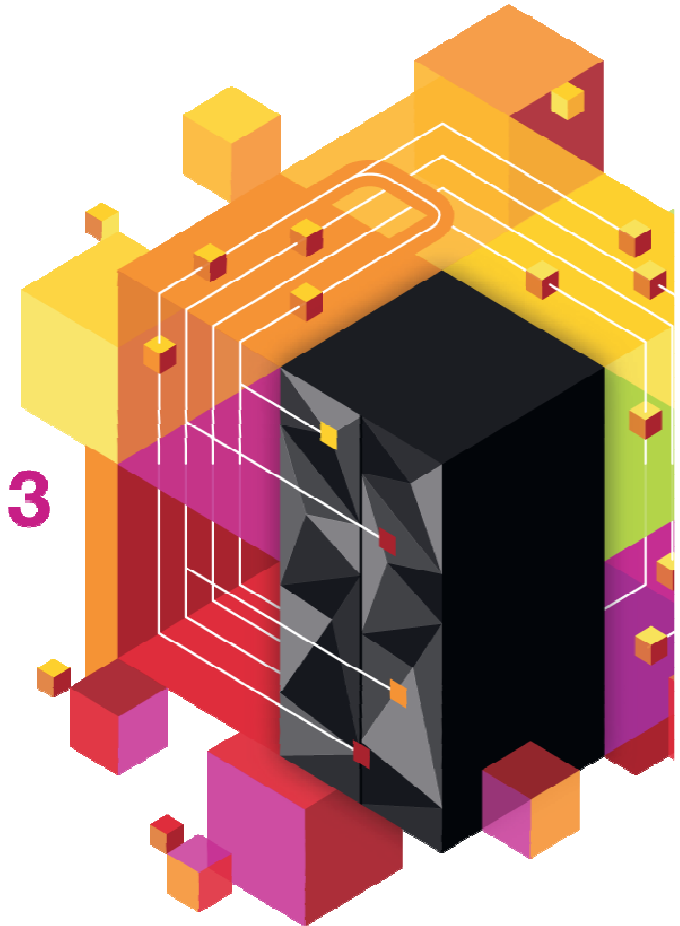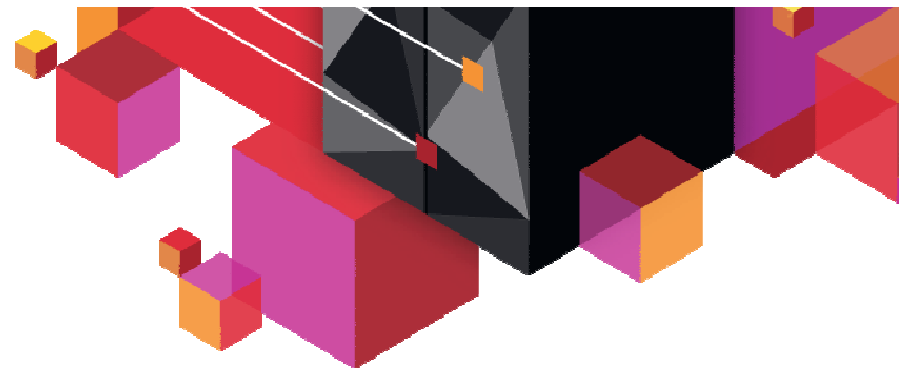# Université du Mainframe 2013

4-5 avril

IMS la révolution continue

Isabelle Bruneel   et   Hélène Lyon

Isabelle_bruneel@fr.ibm.com   helene.lyon@fr.ibm.com
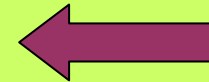
Université du Mainframe 2013

4-5 avril

Agenda

- **Data visualization and reporting**
  - IMS 12 Catalog & IMS Explorer for Dev
  - IMS Administration
  - Cognos or QMF reporting with IMS 12
  - The IMS Auditing solution
- **IMS Apps Modernization**
  - How to do
  - Adding access to innovative services
  - Example of Business Rules
- **IMS Access from Mobile**
- **Documentation, events and education**

IMS DB Modernization – Great Features with IMS 12

- **IMS Catalog**
  - IMS Metadata management
  - Redbook: IMS 12 The Catalog
  - REDP-4812-00 redbooks.ibm.com
    - Also downloadable as an "EPUB"
- **IMS Explorer for Dev & IMS Catalog**

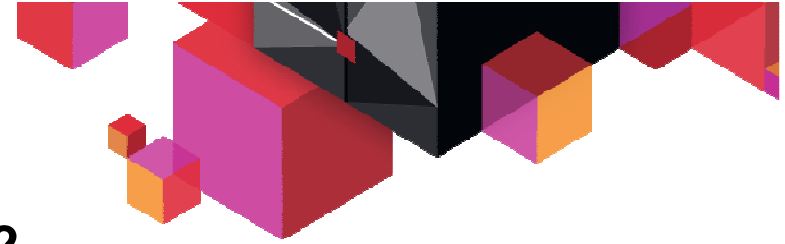 ibm.com/software/data/ims/soa-integration-suite/enterprise-suite/explorer/
  - New *IMS Explorer V2.2.0.1* available since February 15th 2013
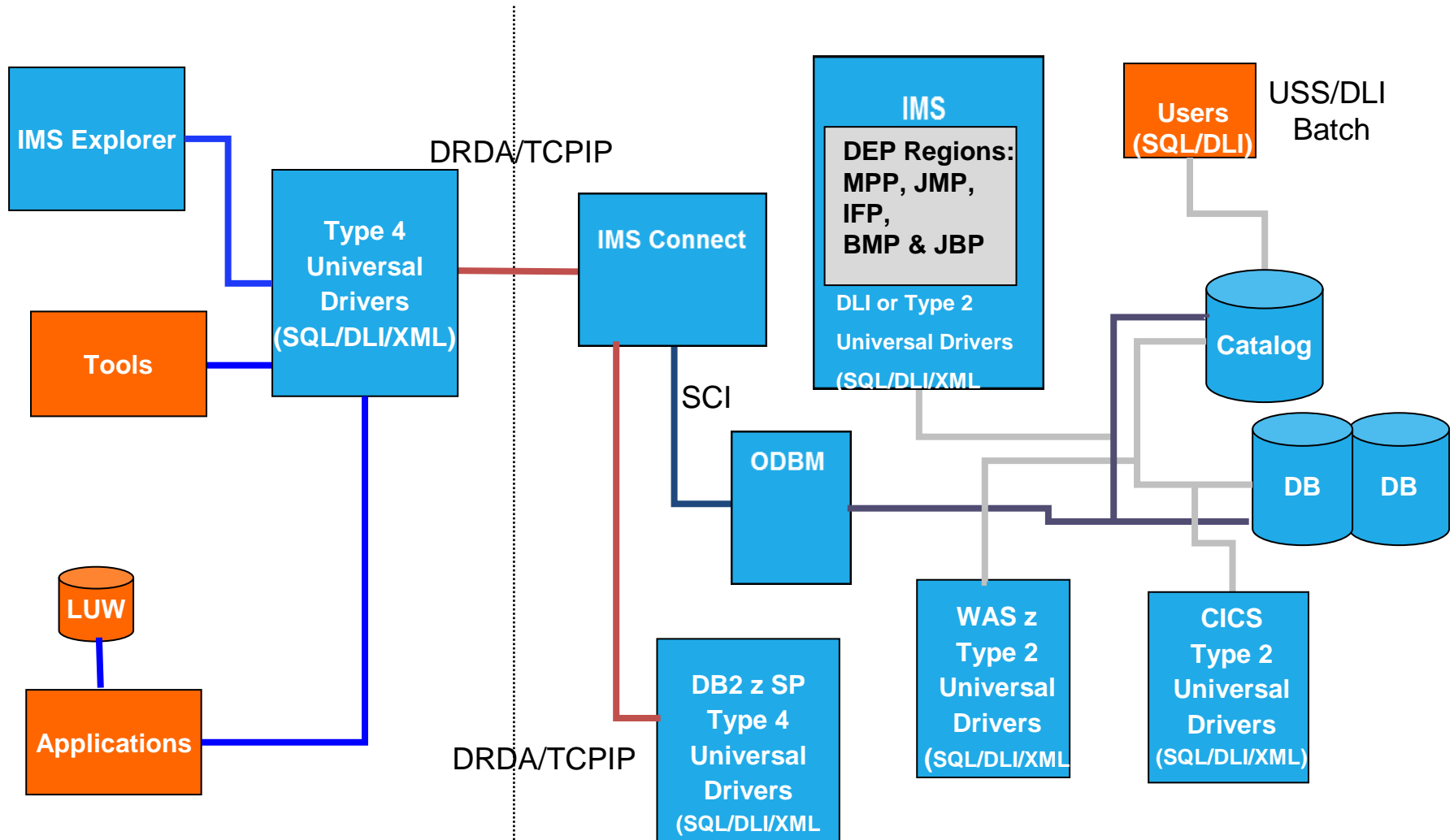 - Download as part of IMS Enterprise Suite

  ibm.com/ims
- **→ Click on IMS Enterprise Suite**

IMS Data Runtime Access with IMS V12

IMS Explorer

Tools

LUW

Applications

Type 4
Universal
Drivers
(SQL/DLI/XML)

DRDA/TCPIP

IMS Connect

SCI

ODBM

DRDA/TCPIP

DB2 z SP
Type 4
Universal
Drivers
(SQL/DLI/XML

IMS

DEP Regions:
MPP, JMP,
IFP,
BMP & JBP

DLI or Type 2
Universal Drivers
(SQL/DLI/XML

Users
(SQL/DLI)

USS/DLI
Batch

Catalog

DB

DB

WAS z
Type 2
Universal
Drivers
(SQL/DLI/XML

CICS
Type 2
Universal
Drivers
(SQL/DLI/XML)

IMS Explorer … two offerings

- **Stand-alone offering**
- **Shell-sharing offering for use**

IMS Enterprise Suite

Downloads

To properly configure your download, please review the information below. Select the appropriate offering. When you are done, press the "Continue" button at the bottom.

Offering	Platform	Format
⊙ IMS Enterprise Suite Explorer for Development Version 2.2.0.1 Languages: English	Windows	download

Shell sharing version to install on top of RDz or Datastudio

Download using Download Director	Download using http

☐ Select all files

For installation instructions, see the IMS Explorer documentation in the information center.

For latest information, known issues, and workaround, see the IMS Explorer readme.

Installation Manager

Use the IBM Installation Manager V1.5.3 or later to install IMS Enterprise Suite Explorer for Development. Download agent.installer.win32.win32.x86 for Windows from the Installation Manager V1.5.3 download page.

IMS Enterprise Suite Explorer for Development

Stand-alone

☐ The installation repository file for IMS Explorer
IMSExplorer2201.zip (820 MB)

☐ The installation repository file for the shell-sharing version of the IMS Explorer plug-in package to be installed on top of IBM RDz (8.5 or higher) or IBM Data Studio (3.1.1 or higher).
IMSExplorer_SS2201.zip (400 MB)

Shell-sharing

⬇ Download now

SQL to DL/I call translation information

Different projects

Copybook mapping in DBD

Graphical DBD view with logical relationships

DB2 and IMS connections to execute SQL

IMS Explorer tools plugins such as BTS and Debug Tool

Debug mode for an IMS application simulated with BTS

Monitoring/settin/changing variables or breakpoints

One server for 2 plugins

Visualize the source with step by step execution

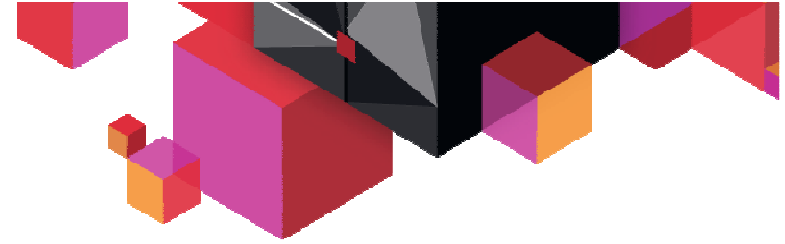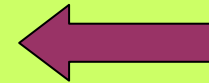BTS execution reports

IBM Data Studio

- **IBM Data Studio is a set of powerful Information Management tools that help you manage enterprise data, databases, and data-driven applications**
- **Available at no-charge: ibm.com/developerworks/downloads/im/data/**
- **IMS Explorer for Dev can be installed in shell-sharing with Datastudio to better merge IMS and DB2 in the same eclipse environment.**

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- **Documentation, events and education**

2 environments for 2 jobs

Eclipse
(development)
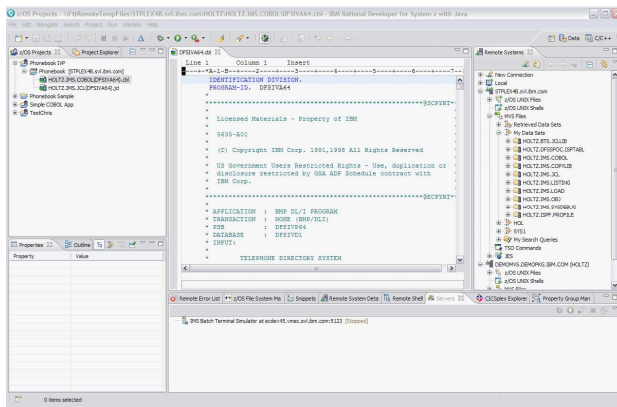
IMS Tools Base (No charge)

DB Administration
IMS Database Solution Pack
IMS Fast Path Solution Pack

Developers

Web Browser
(administration)

Rational Developer for Z
Datastudio

IMS Explorer for Developers
In S/A or Shell Sharing
(No charge)

PD Tools
Batch terminal Simulator

Administrators

IBM ☀

Administering DB with sensor

IMS FP Solution Pack V1.2 and IMS Database Solution Pack V1.2

■ **Implemented DB Sensor capability in FPSP and DBSP :**

- Sensor data can be collected as part of analyze, reorg, or image copy
- Sensor data collection can be notified to Autonomics Director

DB Sensor function

- **FPSP FP Utilities**
- **HP Image Copy**
- **AD captured Sensor**

- **Reorg Expert**
- **HP Pointer Checker**
- **HP Image Copy**
- **AD captured Sensor**

IBM Tools Base V1.3

• **Store sensor data (and reports)**　　• **Notify of sensor data**
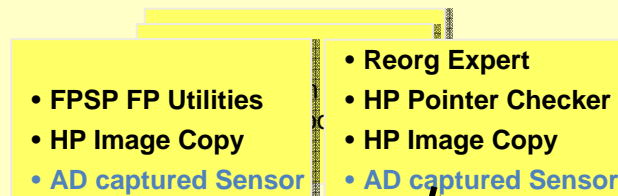
Administration Console
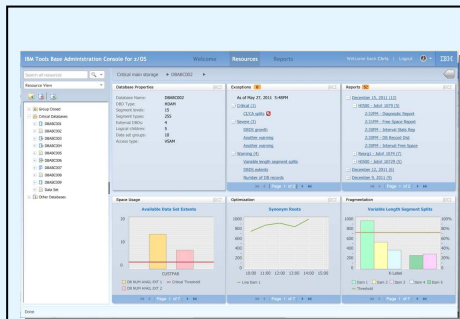
Open Env.　　z/OS Env.

Distributed Access Infrastructure (DAI)

Autonomics Director (+ Policy Services)

AC Servlets on WASCE*

TCP Server

Tools Access Server

IMS Tools Knowledge Base Repository Server

Repository

Autonomics Director Server

- Policy-based DEDB area diagnosis
- Policy-based FF diagnosis

Administration Console

HTTP

Admin Console

TCP/IP

z/OS

DAI

ITKB

AD

IMS

Tool

...

Admin Console

Cloud

Admin Console

Admin Console

Optim

luw

Admin Console

zOSMF

z/OS

Admin Console

zLinux
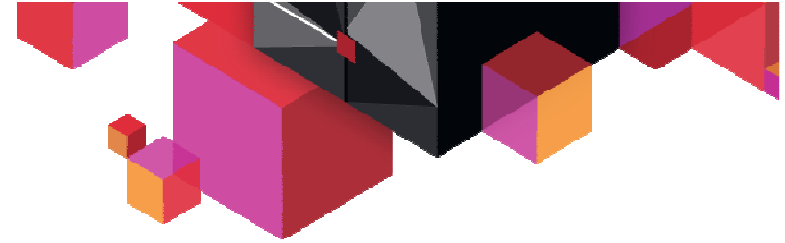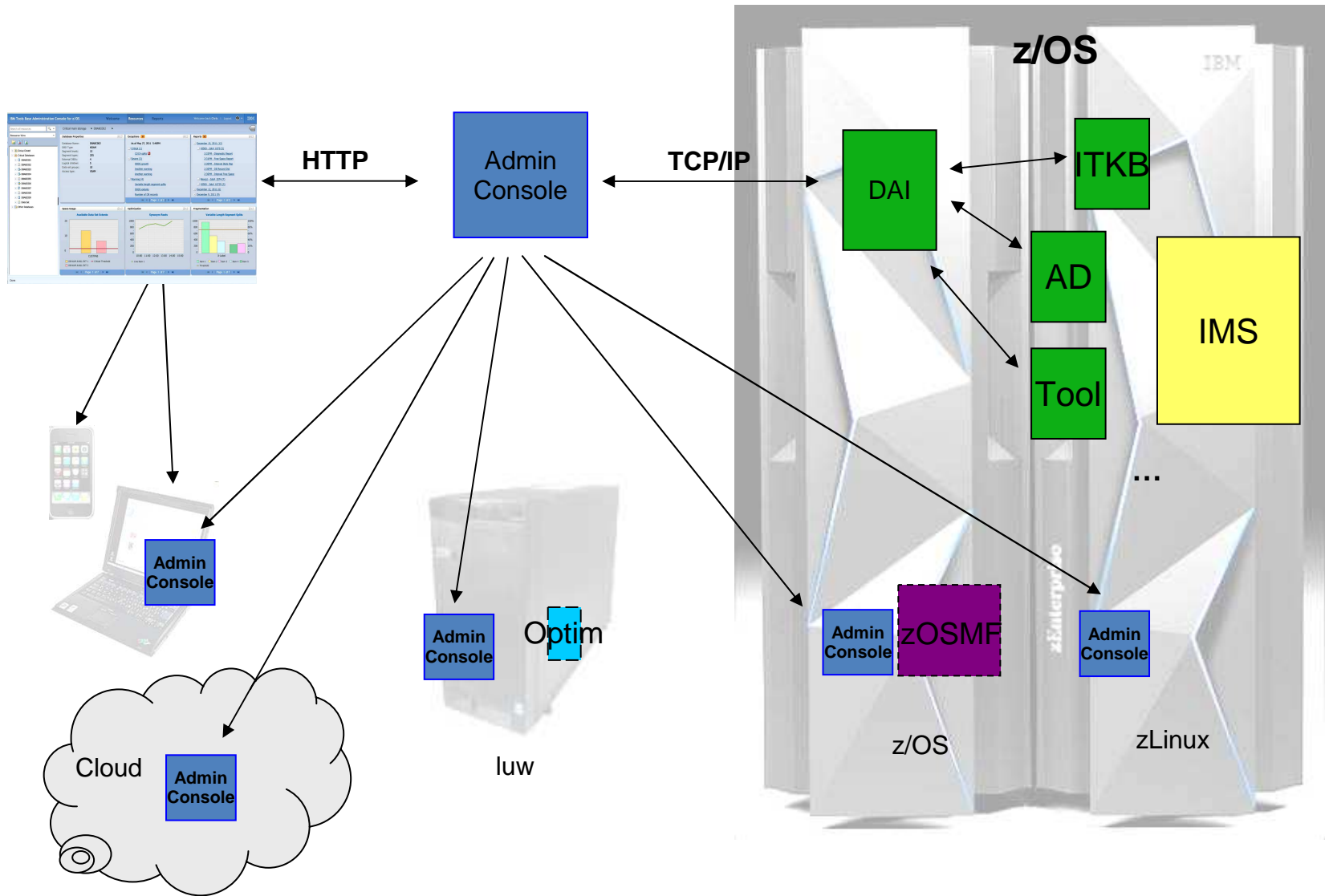
Administration Console work flow

1 Summary Table for a FFDB

Check the summary of latest FFDB space diagnosis done by Autonomics Director.

2 Exceptions Widget

Check the Exceptions widget for evaluation results for the resource.

3 Help Widget

Context sensitive help for exceptions, charts, etc

4 Reports Widget

View DB Solution Pack utility reports for detailed analysis of resource space usage.

5 Sensor Widget

Identify trends for a variety of sensor data values
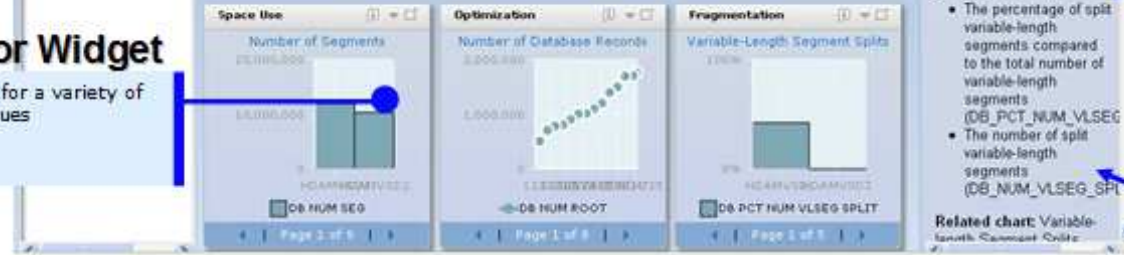
Main dashboard for a FFDB

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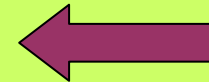
Cognos Reporting with IMS 12

- **Benefits:**
  - Ad hoc reporting access
  - Report on data reflecting the most current state of the business
  - React faster to trusted data
  - Market-leading BI solution for IMS customers
- **Roadmap for customers**
  - Cognos 10.2 & IMS V11: IMS 11 JDBC driver is NOT certified with Cognos 10.2.
    - Even if Open database architecture is available.
  - Cognos 10.2 & IMS V12 : IMS 12 JDBC driver with Catalog is certified with Cognos 10.2.
    - New functions that allow to get enhanced predicats exploited by Cognos
    - IMS catalog for z/OS centralized metadata management
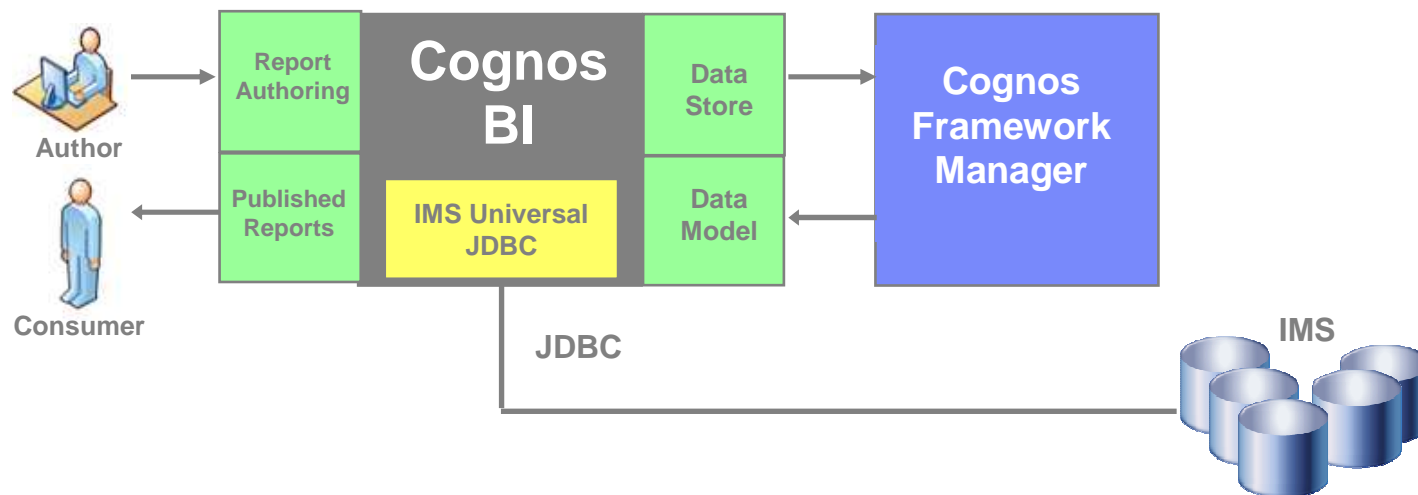
Cognos Reporting avec IMS v12

- **Advantages:**
  - Ad hoc reporting access
  - Report on data reflecting the most current state of the business
  - React faster to trusted data
  - Market-leading BI solution for IMS customers

- **Cognos Query Studio & Report Studio**

- **Cognos Framework Manager**

z/OS

IMS Connect → ODBM → IMS v12 ↔ IMS DBs

TCP/IP

Cognos BI Server 10.2 | Universal Driver JDBC IMS

TCP/IP

zLinux

Cognos BI Server 10.2 | Universal Driver JDBC IMS
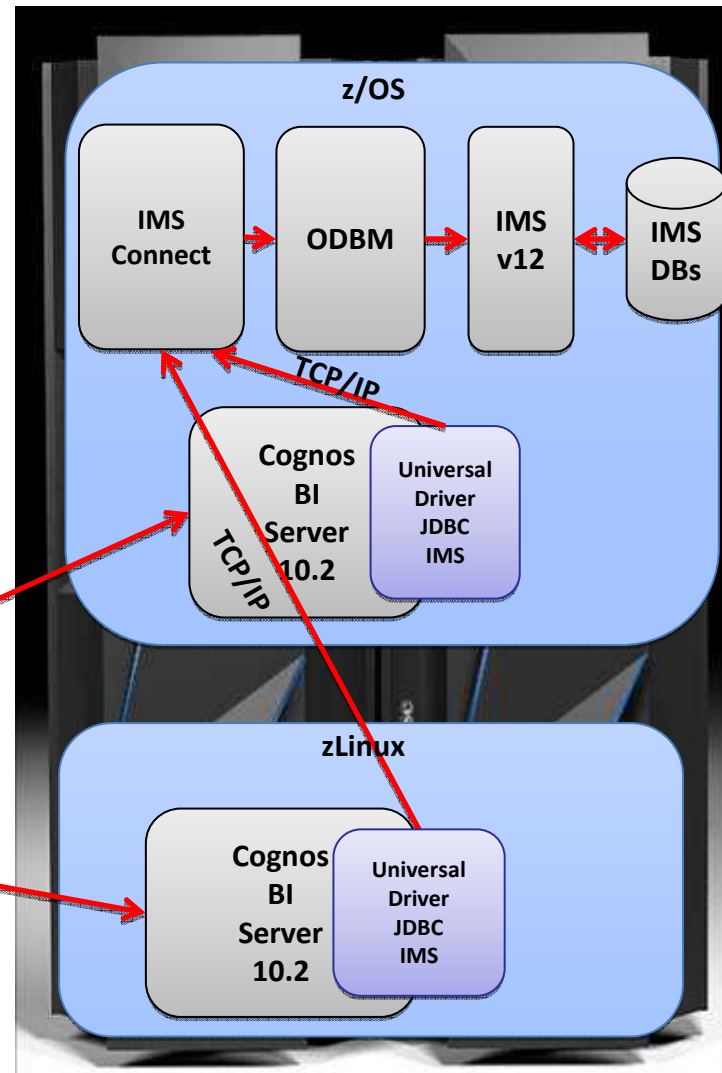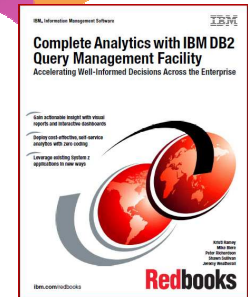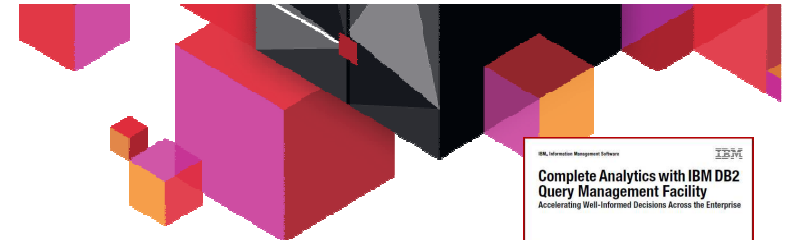
Access with Query Management Facility (QMF)

- **Maximize benefits from IMS environment**
- **JDBC Open Data Access to IMS in a managed environment**
- **Users graphically construct ad-hoc IMS queries**
- **Create reports and dashboards that draw directly from IMS data**
- **Roll out web-based graphical content that blends IMS data with relational and multi-dimensional data sources**
- **Incorporate IMS data within federated queries**
- **Redbook SG24-8012**
    - Complete Analytics with IBM DB2 Query Management Facility: Accelerating Well-Informed Decisions Across the Enterprise
- ▪
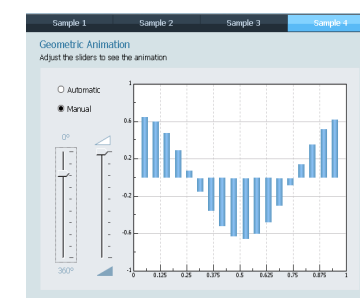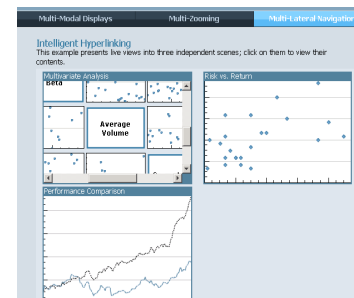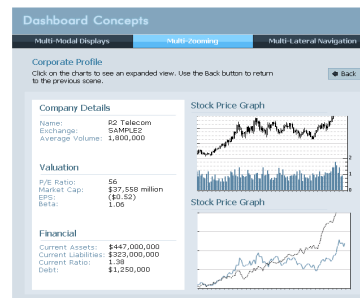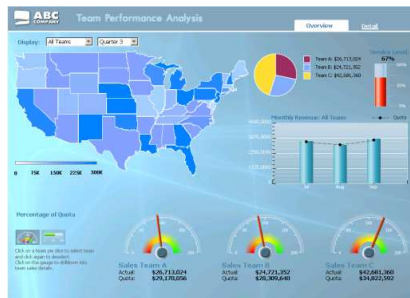
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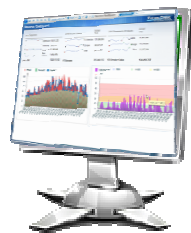- **Documentation, events and education**
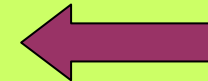
IBM InfoSphere Guardium S-TAP for IMS

- **Real-Time activity Monitoring**
  - Collect Audit information of access to IMS Databases and IMS artifacts
- **Audit Data Collected**
  - Accesses to databases and segment
    - IMS Online regions & IMS DLI/DBB batch jobs
    - GET and INSERT (ISRT), UPDATE (REPL), DELETE (DLET)
    - Obtain concatenated key and segment data
    - Links Get Hold and Replace calls which enables before and after images of UPDATED segments
  - Access to database, image copy and RECON data sets and security violations as recorded by SMF
  - IMS Online region START and STOP, database and PSB change of state activity and USER sign-on and sign-off as recorded in the IMS Archived Log data sets
- **4 Sources to collect audit information**
    - IMS Online regions – to get zIIP support
    - IMS DLI/DBB batch jobs
    - SMF (System Management Facility)
    - IMS Archive Log (SLDS)

- **Also check improvements to IBM InfoSphere Guardium S-TAP for DB2 and InfoSphere Guardium S-TAP for VSAM on z/OS**

New version October 2012

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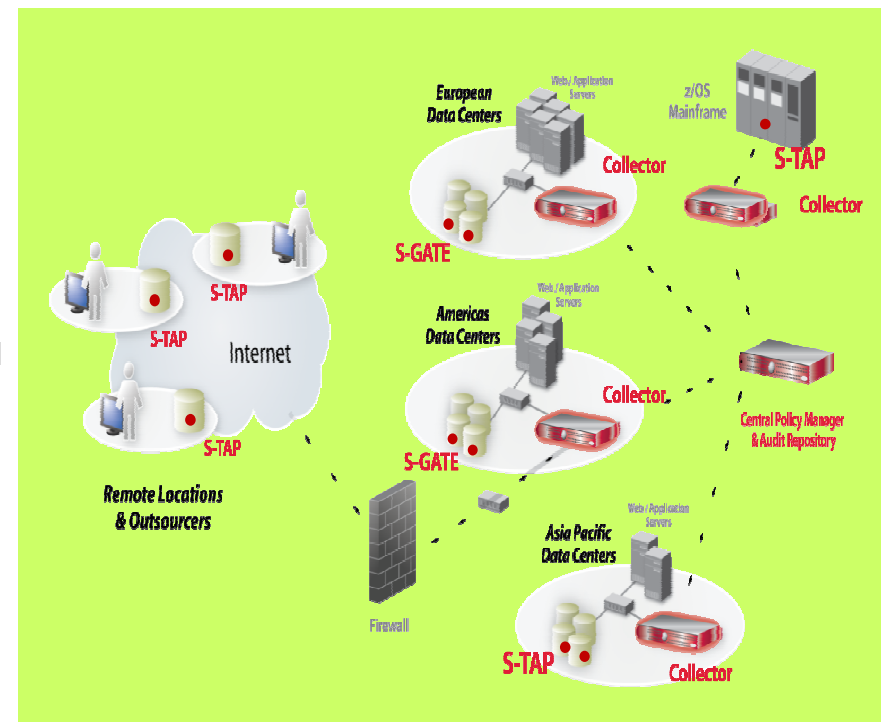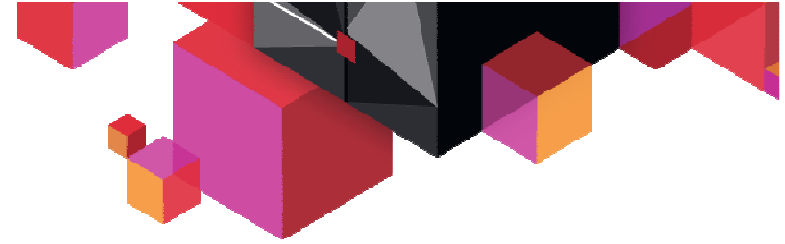- **Documentation, events and education**
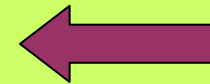
Rethink your Mainframe Apps

- **Download the Redpaper**
  - www.redbooks.ibm.com/redpieces/pdfs/redp4938.pdf
- **Co-authors with great IMS knowledge**
  - Gary Wicks
  - Helene Lyon
- **Answers to 3 questions …**
  - Why transform existing IBM mainframe applications?
  - What are the benefits of IBM mainframe environments today?
  - What are some strategies for transformation and extensibility of applications?
- **… organized in 4 chapters**
  - Business and IT trends and how they affect existing applications
  - Attributes of an agile IT architecture
  - The way today's mainframe applications are implemented
  - Evolution paths to achieve more value

Draft Document for Review March 13, 2013 4:43 pm

REDP-4938-00

IBM

Rethink your Mainframe Applications
Reasons for Extension, Transformation, and Growth

Why transform existing IBM mainframe applications

Benefits of IBM mainframe environments today

Strategies for transformation

Mike Ebbers
Alex Louwe Kooijmans
Michael Lowe
Helene Lyon
Stan Washington
Gary Wicks

ibm.com/redbooks

Redpaper

Maturity Level based on Separation of Application Layers

z/OS Apps & Data

Terminal emulation
P **B** **D**

Revamping
P ← → **B** **D**

Client-Services
• B to B Access
• Direct access from B to D
P ← → **B** ← → **B** **D**
P ← → **B** ← → **D**

Adding integration layer and/or Business process management
P **I** **B** ← → **B** **D**
B **D**
B **D**
P **I** **B** ← → **D**

Application Investment Protection
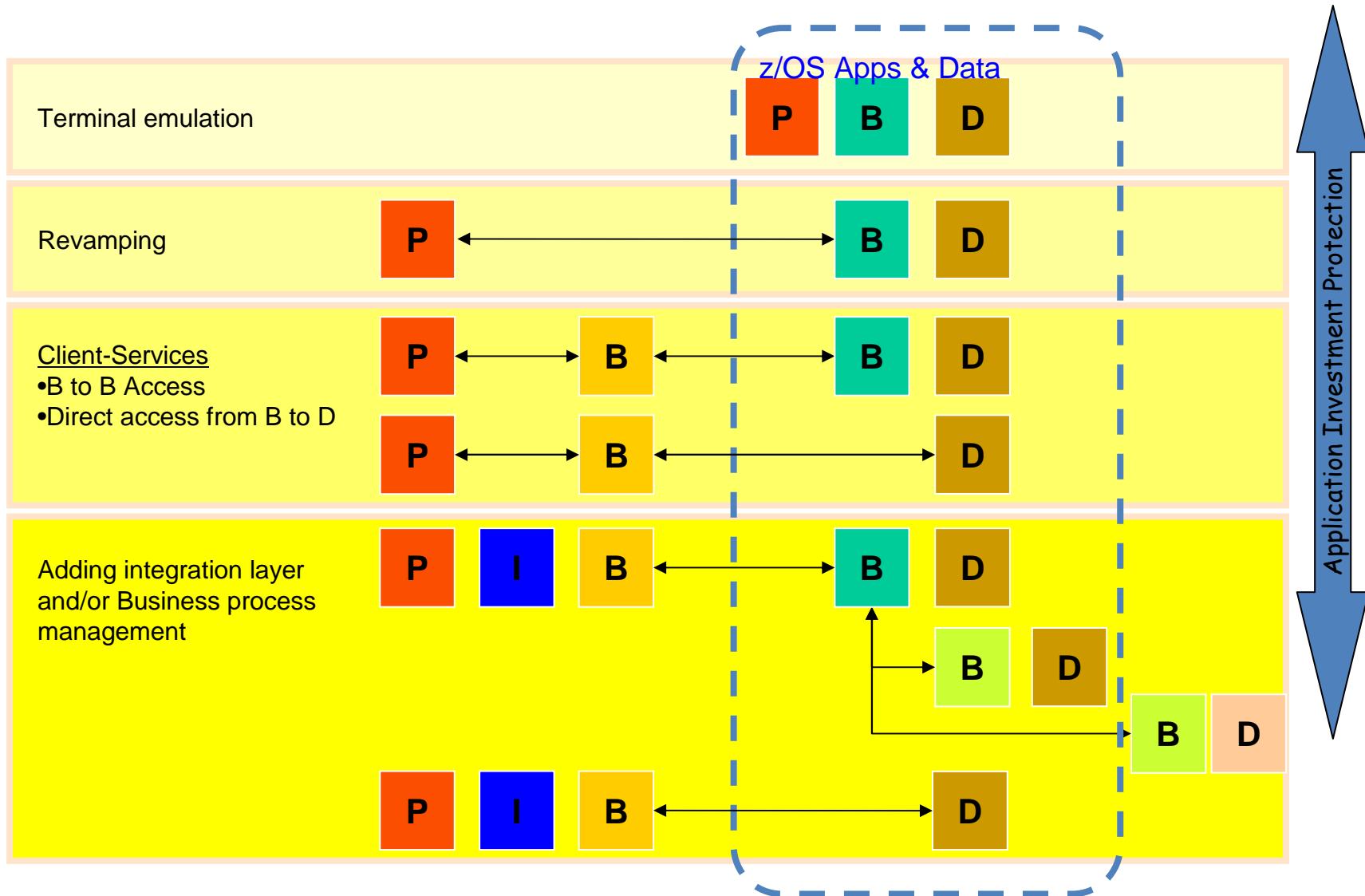
Evolution Paths for Modernization

- **Application runtime modernization**
  - Run regular health checks
  - Implement agile development & test environments
  - Optimize the batch window
  - Take benefit of a highly available infrastructure
- **Application development foundation modernization**
  - Use of the latest compilers
  - Use of a single Integrated Development Environment (IDE)
  - Take benefit of an end-to-end view of development
- **Business application modernization**
  - Call out to services running in WebSphere Application Server on z/OS
  - Integrate external business rules
  - Incorporate direct access to master data management services
  - Publish business events
  - Access real-time scoring capabilities
  - Integrate local CPLEX mathematical algorithms
- **End to end application infrastructure modernization**
  - Integrate CICS and IMS programs as services in a service oriented architecture
  - Augment the integration architecture with business process management
  - Expand the multi-channel architecture and integrate the mobile channel
  - Access mainframe data directly

Business Application Modernization – Many Things

Mobile, Cloud, Web Services
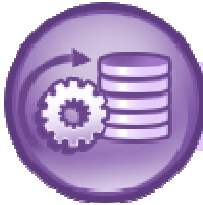
Business Process Management
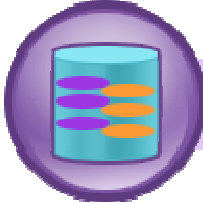
Rules

Enterprise Service Bus

Events

IMS Apps Modernization – Adding access to innovative services

- **Modernize IMS Business logics "B" by accessing new services "S" and new type of data "D"**
    - Using Business Rules
    - Using real-time scoring functions
    - Access to master data in DB2 for z/OS
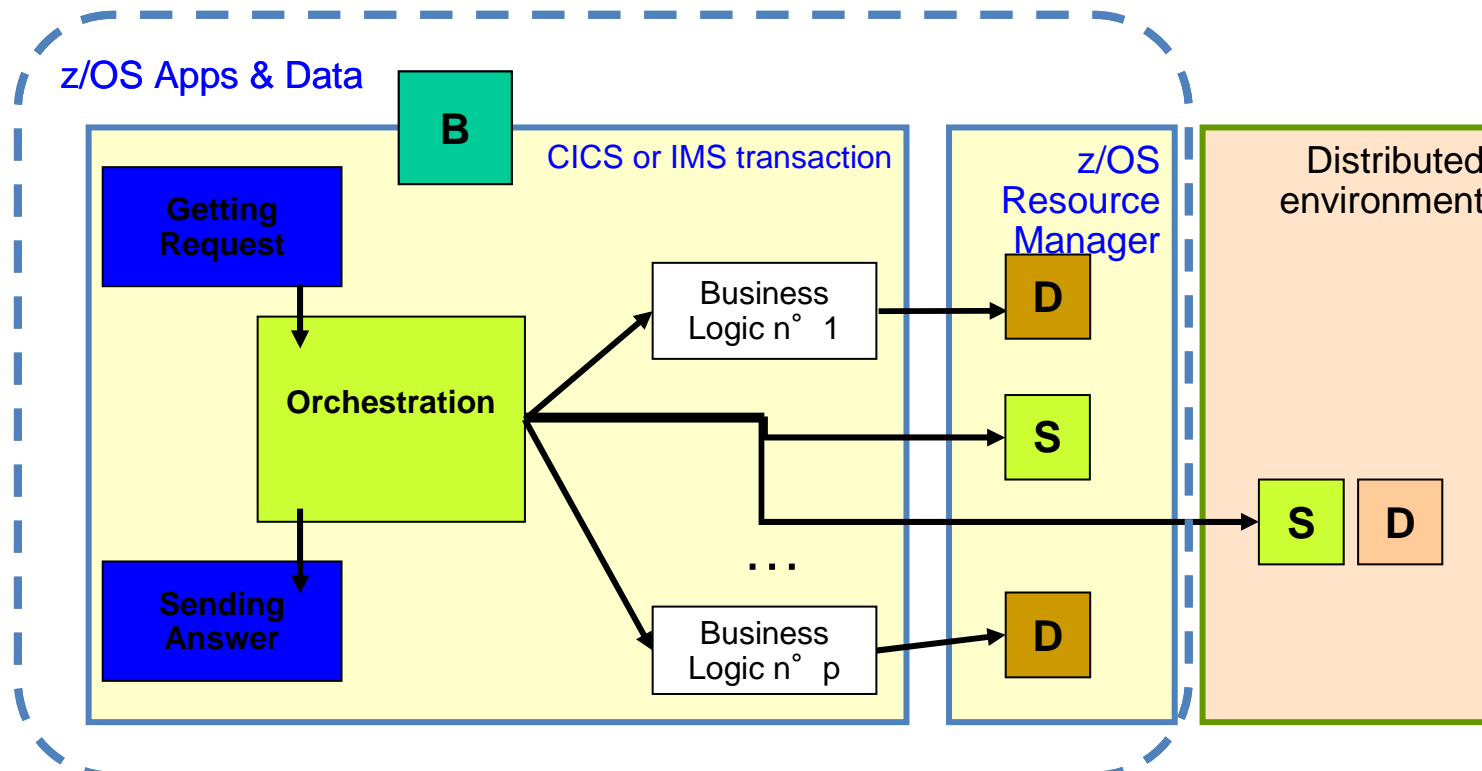
IMS Apps & Business Rules

- **New IBM Operational Decision Manager for z/OS V8.0.1 available December 14 2012**
- **New features include:**
  - Full support for IMS customers (in addition to the previous IMS batch capabilites)
  - Optimized execution for batch processing (via the new Decision Engine)
  - Optimized rule execution for CICS 5.x customers
  - Support for WAS z/OS V8.5 (for rules engine component only)
    - Including WOLA for intra-z/OS communication
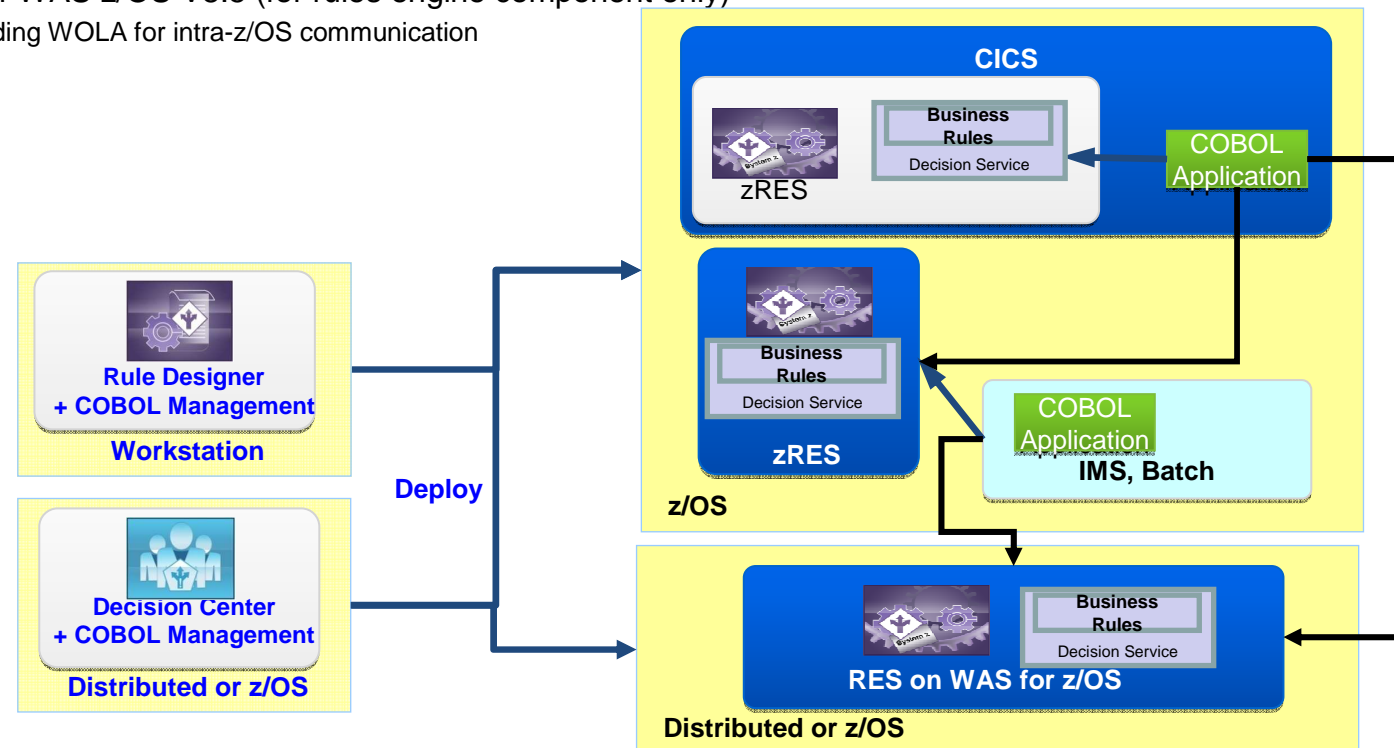
IMS Apps & Real-Time Scoring

- **Moving the computation to the Operational Transactional data**
  - z/Apps can call scoring services deployed in the scoring engine
  - z/Apps can invoke SPSS Modeler scoring algorithms directly into IBM DB2 for z/OS
    - Scores can be invoked by SQL statements and run in user defined functions (UDFs) in DB2 for z/OS.
    - Rather than extracting data from DB2 and sending it to a separate scoring engine on System z or another platform it can be scored within the scope of a transaction accessing the DB2 primary data
    - Lab measurements demonstrate the ability to drive 10,000 scoring transactions per second with 15 millisecond response times.

- **The solution enables the real-time scoring of new transactional data as it is created, resulting in decision-making with greater accuracy and efficiency, while ensuring that you can continue to deliver upon your service level agreements.**

Support for both in-transaction and in-database scoring on the same platform

Business System / OLTP

DB2 for z/OS Data Historical Store

Data In

ETL

R-T, min, hr, wk, mth

Application w/latest data

DB2 for z/OS

Copy

Real-Time Score/ Decision Out
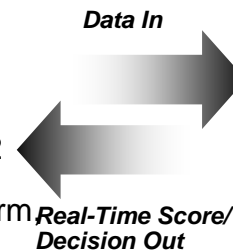
Reduced Networking

End to end solution

SPSS Modeler

For Linux on System z

Scoring Algorithm

Consolidated Resources
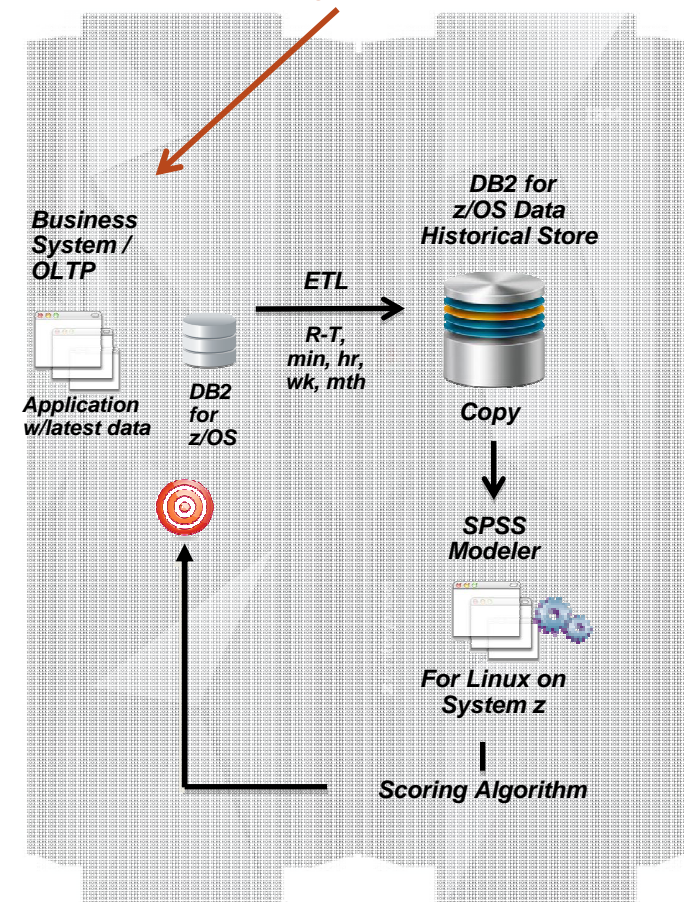
IMS Apps & Master Data Services

- **Incorporate direct access to master data managed with DB2 for z/OS**
- **The MDM Query Connect server is designed to supplement the Central Transaction server by providing a native mainframe capability to address searches and inquiries specifically when data is residing in DB2 for z/OS.**
    - A COBOL Adapter enables COBOL programs to access the Master Data Management Server services through the MDM Server Central Transaction server (for update requests) and through the MDM Server "Query" Connect (for read-only requests).
    - Transactional systems running in the mainframe environment send the request message to the request queue. The Central Transaction server and MDM Query Connect server can share the same queue or have separate ones.
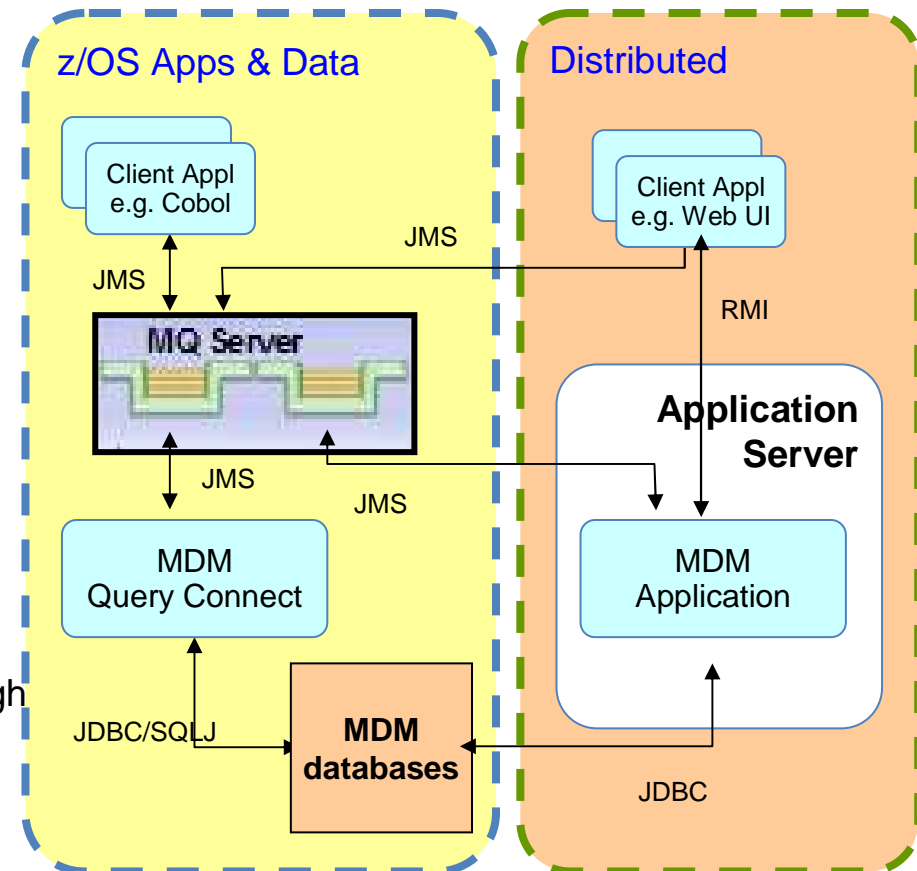
z/OS Apps & Data

Client Appl
e.g. Cobol

JMS

JMS

MQ Server

JMS

JMS

MDM
Query Connect

JDBC/SQLJ

MDM
databases

Distributed

Client Appl
e.g. Web UI

RMI

Application
Server

MDM
Application

JDBC

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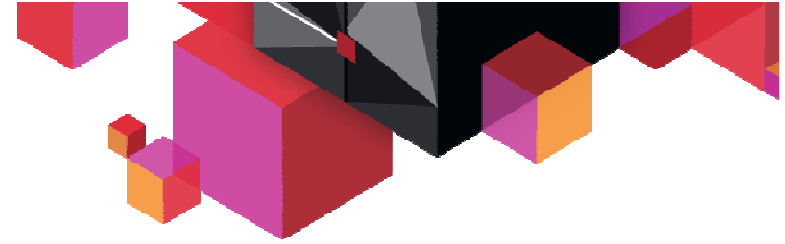 - Adding access to innovative services
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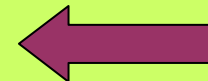
IMS Access from Mobile

- **Check "[Considerations in opening the mainframe to mobile devices](#)"**

A guide for enterprise teams working on mobile applications

Leigh Williamson, Distinguished Engineer, Software Group, IBM

Summary: As more and more enterprises in all industries realize the need for mobile versions of their business applications, there is a need for an enterprise-class approach to mobile app development that leverages past investments in information technology and infrastructure. Leigh Williamson explains the five key themes of the IBM approach to mobile application development, which exploits existing information and transaction systems for maximum speed to market and reuse of services.

- **IMS Access from Mobile**
    - IBM Worklight platform supports connectivity to back-end systems via a number of adapters, provided with the product.
        - Following a simple configuration process, IMS data can be accessed from the Worklight applications via the provided SQL adapter. The SQL adapter supports IMS Universal Driver, which must be downloaded separately and added to a Worklight project.
        - Similarly, IMS transactions can be executed via the provided HTTP adapter. The HTTP adapter works with RESTful and SOAP-based services. For IMS transaction support, IMS SOAP Gateway product must be downloaded and configured.
    - The Worklight development environment can be used to create powerful IMS mobile applications (web-based, native, or hybrid) for a variety of mobile platforms and devices.
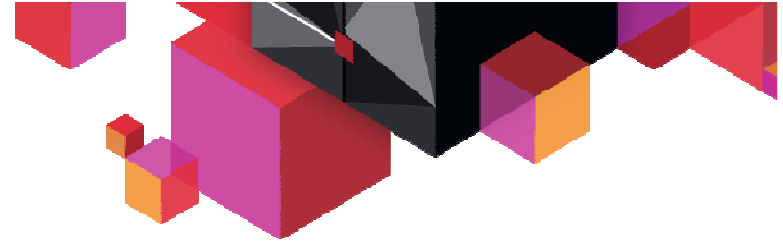
IMS Access from Mobile

- **Mobile Banking and IMS workload increase**
  - Total number of transactions per month over 10 years

  - Mobile banking evolution
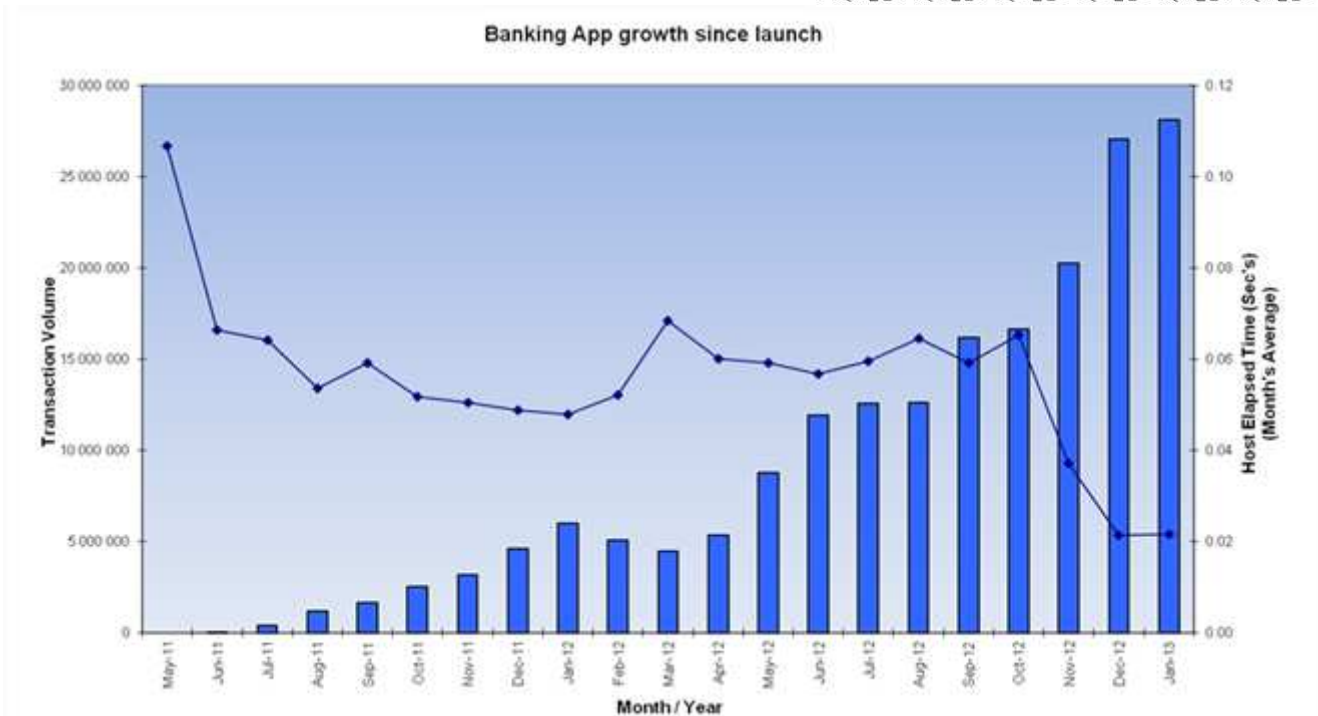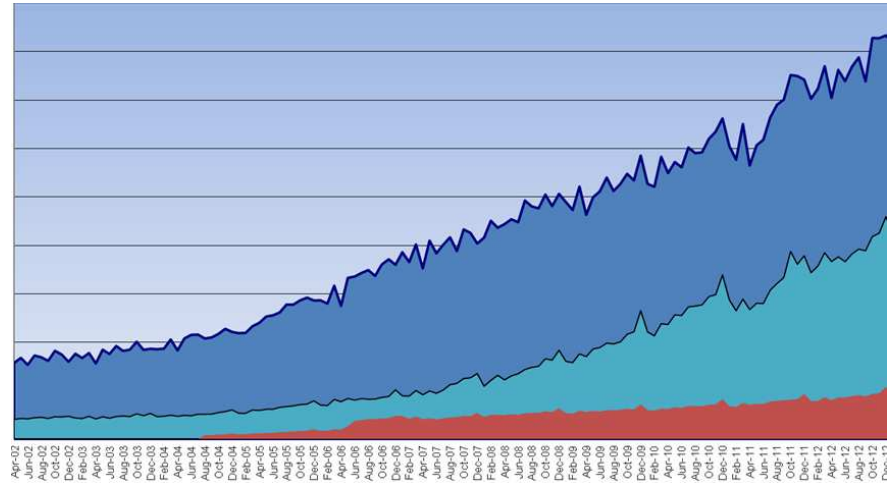
One EMEA Customer Example
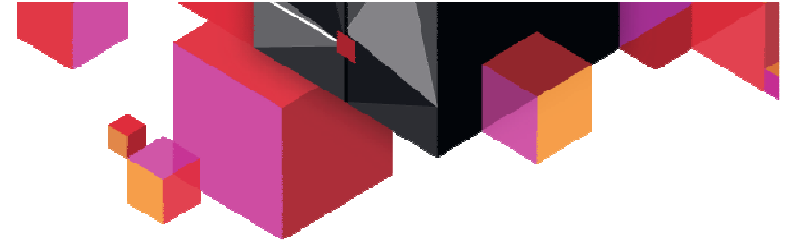
Agenda

- **Data visualization and reporting**
  - IMS 12 Catalog & IMS Explorer for Dev
  - IMS Administration
  - Cognos or QMF reporting with IMS 12
  - The IMS Auditing solution
- **IMS Apps Modernization**
  - How to do
  - Adding access to innovative services
  - Example of Business Rules
- **IMS Access from Mobile**
- **Documentation, events and education**

Two New IMS White Papers!

IBM Software
White Paper

What every enterprise architect needs to know about the evolution of IMS

Leverage IMS data and transactions as strategic elements of the enterprise architecture

IBM

IBM Cognos Proven Practices: Best Practices for Using IMS Data in IBM Cognos BI Reports
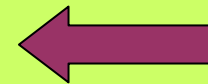
Product(s): IMS, IBM Cognos BI Server; Area of Interest: Business Intelligence

Richard Tran, Software Engineer, IBM
Kevin Hite (khite@us.ibm.com), IMS Solution Test, IBM
Nigel Campbell, Senior Developer, IBM
David Hanson, Information Developer, IBM

Date: 03 Oct 2012
Level: Intermediate
PDF: A4 and Letter (261 KB | 13 pages)   Get Adobe® Reader®

Summary: IBM Cognos BI v10.2 offers a data connection type for direct connections to IMS databases. This article describes best practices for configuring the IBM Cognos BI server, preparing the target IMS system for reporting applications and creating reports.

Activity: 2000 views
Comments: 0 (View | Add comment - Sign in)

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New

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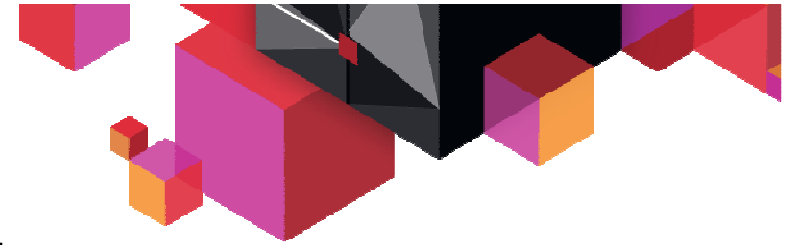
IMS 12 Technical Education Series

IBM Software > System z > Events >

System z Events

IBM IMS 12 – Technical Education on Enhancements and Migration Planning Series

Presentations available for download below, each session posted individually for easy reference.

- **Available for replay at:**
- **ibm.com/software/os/systemz/telecon/26jun/prz/**

External Webcasts

- **The IMS Catalog: The Next Step in Simplification and Enterprise Integration**

  Replay of the Teleconference is available at:
  ibm.com/software/sw-events/teleconference/D108305C25358T22.html
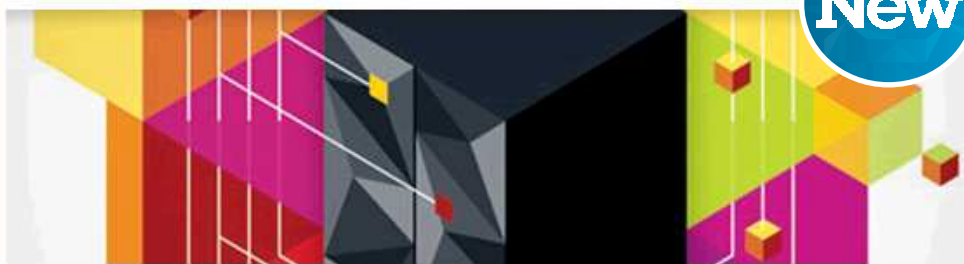
  Replay of the teleconference on 26th Feb. 2013 at:
  ibm.com/software/os/systemz/telecon/feb26/index.html?S_TACT=101HX3BM&S_CMP=ecalendar
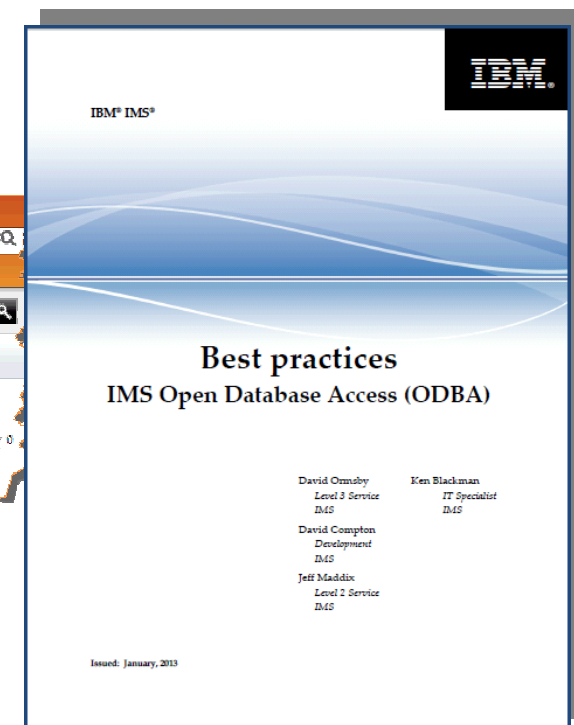
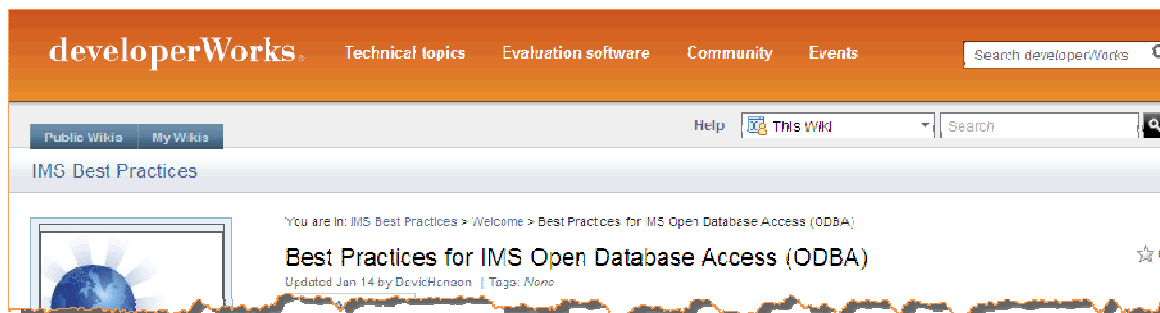 *Link to webcasts can be located at:*
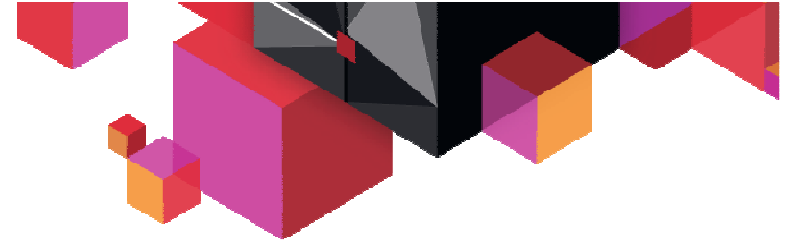 *ibm.com/software/sw-events/type/systemz/events.html*

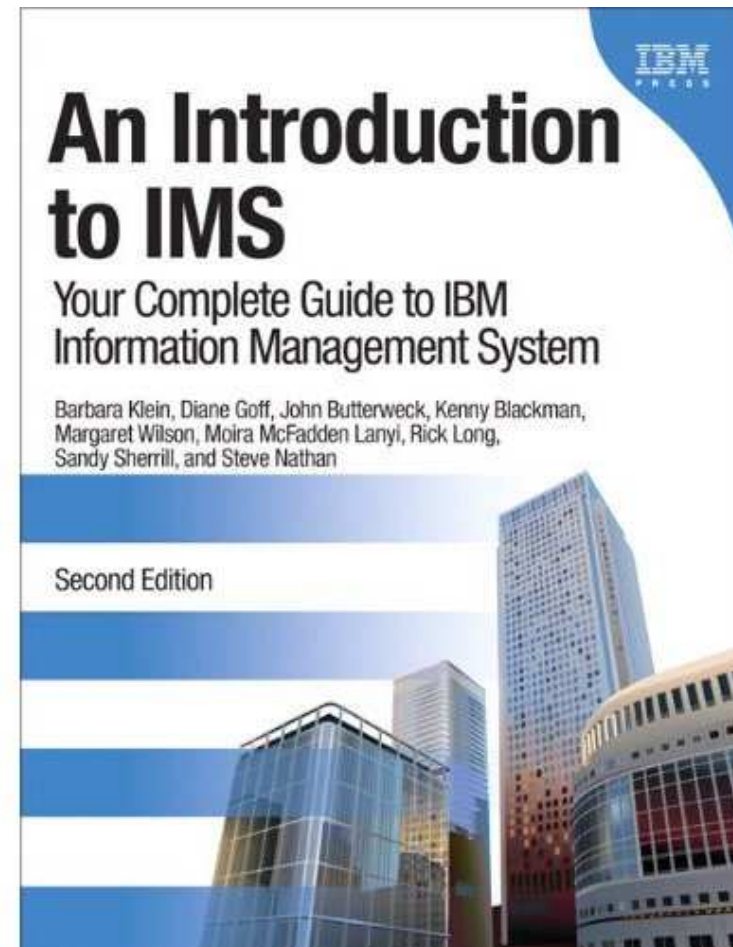# Open Database Access (ODBA)

- **"Best Practices for IMS Open Database Access"** is **available on** Developer Works!
  - **ibm.com/developerworks/**

An Introduction to IMS – Second Edition

- **Updated to include IMS 10, IMS 11 and IMS 12 functions**
  - Published March 23, 2012

New! Online IMS Training with Marist College

- **Offered by the Institute for Data Center Professionals (IDCP) at Marist College**
  - The Marist z/OS Certificate Program
- **The IMS Application Programming Certificate program is one of 7 unique large systems education certificate programs.**
  - Each certificate program consists of three courses that run between 10-12 weeks each.
- **The courses within the IMS Application Programming Certificate program are:**
  - Introduction to z/OS and Major Subsystems
  - IMS Fundamentals
  - IMS Application Programming
- **The first course started on February 11, 2013!**
  - IBM and Marist College were pleased to offer an introductory rate of $2000 for the full IMS Certificate program, 34 weeks of education based on weekly assignment of 10 to 15 hours each. The course can easily work in parallel to daily activities.
- **Stay tuned for next one!**

- **For more information about all of our z/OS education programs, visit: idcp.marist.edu/learnzos.**

New! Online IMS Training with InterSkills Learning

- **E-learning solutions including around 1500 hours on System z platform**
  - 7000 hours total including distributed platform
  - Organized by profile in a IT department
  - Customization possible with input from enterprise
- **Priced per license per user for one year including the whole z catalog – Around 1200€**
  - Enterprise license as well
- **Adding "Ask my Mentor" service contract in some countries**

http://www.interskill.co.uk/index.html

IMS Database Administrator z/OS Learning Plan

The IMS database administrator is responsible for administration and support of the organization's IMS database systems. The duties of this position are:

- Designing and implementing IMS databases
- Monitoring database performance and performing tuning activities
- Identifying, analyzing, and resolving database problems

Cloud Computing for Data Centers
5 hrs

IBM System z e-learning bundles

The ultimate value in training
System z learning at your fingertips
— for a very low price

"Empower your workforce with 12 month access to over 1,000 hours of training spanning over 150 mainframe courses."

IMS Lab Customer Internship Program 2013

- **Opportunity for customers to work closely with IMS developers and testers as well as work on special projects in their area of expertise (DBA, System Programming, Application Development)**
  - IBM will provide mentorship and education
  - Customer provides travel and living expenses
- **Planned 3rd Quarter 2013 at IBM Silicon Valley Lab in San Jose, California**
- **Preliminary planning tasks**
  - Getting input from customers and/or customer advocates regarding topics in order to build the best curriculum

- **Contact Tori Gonzalez for more information**
  - gotori@us.ibm.com
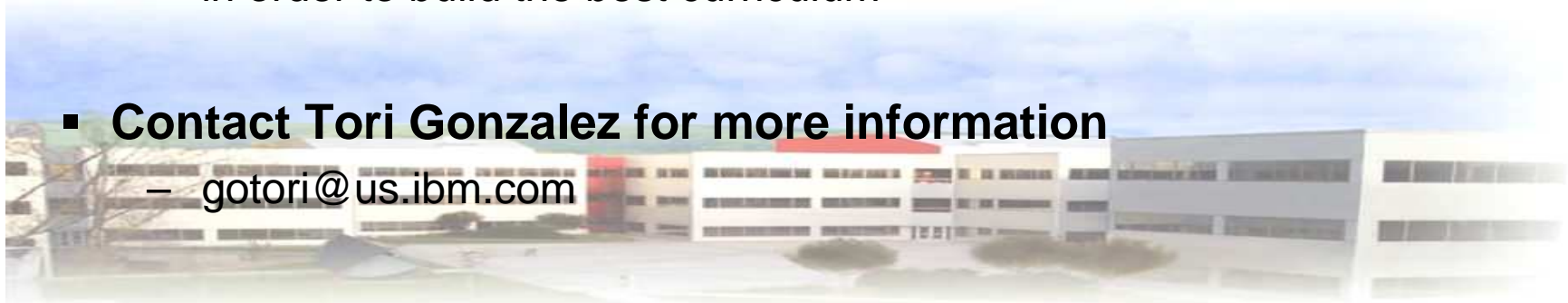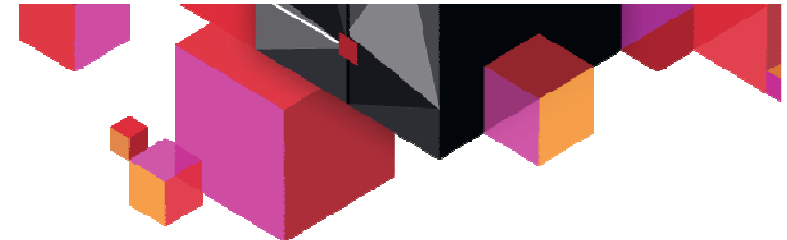
European IMS Technical Symposium 2013 / 2014

- **Changing the timeframe! Moving it to Q1 instead of Q4!**
- **Keeping same location: KTC in Königstein, Germany**

- **Save the date: March 17 to 20 2014**

- **Your education for 2013**
  - Check country-specific IBM events
  - Check GSE Organization events   http://www.gse.org/
    - IMS User's group meetings in Benelux, Germany, France, Spain, UK, ...
    - Enterprise Modernization user's group
    - Conferences

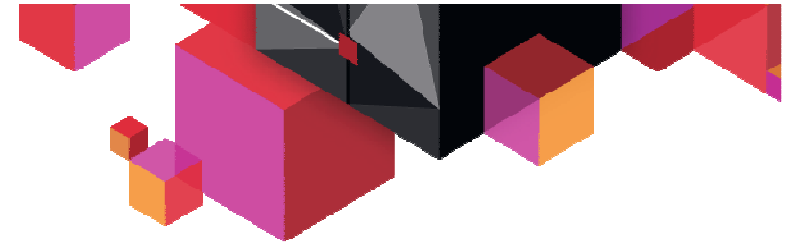|	Date	Event	Venue
GSE	April 15-16	GUIDE Executive Club	Venice IT
IBM	April 22-26	IBM Systems Technical University 15% discount for GSE Members	Noordwijk-aan-Zee NL
GSE	April 25-26	Belgium/Luxembourg Region Annual Conference	Spa BE
GSE	May 07-08	European Enterprise Modernisation for z/OS	London UK
GSE	May 07-08	Jazz Collaboration Lifecycle Management Europe	London UK
GSE	May 13-17	European Operations Technical Conference	Boeblingen DE
GSE	June 05-07	German Region Annual Conference	Dresden DE
GSE	June 10-12	Nordic Region Annual Conference	Helsiki FI
IBM	June 10-14	IBM System z Technical University 15% discount for GSE Members	Munich DE

I am IMS   IBM

IBM IMS Technical Symposium
March 17 - 20, 2014
Koenigstein, Germany

Conclusion

- **General Information about IMS Tools**
    - IMS Tools page
- **IMS Tools library**
    - IMS Tools library page
- **IBM developerWorks**
    - http://www.ibm.com/developerworks/data/products/ims/index.html
        - External IBM website with articles, tutorials and demonstrations
    - http://www.ibm.com/developerworks/rfe/
        - Join the RFE community today in DB2. IMS will come soon !
- **IBM Redbooks**
    - **IBM IMS Version 12 Technical Overview**