top 5 U.S. banks run IMS

16 petabytes of production data managed by IMS

$3.0 trillion ($US) per day is transferred through IMS.....by one customer

300+ million users served worldwide every day

500 million accounts.....for one customer

46,000 transactions per second.....on a single IMS system

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Rapidly expand new workloads in IMS

IMS Database 12 Value Unit Edition

- **Enables IMS 12 data sharing clients access** to IMS data for net new workload
- **Net new applications or workloads for Java or SQL** through IMS open access capabilities (Open Database), from applications on WebSphere Application Server on z/OS or CICS TS VUE
- **Cost savings** by moving Java workloads for zIIP offload
- **Additional new customized capabilities** that address business growth based on key business initiatives, including services-oriented architecture (SOA), enterprise and mobile access strategy, and operational business intelligence.
- **Leverages the unique industry-leading performance and workload management capabilities** of the IMS data server.

ibm.com/ims/imsdbvue/

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IMS Quality Partnership Program: *Best Practice*

- **IMS 11: 6 customers in production prior to General Availability**

- IMS 12: One major European customer in production *100+ days before*

- 12 customers in IMS 13 QPP in 2013
- All customers through Sandbox production
- 5 customers have IMS 13 in AD environments
- 3+ targeted for full production by GA

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Strategy: IMS database and transaction manager

- ***IMS Database**:* Organic integration across the enterprise, increase dynamic capabilities, reduce planned outages, and standardize channel access - which collectively increase workload, grow IMS data worldwide, and strengthen all IMS core capabilities.
- ***IMS Transaction Manager**:* Integrated organically with IMS DB and DB2 for z/OS, positioned as application manager of choice, positioned as industry-leading container for mixed-language workloads, enabled for both mobile and cloud provisioning.

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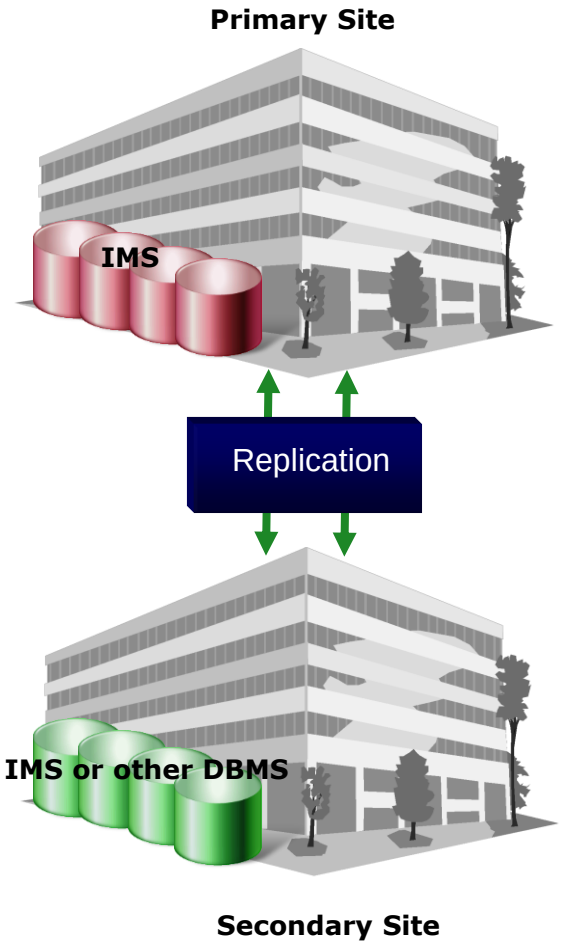
Extend your IMS data to the rest of the enterprise

- Increase the availability of IMS data with InfoSphere IMS Replication for z/OS 10.1
  - ✓ Provide two-way unidirectional replication of data from IMS to IMS
  - ✓ Efficient capture & delivery of IMS data to a local or remote IMS copy
  - ✓ Synchronize data centres for continuous availability, business continuity, disaster recovery
  - ✓ When combined with IBM monitoring and workload management software, provides a hot standby site at unlimited distances with a recovery time in seconds to minutes



- V13 SPE: Add FLD Call support to replicate subset pointers

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IMS V13: Specific Reduced TCO Enhancements

- **IMS logger LOG latch contention reduction**
  - Improves usage of log latch and log buffer management for increased logging bandwidth and more efficient processing
- **Shared Queues local first optimization now applies to program-to-program switch messages as well as ordinary input messages**
  - Avoids false scheduling on another IMS when the local IMS can process the program-to-program switch message
- **Exploitation of pageable 1M pages (large page-backed storage)**
  - Based on usage of new zEC12 processors with Flash Express storage and z/OS 1.13 (Dec. 2012)
  - Provides improvements in dynamic address translation and usage of translation lookaside buffer (TLB)
- **DB Space Management Block Serialization Latch Improvements**
  - Split from single to multiple latches to improve heavy BMP workloads
- **Memory Data Set ENQ Management Exploitation**
  - More efficient memory-based data set ENQ management improves allocation of large number of data sets

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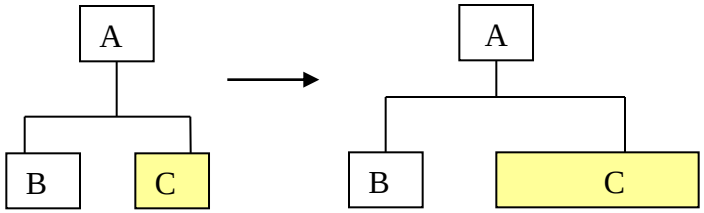
High Availability Large Database (HALDB) Alter

- **IMS V13 improves HALDB availability by providing structure changes without taking the database offline.**
  - Provides flexibility in rolling database changes into the system

- **Change the structure of an IMS HALDB without a DB outage**
  - Add a new field to space at the end of an existing segment
  - Increase the length of an existing segment
  - Define new fields that redefine (overlay) existing fields and space in an existing segment

- **Built on HALDB Online Reorganization – no unload/reload required**
  - INIT OLREORG NAME(*masterdb*) OPTION(ALTER)
  - TERM OLREORG

Improves DB Availability



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Fast Path Data Entry Database (DEDB) Alter

Eliminates DB Outage

V13

- **Improve DEDB Area availability by providing definitional changes without taking the Area offline**
  - Increase/decrease CI SIZE of a DEDB Area for a DEDB database without SDEP defined
  - Change UOW|ROOT for a DEDB Area without SDEP defined
  - Replace 2-stage randomizer with or without SDEP defined
- **Provides new DEDB dynamic change utility**
  - Runs as a standard Fast Path IFP utility
  - Area remains online
- **Requires the use of a two-stage randomizer allowing Areas to be processed individually**
- **Supports Virtual Storage Option (VSO) Areas if /VUNLOAD is done before DEDB Alter is executed**

Requirements:

- **Remove SDEP restriction for UOW|ROOT|SIZE DEDB Alter change for a DEDB Area**
- **Add one or more Area at the end of a DEDB database**

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IMS Database Future Directions

- **Dynamic capabilities**
  - Add fields anywhere
  - Add segments anywhere
  - Remove fields/segments
  - Increase field length
- **Dynamically build and activate**
  - New PCBs (in existing PSBs)
  - New indexes
    - Removal of need to explicitly reference in DBD and use in application
  - New fields
  - New segments

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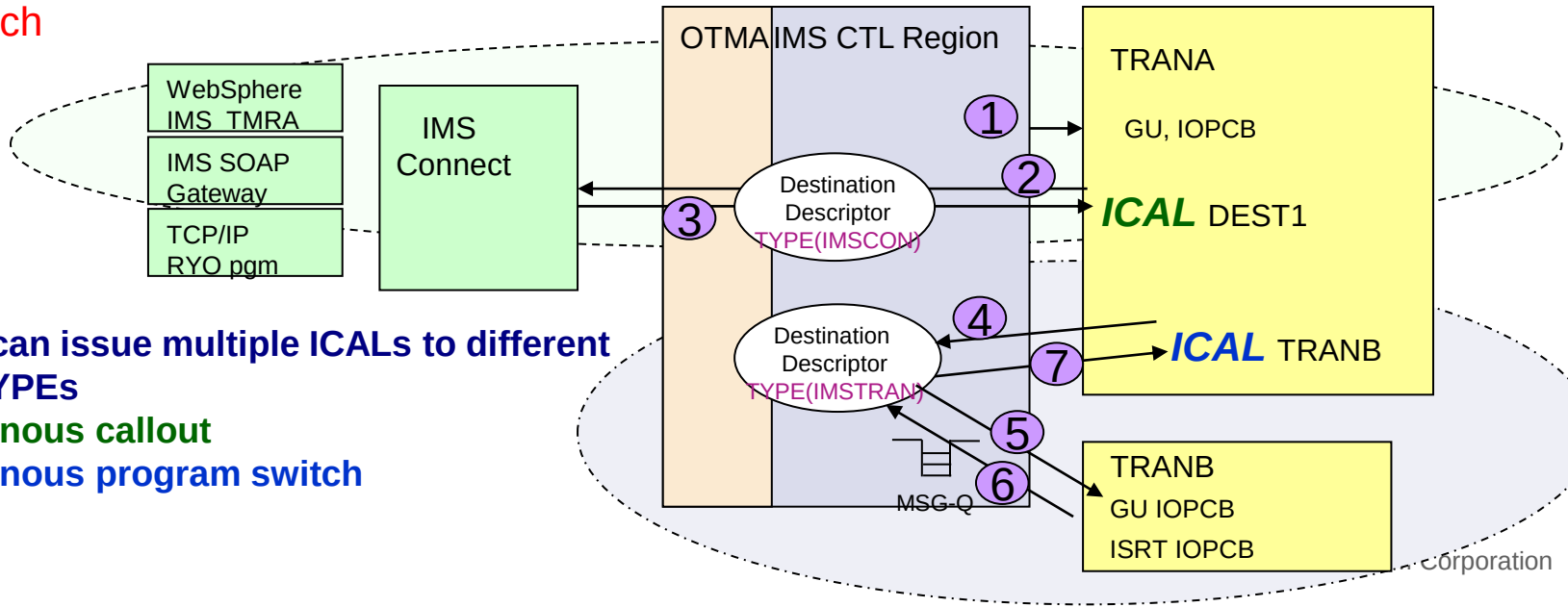
IMS Synchronous Program Switch

V13

- **IMS Synchronous Program Switch simplifies integration and improves usability via a single DL/I call to request a synchronous service regardless of where that service resides**
- **Extend IMS Synchronous Callout to allow DL/I ICAL to invoke another IMS Application**
  - DL/I ISRT continues to be used for asynchronous program switch
- **OTMA Descriptor enhanced to recognize an IMS transaction destination**

Requirements

- **Support Synchronous Remote Program Switch by using ICON-to-ICON service**
  - Use TCP/IP, instead of using MSC or ISC for inter system communication for program switch



Applications can issue multiple ICALs to different destination TYPEs

Synchronous callout

Synchronous program switch

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Modernization & Integration

IMS Database: Emerging Technology and Standards

- **IMS provides Java and SQL/JDBC access to IMS database since 2000**
- **All IMS data are captured as standard metadata**
  - IMS Catalog (V12)
  - Allow desktop tools to consume and understand IMS data
- **IBM WebSphere can access IMS data via IMS DB Resource Adapter**
  - New DataPower V6 to access IMS data
- **IMS Open Database (with V11+) provides distributed access to IMS data via standard interfaces**
- **Distributed applications can access IMS data via IMS universal drivers, JDBC, ODBC**
- **IMS Explorer integrates with Eclipse to give relational view of IMS data via Data Source Explorer; and provide graphical editor to create SQL statements to use with IMS data**
- **Cognos V10 is fully integrated with IMS Open Database (with V12) to do business reporting against both operational and data warehousing environments**
- **SAP & .NET directly access IMS database**
- **InfoSphere Guardium 8.2: Block privileged users from accessing sensitive IMS data**
- **IMS goes Mobile!**

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IMS Transaction: Emerging Technology and Standards

- **Provide Java container in IMS regions since 2000**
- **IMS has evolved from its initial server function with the ability to consume external resources as well as provider access to external applications**
  - IMS as an Integration Focal Point in enterprise environments
  - Support both Web services and non-Web services protocols
- **Integration with IBM products in supporting XML, Java, JEE, Web Services, SOAP, RESTful, JSON, etc.**
  - WebSphere: WAS, WDP, WTX
    - New DataPower V6 to support IMS Callout
  - PureSystems
  - IIB (IBM Integration Bus), BPM IPS (IBM Process Server)
  - IODM (IBM Operational Decision Manager)
  - WebSphere MQ
- **Integration with solution packages and databases**
  - JEE compliant application servers
  - .NET
  - BizTalk
  - SAP
  - and Oracle, etc.
- **Integration with Big Data**
- **IMS goes Mobile!**

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IMS TM Connectivity and Integration

Java EE	Web Services			BPM	Complex Data Transformation	Business Rules	Mobile
WebSphere Application Server or Java EE Server	**SOAP Gateway**	**WebSphere DataPower**	**IBM Integration Bus**	**IBM Business Process Manager**	**WebSphere Transformation Extender**	**IBM Operational Decision Manager**	**IBM Worklight**
		Network Gateway	Enterprise Service Bus				
• Full SOA and Java EE Services • Inbound and Outbound to/from IMS	• Direct IMS SOAP endpoint for Web Services • Inbound and Outbound to/from IMS	• SOA appliances • Ubiquitous gateway • Fast web services and XML transformation • Inbound to IMS • New: Outbound from IMS (WebSphere DataPower V6.0)	• Interoperability among heterogeneous services and data environments • Inbound to IMS	• Business process automation and choreography • Inbound to IMS	• Transform complex data types • Inbound to IMS	• zRule Execution Server (stand-alone) supports IMS • Rule Execution Server in zWAS supports IMS	• Open mobile platform • Integration with other servers (WAS, DataPower, IMS SOAP Gateway, IIB, and etc.) for inbound to IMS

New ***WebSphere DataPower 6.0 Integration with IMS: Announced on 4/23/2013! GA on 6/28/2013!***

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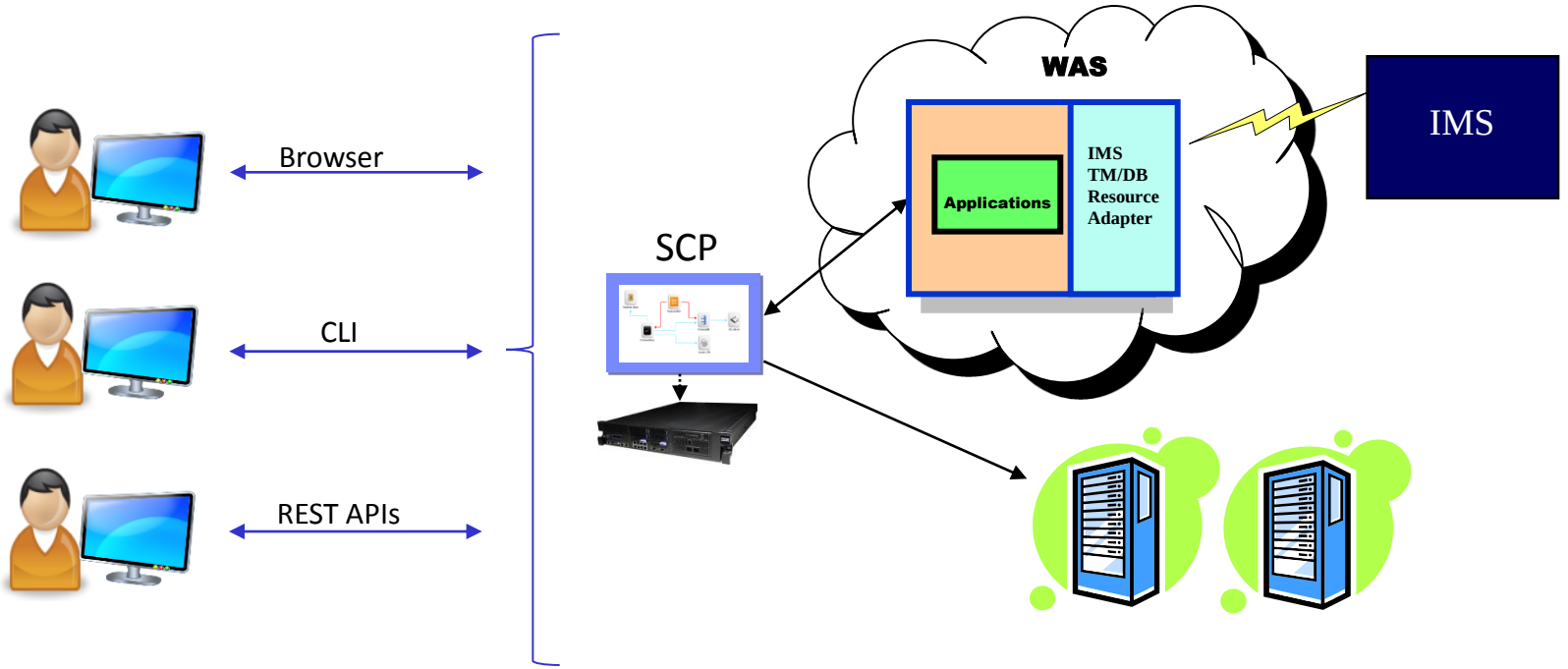
SmartCloud Provisioning (SCP) supports IMS transactions and data

- SCP builds & deploys applications that run in WebSphere to drive IMS transactions and access IMS data
  - Can be deployed and managed in conjunction with application pattern
  - Pattern for Web Applications consists of application support based on
    - IMS TM Resource Adapter and IMS DB Resource Adapter



18
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IMS cloud strategy

- **Platform as a Service (PaaS)**
  - Enable deployment of application packages
    - Allow creation, modification and deletion of packages that runs in IMS
- **Database as a Service (DaaS)**
  - Enable IMS Database as a service for creation, modification, and deletion of databases
    - Allow “icloud-like” support for IMS DB
    - Allow a new user of an existing IMS DB
- **Software as a Service (SaaS)**
  - Enable multi-tenancy for application vendor support
- **Deployment through a Web Console**
  - zOSMF / IMS Explorer for Administration
  - Allow application providers, customers, vendors to provide software as a service by providing infrastructure such as multi-tenancy in IMS
  - Provision logical IMS system in a private cloud

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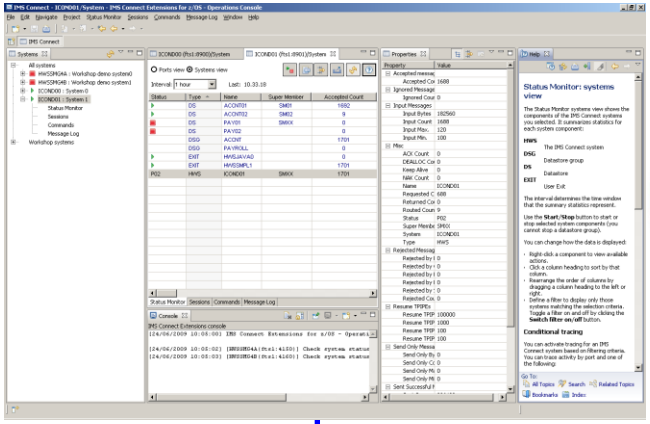
IMS User Interfaces

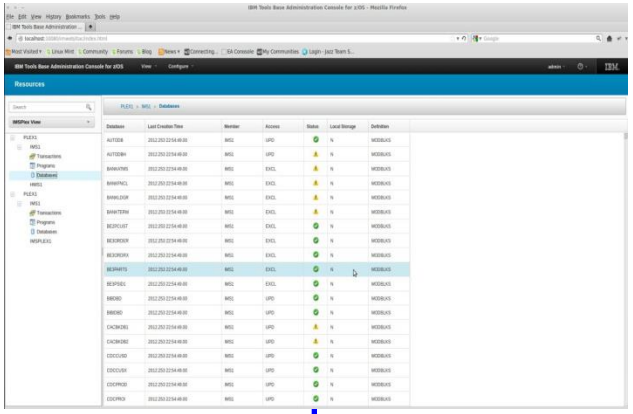
IMS Explorer for Development (Eclipse)



Developers

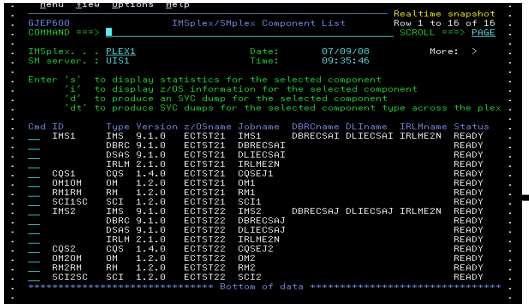
Administrators

IMS Explorer for Administration (Web Browser)



Mobile

ISPF



IMS

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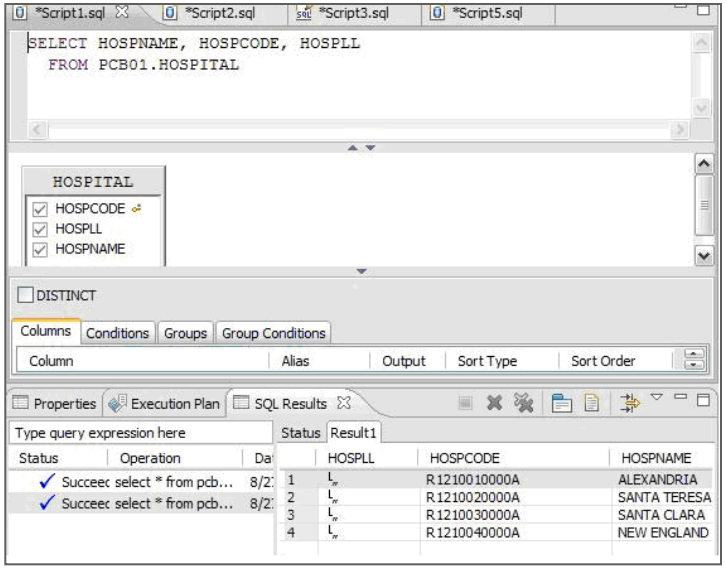
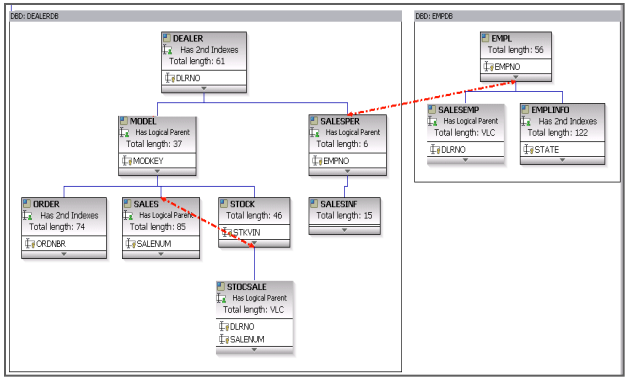
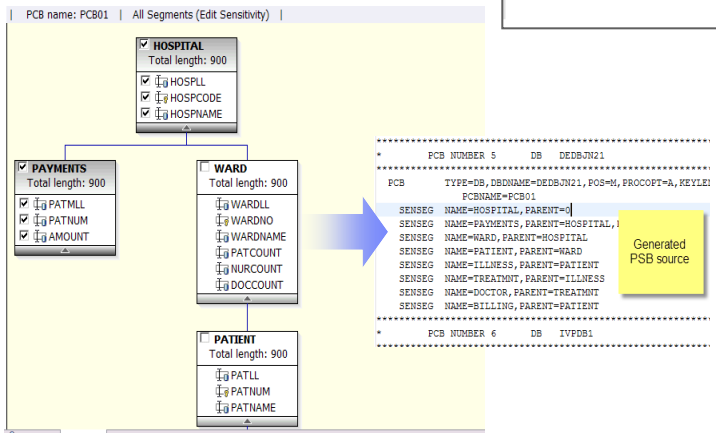
IMS Explorer for Development

- Change IMS Database and Program Definitions sources
- Integrate with Eclipse to give relational view of IMS data via Data Source Explorer
- Provide graphical editor to create SQL statements to use with IMS data
- Graphically access IMS data using SQL
- View your mainframe datasets
- Submit JCL and inspect output in JES
- Fully integrated with Data Studio
- **Intended directions:**
  - Support IMS transactions
  - Integrate with CICS Explorer







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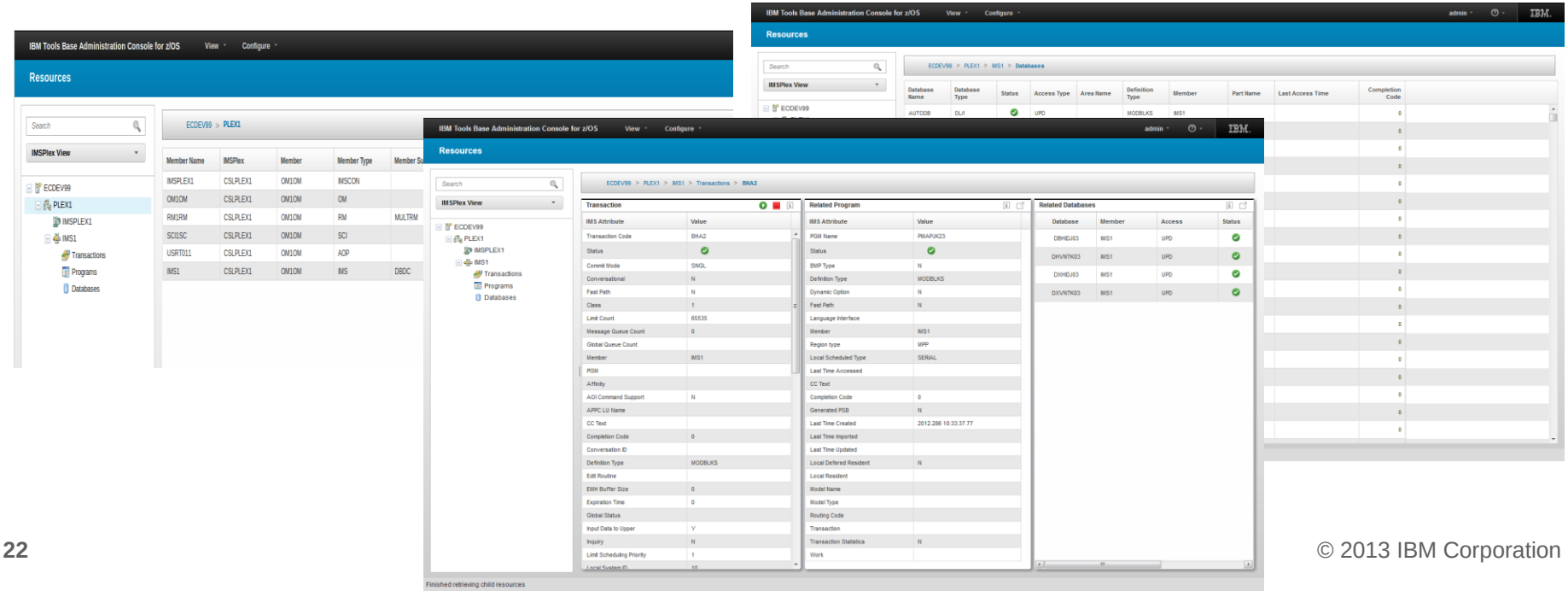
Requirements: IMS Explorer for Administration

- **Provide IMS system programmers and DBAs a state-of-the-art user interface to manage, configure, and deploy IMS systems**
- **Full operational single point of control for all IMS address spaces**
- **Full GUI support for IMS resources**
- **Immediately react to and resolve issues in the system**
- **Cloud-style IMS system management**
- **Integrated with IMS Tools Administration Console**
- **Intended Directions:**
  - Enable RESTful API for Mobile administration
  - Integration with zOSMF for dynamic configuration updates



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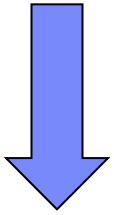
Think BIG with IMS Transactional Messages

- **IMS Transactions with Large Messages and Large Attachments**
  - Do you foresee a need to drive IMS transactions with large messages?
  - Do you foresee a need to invoke external application server with large IMS transactional messages?
  - Do you foresee a need to drive IMS transactions with large attachments for both structured and non-structured data, e.g. XML documents, medical records (X-Ray or MRI images), and picture files, etc.?
  - Do you have the need to propagate original network identity when going outbound from IMS to external application server?



IMS transactions with large attachments

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Thank You