

IMS 12 System Enhancements and Migration

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Agenda

- IMS 12 System Enhancements
- IMS 12 Installation and Migration Considerations

IMS 12 System Enhancements ...

- Dynamic resource definition (DRD) enhancements
- zAAP/zIIP times in accounting log records
- zIIP support for some CQS processing
- Member online change NAMEONLY option
- EAV support for non-VSAM data sets
- IMS logging enhancements
 - Extended-format data set support for OLDS/SLDS
 - IMS log buffers in 64-bit virtual storage
 - Simplified WADS management
- System pools in 64-bit real storage
- Sysplex Serial Program Management (SSPM) Disabling
- Command enhancements

IMS 12 System Enhancements

- System usability enhancements
 - IMS 11 SPE User Exit Enhancements
- RAS enhancements
 - CQS traceability enhancements
 - IMS Dump Formatter enhancements
 - Reduce IMS Module Aliases in RESLIB
 - End-Of-Memory / End-Of-Task (EOT) Tracing Facility
 - IMS 11 SPE BPE Trace Selective Initialization
 - /DIAGNOSE SNAP command enhancements
- MIPS reduction enhancements
- IMS Repository

Dynamic Resource Definition (DRD) Enhancements

- New UPDATE option for IMPORT command
 - Previously, IMPORT could only be used for adding runtime resource definitions/descriptors that did not exist in the target IMS system
 - New IMPORT .. OPTION(UPDATE) allows existing runtime resource definitions/descriptors in the the target IMS to be changed
 - Command fails if changed definition is in use
- DRD usage of the IMS repository function
 - Previously, stored resource definitions/descriptors were kept in resource definition data sets (RDDs)
 - New IMS repository function provides an additional method for storing stored resource definitions/descriptors
- Benefits
 - Improved manageability for DRD

zAAP/zIIP Times in Accounting Log Records

- zAAP/zIIP time field is added to the x'07', x'0A07' and x'56FA' log records
 - X'07' program termination
 - X'0A07' CPIC program termination
 - X'56FA' optional transaction level statistics record
- CPU time field is changed to include only the standard CP (central processor) time, not zAAP/zIIP time
 - Sum of CP and zAAP/zIIP times is the total CPU time
- Benefits
 - Users can distinguish between CP and zAAP/zIIP times
 - Could be used for accounting or charge out purposes
 - Significant for software licensing
 - Most significant for JMP and JBP regions

zIIP support for some CQS processing

- Request response processing for authorized CQS clients is eligible to run on a zIIP
- Examples
 - When the IMS control region is running with IMS Shared Message Queues or Shared IMS Fast Path Message Queues enabled
 - When the IMS Resource Manager address space is using a resource structure

Member Online Change NAMEONLY Option

- OPTION(NAMEONLY) added for member online change

```
INIT OLC TYPE(ACBMBR) PHASE(PREPARE) NAME(name1, name2, ...)  
OPTION(NAMEONLY)
```

- Command processes only the named member(s) of the staging ACBLIB
 - Without this option, the command processes related members which have been changed
 - *For example, DBDs in intent list of PSB*
- OPTION(NAMEONLY) may be used for:
 - New DBDs
 - *These DBDs cannot reference existing DBDs which have been modified*
 - New or changed PSBs which do not reference changed DBDs in their intent lists
- Benefit
 - Performance enhancement
 - This option provides a performance benefit when there are many members in the staging and active ACB libraries.

Extended Address Volume (EAV) for Non-VSAM Data Sets



- IMS 12 adds EAV support for some non-VSAM system data sets
 - IMS OSAM database data sets
 - Restart Data Set (RDS)
 - Message Queue data sets (queue blocks, long message and short message)
 - Logs (OLDS, SLDS and WADS)
 - IMS SPOOL data sets (UNITYPE=DISK and UNITYPE=SPOOL)
 - BPE External Trace Data Sets
- z/OS 1.12 is required for these data sets
- EATTR=OPT must be specified on allocation JCL
- Large sequential data set support added for IMS SPOOL data sets
 - UNITYPE=SPOOL or UNITYPE=DISK on LINEGRP macro
- Benefits
 - Support the placement of more data sets on a single volume
 - Allow users to manage fewer numbers of larger volumes
 - Less need for multi-volume OSAM

Logging Enhancements

- Extended Format Support for OLDS and SLDS
 - Optional
 - Allows OLDS and SLDS to be striped
 - Increased logging speed
- Log buffers moved above the 2-gigabyte boundary (“bar”) in virtual
 - Optional
 - Frees substantial amount of ECSA
- Simplified WADS management
 - Improved WADS performance

Striping of OLDS and SLDS

- Use of extended format data sets allows striping
 - Striping allows multiple concurrent I/Os for sequential processing
 - Data set is spread across multiple volumes
 - Increased logging rates
- IMS 12 allows OLDS and SLDS to be defined as extended format data sets
 - Extended format is specified with data set type of 'EXT'
 - *JCL allocation requires DATACLAS and STORCLAS parameters on DD statement*
 - Striping is invoked for extended format data sets when the storage class has Sustained Data Rate (SDR) value of 5 or higher

OLDS Buffers Specifications

- OLDS buffers above 2-gigabyte boundary
 - Specified with BUFSTOR=64 on OLDSDEF statement in DFSVSMxx
 - Puts buffers in 64-bit virtual storage
 - *Requires that block size is 4K multiple*
 - OLDS must be extended format
 - Frees substantial amount of ECSA
- OLDS block size
 - Optionally specified with BLKSZ parameter on OLDSDEF statement in DFSVSMxx member
 - Previously, it was set only from the data set characteristics
 - BLKSZ= is recommended
- If BLKSZ and BUFSTOR=64 are both specified
 - IMS will round up number of buffers (BUFNO=) to a megabyte boundary
 - 64-bit storage is acquired in megabyte increments
 - Maximizes number of buffers in acquired storage

WADS Management

- The concept of WADS track groups is not used by IMS 12
 - WADS should be sized to provide enough space for any OLDS buffers not yet written at any time plus one track
 - WADS use 4K block size
 - WADS writes are changed from previous IMS versions
 - WADS writes are sequential
 - WADS written in wrap-around fashion
- Performance
 - WADS sequential writes generally improve usage of cache in storage systems
 - WADS should be kept in cache in storage subsystem

Logging Enhancements Summary

- Benefits
 - OLDS buffers in 64-bit virtual storage
 - Simplified definition of OLDS block size
 - Increased maximum logging rate
 - ECSA constraint relief

System Pools in 64-bit Real Storage

- The following pools are moved to 64-bit real storage
 - These pools remain in 31-bit virtual storage
 - DBWP – Database work pool
 - DLDP – DMB pool
 - DLMP – CSA PSB pool
 - DPSB – DLI PSB pool
 - PSBW – PSB work pool
- Benefits
 - Reduction in 31-bit fixed real frames for fixed pools
 - Some users will now be able to fix these pools
 - Previously, they were constrained by 31-bit real storage

Sysplex Serial Program Management (SSPM) Disabling

- Optional capability to disable Sysplex Serial Program Management
 - Before IMS 12
 - Serial programs (SCHDTYPE=SERIAL on APPLCTN macro or DEFINE PGM command) enforce serialization of PSB scheduling when:
 - *RM is used*
 - *RM structure is defined*
 - Serialization is enforced across the shared queues group
 - *Does not apply to CICS or ODBA application schedules*
 - IMS 12 adds option not to enforce serialization
 - Option is specified with control statement
 - *GBL_SERIAL_PGM=N | Y*
 - *Specified in DFSDFxxx member COMMON_SERIVCE_LAYER section*
 - or*
 - *DFSCGxxx member*
 - *GBL_SERIAL_PGM=N turns off serialization across the shared queues group*

Command Enhancements

- Enhancements to existing commands and new commands
 - CQS trace command enhancements
 - DBRC command enhancements
 - Dynamic database buffer pool command enhancements
 - Dynamic resource definition (DRD) command enhancements
 - Fast Path secondary index command enhancements
 - HALDB command enhancements
 - IMS Connect command enhancements
 - MSC command enhancements
 - IMS repository function command enhancements
 - OTMA command enhancements

Command Enhancements

- Enhancements are focused on type-2 commands for the Operations Manager (OM) environment
- Benefits
 - Support of new IMS 12 functions
 - Improved manageability

System Usability Enhancements

- IMS 11 SPE User Exit Enhancements
 - Enables support for multiple instances of a user exit type
 - Provides support for 3 new exits
 - Implements the QUERY USEREXIT command
 - Included in IMS 12

IMS 11 SPE User Exit Enhancements

IMS 11 APAR PM04456 /
PTF UK67199

- Ability to run multiple instances of a supported user exit type
 - No longer need user or vendor written code to manage multiple exits
- Three new IMS user exit types
 - IMS Initialization/Termination - **INITTERM**
 - IMS CQS Event - **ICQSEVNT**
 - IMS CQS Structure Event - **ICQSSTEV**
- Existing User Exits eligible to use new exit services
 - Product Partner Exit DFSPPE0 - **PPUE**
 - Restart Exit DFSRSTX0 (available in IMS 10) – **RESTART**
- Implements the QUERY USEREXIT command

IMS 11 SPE User Exit Enhancements

- QUERY USEREXIT Command
 - Type-2 command to display information about user exits defined in the EXITDEF parameter in the USER_EXITS section of the DFSDFxxx member
 - Command is not available for user exits not defined in EXITDEF parameter
 - Default command routing to all IMSs in the IMSplex
 - Sample information returned for requested user exit type:

Module Name(s)	Entry Point Address
Module Size	Number of Calls (since initialization)
Total Elapsed Time Spent in Exit Routine (since initialization)	
IMS member name that created the output for the exit	

IMS 11 SPE User Exit Enhancements

- Benefits
 - Three new IMS User exit types
 - INITTERM - IMS Initialization/Termination
 - ICQSEVNT - CQS Event
 - ICQSSTEV - CQS Structure Event
 - Ability to execute multiple exit routines for supported IMS User exit types
 - INITTERM
 - ICQSEVNT
 - ICQSSTEV
 - PPUE
 - RESTART
 - New QUERY USEREXIT command

RAS Enhancements

- IMS 12 CQS Traceability
 - Creates two new BPE trace tables to track CQS structure events
- IMS Dump Formatter Enhancements
 - Support for the Repository Server and the Repository Client address spaces
 - Support for the OTMA C/I
- Reduce IMS Module Aliases in RESLIB
 - Begins a process to reduce IMS load module aliases
- End-Of-Memory / End-Of-Task (EOT) Tracing Facility
 - Created a step trace function in the End-of-Task (EOT) process

RAS Enhancements

- IMS 11 SPE BPE Trace Selective Initialization
 - Creates a new BPE trace table feature that allows a trace table to be defined to require explicit commands
 - IMS Connect Recorder Trace, RCTR, trace table definition has been updated to enable the new explicit commands feature
- New /DIAGNOSE Command SET AOSLOG Function
 - Enable and disable log record capture of events related to APPC and OTMA synchronous transactions in a shared-queues environment

RAS Enhancements

- /DIAGNOSE Command SNAP Function Enhancements
 - Added six new resource types to the SNAP function
 - Provided DISPLAY option to route output back to issuing LTERM
 - Provided LIMIT option to restrict number of lines of output going to LTERM
 - Provided SHOW parameter to control type and amount of output produced

RAS Enhancements

- Benefits
 - Diagnose problems interactively
 - Non-disruptive alternatives to producing console dumps
 - Reduce time and effort to capture and analyze IMS diagnostic information
 - Help reduce time to resolve problems
 - Satisfy several customer and IBM requirements

MIPS reduction enhancements

- CICS threadsafe support
- CICS and ODBA users have new DFSTRAS00 exit capability to designate a user as trusted, bypassing RACF or equivalent security checks
- Usage of newer, more efficient hardware instructions when available
 - Long displacement facility / Store Clock Fast (STCKF) facility
- Replacing GETMAIN storage allocation calls with more efficient IMS internal storage management calls for APPC/OTMA scheduling
- Supporting native 64-bit invocation of several highly used IMS internal macro services, reducing AMODE switching for 64-bit modules
- Efficiency/pathlength reductions in CQS inform exit processing and OTMA processing
- Improving IMS shutdown time by reducing OTMA/APPC shutdown quiesce waits

- Benefits – Improved Performance

IMS Repository

- Overview of the IMS Repository Function
- IMS Repository Function Components
 - Repository Server (RS) address space
 - Repository catalog data sets
 - Repository data sets
 - CSL requirements and RM usage

IMS Repository Function Overview

- A ‘repository’ is a generalized data storage facility that can be used to store various types of information
- The IMS repository function is a centralized method for storing and retrieving resource definitions in an IMSplex
 - Enables multiple IMS systems in a multiple-IMS IMSplex to manage, store, share, and retrieve resource definitions
 - Enables a single IMS system in a single-IMS IMSplex to manage, store, share, and retrieve resource definitions
- Focus is on improving the systems management and resource management aspects of handling IMS resource definitions
 - Across multiple IMSs or for a single standalone IMS
 - For test systems, for production systems

IMS Repository Function Usage

- In IMS 12, the resource and descriptor definitions for Dynamic Resource Definition (DRD) can be stored in an IMS repository
 - Contains resource definitions for programs/transactions/databases/FP routing codes & descriptors
 - Called the IMSRSC, the IMS resource definition repository
 - Provides an alternative to using RDDSs (resource definition data sets) for DRD
 - Replaces one or more sets of RDDSs in an IMSplex with a single repository
 - Eliminates the need to manually coordinate and manage separate RDDSs per IMS across a multiple-IMS IMSplex
 - Provides an alternative to using MODBLKs with SYSGEN and online change
 - Considered a strategic alternative to the RDDS
- IMS 12 can retrieve the stored resource definitions from the IMSRSC repository to dynamically generate runtime resources for DRD

IMS 12 support for the DRD function ...

- DRD users in IMS 10 and IMS 11 moving to IMS 12
 - Can use existing RDDSs from IMS 10 or IMS 11 for stored resource definitions in IMS 12
 - Can use existing RDDSs from IMS 10 and IMS 11 for stored resource definitions at initial migration to IMS 12, then can migrate to the new IMSRSC repository
 - Can use the new IMSRSC repository to store definitions in IMS 12

IMS 12 support for the DRD function

- Users in IMS 10 and IMS 11 without DRD
 - Can use the new IMSRSC repository for stored resource definitions in IMS 12
 - Can create new RDDSs for stored resource definitions in IMS 12
- Both RDDSs (system and non-system) and the IMSRSC repository can exist together during migration to the IMSRSC repository

IMS Repository Function components

- A Repository Server (RS)
- Repositories
 - Catalog repository
 - IMSRSC repository(s)
- A Common Service Layer (CSL) IMSplex configuration consisting of
 - Operations Manager (OM)
 - Resource Manager (RM)
 - Structured Call Interface (SCI)
 - SPOC for entering type-2 commands
 - Optional resource structure with CQS address space
- Batch utilities
 - Batch ADMIN utility
 - RDDS to / from repository utilities

IMS Repository Function components ...

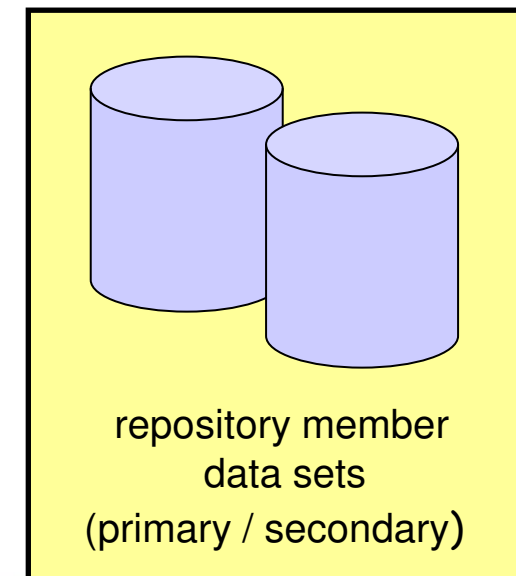
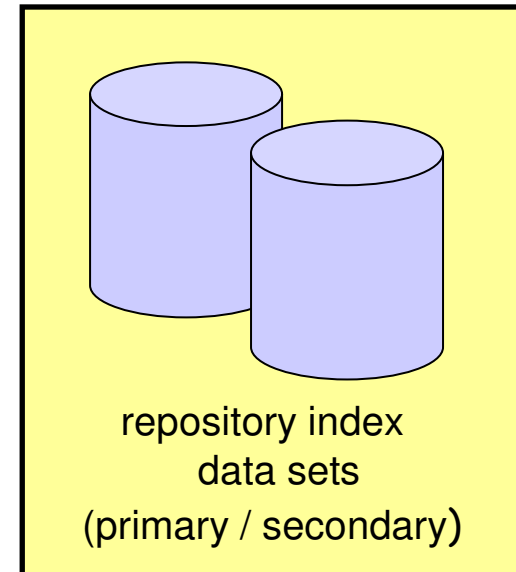
- A Repository Server (RS)
 - A new BPE-based address space
 - Managed by the RM CSL address space
 - Two types
 - Master repository server
 - *Single instance*
 - *Manages access to repository data sets*
 - *First RS address space to access repository*
 - Subordinate repository server
 - *One or more instances*
 - *Used if master repository server goes down*
 - *Optional but recommended*

IMS Repository Function components ...

- A Repository Server (RS)
 - Uses VSAM KSDS data sets to store information
 - Has its own internal repository called the 'catalog repository'
 - Manages IMS repositories (IMSRSC for DRD)
 - Ensures repository data integrity
 - Uses SAF to restrict access to repositories
 - Provides an audit trail using the z/OS logger
 - Provides tracing capabilities via BPE
- Recommendation
 - One master repository server address space per IMSplex

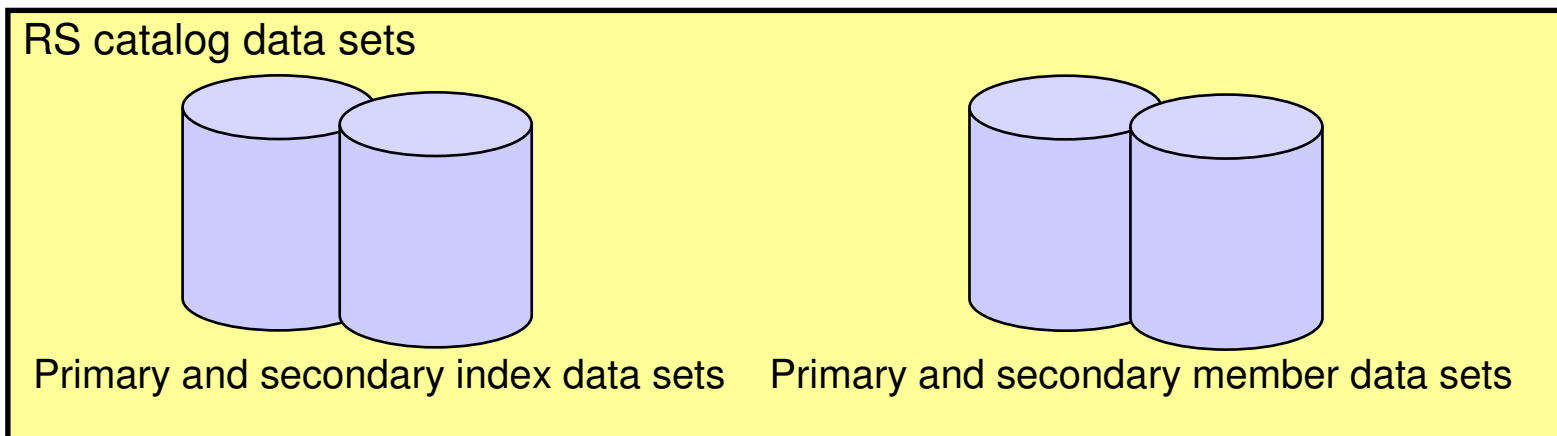
IMS Repository Function components ...

- Repository data sets
 - Multiple sets of VSAM KSDS data sets
 - Each set composed of
 - Repository index data set
 - Repository member data set
 - Each of these has a primary and secondary data set (duplexed)
 - *Optional spare set (third) can be defined*
- Two types of repository data sets
 - Catalog repository data sets
 - IMS repository data sets



IMS Repository Function components ...

- Catalog repository (RS catalog data sets)
 - Required per Repository server
 - Manages the Repository Server (RS) functions
 - Manages information about IMS repository data sets
 - Composed of two pairs of data sets
 - Primary index data set and primary member data set (required)
 - Secondary index data set and secondary member data set (required)
 - No spare capability

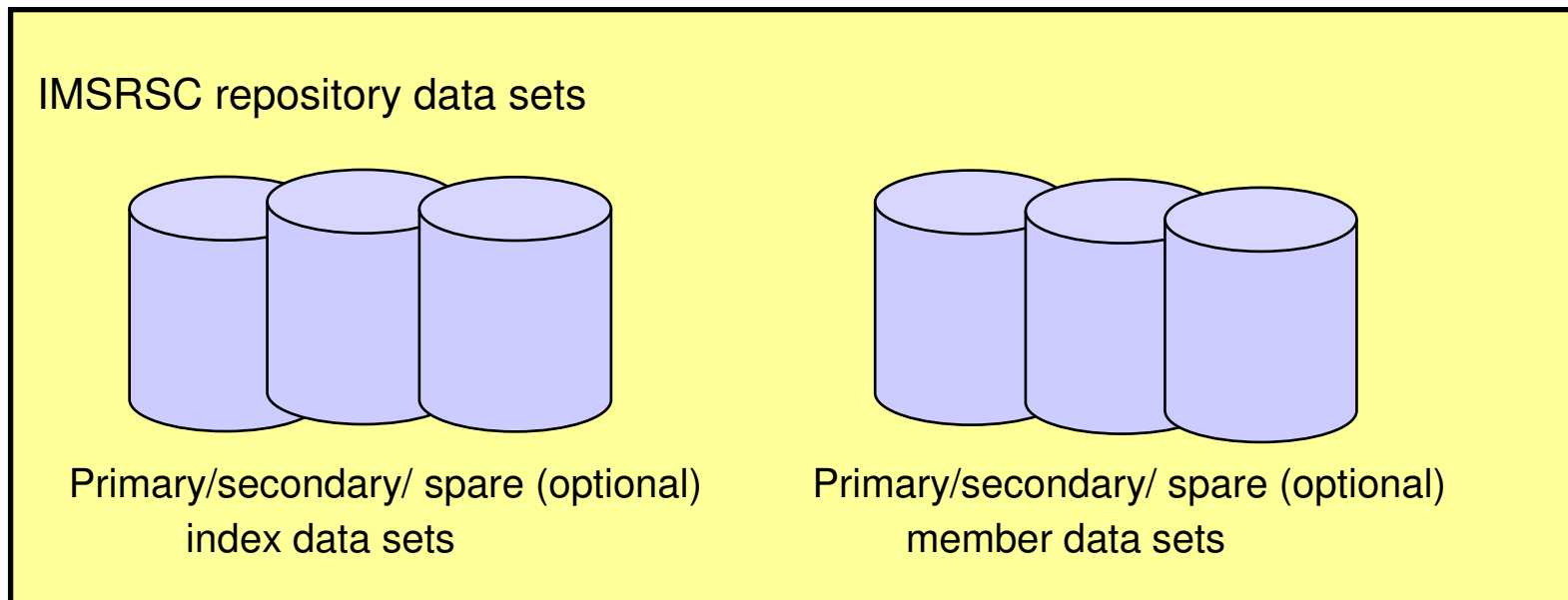


IMS Repository Function components ...

- IMS repositories
 - IMSRSC repository contains
 - Stored resource definitions for DRD resources for one or more DRD-enabled IMS systems
 - *Programs / transactions / databases / FP routing codes and descriptors*
 - Resource lists for each IMS
 - *Contains resource names and resource types that can be processed by an IMS system*
 - Typically one IMSRSC repository per Repository Server (RS) per IMSplex

IMS Repository Function components ...

- IMS repositories
 - IMSRSC repository
 - Composed of up to three pairs of data sets
 - *Primary index data set and primary member data set (required)*
 - *Secondary index data set and secondary member data set (required)*
 - *Spare index data set and spare member data set (optional)*



IMS Repository Function components ...

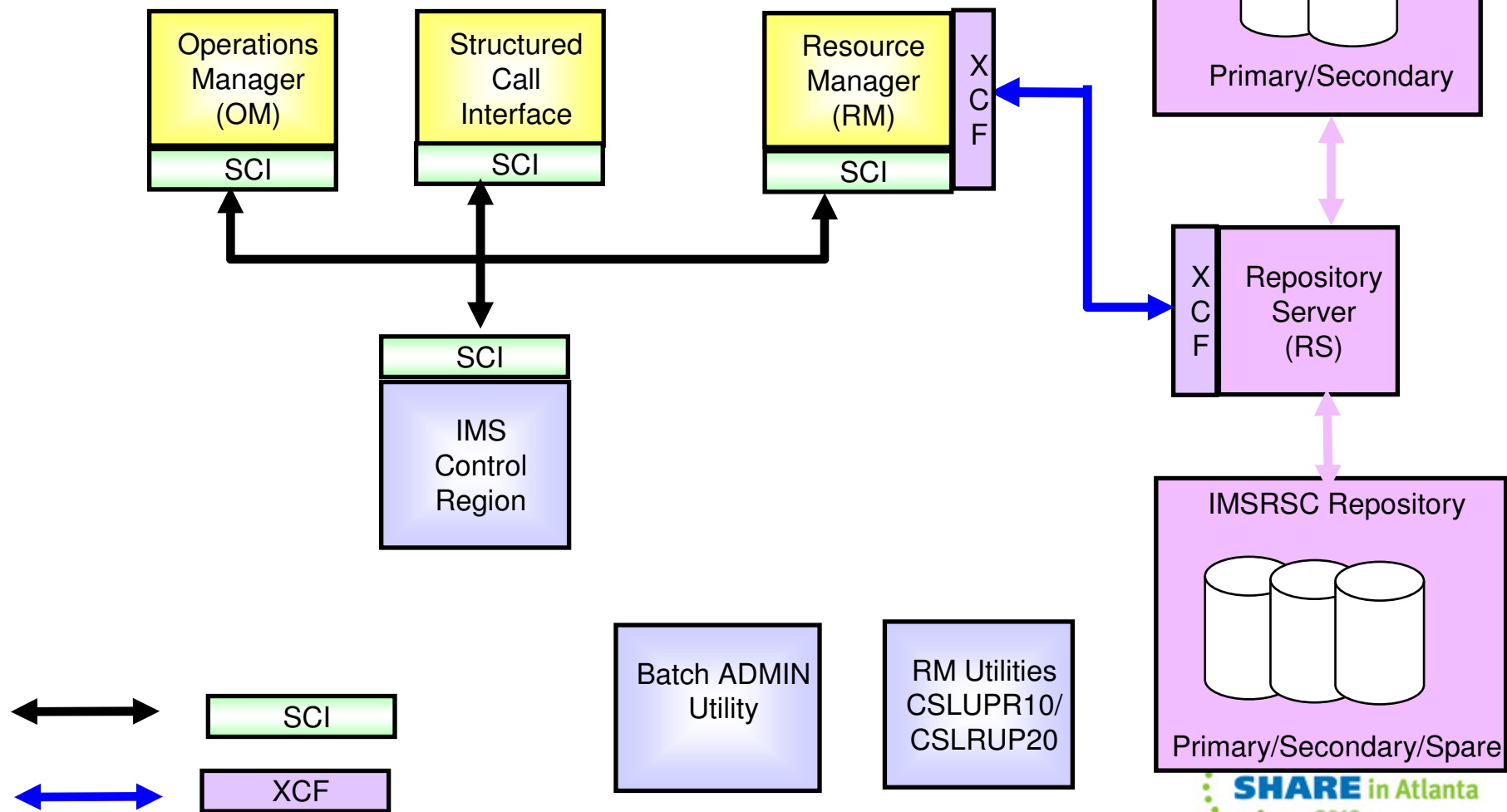
- A Common Service Layer (CSL) IMSplex configuration consisting of
 - Operations Manager (OM)
 - Used for new/modified type-2 commands for repository functions
 - Resource Manager (RM)
 - Used for managing the new Repository Server (RS) address space
 - Structured Call Interface (SCI)
 - Used for communications within the CSL
 - Optionally, a resource structure in a Coupling Facility
 - SPOC (single point of control) for entering type-2 commands
- Can be a single-IMS IMSplex or a multiple-IMS IMSplex

IMS Repository Function components ...

- Batch utilities
 - Batch ADMIN utility (FRPBATCH)
 - Commands for managing IMSRSC repositories
 - *Functions such as ADD a new IMSRSC repository, LIST the characteristics of an IMSRSC repository, START or STOP an IMSRSC repository*
- RDDS to / from repository utilities (Batch RM utilities)
 - RDDS to Repository Utility (CSLURP10)
 - *For migration*
 - Repository to RDDS Utility (CSLURP20)
 - *For fallback*



IMS Repository Function Configuration



Summary of System Enhancements ...

- Dynamic resource definition (DRD) enhancements
- zAAP/zIIP times in accounting log records
- zIIP support for some CQS processing
- Member online change NAMEONLY option
- EAV support for non-VSAM data sets
- IMS logging enhancements
 - Extended-format data set support for OLDS/SLDS
 - IMS log buffers in 64-bit virtual storage
 - Simplified WADS management
- System pools in 64-bit real storage
- Sysplex Serial Program Management (SSPM) Disabling
- Command enhancements

Summary of System Enhancements

- System usability enhancements
 - IMS 11 SPE User Exit Enhancements
- RAS enhancements
 - CQS traceability enhancements
 - IMS Dump Formatter enhancements
 - Reduce IMS Module Aliases in RESLIB
 - End-Of-Memory / End-Of-Task (EOT) Tracing Facility
 - IMS 11 SPE BPE Trace Selective Initialization
 - /DIAGNOSE SNAP command enhancements
- MIPS reduction enhancements
- IMS Repository

Installation and Migration for IMS 12

- Packaging, Prerequisites and Coexistence
- IMS Publications Changes
- IMS Tools support
- IVP and Syntax Checker Enhancements
- Installation and Migration Tasks

IMS 12 Packaging

- IMS 12 product number: 5635-A03

FMID	Feature Description
HMK1200	System Services
JMK1201	Database Manager
JMK1202	Transaction Manager
JMK1203	Extended Terminal Option (ETO)
JMK1204	Recovery Level Tracking (RSR)
JMK1205	Database Level Tracking (RSR)
JMK1206	IMS Java and On Demand
HIR2220	IRLM 2.2
HIR2230	IRLM 2.3

IMS 12 Hardware Prerequisites

- IMS 12 requires the following hardware:
 - A 64-bit IBM zSeries® processor running in z/Architecture® mode (ESA mode is not supported by IMS 12)
 - Capable of running z/OS Version 1 Release 11 or later
 - A processor that supports the Long Displacement Facility of the z/Architecture
- Sysplex data sharing
 - Requires Coupling Facility (CF) level 9 or later
- Shared Queues and Shared EMH
 - Require Coupling Facility (CF) level 9 or later
 - System managed duplexing requires CF level 12 or later and bidirectional CF to CF links

IMS 12 Software Prerequisites

- Minimum software level prerequisites
 - z/OS V1R11 (5694-A01) is minimum level
 - DFSMS APAR OA33409 / UA55338 for z/OS V1R11
 - High Level Assembler Toolkit (5696-234), Version 1 Release 5
 - SMP/E V3R5
 - RACF, or equivalent, if security is used
 - IRLM 2.2, if IRLM is used
- Minimum software levels for optional functions:
 - Parallel RECON Access requires Transactional VSAM
 - Java Dependent Regions require JDK 6.0
 - The IMS Universal Drivers require JDK 6.0
 - CA Reclaim requires z/OS V1R12
 - EAV support for non-VSAM data sets requires z/OS V1R12

IMS Enterprise Suite for z/OS, V2.1 (5655-T62)

- Available October 28, 2011
- The SOAP Gateway, Connect API for Java™, Java Message Services (JMS) API, and Base Services components for running in the z/OS environments are orderable
- **IMS Explorer (NEW)**, DLIModel Utility, Connect API for C, SOAP Gateway, Connect API for Java components for running in Windows® or Linux® environments can be downloaded from the IMS website
- Details at: <http://www.ibm.com/ims>

Additional IMS 12 Prerequisites

- See the IMS 12 Release Planning (GC19-3019) for additional requirements
 - Available at: <https://www-304.ibm.com/support/docview.wss?uid=swg27019860>
 - Available in the Information Center at: <http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp>

Support Status of IMS Versions

- IMS Version 9
 - End of service was November 7, 2010
- IMS Version 10
 - Generally available on October 26, 2007
 - End of service is November 5, 2012 - NEW
- IMS Version 11
 - Generally available on October 30, 2009
 - End of service has not been announced
- IMS Version 12
 - Generally availability on October 28, 2011
 - End of service has not been announced

Withdrawn Support

- IMS 11 is the last release to support the SMU-to-RACF utilities
 - IMS 9 was the last version of IMS to support SMU
 - Migration from SMU to RACF or an equivalent product should be done on IMS 9 or earlier
- IMS 10 is the last release to support z/OS-based batch DLIModel utility
 - IMS Enterprise Suite V1.1 DLI Model Utility plug-in should be used with IMS 12
- IMS 12 is the last release to support the SECURITY macro in system definition
 - Use the initialization parameters

Withdrawn Support

- IMS V11 is the last release to support the Knowledge Based Log Analysis (KBLA) facility
 - Customers using this function should migrate to use other IMS-provided analysis utilities and reports, such as
 - Fast Path Log Analysis utility (DBFULTA0)
 - File Select and Formatting Print utility (DFSERA10)
 - IMS Monitor Report Print utility (DFSUTR20)
 - Log Transaction Analysis utility (DFSILTA0)
 - Offline Dump Formatter utility (DFSOFMD0)
 - Statistical Analysis utility (DFSISTS0),
 - Other complementary products, such as IMS Problem Investigator, IMS Performance Analyzer, or similar products.

IMS 12 Supported Connections

- DB2 connections are supported with
 - DB2 for z/OS 10, 9 and 8
- DBCTL connections are supported with
 - CICS Transaction Server V 4.2, V4.1, V3.2 and V3.1
- Java application programs using JDBC access to IMS DB from WebSphere Application Server for z/OS require
 - WebSphere Application Server for z/OS 7.0.1 or later
- IRLM 2.3 and IRLM 2.2 are supported
 - IMS 12, IMS 11 and IMS 10 may use either IRLM 2.2 or IRLM 2.3
 - IRLM 2.3 and IRLM 2.2 may participate in the same data sharing group and connect to the same lock structure

IMS 12 Supported Connections

- ISC is supported with
 - IMS 12, IMS 11, and IMS 10
 - CICS Transaction Server V 4.2, V4.1, V3.2 and V3.1
 - User-written software
- MSC is supported with
 - IMS 12
 - IMS 11
 - IMS 10
- Shared Queues is supported with
 - IMS 12
 - IMS 11
 - IMS 10

Supported Migrations and Coexistence - DBRC

- IMS 11 to IMS 12
 - Upgrade RECONs from IMS 11 to IMS 12
 - IMS 11 SPE PM05244 / UK62971 allows IMS 11 to use IMS 12 RECONs
 - Databases are compatible
 - Application programs are compatible
- IMS 10 to IMS 12
 - Upgrade RECONs from IMS 10 to IMS 12
 - IMS 10 SPE PM05243 / UK62970 allows IMS 10 to use IMS 12 RECONs
 - Databases are compatible
 - Application programs are compatible

IRLM 2.3

- IRLM 2.3 and IRLM 2.2 are both shipped with IMS 12
- IRLM 2.3 and IRLM 2.2 may be used with any supported version of IMS
 - IRLM 2.3 is required by DB2 Version 10
 - IRLM 2.3 has 64-bit caller interface
 - *IMS continues to use the 31-bit caller interface*
 - IRLM 2.3 requires z/OS 1.10 or higher
- IRLM 2.3 provides improved performance for some requests
 - We do not expect a substantial performance improvement with IRLM 2.3 with IMS

DBCTL, ODBA and ODBM Migration

- The DRA interface modules must be at the same version as IMS
 - Copy DFSPRRRC0 and DFSPZPxx load modules to the address spaces which communicate with IMS
 - Include these modules from IMS 12 in the CICS, ODBM and ODBA (DB2 Stored Procedures, WebSphere Application Server, etc.) address spaces

Migration with DRD

- IMS 12 system may be cold started with RDDS from IMS 11 or IMS 10
 - IMSID must remain the same
- IMS 11 or IMS 10 system may be cold started with RDDS from IMS 12 for fall back
 - IMSID must remain the same

CSL Coexistence

- IMS 12, IMS 11 and IMS 10
 - CSL address spaces and IMS may be at mixed levels
 - SCI, OM, RM, ODBM and IMS subsystems may be at IMS 12, IMS 11 and IMS 10
 - IMS 12 is recommended for the CSL address spaces
- IMS Repository requires IMS 12 RM
 - Migration SPEs for IMS Repository:
 - Ensure that all RMs are at IMS 12 level for users of Repository

Coexistence Maintenance

- See Chapter 4 of IMS 12 Release Planning (GC19-3019) for coexistence maintenance requirements
 - Available at: <https://www-304.ibm.com/support/docview.wss?uid=swg27019860>
 - Available in the Information Center at: <http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp>

Coexistence - IMS Utilities

- Batch Backout, Log Archive, and Log Recovery
 - Use the utility from the IMS release that created the log
- IMS 12 Database Recovery utility
 - Accepts Image Copies produced by IMS 12, IMS 11 and IMS 10
 - Accepts HISAM Unloads produced by IMS 12, IMS 11 and IMS 10
 - Accepts Change Accum data sets produced by IMS 12, IMS 11 and IMS 10
 - Accepts logs produced by IMS 12, IMS 11 and IMS 10
- IMS 12 Change Accumulation utility
 - Accepts logs produced by IMS 12, IMS 11 and IMS 10
 - Accepts Change Accum data sets produced by IMS 12, IMS 11 and IMS 10

Remote Site Recovery (RSR) Migration/Coexistence

- IMS 12 RSR tracking system can process logs created by IMS 12, IMS 11, or IMS 10
- IMS 12 RSR Isolated Log Sender can send logs created by IMS 12, IMS 11, or IMS 10
- Logs created by IMS 12 cannot be processed by IMS 11 or IMS 10 tracking system or Isolated Log Sender
- Migration steps
 - Upgrade the RSR tracking system RECONs to IMS 12
 - Migrate RSR tracking system to IMS 12
 - Upgrade the active system RECONs to IMS 12
 - Migrate active system Transport Manager Subsystem (TMS) running Isolated Log Sender to IMS 12
 - Migrate active IMS to IMS 12

Log Records

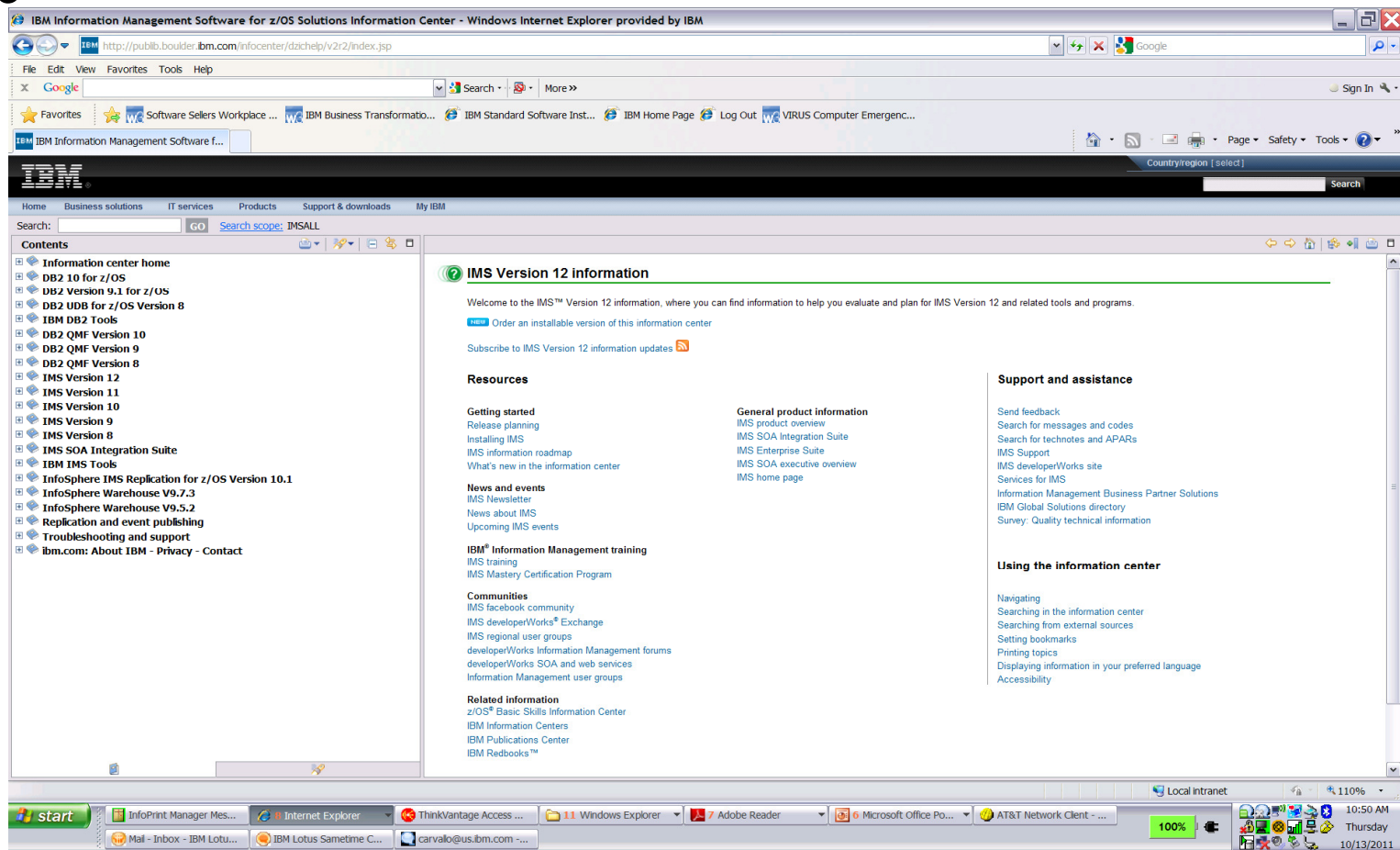
- Change in log record suffix
 - Timestamp in log record suffix is no longer necessarily unique
 - Previous versions produced unique timestamps
 - Sequence number is unique
- Some log records have changed
- New log records have been added
- DSECTS for most IMS log records may be generated by assembling:
 - ILOGREC RECID=ALL

IMS Publication Changes

- IMS publications structure and titles remain the same as in IMS 11
 - PDF master index and glossary are not available
 - Master index and glossary are included in the information center
 - Bookmanager format publications will not be published (same as IMS 11)
- All publications will be available in hardcopy for an additional charge

IMS Library

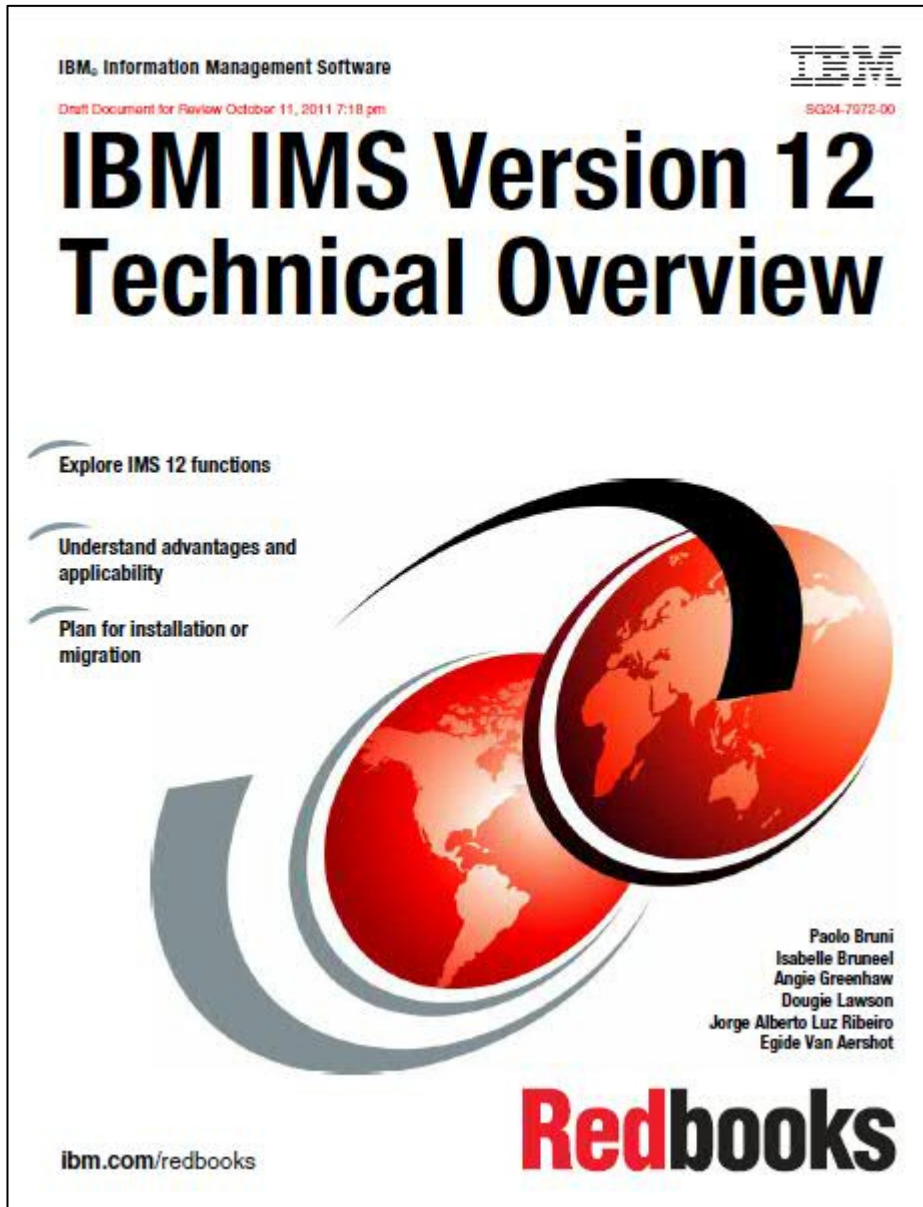
- Information Center will contain information on IMS 12
- <http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.x.jsp>



The screenshot displays the IBM Information Management Software for z/OS Solutions Information Center website. The browser window title is "IBM Information Management Software for z/OS Solutions Information Center - Windows Internet Explorer provided by IBM". The address bar shows the URL: <http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp>. The page content is organized into several sections:

- Contents:** A sidebar menu listing various products and versions, including DB2 10 for z/OS, DB2 UDB for z/OS Version 8, IBM DB2 Tools, DB2 QMF Version 10, DB2 QMF Version 9, DB2 QMF Version 8, IMS Version 12, IMS Version 11, IMS Version 10, IMS Version 9, IMS Version 8, IMS SOA Integration Suite, IBM IMS Tools, InfoSphere IMS Replication for z/OS Version 10.1, InfoSphere Warehouse V9.7.3, InfoSphere Warehouse V9.5.2, Replication and event publishing, Troubleshooting and support, and links to About IBM, Privacy, and Contact.
- IMS Version 12 information:** The main content area features a heading "IMS Version 12 information" and a welcome message: "Welcome to the IMS™ Version 12 information, where you can find information to help you evaluate and plan for IMS Version 12 and related tools and programs." Below this, there are links for "Order an installable version of this information center" and "Subscribe to IMS Version 12 information updates".
- Resources:** This section is divided into three columns:
 - Getting started:** Includes links for Release planning, Installing IMS, IMS information roadmap, and What's new in the information center.
 - General product information:** Includes links for IMS product overview, IMS SOA Integration Suite, IMS Enterprise Suite, IMS SOA executive overview, and IMS home page.
 - News and events:** Includes links for IMS Newsletter, News about IMS, and Upcoming IMS events.
 - IBM® Information Management training:** Includes links for IMS training and IMS Mastery Certification Program.
 - Communities:** Includes links for IMS facebook community, IMS developerWorks® Exchange, IMS regional user groups, developerWorks Information Management forums, developerWorks SOA, and web services, and Information Management user groups.
 - Related information:** Includes links for z/OS® Basic Skills Information Center, IBM Information Centers, IBM Publications Center, and IBM Redbooks™.
- Support and assistance:** Includes links for Send feedback, Search for messages and codes, Search for technotes and APARs, IMS Support, IMS developerWorks site, Services for IMS, Information Management Business Partner Solutions, IBM Global Solutions directory, and Survey - Quality technical information.
- Using the information center:** Includes links for Navigating, Searching in the information center, Searching from external sources, Setting bookmarks, Printing topics, and Displaying information in your preferred language/Accessibility.

IMS 12 Redbook Announcement



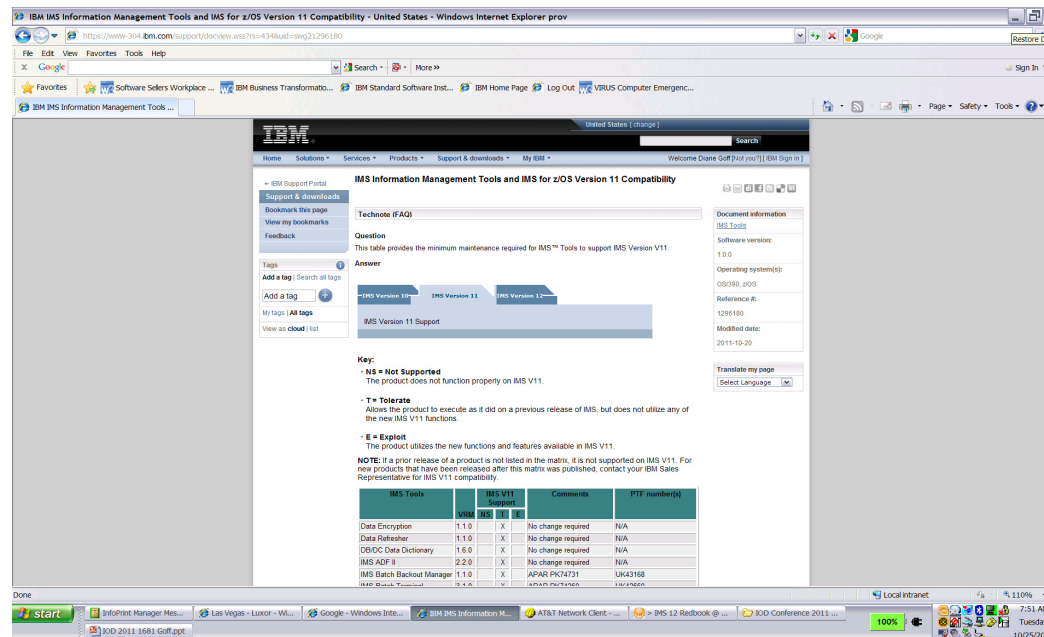
- Just released!
- Discusses all IMS 12 capabilities from a user perspective
- Draft available for free download at

<http://www.redbooks.ibm.com>



IMS Tools Migration/Coexistence

- Some products may require updates
 - Contact your vendors for information on requirements
 - IBM has a web site with consolidated information about requirements for IBM IMS tools with IMS 12
 - <https://www-304.ibm.com/support/docview.wss?rs=434&uid=swg21296180>



IMS Information Management Tools and IMS for z/OS Version 11 Compatibility

This table provides the minimum maintenance required for IMS™ Tools to support IMS Version V11.

IMS Tools	IMS V11 Support		Comments	PTF number(s)
	Y/N	W/E		
Data Encryption	1.1.0	X	No change required	N/A
Data Refresher	1.1.0	X	No change required	N/A
DB/DC Data Dictionary	1.6.0	X	No change required	N/A
IMS ADP II	2.2.0	X	No change required	N/A
IMS Batch Backout Manager	1.1.0	X	APAR PK24751	IK43168
IMS Batch Backout Manager	1.1.0	X	APAR PK24751	IK43168

IBM IMS Tools - Highlights

- New IMS Tools Solution Packs
 - In general, IBM will support the latest stand-alone version of every tool as well as their Solution Pack counterpart if one exists
 - Special circumstances not withstanding
 - Latest versions of TOSI, Generic Exits, IMS Tools Knowledge Base, and HD Compression Extended are only supported in the IBM Tools Base
 - Fast Path Secondary Index creation tool will be included in FP Solution Pack

IVP Enhancements

- Repository usage for DRD is added to IVP
 - IVP provides sample JCL to create repository catalog data sets and the IMS repository
 - IVP provides sample repository server PROC and its configuration file
 - Sample JCL is provided to:
 - Add an IMS repository into the repository catalog
 - Rename a repository in the repository catalog
 - Delete a repository in the repository catalog
 - List the status information for all repositories
 - List the detailed information for a single repository

Syntax Checker Enhancements

- Syntax Checker supports PROCLIB members for IMS 12, IMS 11 and IMS 10
 - IMS 9 PROCLIB members are not supported
- All previously supported members are supported
 - Newly added parameters of these members are supported
- Support added for Repository Server configuration member
- Support added for dynamic full-function database buffer pools
- Support added to view and save parameters of members in a custom order
 - Formerly, only alphabetical order was used
 - Delivered through the IMS service process (PK30599/UK74973)

Installation and Migration Tasks

- Migration Tasks
 - Review the IMS 12 *Release Planning* publication
 - Check PSP bucket
 - PSP upgrade name is IMS1200
 - Use SMP FIXCAT HOLDDATA to simplify identifying required service from PSP buckets
 - Review the Program Directory
 - Available through the Info Center
 - Review the installation information in Chapter 1 of the *Installation* publication
 - Install prerequisite software and maintenance
 - Check your IMS tools and related products
 - Apply coexistence maintenance to other IMS systems

Installation and Migration Tasks

- Migration Tasks (continued)
 - Evaluate and update IMS exit routines
 - RECON I/O Exit Routine (DSPCEXT0)
 - If migrating from IMS 10
 - *DFSMSCE0 must be reassembled*
 - *All IMS Connect exits must be reassembled when migrating IMS Connect*
 - *HWSIMSO0 and HWSIMSO1 are not shipped with IMS 12*
 - Recommendation
 - *Reassemble all exit routines which use IMS macros*
 - Install IMS 12 using SMP/E installation process
 - CBPDO or ServerPac may be used
 - System definition
 - “ALL” sysgen

Installation and Migration Tasks

- Migration Tasks (continued)
 - Install the Type 2 and Type 4 SVCs
 - Upgrade RECONs
 - ACBGEN
 - Run the IVP
 - Include DFSPRRRC0 and DFSPZPxx modules in CICS, ODBM and ODBA address spaces

Installation and Migration Summary

- Packaging, Prerequisites and Coexistence
- IMS Publications Changes
- IMS Tools support
- IVP and Syntax Checker Enhancements
- Installation and Migration Tasks

Summary

- IMS 12 System Enhancements
- IMS 12 Installation and Migration Considerations