IBM

Installation and Migration

Information Management software

IBM

Installation and Migration

- Packaging, Prerequisites, and Coexistence

- IMS Library Updates

- Installation and Migration Tasks

- Review of Migration Considerations

- IMS Tools Support

Packaging, Prerequisites, and Coexistence

Packaging

- IMS 13 program number: 5635-A04 (Component ID 5635A0400)

- IMS 13 Component ID for RETAIN: 5635A0400

FMID	Feature Description
HMK1300	IMS System Services
JMK1301	IMS Database Manager
JMK1302	IMS Transaction Manager
JMK1303	IMS ETO
JMK1304	IMS Recovery Level Tracker
JMK1305	IMS Database Level Tracker
JMK1306	IMS Java on Demand
HIR2230	IRLM 2.3

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IMS 13 packaging is the same as that for IMS 11 and IMS 12. Transaction Manager is a prerequisite for ETO. Recovery Level Tracking RSR is a prerequisite for Database Level Tracking RSR.

IRLM 2.3 is the only IRLM shipped and supported with IMS 13.

Software Prerequisites…

- Minimum software level prerequisites
  - **z/OS V1R13 (5694-A01)**
    - RACF (included in separately orderable SecureWay Security Server), or equivalent, if security is used
    - High Level Assembler Toolkit Release 5 (5696-234)
    - APARs/PTFs OA39392/UA66823, OA36172/UA61786
    - If zIIP offload is used: OA39392/UA66823

  - IRLM 2.3 if the IRLM is used

z/OS 1.13 is the base operating system level for IMS 13.

Software Prerequisites ...

- **Minimum software levels for optional functions…**
  - Java Dependent Regions requires JDK 6.0.1
  - ISC TCP/IP requires CICS 5.1
  - Native SQL for COBOL requires **COBOL 5.1** + PM92523/UK98481 which adds the IMS co-processor function
    - IMS 13 requires UK98028, UK98418
  - Depending on the environment, the IMS Universal Drivers require:
    - IBM JDK 6.0.1 or later
    - DB2 V9.1 or later
    - WAS V7 or later
    - CICS V4.1 or later
  - .net Data Provider in IMS Enterprise Suite 3.1 requires
    - DRDA Support for Native SQL flows in IMS 13
    - Implementation of CSL, IMS Connect, ODBM, Catalog
  - DB Versioning requires implementation of the IMS Catalog

Software Prerequisites

- **Minimum software levels for optional functions**
  - IMS 13 supports interactions with
    - DB2: Versions 9, 10, 11
      - DB2 11 QPP starts in same timeframe as IMS 13 QPP

    - CICS: Versions 3.2, 4.1, 4.2, 5.1
      - CICS 5.1 (newly announced) is required for ISC TCP/IP support
        - Requires z/OS 1.13

    - MQ for z/OS: Versions V7.0.1, V7.1
      - Note V6 EOS was September 2012
      - 7.01 introduced MQ message expiry interfacing with IMS transaction expiration
      - 7.1 enhanced the expiry support and support for OTMA resource monitoring protocol messages

Note the software levels for interaction with DB2, CICS, or MQ.

Hardware Prerequisites…

- IMS 13 runs only on 64-bit processors running in z/Architecture mode
  - Processors must also support the Long-Displacement Facility of the z/Architecture
  - ESA mode is not supported
  - For a list of z/Series machines see: www.ibm.com/systems/z/hardware
  - → z900 machines must be at GA2 level (microcode level 3G or later)

- Sysplex Data Sharing (including Data Caching and VSO Data Sharing)
  - Coupling Facility (CF) level 9, or later

The hardware prerequisite for a 64 bit processor running in z/Architecture mode is not new for IMS.

Hardware Prerequisites

- Shared Queues and Shared EMH support
  - Coupling Facility level 9 or later
  - System-managed CF Duplexing
    - CF level 12, or later and bidirectional CF to CF links

- EAV support for non-VSAM data sets
  - EAVs are supported on DS8000 at microcode level R4.0 via bundle 64.0.175.0 (Sept 2008) or higher

Prerequisite Maintenance

- Fixes for Migration Download enhanced holddata
  - Run SMPE: REPORT MISSINGFIX (FIXCAT)

The following are the categories that we have defined for IMS (the ones in red were set up for tools to use in their service):

Category: **IBM.Coexistence.IMS.V11**
  Keywords: IMSV11COEX/K
  Description: Fixes that allow IMS V9 and V10 to coexist with, and fallback from, IMS V11.
Category: **IBM.Coexistence.IMS.V12**
  Keywords: IMSV12COEX/K
  Description: Fixes that allow IMS V10 and V11 to coexist with, and fallback from, IMS V12.
Category: **IBM.Coexistence.IMS.V13**
  Keywords: IMSV13COEX/K
  Description: Fixes that allow IMS V11 and V12 to coexist with, and fallback from, IMS V13.

Category: **IBM.TargetSystem-RequiredService.IMS.V11**
  Keywords: IMSV11TGT/K
  Description: Fixes required on other IBM products to allow them to run with IMS V11.
Category: **IBM.TargetSystem-RequiredService.IMS.V12**
  Keywords: IMSV12TGT/K
  Description: Fixes required on other IBM products to allow them to run with IMS V12.
Category: **IBM.TargetSystem-RequiredService.IMS.V13**
  Keywords: IMSV13TGT/K
  Description: Fixes required on other IBM products to allow them to run with IMS V13.

http://www-03.ibm.com/systems/z/os/zos/smpe/fixcategory.html

Support Status of IMS Versions

- **IMS 10**
  - Generally available on October 26, 2007
  - End of marketing was September 12, 2011
  - End of support was November 12, 2012

- **IMS 11**
  - Generally available on October 30, 2009
  - End of marketing on September 9, 2013
  - End of support on October 30, 2014

- **IMS 12**
  - Generally availability on October 28, 2011
  - End of marketing/support has not been announced

- **IMS 13**
  - General availability on October 25, 2013

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 have been done on IMS 9 or earlier
- IMS 12 is the last release to support the SECURITY macro in system definition
  - Use the initialization parameters in IMS 13
  - RCLASS and SECCNT for V12 and V11
    - PM48204/UK74051 V12 SPE, PM48203/UK74050 V11 SPE
  - 3 security exits no longer in IMS 13 Nucleus—now standalone in 31-bit private
    - DFSCSGN0, DFSCTRN0, DFSCTSE0
    - DFSCSGN0 is now called at IMS initialization

IMS 9 was the last version of IMS to support the Security Management Utility (SMU). IMS supplied SMU-to-RACF utilities to provide assistance in the migration from SMU to RACF. These utilities are not supplied after IMS 11. Users of SMU should have migrated from SMU to RACF or an equivalent product while on IMS 9 or an earlier version of IMS.

IMS 12 is the last release to support the SECURITY macro in system definition. Use the initialization parameters to define RCLASS and SECCNT in IMS 13. This capability has been retrofit to both IMS 11 and IMS 12.

Withdrawn Support

- **IMS Enterprise Suite V2.1 last release to include DLIModel utility plug-in**
  - Continue to use this version if either of the following functions required
    - XML DB not supported
    - IMS database web services
  - Otherwise, migrate to the IMS Enterprise Suite Explorer for Development
- **JCA 1.0 resource adapter no longer enhanced, use IMS Universal DB resource adapter instead**
- **IMS 13 last release to support IMS Connect SSL function**
  - Instead, use IBM z/OS Communications Server Application Transparent Transport Layer Security (AT-TLS) to set up Secure Socket Layer (SSL) on TCP/IP connections to IMS Connect

IMS Enterprise Suite Version 2.1 is the last release of IMS Enterprise Suite that will include the DLIModel utility plug-in. To take advantage of the most current enhancements, customers using the IMS Enterprise Suite DLIModel utility plug-in should migrate to using the IMS Enterprise Suite Explorer for Development instead. Although IMS Explorer for Development includes enhancements to most IMS Enterprise Suite DLIModel utility plug-in functions, it does not provide support for IMS XML DB or IMS database web services. Customers should continue to use the IMS Enterprise Suite Version 2.1 DLIModel utility plug-in if these functions are required.

The JCA 1.0 resource adapter, one of the Java connectors in the IMS DB distributed resource adapter, is stabilized and is no longer being enhanced. **Recommendation:** Because the IMS Universal drivers are built on industry standards and open specifications, and provide more flexibility and improved support for connectivity, data access methods, and transaction processing options, use the IMS Universal DB resource adapter.

IMS 13 is the last version of IMS to support the IMS Connect SSL function. Customers using this function should migrate to using IBM z/OS Communications Server Application Transparent Transport Layer Security (AT-TLS) to set up Secure Socket Layer (SSL) on TCP/IP connections to IMS Connect

Withdrawn Support

- IMS 13 is the last release to support IMS MFS Web Enablement.
  - Customers using this function should migrate to IBM Rational Host Access Transformation Services (HATS).

- IMS 13 is the last release to support IMS Classic Java APIs.
  - Customers using these APIs should migrate to the IMS Universal JDBC Driver

- Withdrawn support for Enterprise Workload Manager (EWLM)
  - Transition assistance for EWLM 2.1 customers available
  - Tivoli tools offer workload automation and monitoring solutions

Withdrawn Support

- IMS 11 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.

KBLA (Knowledge Based Log Analysis) is not supported after IMS 11. Two IBM IMS Tools, IMS Performance Analyzer and IMS Problem Investigator, provide capabilities to analyze logs. They provide capabilities similar to those of KBLA plus many more extensive analysis capabilities.

IMS 13 Supported Connections

- ISC is supported with
  - IMS 13, IMS 12, and IMS 11
  - CICS Transaction Server V 4.2, V4.1, V3.2 and V3.1
  - CICS Transaction Server V 5.1 for ISC TCP/IP connectivity
  - User-written software
- MSC is supported with
  - IMS 13
  - IMS 12
  - IMS 11
- Shared Queues is supported with
  - IMS 13
  - IMS 12
  - IMS 11

All currently supported releases of IMS and CICS are supported for ISC connectivity to IMS 13.

All currently supported releases of IMS are supported for MSC connectivity to IMS 13.

All currently supported releases of IMS are supported for shared queues with IMS 13 Transaction Manager.

Supported Migrations and Coexistence

- **Migration from previous releases:**

  – DBRC Migration/Coexistence SPEs
    - IMS 11: APAR PM53134/UK80026
    - IMS 12: APAR PM53139/UK80027

  – Security Migration/Coexistence SPEs
    - Eliminates RCLASS and SECCNT support in Security macro and adds support as execution parameters
      – SPEs to support removal of the SECURITY macro and addition of execution parameter support in previous releases
    - IMS 11: PM48203/UK74050, PM72199/UK82616
    - IMS 12: PM48204/UK74051, PM73558/UK82617

  – IMS 13 supports RSR migration/coexistence from/with IMS 11 and IMS 12

Migration from previous releases, e.g., IMS 11 or IMS 12 is supported.

As always, DBRC migration/coexistence SPEs are provided.

In IMS 13, the SECURITY macro has been removed. SPEs are provided to support coexistence/migration.

DBCTL, ODBA and ODBM Migration

- The DRA interface modules must be at the same version as IMS
  - Copy DFSPRRC0 and DFSPZPxx load modules to the address spaces which communicate with IMS
    - Include these modules from IMS 13 in the CICS, ODBM and ODBA (DB2 Stored Procedures, WebSphere Application Server, etc.) address spaces

The DRA interface modules are DFSPRRC0 and the DFSPZPxx member which is the DRA startup table. It is generated from the DFSPRP macro. These modules are specific to a version of IMS. They reside in the address space which communicates with IMS. These address spaces may include CICS, ODBM and the address spaces using ODBA, such as DB2 stored procedures and WebSphere Application Server.

Impact of IMS Connect/OTMA TCO Enhancement

- Conversion of OTMA and IMS Connect STORAGE calls to CPOOL in its XCF SRB exits
  - Improves performance
    - Less CPU intensive and faster memory acquisition
  - Adds 167MB of virtual storage in EVPT for IMS Connect
    - 256K for IMS Control Region

Migration with DRD

- IMS 13 system may be cold started with RDDS from IMS 12 or IMS 11
  - IMSID must remain the same

- IMS 12 or IMS 11 system may be cold started with RDDS from IMS 13 for fall back
  - IMSID must remain the same

- IMS Repository requires a minimum level of IMS 12 RM   NOTE
  - Ensure that all RMs are at IMS 12 or IMS 13 level for users of Repository

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Installations which have implemented DRD in IMS 11 or IMS 12 may carry their DRD definitions forward to IMS 13 by using the RDDS. When IMS 13 is cold started, it may import its database, program, transaction, and routing code definitions from an RDDS created with IMS 12 or IMS 11.

Similarly, for a fall back from IMS 13 to IMS 12 or IMS 11 you may cold start the IMS 12 or IMS 11 system and import definitions from an RDDS created by IMS 13.

For both migration and fall back, the IMSID must be the same as that used by the system which created the RDDS.

The IMS Repository requires the RM to be at a minimum level of IMS 12. There is coexistence maintenance associated with this for IMS 12, which ensures that all RM address spaces are at IMS 12 for users of the IMS Repository. For IMS 13, it is included in the base.

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DRD Coexistence

- Coexistence maintenance required for mixed-release DRD environments
  - IMS 12/13 (that uses repository) and either IMS 10/11 (that use RDDS)
    - PM19025/UK63960 (IMS 10)
    - PM19026/UK63964 (IMS 11)

For an IMS Version 12 or 13 system using the IMSRSC repository to coexist with an IMS Version 10 or 11 system using the RDDS data sets, coexistence APAR/PTF PM19025/UK63960 must be installed on the IMS Version 10 systems and coexistence APAR/PTF PM19026/UK63964 must be installed on the IMS Version 11 systems.

DRD Coexistence…

- PM77568 Repository Change-list Enhancement
  - requires new V12 coexistence PM80588
    - APAR PM80588 is co-existence APAR for IMS V12 with IMS V13.
    - Required by all IMS V12 users of the IMSRSC repository in a mixed environment of IMS V12 and IMS V13 and must be applied before IMS V13 APAR PM77568 is applied.
      → If no V12 SCI, RM, OM in IMSPEX then PM80588 not required

    - Description:
      - When the QUERY, UPDATE and DELETE of a IMS change list is being processed by a V12 Resource Manager (RM) address space.   APAR PM80588 adds logic to disable support of unsupported functions in IMS V12

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CSL Coexistence

- IMS 13, IMS 12 and IMS 11
  - CSL address spaces and IMS may be at mixed levels
    - SCI, OM, RM, ODBM and IMS subsystems may be at IMS 13, IMS 12 and IMS 11
  - IMS 13 is recommended for the CSL address spaces

- Coexistence maintenance required for mixed-release CSL environments
  - IMS 12/13 with RM and IMS 10/11 with RM   NOTE
    - PM32951/UK68883 (IMS 10)
    - PM32766/UK68882 (IMS 11)

When migrating a system using the Common Service Layer address spaces, any address space may be migrated to IMS 13 before the other address spaces are migrated. It is permissible to have some SCI, RM, OM, ODBM and IMS subsystems on IMS 13 while others are on IMS 12 and/or IMS 11.

The use of IMS 13 CSL address spaces is recommended when any IMS subsystem is at IMS 13.

For an IMS Version 12 or 13 system using the CSL RM address space to coexist with an IMS Version 10 or 11 CSL RM address space, coexistence APAR PM32951/UK68883 must be installed on the IMS Version 10 systems and coexistence APAR/PTF PM32766/UK68882 must be installed on the IMS Version 11 systems.

Coexistence Maintenance

- In a shared queues environment with mixed-release IMS systems, APAR PM75791 / PTF UK83421 addresses downward compatibility issue and 0C4
  - AOS extended header obtained only when DBRC minvers=12.1 or greater

    NOTE
    - Applies to environments where XCF= is set to something other than 'N'

- See Chapter 4 of IMS 13 Release Planning (GC19-3658-00) for coexistence maintenance requirements
  - Available in the Information Center at:
    http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp?topic=%2Fcom.ibm.ims13.doc.rpg%2Frpg.htm
    - Or at **http://tinyurl.com/kdovwdf**
  - Available in the Knowledge Center at:
    http://www-01.ibm.com/support/knowledgecenter/SSEPH2_13.1.0/com.ibm.ims13.doc.rpg/ims_coex_over.htm
    - Or at **http://tinyurl.com/kmjw2e7**

In a shared queues, mixed-release environment, IMS 12 APAR PM75791 will resolve issues with downward compatibility with IMS 11. This fix is currently being worked on, and updates will be made available to circumvent this issue. With the fix applied, IMS 12 will only obtain an extended AOS (APPC OTMA synchronous) header if all systems are IMS 12 (DBRC minvers=12.1). Otherwise, a shorter header compatible with IMS 11 is used. This fix affects processing for conversational transactions or output greater than 61K in mixed (IMS 11 and IMS 12) shared queues environments with an AOS specification other than "N", and will be added to the IMS 13 base.

Additional coexistence maintenance is listed in Chapter 4 of IMS 13 Release Planning.

Additional Maintenance

- **New Type 2931 log record**
  - Written before the HALDB OLR start time so that products performing a PITR can correctly build the output(target) data sets when a PITR is done
    - This record is a copy of the x'2930' log record and contains the same information except for the USID and the USN which are excluded

  - Impact:
    - User modifications or non-IBM vendor software which reference the 2930 log record may need to be modified to also reference the 2931 log record.

Additional Maintenance…

- **Type 47 log record restructure**
  - Addresses potential abends/storage overlays that could occur when the Type47 log record overlays storage beyond the end of the Log Work Area
    - IMS12: PM63331/UK83101, IMS11: PM52121/UK78835
  - Occurs when a BMP does not take a checkpoint before updating:
    - More than 300 FF databases + HALDB Partitions (IMS 12)
    - More than 242 FF databases + HALDB Partitions (IMS 11)

- **Solution in IMS 11 and IMS 12**
  - BMP and Batch IMS job receive ABENDU0199 if they attempt database updates after reaching the maximum changed database count
    - Maximum is based on the log record allocation size:
      - If N= the decimal number of 1024 byte blocks allocated for the IMS Log Data set
        - Then the Changed Database Limit = (64N - 15) Databases in IMS12
          or (64N - 10) Databases in IMS 11

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Additional Maintenance ...

- Type 47 log record restructure (continued)
  - In IMS 13 – no limitations
    - The Type 47 log record is now spanned to handle as many databases as necessary

Coexistence - IMS Utilities

- Batch Backout, Log Archive, and Log Recovery
  - Use the utility from the IMS release that created the log
- IMS 13 Database Recovery utility
  - Accepts Image Copies produced by IMS 13, IMS 12 and IMS 11
  - Accepts HISAM Unloads produced by IMS 13, IMS 12 and IMS 11
  - Accepts Change Accum data sets produced by IMS 13, IMS 12 and IMS 11
  - Accepts logs produced by IMS 13, IMS 12 and IMS 11
- IMS 13 Change Accumulation utility
  - Accepts logs produced by IMS 13, IMS 12 and IMS 11
  - Accepts Change Accum data sets produced by IMS 13, IMS 12 and IMS 11

The Batch Backout, Log Archive, and Log Recovery utilities access one log. The release level of the utility must match the IMS release that was used to create the log.

The IMS 13 Database Recovery utility (DFSURDB0) accepts Image Copies, HISAM Unload data sets, Change Accumulation data sets, and IMS logs as inputs. These inputs may be created by any currently supported release of IMS.

The Change Accumulation utility accepts IMS logs and Change Accumulation data sets as inputs. These inputs may be created by any currently supported release of IMS.

Remote Site Recovery (RSR) Migration/Coexistence

- IMS 13 RSR tracking system can process logs created by IMS 13, IMS 12, or IMS 11

- IMS 13 RSR Isolated Log Sender can send logs created by IMS 13, IMS 12, or IMS 11

- Logs created by IMS 13 cannot be processed by IMS 12 or IMS 11 tracking system or Isolated Log Sender

- Migration steps
  - Upgrade the RSR tracking system RECONs to IMS 13
  - Migrate RSR tracking system to IMS 13
  - Upgrade the active system RECONs to IMS 13
  - Migrate active system Transport Manager Subsystem (TMS) running Isolated Log Sender to IMS 13
  - Migrate active IMS to IMS 13

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The migration of systems using RSR is similar to migrations for previous releases. IMS 13 tracking systems can process logs produced by lower releases. The IMS 13 Isolated Log Sender (ILS) function of the Transport Manager System (TMS) can process logs created by lower releases. On the other hand, IMS 12 and IMS 11 tracking systems cannot accept logs produced by IMS 13 and the IMS 12 and IMS 11 ILSs cannot accept logs produced by IMS 13. Of course, you could migrate all of the RSR components at the same time. You would more likely prefer to migrate them in stages. The restrictions mentioned above imply that the order of migration of the components is as shown on the slide. The tracking system must be migrated before or at the same time as the ILS at the active site. The ILS at the active site must be migrated before or at the same time as the active IMS system. The RECONs must be upgraded to IMS 13 before the systems that use them are migrated to IMS 13.

Log Records

- 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

If you have application programs which process IMS log records, you should examine to see if they are affected by the changes to the log records. You can assemble DSECTs for IMS log records by using the ILOGREC macro.

Log records which are new or changed in IMS 13 include the following hexadecimal log record types:
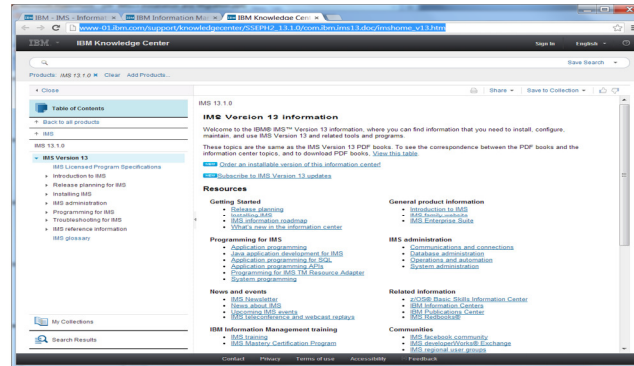X'16'
X'47'
X'63'
X'4021'
X'450F'
X'67D0'

IMS Library Updates

IMS Library Updates

- Books remain the same as IMS 12
- Information Center contains information on IMS 13
  - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp?topic=%2Fcom.ibm.ims13.doc.rpg%2Frpg.htm
- The new Knowledge Center
  - http://www-01.ibm.com/support/knowledgecenter/SSEPH2_13.1.0/com.ibm.ims13.doc/imshome_v13.htm

The Information Center has been updated to include information on IMS 13.

IBM Knowledge Center – www.ibm.com/support/knowledgecenter

Installation & Migration Tasks

Installation and Migration Tasks

- **Migration Tasks**
  - Review the IMS 13 Release Planning Guide
  - Check PSP bucket
    - PSP upgrade name is IMS1300
  - 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

This is an overview of the tasks for migration to IMS 13.

As for all installations of new products the Preventive Service Planning (PSP) bucket and the Program Directory for the product should be reviewed before beginning the migration.

You should read the IMS 13 Installation publications before beginning the migration process. Chapter 1 should be reviewed for installation information.

Other products may need to be upgraded for use with IMS 13. They could require maintenance or new releases.

You should apply DBRC coexistence SPEs to your IMS 12 or IMS 11 systems before upgrading your RECONs to IMS 13. This is required for the IMS 12 or IMS 11 systems to be able to use the RECONs after the upgrade.

Similarly, you should apply the other coexistence SPEs to your lower level IMS systems.

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Installation and Migration Tasks

- **Migration Tasks (continued)**
  - Evaluate and update IMS exit routines
    - May need to re-work DFSCTSE0, DFSCTRN0 and DFSCSGN0 to use new parameter that contains storage address
    - RECON I/O Exit Routine (DSPCEXT0)
  - Install IMS 13 using SMP/E installation process
    - CBPDO or ServerPac may be used
  - System definition

Recall that there is a new parameter available for use that enables sharing of storage between the security-related exits DFSCTSE0, DFSCTRN0 and DFSCSGN0. If you choose to use this new parameter, these exits must be updated to use it. Another exit routine that <u>must</u> be updated for use with IMS 13 is the RECON I/O Exit Routine (DSPCEXT0). If you use a RECON I/O Exit Routine, you should examine it for required changes due to the change in RECON records. As a sidenote, it is generally advisable to reassemble all assembler exits when migrating to a new IMS release in order to ensure that the latest macro changes are included.

CBPDO is Custom-Built Product Delivery Offering. The CBPDO product package consists of one logical tape (multiple volumes). A CBPDO package that includes IMS can also include other products in the same System Release (SREL). CBPDO also provides service for the products included with the product order. The service includes all PTFs available within one week of order fulfillment. All PTFs are identified by one or more SOURCEIDs, including PUTyymm, RSUyymm, SMCREC, and SMCCOR.

ServerPac is an entitled software delivery package. It consists of products and service for which IBM has performed the SMP/E installation steps and some of the post-SMP/E installation steps. To install the package on your system and complete the installation of the software it includes, use the CustomPac Installation Dialog, which is the same dialog used for all CustomPac offerings, including SystemPac® (dump-by-data-set format), ProductPac®, and RefreshPac. For IMS, ServerPac allocates, catalogs, and loads all the data sets; sets up the SMP/E environment; supplies a job to update PARMLIB (IEFSSNxx, PROGxx, IEASVCxx, and SCHEDxx) ; and directs you to start the IVP

System definition is required as with previous IMS releases. Most system definition statements from previous IMS releases are compatible with IMS 13.

Installation and Migration Tasks

- Migration Tasks (continued)
  – Install the Type 2 and Type 4 SVCs
  – Upgrade RECONs
  – ACBGEN
  – Run the IVP

System definition creates the Type 2 and Type 4 SVC modules which must be installed in the z/OS system. A z/OS IPL is not required. They may be installed by running DFSUSVC0 and specifying SVCTYPE=(2,4).

Upgrade the RECONs by using the CHANGE.RECON UPGRADE command using the IMS 13 release of the DBRC utility.

An ACBGEN is required for use with the online system or any batch DBB jobs.

Running the IVP is optional, but recommended. All required installations tasks are done outside of the IVP. The IVP verifies that the installation is correct.

Review of Migration Considerations

OTMA Global Flood Control – Migration Considerations…

- Messages
  - Enhancements to DFS4388W and DFS0793I messages
    - Possible changes to automation programs that deal with DFS4388W and DFS0793I messages
  - New messages DFS3428W and DFS3429E
- Changes to the default values
  - OTMA global flood limit: 8,000 → 10,000
  - Relief value: 6,400 → 5,000
- /STA TMEMBER ALL INPUT ####
  - In previous releases resulted in warning messages
  - Now turns on global control and will reject new input
    - IMPACT if you change the value to be below what is currently queued

Older releases of IMS provided the following messages for an input message flood condition: DFS1988W, DFS1989E, and DFS0767I. In IMS 11 four additional messages were introduced: DFS4380W, DFS4381I, DFS4388W, and DFS0793I.

In IMS 13, the existing DFS4388W (when limit is reached and the new global support is not active) and DFS0793I (when flood is relieved) messages have been enhanced to make them clearer and to be consistent with the new messages:

▪DFS3428W THE TOTAL OTMA INPUT MESSAGES(TIB) HAVE REACHED XX% OF THE GLOBAL LIMIT ZZZZ

▪DFS3429E THE TOTAL OTMA INPUT MESSAGES(TIB) HAVE REACHED THE GLOBAL LIMIT ZZZZ

Additionally, issuing the /STA TMEMBER ALL INPUT command prior to IMS 13 simply turned on global flood notification and a warning message at 100%. The same command in IMS 13 enforces the global limit and will cause any new input to be rejected.

IBM

OTMA Global Flood Control – Migration Considerations

- Pre-IMS 13:
  - Changing the value with: /START TMEMBER ALL INPUT 200 command
    - Does not trigger the flood status update in the /DIS OTMA output even if there are more messages than the limit until a new OTMA transaction is entered
    - New input continues to be accepted warning messages are issued

- IMS 13:
  - Changing the value with: /START TMEMBER ALL INPUT 200 command
  - Immediately takes effect
    - If there are <u>more</u> messages waiting to be processed than the <u>value</u>
      - DFS3429E THE TOTAL OTMA INPUT MESSAGES(TIB) HAVE REACHED THE GLOBAL LIMIT ZZZZ
      - /DIS OTMA shows a status of SERVER+FLOOD
      - New input is rejected

09- IMS Installation & Migration: 40

IMS Connect Migration Considerations…

- Maximum number of XML converters that can be loaded
  - Increased to 2000 from 100
  - Existing commands that display configuration parameters
    - Include displays with two new fields:
      - Current number of converters and maximum limit

(WTOR) VIEWHWS
and z/OS MODIFY

```
HWSC0001I    HWS ID=HWS1      RACF=N  PSWDMC=R
HWSC0001I         UIDCACHE=N   UIDAGE=2147483647
HWSC0001I         MAXSOC=50       TIMEOUT=2147483647
HWSC0001I         NUMSOC=5        WARNSOC=55%  WARNINC=5%
HWSC0001I         RRS=Y     STATUS=REGISTERED
HWSC0001I         VERSION=V13 IP-ADDRESS=009.030.114.199
HWSC0001I         SUPER MEMBER NAME=      CM0 ACK TOQ=
HWSC0001I      ADAPTER=Y MAXCVRT=400  NUMCVRT=15
```

(Type-2)

```
QUERY IMSCON TYPE(CONFIG) SHOW(ALL)

TSO SPOC output:  (screen 1)
 MbrName CC  Version IconID IpAddress              MaxSoc TimeOut NumSoc  WarnSoc   WarnInc
 HWS1       0     V13     HWS1  009.030.124.150    50      5000        4              80
5

....
(screen 3)
 MbrName Adapter MaxCvrt NumCvrt ODBMAC ODBMTO ODBMIpMem ODBMTMem
 HWS1       Y        400      15                    Y        18000        IMSPLEX1
PLEX1
```

The previous maximum of 100 XML Converters that could be loaded at any one time into an IMS Connect instance has been increased to 2000. To support the new capability the existing IMS Connect command output to display the configuration has been enhanced to include the maximum as well as current number of converters. This affects the output of the WTOR command: VIEWHWS; the z/OS Modify command: F HWS1,QUERY MEMBER TYPE(IMSCON) SHOW (ALL); and the IMS Type-2 command: QUERY IMSCON TYPE(CONFIG) SHOW(ALL).

IMS Connect Migration Considerations

- IMS Connect Recorder trace entries have been expanded to capture entire messages sent and received using:
    - All TCP/IP communications
        - Including DRDA sockets and ISC TCP/IP
    - SCI (OM, ODBM, MSC, and ISC communications)

    - Turning on the trace in IMS 13 uses the same method as IMS 12

        UPDATE TRACETABLE NAME(RCTR) OWNER(HWS) **LEVEL(HIGH)** EXTERNAL(YES | NO)

    - But IMS 13 could produce a significant increase in trace records
        - Ensure that BPE external tracing is enabled

IMS Connect 12 introduced new Recorder Trace Records that made use of BPE's External Trace Tables. In IMS Connect 13, these trace records have been expanded to capture the entire messages sent and received on the DRDA sockets as well as all messages sent and received to/from OM and ODBM via SCI. Although enabling the trace in IMS Connect 13 uses the same command as in IMS Connect 12, the amount of trace information produced could be significantly higher. Make sure that BPE external tracing is enabled to account for the increase.

IBM

IMS Enterprise Suite V3.1 for z/OS

- Program Number 5655-TDA

- Program Directory for IMS Enterprise Suite GI10-8964-00

- Components that run on z/OS supplied in CBPDO
  - Base Services – HAHF310 sample Jobs for installation of z/OS based components
    - IBM 31-bit SDK for z/OS Java Technology Edition Version 7
  - SOAP Gateway - JAHF311
  - Java Message Services (JMS) API - JAHF312
  - Connect API for Java programming language - JAHF313

A new IMS Enterprise Suite is now available. The components in IMS Enterprise Suite for z/OS V3.1 are available for the z/OS or distributed platforms to facilitate application development and enable greater reach and maximum participation of IMS transactions and data in an On-Demand or service-oriented business environment. The Enterprise Suite for z/OS is supplied as no charge orderable Custom-Built Product Delivery Offering (CBPDO). See the Program Directory for IMS Enterprise Suite.

The Installable Information Center framework, which was shipped with IMS Enterprise Suite for z/OS, V2.2 (5655-T62), is not included in IMS Enterprise Suite for z/OS, V3.1.1 (5655-TDA). To install a local information center for local access to documentation for IMS Enterprise Suite for z/OS and other products, including IMS, IMS Tools, DB2® for z/OS, and DB2 Tools, you can download the latest version of the framework from its download site at

https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?source=swg-insinfozOS.

IMS Enterprise Suite 3.1 .NET
Data Provider System Requirements

- Software requirements
  - IMS V13
    - IMS Connect
    - CSL, Open Database Manager (ODBM)
    - IMS catalog
    - IMS V13 APAR fixes PM96324 and PI05437
    - IMS Enterprise Suite 3.1 .NET Data Provider
  - Microsoft Visual Studio 2010
  - Windows XP with Service Pack 3 or later (32 or 64 bit)

IMS Enterprise Suite 3.1.NET
Data Provider Installation and Migration

- Distribution site
  - http://www-01.ibm.com/software/data/ims/soa-integration-suite/enterprise-suite

- IMS .Net Data Provider installation
  - Use the IBM Installation Manager to install the IMS .NET Data Provider
  - The IMS .NET Data Provider is distributed as a dynamic link library (ImsDataProvider.dll).
    - Add the .dll to the client application reference path:

    ```
    C:\Program Files\ReferenceAssemblies\Microsoft\Framework\.NETFramework\v4.0
    ```

IMS Enterprise 3.1 Connect API for Java

- The following software versions are supported:
  - z/OS V1.12 or later
  - IMS V13 ,V12 and V11
    - Some functions unavailable in IMS V11
  - Java Development Kit Version 6.0 (JDK 6.0) or later for the development
  - Java Runtime Environment Version 6.0 (JRE 6.0) or later for the runtime
  - Microsoft Windows 7 (SP1)

IMS Enterprise 3.1 Connect API for C

- The following software versions are supported:
  - z/OS V1.12 or later
  - IMS V13 ,V12 and V11
  - Microsoft .NET Framework 2.0 or later
  - Microsoft Windows XP (SP2)

  - Microsoft Windows 7 (SP1)

IMS Enterprise Suite 3.1 SOAP Gateway

- z/OS V1.13 or later
- Supported IMS versions
  - IMS Enterprise Suite Version 3.1 supports IMS V13, V12 ,V11
  - In addition:
    - For IMS 11, APAR PM27324 must be applied
    - For IMS 12, APAR PM29137 must be applied
      - The SOAP Gateway transaction tracking and transaction logging features requires IMS 12 APAR PM69983 & PM76333
    - For IMS 13 synchronous callout, APAR PM91344
- Java Technology Edition, Version 7.
- Required versions of Rational Developer for System z
  - Rational Developer for System z Version 9.0 or later is required
- Requirements for business events for WebSphere Business Events:
  - WebSphere Business Events Development Toolkit Version 6.2 or later installed in a compatible version of IBM Rational Application Developer for WebSphere Software
  - WebSphere Business Events Server Version 6.2 or later
  - For WebSphere Business Monitor:
    - WebSphere Business Monitor Development Toolkit Version 6.2 or later installed in a compatible version of Rational Application Developer

09- IMS Installation & Migration: 48

IMS Enterprise Suite 3.1 SOAP Gateway …

- Migrating existing web services
  - Support for migrating Services & Properties from V2.1 & V2.2
  - Correlator schema has changed
  - Use management utility
    ```
    iogmgmt -migrate
    ```
  - For correlator file genned by Rational Developer V2
    ```
    iogmgmt -migrate correlator
    ```
- Enhanced migration support of server properties
  - The -migrate command is enhanced to support the migration of server properties
    - Support the migration of existing server properties
    - Propagate the server configuration to multiple server instances

    ```
    iogmgmt -migrate /absolute path to IMS_Enterprise_Suite_SOAP_Gateway/
    ```

Database Versioning – Migration Considerations

- **Enable IMS Catalog**
  - Populate catalog with DBD version definitions
  - Before Database Versioning is enabled for a database, IMS continues to only recognize the current active database definition

- **Recommendations**
  - In preparation to enable Database Versioning, specify the new DBD and PSB statement versioning attributes
    - Use the DBLEVEL=CURR setting so all applications access database at latest levels by default
    - Use the PCB DBVER= parameter if an application needs to continue using an old version of a database
  - All systems in an IMSplex must be running IMS 13
  - Enable Database Versioning

HALDB Alter – Migration Considerations

- **Enable Common Service Layer (CSL)**
  – Operations Manager (OM)
  – Structures Call Interface (SCI)
  – Type-2 INITIATE OLREORG command with new OPTION(ALTER)
  – Type-2 QUERY OLREORG command to display ALTER status for a DB
- **DBRC**
  – RECON MINVERS must be at least ('13.1')
  – Several DBRC LISTs produce output containing new fields
  – DBRC API Query output has changed
  – Content of several DBRC RECON record have changed
- **Recommendations**
  – If database ALTER needed and HALDB not used
    • Convert Full-Function Database to HALDB Database
  – All systems in an IMSplex must be running IMS 13

IMS Tools

IMS Tools Migration/Coexistence

■ **Some products may require updates**

  – Contact your vendor for information on requirements

  – IBM has a web site with consolidated information about requirements for IBM IMS tools with various IMS releases

  – http://www-01.ibm.com/support/docview.wss?uid=swg21611198

  • Or **http://tinyurl.com/kbwrey3**

Check the website for the most up to date information

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IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
InfoSphere Guardium Data Encryption for DB2 and IMS Databases	1.2.0	5655-P03		Tool is IMS release independent - does not require a PTF
IBM DB/DC Data Dictionary	1.6.0	5740-XXF		Tool is IMS release independent – does not require a PTF
IBM Tools Base	1.3.0	5655-V93	Jan 2013	**Gen Exits: PM75246/UK90548** **TOSI: PM75257/UK90611** **HWDCE: PM75481/UK90489** **Scrub Utility: PM 79984/UK90846**
IBM Transaction Analysis Workbench	1.1.0	5697-P37		PM75605/UK91447
IMS ADF II	2.2.0	5665-348		Tool is IMS release independent - does not require a PTF
IMS Audit Management Expert	1.2.0	5655-R23		Replaced by IBM InfoSphere Guardium S-TAP for IMS
IMS Batch Backout Manager	1.1.0	5697-H75		PM75612/UK90905

IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
IMS Batch Terminal Simulator	3.1.0	5655-J57	N/A	New version required
	4.1.0	5655-BT4		PM70739/UK90240
IMS Buffer Pool Analyzer	1.3.0	5697-H77		PM75613/UK90934
IMS Cloning Tool	1.1.0	5655-U91		PM73059/UK91106
IMS Command Control Facility	2.1.0	5655-R58	Jan 2013	PM76073/UK91079
IMS Configuration Manager	1.3.0	5655-L69	N/A	New version required
	2.1.0	5655-WR2		PM75879/UK95193
IMS Connect Extensions *	2.2.0	5655-S56	N/A	New release required
	2.3.0	5655-S56		Includes Functional Support Library (FSL) – Common code for CEX. Toleration PTFs not required. Exploitation PTFs: - PM76242/UK95969 (CEX) - PM88073/UK95968 (FSL)

* Indicates that the pack component is sold also as a standalone product

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IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
IMS Data Refresher	1.1	5696-703		No PTF required
IMS Database Control Suite	3.2.0	5655-L08		PM75489/UK90875
IMS Database Reorganization Expert *	4.1.0	5655-S35		PM75249/UK90493
IMS Database Repair Facility (DBRF)	1.2.0	5655-E03		Out of service Sept. 2011. Now delivered as an embedded function owned by IMS HP Pointer Checker. The DBRF FMID is also "shadowed: in IMS Database Solution Pack and IMS Fast Path Solution Pack.
IMS Database Solution Pack	1.1.0	5655-S77	N/A	New release required
	1.2.0 2.1.0	5655-S77 5655-DSP	N/A	PTFs required for individual products Must apply PTFs for standalond products in the pack
IMS DataPropagator	3.1	5655-E52		No PTF required

Indicates that the pack component is sold also as a standalone product

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IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
IMS DEDB Fast Recovery	2.2.0	5655-E32		PM75251/UK90239
IMS ETO Support	3.1.0	5655-L61		PM76074/UK90989
IMS Fast Path Solution Pack	1.1.0	5655-W14	N/A	New release required
	1.2.0	5655-W14		Pack only: PM75252/UK90549 PTFs required for pack and stand-alone products Embedded Database Repair Facility function: PM78910/UK90495 Must apply PTFs for standalone products in the pack (HPIC and DBRF)
	1.3.0	5655-W14		
IMS HALDB Toolkit	3.2.0	5655-N46		PM73162/UK83980
IMS HP Image Copy *	4.2.0	5655-N45		PM75253/UK90552
IMS HP Load *	2.1.0	5655-M26		PM75254/UK90459
IMS HP Pointer Checker *	3.1.0	5655-U09		HPPC: PM75255/UK90496 DBRF: PM78910/UK90495
IMS HP Prefix Resolution *	3.1.0	5655-M27		PM75256/UK90563

Indicates that the pack component is sold also as a standalone product

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IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
IMS HP Sysgen Tools	2.2.0	5655-P43		PM75614/UK90992
IMS HP Unload *	1.2.0	5655-E06		PM75257/UK90563
IMS Index Builder *	3.1.0	5655-R01		PM75258/UK90494
IMS Library Integrity Utilities *	2.1.0 2.2.0	5655-U08 5655-U08		PM75259/UK90553 No PTF required
IMS Network Compression Facility	1.1.0	5655-E41		PM75616/UK90350
IMS Online Reorganization Facility	1.2.0	5655-H97		PM75260/UK90554
IMS Performance Analyzer *	4.2.0	5655-R03	N/A	New release required
	4.3.0	5655-R03		PM74169/UK90796
IMS Performance Solution Pack	1.1.0	5655-S42	N/A	New release required
	1.2.0	5655-S42		PTFs required for individual products

* Indicates that the pack component is sold also as a standalone product

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09- IMS Installation& Migration: 58

IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
IMS Problem Investigator *	2.2.0	5655-R02	N/A	New release required
	2.3.0	5655-R02		V11 components: PM74271/UK90807 V12 components: PM74272/UK90808 V11 components: PM74172/UK90802
IMS Program Restart Facility	2.1.0	5655-E14		PM75617/UK90879
	2.2.0	5655-E14		No PTF (note: IMS BBM is merged into IMSPRF
IMS Queue Control Facility	3.1.0	5697-N50		PM75713/UK90617
IMS Recovery Expert	2.1.0	5655-S98		PM73060/UK93129
IMS Recovery Solution Pack	1.1.0	5655-V86		DRF: PM73744/UK90564 DRF-XF: PM75720/UK90586 HPCA: PM75717/UK90565 DRF/XF IMSv13 support does not include the RCU and RECONCOPY features (future PTF)

Indicates that the pack component is sold also as a standalone product

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IMS Tools Support

Product Name	V.R.M	PID	IMS 13 Support	Requirements
IMS Sequential Randomizer Generator	1.1.0	5655-E11		IMS release independent – does not require a PTF
IMS Sysplex Manager	1.3.0	5655-P01		PM76076/UK90640
IMS Workload Router	2.7.0	5697-B87		PM72991/UK90761

IMS Tools Solution Pack components

IMS Recovery Solution Pack
- IMS Database Recovery Facility
- IMS Database Recovery Facility: Extended Functions
- IMS High Performance Change Accumulation Utility
- IMS High Performance Image Copy *
- IMS Index Builder *

IMS Performance Solution Pack
- IMS Connect Extensions *
- IMS Performance Analyzer *
- IMS Problem Investigator *

IMS Database Solution Pack
- IMS Database Reorganization Expert *
- IMS High Performance Image Copy *
- IMS High Performance Load *
- IMS High Performance Pointer Checker *
- IMS High Performance Prefix Resolution *
- IMS High Performance Unload *
- IMS Index Builder *
- IMS Library Integrity Utilities *
- Database Repair Facility function embedded
    (separate "shadowed" FMID)

IMS Fast Path Solution Pack
- IMS Fast Path Advanced Tool
- IMS Fast Path Basic Tools
- IMS Fast Path Online Tools
- IMS High Performance Image Copy *
- IMS Library Integrity Utilities *
- Database Repair Facility function embedded
    (separate "shadowed" FMID)

IBM Tools Base
Autonomics
- Autonomics Director
- IMS Tools Knowledge Base
- Policy Services
Modernization (GUI)
- Administration Console
- IMS Batch Terminal Simulator Resource Adapter
- IMS Batch Terminal Simulator GUI plugin
Common Services
- Connection Server
- Distributed Access Infrastructure
- IMS Tools Generic Exits
- IMS Tools Online System Interface
- ZIIP Enablement Routine (API)
Supplementary Tools
- IMS Hardware Data Compression Extended
- IBM Tools Customizer (separate FMID)
- IMS Records User Data Scrub Utility

* Indicates the pack component is sold also as a standalone product

Other Tools Supporting IMS 13

Product Name	V.R.M	PID	IMS 13 Support	Requirements
Application Performance Analyzer for z/OS	13.1	5655-Q09		GA – 10/18/2013
	12.1	5697-Q03		PM85313/UK93416
Application Recovery Tool for IMS and DB2 Databases	1.2.0	5697-F56		PM99596
Debug Tool for z/OS	13.1	5655-Q10		GA – 10/18/2013
	12.1	5655-W45	N/A	No PTF required
	11.1	5655-W45	No support	New version required
	10.1	5655-V50	No support	New version required
Fault Analyzer for z/OS	13.1	5655-Q11		Available 10/18/2013
	12.1	5655-W69		PM78349/UK91859
	11.1	5655-W46		PM78350/UK91900
	10.1	5655-V51		PM78351/UK91960
File Manager for z/OS	13.1	5655-Q12		GA – 10/18/2013
	12.1	5655-W47		No PTF required
	11.1	5655-W47	No support	New version required
	10.1	5655-V52	No support	New version required

Other Tools Support …

Product Name	V.R.M	PID	IMS 13 Support	Requirements
Hourglass	6.1.0	5697-P29		No PTF required Hourglass User Guide updated with instructions to setup IMS to work with HourGlass.
InfoSphere Classic Change Data Capture for z/OS	11.1 10.1	5655-IM5 5655-W29		PTFs TBD
InfoSphere Classic Data Event Publisher for z/OS	9.5	5655-R54	N/A	Use InfoSphere Classic Change Data Capture for z/OS 11.1
InfoSphere Classic Federation for z/OS	11.1 10.1 9.5	5655-IM4 5655-W33 5655-R52	N/A	PTFs TBD PTFs TBD New version required
InfoSphere Classic Replication Server for z/OS	9.5 10.1	5655-R53 5655-W28	N/A	Use InfoSphere Classic CDC for z/OS v11.1 PTFs TBD
InfoSphere Guardium S-TAP for IMS on z/OS	9.0 8.2.0	5655-STY 5655-STN	N/A	PM74892/UK90690 for IMS 13 support for users of AUI V9.0
InfoSphere IMS Replication for z/OS	11.1 10.1	TBD 5655-W28		No PTF required PTF TBD

Other Tools Support …

Product Name	V.R.M	PID	IMS 13 Support	Requirements
InfoSphere OPTIM Data Growth Solution for z/OS IMS/VSAM/SEQ	7.2	5655-DG9	(Classic Fed support only)	OPTIM LUW depends on the following products to support IMS 13: - IBM Classic Federation Server v10.1 - Optim Connect 5.3.3
InfoSphere OPTIM Move IMS//VSAM/SEQ (ISPF)	7.2	5655-V04	(ISPF-based support only)	No PTF required
	7.1	5655-V04		For IMS 12 PM43674/UK70435 which is the pre-req for IMS 13
InfoSphere OPTIM Test Data Management Solution for z/OS IMS/VSAM/SEQ (Distributed)	8.1.0	5655-DG4	(Classic Fed support only)	OPTIM LUW depends on the following products to support IMS 13: - IBM Classic Federation Server v10.1 - Optim Connect 5.3.3
Tivoli AF/Integrated Resource Manager	5.0.0	5608-AFI		OA40457/UA66818
Tivoli AF/Operator on z/OS	3.4.1	5608-C03		No PTF required
Tivoli Decision Support for z/OS	1.8.1	5698-B06		Toleration: PM83774/UK97165
	1.8.0	5698-B06		Toleration: PM83744/UK97164

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Other Tools Supporting IMS 13 …

Product Name	V.R.M	PID	IMS 13 Support	Requirements
Tivoli OMEGAMON XE for IMS on z/OS	5.1.0	5698-T02		OA43450/UA70976 OA40749/UA68727
	4.2.0	5698-A34		OA43450/UA70976 OA40749/UA68726
Tivoli OMEGAMON XE for DB2 Performance Monitor on z/OS	5.1.1	5655-W38		PM70618/UK91292
	5.1.0	5655-W38		PM70618/UK91291
	~~4.2.0~~	~~5655-Q08~~	~~N/A~~	~~New version required~~
Tivoli OMEGAMON XE for DB2 Performance Expert on z/OS	5.1.1	5655-W37		PM70618/UK91292
	5.1.0	5655-W37		PM70618/UK91291
	4.2.2	5655-Q07	N/A	New version Required
Tivoli System Automation for z/OS (TSA)	3.4	5698-SA3	N/A	Tool is IMS release independent, does not require a PTF
	3.3	5698-SA3	N/A	Tool is IMS release independent, does not require a PTF
	3.2	5698-SA3	N/A	End of service Apr 2013
	3.1	5698-SA3	N/A	End of service Sept 2010
IBM Tivoli Monitoring (ITM)	6.2.2	5724-C04	N/A	Tool is IMS release independent, does not require a PTF

Other Tools Supporting IMS 13 …

Product Name	V.R.M	PID	IMS 13 Support	Requirements
Tivoli Omegacenter Gateway on z/OS	3.4.1	5608-C04		OA41379/UA67913
WebSphere MQ for z/OS	7.1.0 7.0.1	5655-R36 5655-R36		No PTF required No PTF required