



IBM Information Management System (IMS) 13 Transaction and Database Servers delivers high performance and low total cost of ownership

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At a glance

IMS™ 13 (5635-A04) delivers on its tradition of high-performance, low-cost transaction processing with multiple enhancements that improve IMS efficiency, reduce MIPs usage, and therefore reduce clients' total cost of ownership. The synergy of IMS with IBM® System z® and IBM z/OS® allows IMS to exploit new hardware and software enhancements, including specified System z Integrated Information Processor (zIIP) utilization.

By relentlessly focusing on delivering performance that keeps the world in business, IBM has broken new ground with IMS 13 by achieving an unprecedented milestone for a Fast Path benchmark: High Volume Transaction Processing reaching 100,000 transactions per second on a single system.¹ IMS 13 is performance charged and production ready.

IMS 13 Transaction Manager enhancements

- IBM IMS Connect, the TCP/IP gateway to IMS transactions, operations, and data, offers improved IMS flexibility, availability, resilience, and security.
- TCP/IP support for Intersystem Communication (ISC) links between IMS and CICS® can help reduce maintenance costs and complexities.
- Synchronous program switch and enhanced callout support ease IMS application development and connectivity to assist developers with business transformation.
- Enhanced commands, security, repository, and open transaction manager access (OTMA) support simplify operations, improve availability, and can help reduce total cost of ownership.

IMS 13 Database Manager enhancements

- Online Alter function for IMS High-Availability Large Databases (HALDB) and Fast Path data entry databases (DEDB) simplifies database changes and enhances availability.
- Database versioning offers greater flexibility for implementing database changes and speeding new program deployments without the need to roll out changes to existing programs.
- DBRC enhancements include migration and coexistence support for RECON records that changed in IMS 13, changes that support the DEDB alter and HALDB alter functions, and changes to the DELETE.LOG command.
- Enhanced log, storage, and infrastructure support reduce total cost of ownership, improve performance, and enable growth.

- Native SQL support for COBOL enables SQL in COBOL programs to access IMS databases and provides SQL processing natively in IMS .
- Enhanced support for Distributed Relational Database Architecture™ (DRDA®) distributed data management (DDM) command for native SQL in order to improve Open Database flows.
- Additional support for Java™ , SQL, and tools ease IMS development and access to IMS data.

¹

Performance is based on measurements from testing a single IMS , using IBM's Fast Path benchmark. The IMS application workload is run on a specific hardware and software configuration in a controlled laboratory environment. For details, refer to [Performance considerations](#) section.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: LE001).

Overview

IMS is the high-performance application and data server for IBM System z . No other solution offers the combination of extremely high performance, scalability, rock-solid reliability, and runtime efficiency. When it comes to running core applications that are at the heart of business processing, most large corporations worldwide continue to depend on IMS .

Today's enterprise IT needs are more closely tied to businesses than ever before. Companies require efficiency to meet the cost challenges and responsiveness demanded by the global economy. Enterprise IT must support growth, enabling your business to rapidly develop new products and services to remain competitive while at the same time increasing productivity and flexibility on demand. Business today also requires IT systems to be resilient, helping reduce business risk and helping companies to comply with regulations and business processes.

IMS and IBM IMS Tools continue to evolve to provide value and help enterprise customers meet these needs. They have offered investment protection for four decades. The IMS assets you have invested in continue to not only operate on current releases without modifications, but can also be easily re-purposed as web services, mobile apps, and so on, thus preserving and extending the ROI of your original investment.

IMS delivers unmatched capabilities to address your On Demand Business needs through enhanced integration, openness, manageability, and scalability.

Benefits include the following:

- Integration and open access improvements offer the flexibility and support for your business growth requirements.
- Manageability enhancements help you optimize system staff productivity by improving ease of use and autonomic computing facilities, while also enabling increased availability.
- Scalability improvements have been made to the well-known performance, efficiency, availability, and resilience of IMS .

IMS includes many additional features and improvements that, along with the System z platform, help you meet your IT and enterprise data center cost challenges, as well as efficiency, resilience, and flexibility needs.

To learn more about IMS products and tools, visit

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

Key prerequisites

Processors: IMS 13 operates on 64-bit IBM processors capable of running z/OS V1.13, or later, and supports the Long Displacement Facility of the z/Architecture® .

Additional line-item requirement information and a list of supported terminals is provided in the *IMS 13 Release Planning Information* and the *Program Directory for IMS V13.01.00* found in the IMS Resources section and following the product documentation link at

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

Planned availability date

October 25, 2013

Description

Integrated and open access for simplified application development and deployment

IMS TCP/IP and IMS Connect

IMS TCP/IP communication is enhanced to optionally enable IMS systems to communicate with CICS systems through the Intersystem Communication (ISC) connection using TCP/IP protocols. This can help reduce maintenance costs and complexities associated with maintaining SNA LU 6.1 communications between these systems.

The new ISC TCP/IP connection supports the asynchronous sending and receiving of transaction messages and their responses, using the IMS Connect function to enable TCP/IP communication with CICS . The configuration and operation of the ISC TCP/IP links are similar to that of the ISC VTAM® links. Both link types can coexist and be used as backup to each other to help availability.

To ease operational support for IMS TCP/IP connections, new IMS Connect type-2 commands are provided to create new port and datastore definitions. Eliminating the need to restart IMS Connect to add or create these definitions contributes to higher availability.

IMS Connect enhancements enable you to use IMS Connect more easily while giving you improved availability and security. These enhancements, which make IMS Connect more helpful, more resilient to abends, and easier to use and manage, enable you to:

- Query XML Converters loaded in IMS Connect
- Auto-restart the Language Environment® (LE) if an XML Converter abend occurs
- Expand the Recorder Trace Records and provide some new trace records
- Use the RACF® Event Notification Facility (ENF), which enables IMS to automatically refresh the cached RACF user IDs
- Configure TCP/IP backlog or queue size for concurrent connection requests
- Automatically report overall health to Workload Manager (WLM) for Sysplex Distributor to use and take into account when routing work to IMS Connect

IMS Connect immediate socket notification

When an IMS Callout client terminates, IMS Connect and IMS are not notified of the client termination. This can result in unnecessary IMS callout failures in the IMS application, or in delays in re-establishing a client connection. Now IMS Connect

listens for such client terminations for Resume TPIPE clients when the execution timeout value is 'wait-for-ever'.

Open Transaction Manager Access (OTMA) enhancements

OTMA Early Termination Notification support disconnects the OTMA clients, such as IMS Connect and IBM WebSphere® MQ for z/OS (5655-R36) from the OTMA z/OS cross-system coupling (XCF) group earlier in the notification process. The OTMA client can then route new transactions to other IMS systems, resulting in more completed requests. This reduces CPU usage by not attempting to process new requests during IMS shutdown.

OTMA destination descriptors are enhanced to support asynchronous callout messages to WebSphere MQ by way of the WebSphere MQ-IMS bridge. This enables you to send asynchronous output messages to WebSphere MQ without having to code OTMA user exits to recognize an MQ destination. This simplifies integration and messaging to WebSphere MQ. In addition, it enhances availability by supporting dynamic definition change using type-2 commands.

OTMA destination routing exits (DFSYPX0 and DFSYDRU0) can also now be called when a destination name is found in the OTMA destination descriptor. The exits can make the final routing decision whenever the OTMA destination descriptor allows.

OTMA now includes an option to enforce the global flood limit to reject new transaction requests from all of the OTMA clients and protect IMS from storage exhaustion. This improves system resilience.

The OTMA client connection has been enhanced to allow clients to declare their "type" to OTMA. Knowing the type allows OTMA to optimize certain functions for greater efficiency. IMS Connect provides the OTMA client type during the OTMA client connection. The OTMA Callable Interface (OTMA C/I) is already identified, as is the internal DFSYICAL for Synchronous program switch.

OTMA C/I provides a high-level interface for host infrastructure applications to send and retrieve messages with IMS OTMA using XCF services. This enhancement changes OTMA C/I to use the OTMA hold queue.

Important OTMA messages are now sent to the Write To Operator (WTO) console; previously these messages were sent only to the Master Terminal Operator (MTO) Logical Terminal (LTERM). If you use automation for console WTO messages, you can benefit from OTMA messages, which are now being sent to both the MTO and WTO consoles. There are no changes to the message content.

Intersystem Communication (ISC) enhancements

To support strategic moves toward TCP/IP networking, ISC has been enhanced to support TCP/IP for asynchronous communication on ISC links between IMS and CICS . TCP/IP support for the ISC links is provided by IMS Connect. Dynamically defined terminals that use ISC TCP/IP links require the IMS Extended Terminal Option (ETO). This enhancement can help eliminate maintenance costs and complexities associated with maintaining SNA LU 6.1 communications between these systems.

Installation Verification Program (IVP) enhancements for ISC TCP/IP

New samples for the ISC TCP/IP feature are provided as part of the Installation Verification Program. System programmers, application developers, and computer operators can use the IVP sample system, the sample applications, and the jobs and tasks as a training vehicle. The ISC TCP/IP IVP samples provide and demonstrate the setup and configuration of ISC TCP/IP.

Synchronous program switch

You can use the DL/I ICAL function to perform a program switch and receive a synchronous response during the same unit of work. For example, you can enable a transaction from another application receiving input and, based on the contents,

synchronously call additional programs to complete the business transaction. This simplifies the IMS program logic, reduces unnecessary network traffic of multiple external transactions, and eases reuse of existing services of IMS applications. Synchronous program switch is also supported by the Universal Java Dependent Region Resource Adapter and the JMS API.

Synchronous callout

A new RECEIVE subfunction for the ICAL call can retrieve the entire synchronous callout response data when an ICAL call returns with truncated response data. No TCP/IP traffic is needed to get the response data with the RECEIVE subfunction of the ICAL retrieval call. The DL/I ICAL call for synchronous program switch also supports the RECEIVE subfunction.

Java-dependent regions use of External Subsystem Attach Facility

Java-dependent regions can now use the External Subsystem Attach Facility. This enables connections for DB2® to be consistent across all region types, gives you access to other subsystems, such as WebSphere MQ, and eliminates the need to use z/OS Resource Recovery Services (RRS) attach for DB2 . In addition, it enables the following:

- Java Message Services (JMS) access to MQ from IMS Java applications
- MQ access from IMS COBOL and PL/I applications
- WebSphere Optimized Local Adapter (WOLA) access from IMS COBOL and PL/I applications
- Simplified external subsystem definitions

Increased number of application threads

The maximum number of application threads that can run concurrently is increased from 999 to 4095. This supports newer system hardware with additional room for vertical growth, and enables IMS to add capacity without having to add more IMS images.

User exit enhancements

The user exit enhancement provides the means to reduce the number of times IMS must be restarted to update a user exit by extending the existing refresh support to additional user exits. New user exit enhancements allow the following user exits for the enhanced user exit services:

- Build Security Environment User Exit (BSEX)
- Log Record Edit User Exit (LOGEDIT)
- Logger User Exit (LOGWRT)
- Non-Discardable Messages User Exit (NDMX)
- OTMA Input/Output User Exit (OTMAIOED)
- OTMA Security User Exit (OTMARTUX)
- OTMA Destination Resolution User Exit (OTMAYPRX)
- Resource Access Security User Exit (RASE)

The enhanced user exit services provide you the ability to:

- Use the REFRESH USEREXIT command to bring in a new copy of a user exit routine without bringing IMS down
- Use the QUERY USEREXIT command to display information about the user exit
- Define multiple user exit routines that are called for a user exit type

Security enhancements

New security enhancements make it easier to update security-related settings, simplify the system generation process and the process of linking IMS with user exits, and reduce 24-bit private virtual storage.

These enhancements include:

- Additional settings specified through runtime parameters, enabling the removal of the system definition SECURITY macro
- Security-related user exits moved out of the IMS nucleus
 - Modules loaded as stand-alone modules in 31-bit private virtual storage

In addition, the user exit DFSCSGN0 is called during IMS initialization and allows you to get storage that can be shared between exits.

Additional IMS 13 integration items from the IMS 12 service process

The IMS catalog offers a validated and comprehensive view of IMS database metadata and is fully managed by IMS . Catalog information includes program (PSB) and database (DBD) information defined to the IMS database system, including databases, fields, segments, data types, and more. When PSB and DBD resources are created, altered, or deleted, the catalog reflects those changes. This enables IMS to participate in solutions requiring exchange of metadata, such as impact analysis. The catalog also offers a more flexible IMS Open Database solution as applications no longer need to maintain Java metadata classes.

The IMS catalog includes information for other tools to enable fast, detailed impact analysis that can help reduce the overall costs associated with adding new or changed databases or application programs into IMS . The catalog helps minimize the risks of unexpected dependencies between IMS resources, and significantly aids new application development. It also includes information to simplify application development and viewing of application data, assisting in integration with the rest of the application and data management products and development tools. The catalog also enables large-scale deployment of IMS Open Database solutions. The catalog can offer a single source of up-to-date IMS metadata, no longer requiring a multifile system-based approach.

The IMS Universal Drivers are enhanced to support the IMS catalog for retrieving database and application metadata. This support allows for greater application scalability and support for complex datatypes (arrays and structures), and segment maps, which are different cases (sets of fields) within a segment where each case is only valid for a unique value of the map's control field. The drivers have also been enhanced with the ability to search on a qualifier based on an offset and length within a segment instance instead of a field name. This enhancement allows for greater search capabilities as search fields do not need to be defined within the DBD source.

Synchronous Callout SendOnly with ACK support enables the return to an external application of an indication that a response has been successfully delivered to IMS . It enables the commit or abort of the updated resources in the external application.

IMS OTMA TPIPE flood monitoring support has been enhanced to avoid getting the ABENDU0367 at the shared queues back-end IMS when the maximum TPIPE limit, specified via MAXTP parameter in the OTMA client descriptor, is reached for a front-end initiated OTMA transaction. And a global TPIPE limit for all of the OTMA clients (MEMBERS) can be specified.

OTMA transaction expiration enhancements do the following:

- Reduce MIPS usage.
- Support the WebSphere MQ expiry function, indicating the time for a message to live.

- Enable retrieval of the ALTPCB output created at Shared Queues backend IMS systems.
- Improve the usability of the /DISPLAY TMEMBER TPIPE command, adding support at the end of the TPIPE name in this command for a generic character or wildcard. The wildcard character can display a series of TPIPE queues named similarly.

These enhancements reduce CPU costs for IMS and MQ environments, simplify Shared Queues usage, and ease use of this DISPLAY command for all OTMA users.

IMS Connect is enhanced to increase the number of XML converters that can be loaded in IMS Connect from 100 up to 2000. This can simplify XML access and use.

IMS Transaction Manager Resource Adapter (RA) enhancements expand usage and ease deployment and security, with support for:

- IBM WebSphere Application Server V8.5 to enable applications to use the latest offerings of the server.
- IBM RACF password phrases to enhance the current support for RACF passwords. This support is provided through the IMS 13 service process.

The multiple systems coupling (MSC) facility was enhanced to increase the maximum number of MSC logical links (MSLINK) and physical links (MSPLINK) to 999.

The /DISPLAY ACTIVE command is enhanced to show the OLR-RUNNING status for a BMP type region started by IMS to process the OLR (Online Reorg). In addition, in IMS 13, the /DISPLAY ACTIVE command output also shows the status of OLR-ALTER-INPROG for a BMP region started by IMS to process the OLR-ALTER for an HALDB database.

In a Shared Queues environment, the /DIS POOL QBUF command is enhanced to return two additional lines of output to show the current in use count and the max in use buffer count information.

Use the IMS timer services to prevent "runaway" applications and excessive CPU or loops in an External Subsystem (ESS). A U240 time-out is now allowed while in an External Subsystem Call, if running under an IMS dependent region TCB. Before this enhancement, IMS applications, while in an ESS call, would wait for the ESS to return to the IMS dependent region before issuing a time-out ABENDU240. The change will now ABENDU240 IMS dependent regions that have timed out while in an ESS call, as long as they are running under the IMS dependent region's TCB.

The following separate products offer additional integration for IMS 13 users:

IBM IMS Enterprise Suite V3.1 (5655-TDA) is designed to enhance your use of IMS applications and data. In this new version of the suite, components deliver innovative new capabilities for your IMS environment that include the following:

- IMS SOAP Gateway helps you maximize reuse of your IMS assets, using standard interfaces with HTTP/SOAP transport to IBM and non-IBM components and utilizing Rational® tooling for XML conversion. New IMS SOAP Gateway enhancements use industry standards and enhanced tooling to further extend the reach and participation of your IMS assets in an SOA, with 64-bit support for the z/OS platform allowing organizations to take advantage of their 64-bit operating environment for extended memory usage. Another enhancement is the Send-only with acknowledgement protocol support for synchronous callout allowing IMS SOAP Gateway to receive a final confirmation that the response message was delivered to the original IMS application that issued the callout request, providing IMS SOAP Gateway users additional information about whether a callout response message was sent to IMS and whether IMS received the message. IMS SOAP Gateway also supports IMS 12 and IMS 11.
- IMS Enterprise Suite Explorer for Development support enables IMS application developers and database architects and developers to easily perform common

and essential tasks in an end-to-end application development lifecycle, through an Eclipse-based user interface that seamlessly integrates with other Eclipse-based solutions. Graphical editors simplify the development and visualization of Database Description (DBD) and Program Specification Block (PSB) resource definitions. IMS Enterprise Suite Explorer for Development also enables you to graphically edit PSBs and DBDs. It generates new PSB and DBD source and enables you to export that source to the host where normal PSBGEN, DBDGEN, and ACBGEN processing can be done. It also leverages the IMS Universal JDBC Driver to provide a relational view of IMS data, and offers the ability to graphically build and run ad hoc queries against live IMS data. IMS Enterprise Suite Explorer for Development also supports IMS 12 and IMS 11.

- IMS Enterprise Suite Connect APIs for Java and C extend connectivity of distributed platforms to IMS and simplifies application development for stand-alone, user-written IMS Connect clients. IMS Enterprise Suite Connect APIs also support IMS 12.
- JMS API expands Java application development in Java-dependent regions to offer IMS 13 synchronous program switch support with the ICAL DL/I call. JMS API also supports IMS 12 and IMS 11.
- IBM Installation Manager provides an effective way of managing installations through a hosted repository that clients install with the added ability to apply APARs, rollback, and uninstall the product. This also provides the flexibility for the IMS SOAP Gateway server components to be installed on different mount points and optionally in read-only mode, enhancing the server's ability to grow with the increasing demands for web services, with improved security. IMS Installation Manager also supports IMS 12.
- Base Services can help to ease installation, and includes the Java Development Kit and sample jobs for installation of z/OS based components. Base Services also support IMS 12 and IMS 11.

IBM intends, at a future time, possibly via its support and service processes, to make available IMS Data Provider for Microsoft™ .NET as part of the IMS Enterprise Suite for Distributed Systems offering. IMS Data Provider for Microsoft .NET will be designed to provide standard SQL access to IMS data from Microsoft .NET applications. The intention is to allow Microsoft .NET applications to transparently and directly read and manipulate IMS data without the need for intermediate steps and additional tooling to accomplish these tasks. Refer to the [Statement of direction](#) section for additional important information.

IBM Explorer for z/OS (z/OS Explorer), V2.1 is an Eclipse-based integration platform for z/OS users that enables the integration of a variety of offerings from IBM , vendors, or customers. The z/OS Explorer is extendable with the IBM repository of compatible products to fulfill each user's roles and responsibilities. For example, z/OS Explorer can provide a single Eclipse environment with the ability to develop and administer applications for key z/OS subsystems. IBM IMS Enterprise Suite Explorer for Development is made available in the IBM repository of compatible products and is enabled to shell-share with the rest of the IBM products listed in the repository. z/OS Explorer can be downloaded from

<http://ibm.com/systems/Z/os/zos/explorer>

The following separate products offer additional integration for IMS 12 and 13 users:

IBM 31-bit (5655-W43) and IBM 64-bit (5655-W44) SDK7 for z/OS Java Technology Edition Version 7 enable IMS Java application developers to take advantage of new IBM zEnterprise™ features, including:

- z/OS V1.13 Flash Express® for paging and for pageable large pages
- Transactional-Execution facility
- Miscellaneous-instruction-extension facility

These enhancements are delivered through the SDK7 for z/OS Java Technology Edition Version 7 service process.

WebSphere DataPower® Integration Appliance V6.0 (5725-K52) enables new level of integration across your enterprise environment; any external services can now be integrated and leverage the processing power of one of the fastest database management systems in the world: IMS .

- IMS Synchronous Callout Support for customers who need a high performance IMS callout solution. By defining an " IMS Callout Front Side Handler" to DataPower's MPG, an IMS application can initiate asynchronous calls to an external service through DataPower following the ICAL protocol.
- IMS Connect Support allows distributed services to drive an IMS transaction through DataPower . DataPower Multi-Protocol Gateway (or MPG) services can be configured with an IMS Connect backside handler to receive a request from a client, process it, and send it to IMS Connect; a response is sent back to the client once the message is processed by IMS .
- IMS Database Support enables a direct connection to an IMS database through the IMS Universal JDBC Driver. This support allows you to issue dynamic SQL calls such as basic CRUD operations on the IMS database.

InfoSphere® Guardium® S-TAP™ for IMS on z/OS , V9.0 (5655-STY) includes support for:

- Capture of database and segment reads and changes (insert, update, delete)
- Capture of segment concatenated key and segment data on request to provide before and after images of updated segments
- Capture of access to IMS data sets outside the control of IMS services, including Database, Image copy, IMS log, and RECON
- Direct streaming of DLI call audit data from a z/OS process to a networked Guardium appliance to support near real-time reporting
- IMS online system STOP and START activity as recorded in the IMS log
- Centralized interaction through the Guardium appliance
- More flexible deployment options for simplicity and availability
- Greater resilience against appliance outages through the use of the failover and spill file features, along with Policy Persistence, to enable audit data collection to continue in the event of an appliance outage

Ease management and extend scalability for ultra-high performance, capacity, availability, and recovery:

Database versioning support

Database versioning support enables programs to use different versions of the same physical database. Multiple views of the physical data are maintained in the IMS catalog. Existing applications can remain unchanged when the physical structure of the database changes. You can make database structure changes and need only compile programs that reference the changed fields and segments. This enhancement offers the following benefits:

- Enables changes to be made more granularly
- Offers greater flexibility in rolling out new versions of programs and databases
- Allows new programs to get out faster without waiting for all programs to be updated to the new database structure

Full-function high-availability large database (HALDB) alter support

Full-function HALDB alter support enables an IMS HALDB structure to be changed without unload/reload of the database. You can add a field to the end of a segment and increase the length of a segment. This improves IMS HALDB availability by enabling structure changes without taking the database offline and flexibility in rolling database changes into the system.

Fast Path data entry database (DEDB) alter support

Fast Path DEDB alter support enables DEDB area changes without unload/reload of the area. This provides dynamic change for UOW, ROOT, and SIZE parameters of an existing area, allowing the Root Addressable and Independent Overflow sections to be increased or decreased. It improves DEDB area availability by enabling definitional changes without taking the database offline and flexibility in rolling area changes into the system.

Dynamic resource definition (DRD) enhancements

Support for IMS repository, a single centralized store for resource definitions in an IMSplex, is enhanced to validate resource attributes between associated resources when a resource definition is added to, updated in, or deleted from the IMSRSC Repository. This simplifies management of the DRD resources. This support is also provided through the IMS 12 service process.

Additionally, IMS 13 adds the IMS Repository change list support, which allows DRD resource definition changes to be made when an IMS system is down and make it available to IMS when it restarts. The IMS change list is created in the IMS Repository for an IMS system that is down when an IMPORT DEFN SOURCE(REPO) SCOPE(ALL) command is issued and the resources and descriptors specified on the IMPORT command are in the IMS' resource list. The IMS change list consists of the resource or descriptor names and resource types. It is read during IMS warm and emergency restart. The resource definitions for the resource and descriptor names in the IMS change list are imported from the repository at end of warm or emergency restart after the IMS log is processed.

Native SQL support for COBOL

Native SQL support for COBOL enables SQL in COBOL programs to access IMS databases and provides for SQL processing natively in IMS. This support is in addition to the current Java-based SQL IMS application support. This support simplifies application programming in allowing SQL programmers to access IMS databases in a similar manner as they use relational databases. It expands IMS database usage to a wider group of application and database developers and can take advantage of SQL skills without requiring in-depth IMS database knowledge. This support requires IBM Enterprise COBOL for z/OS 5.1 and APAR PM92523.

Open Database Enhancements for the IMS Native SQL Engine

The IMS support for the Distributed Relational Database Architecture (DRDA) distributed data management (DDM) command is enhanced for native SQL. The enhancements to the IMS DRDA interface enable clients to use DDM commands to make SQL calls to IMS databases through IMS Connect and the Open Database Manager (ODBM) component of the IMS Common Service Layer (CSL). This support improves Open Database flows.

Database Recovery Control (DBRC) enhancements

DBRC enhancements include migration and coexistence support for RECON records that changed in IMS 13, changes that support the DEDB alter and HALDB alter functions, and changes to the DELETE LOG command. A MINVERS value of "13.1" must be set in order to use the HALDB alter and the DEDB alter functions.

Common Queue Server clients support

When IMS Common Queue Server (CQS) rejects a z/OS STOP cqsjobname command because CQS clients are still connected, CQS issues a new message. CQS issues a CQS0301I message for each connected client. This information allows you to shut down or quiesce the connected CQS clients so that the CQS address space can be stopped.

Increased number of database and HALDB partitions in a unit of work

Batch Message Program (BMP) applications are enabled to update full-function databases and HALDB partitions as desired before the changes must be committed. Relieving an earlier restriction, this enhances availability and simplifies use.

Additional performance and reduced total cost of ownership (TCO) enhancements

Numerous small internal changes improve efficiency and reduce MIPS usage to run IMS . These changes include eliminating or reducing the need for certain latches and locks, and optimizing some frequently used processes. They also include IMS use of newer hardware and software features when available.

IMS includes the following internal enhancements for reduced TCO:

- Use of pageable 1 MB pages for Common Queue Server interface buffers and selected database storage pools when IMS is run on a zEnterprise server with z/OS system supporting pageable large pages. The CQS interface buffer support is also provided through the IMS 12 service process.
- Support for memory-based data set ENQ management for dynamically allocated data sets
- BPE dispatcher hot cache line prefetch
- Elimination of local lock obtain around buffer page fix for OSAM buffers
- DFSCPY00 improved SVC directory entry search algorithm and removal of IVSK instructions
- IMS logger LOG latch contention reduction
- IMS dispatcher optimization
- IMS page load service algorithm optimization
- Reduction of unintentional cache sharing for common storage PSTs
- Shared queues local first optimization for program-to-program switch messages
- Type-2 universal JDBC driver
- OTMA and IMS Connect performance improvements:
 - OTMA YTIB chain converted to a hash table
 - OTMA STORAGE calls converted to CPOOL
 - Unnecessary clearing of OTMA buffers removed
- General instruction optimization (using newer instructions, converting modules to branch relative addressing)
- Reduction of contention for the database block serialization latch

IMS System z Integrated Information Process (zIIP) Utilization

Note: This information provides only general descriptions of the types and portions of workloads that are eligible for execution on Specialty Engines (for example, zIIPs, zAAPs, and IFLs) (SEs). IBM authorizes customers to use IBM SE only to execute the processing of Eligible Workloads of specific programs expressly authorized by IBM as specified in the "Authorized Use Table for IBM Machines" (AUT) provided at

http://www-947.ibm.com/systems/support/machine_warranties/machine_code/aut.html

No other workload processing is authorized for execution on an SE. IBM offers SE at a lower price than General Processors/Central Processors because customers are authorized to use SEs only to process certain types or amounts of workloads as specified by IBM in the AUT.

In IMS Version 13 (V13), certain processing in the IMS Connect address space and in the IMS Open Database Manager (ODBM) address space as specified below may, when enclave SRB execution is enabled by a user, be executed under enclave service request blocks (SRBs). Enclave SRB execution may be enabled as unconditional² ; or it may be enabled as conditional, based on the presence of at least one online zIIP

during address space initialization. When enclave SRB execution is enabled, V13 will direct z/OS to authorize such work to be processed on an available zIIP.

Except as otherwise described below, the following IMS Connect and ODBM processing can execute under an enclave SRB in V13:

- The processing of IMS Connect address space SOAP message threads for SOAP messages arriving via TCP/IP
- The processing of IMS Connect and ODBM address space Distributed Relational Database Architecture (DRDA) threads for DRDA requests arriving via TCP/IP
- The processing of IMS Connect address space Multiple System Coupling (MSC) threads for MSC messages arriving via TCP/IP
- The processing of IMS Connect address space Intersystem Communication (ISC) threads for ISC messages arriving via TCP/IP
- The processing of ODBM address space threads for requests arriving through the CSLDMI API

Note that any user exits called by the above processing will not execute under an enclave SRB. User exits are always given control in TCB mode, and such exit instructions are not authorized to be processed on a zIIP. Also note that certain processing cannot, due to technical restrictions, execute under enclave SRBs. Such processing includes calling z/OS Resource Recovery Services (RRS), IMS DL/I call processing, and z/OS supervisor calls (SVCs). IMS switches from SRB mode into TCB mode to perform such processing, and thus such processing will not execute on a zIIP.

²

In an unconditional status, the user may enable such processing to be executed in enclave SRB mode when no zIIP is online or part of the user's System z environment. But, of course, no zIIP utilization could result. A user might request enclave SRB execution even in the absence of zIIPs to allow the system to project how much work is eligible to run on zIIP and probably would if there were zIIP capacity available. See the PROJECTCPU parameter of the IEAOPTxx SYS1.PARMLIB member in the *MVS™ Initialization and Tuning Reference*, SA22-7592-23, for further information.

Additional serviceability enhancements

The /DIAGNOSE command enhancements enable the /DIAG SNAP command to offer new options for output and to include information on more resources. Support for the SYSOUT output formatting routine enables output to be sent to SYSOUT data sets. This can reduce the time and effort required to capture diagnostic information and resolve problems.

Enhancements to the IMS logger provide you a more straightforward way to monitor the values of the Block Sequence Number (BSN) and Log Sequence Number (LSN). The output of the /DISPLAY OLDS Command now includes the logger's BSN and LSN. Monitoring these values allows you to determine when you are reaching the finite limitation.

Additional IMS 13 integration items from the IMS 12 service process

IMS customers who use GSAM data sets can exploit the Extended Address Volumes (EAV) support available in z/OS 1.12. This support alleviates disk storage constraints, allowing the placement of more data sets on a single volume and providing you with greater scalability to grow your business.

Fast Path Secondary Indexing (FPSI) was enhanced to provide application programmers the ability to specify multiple qualifications, an expanded set of command codes, and multiple secondary search arguments (SSAs) when using Fast Path secondary indexing to access database records.

The DBRC NOTIFY.ALLOC command was enhanced to allow you to create a new update set for a database in order to maintain its recovery status.

The DBRC NOTIFY.CA command was enhanced to support LSN, DSSN, LRID, and USID.

The parallel RECON access (PRA) mode of DBRC is enhanced to ensure that deadlocks accessing the RECON data set do not repeat excessively so that periods of high DBRC usage complete in a timely manner.

A new user exit (JRNAD) for VSAM provides additional diagnostic information for the VSAM CA Reclaim feature introduced in z/OS 1.12; this support requires VSAM APAR OA40974.

The following separate products offer additional management and scalability for IMS 12 and 13 users

IBM IMS Solution Packs (IBM IMS Database Solution Pack for z/OS , V2.1 (5655-DSP), IBM IMS Fast Path Solution Pack for z/OS , V1.3 (5655-W14), IBM IMS Performance Solution Pack for z/OS , V1.2 (5655-S42), and IBM IMS Recovery Solution Pack for z/OS , V1.1 (5655-V86)) allow customer to extend their IMS investment by providing:

- High-performance utilities to analyze, maintain, and tune IMS Fast Path and Full Function databases
- A complete portfolio of IMS database performance management tools for faster and easier analysis of IMS transactions
- A consolidated recovery solution that helps reduce the operational complexity and the impact of IMS database backup and recovery on system resources

IBM Tools Base for z/OS , V1.4 (5655-V93) assists IBM DB2 and IBM IMS tools products in delivering key strategic architectures as well as new support that enables a higher level of autonomies.

IBM IMS Library Integrity Utilities for z/OS , V2.2 (5655-U08) provides a set of utilities designed to validate, compare, map, recover, report, and regenerate a number of IMS libraries needed for operations. Supported libraries include the ACB (application control block), DBD (data base definition), PSB (program specification block), and MFS (message format services) libraries. The utilities are used in conjunction with database maintenance tasks and migration operations, and to prevent accidental misuse in production.

IBM IMS Program Restart Facility for z/OS , V2.2 (5655-E14) is an application management tool that helps automate the backout and restart of abended IMS Batch Message Processing (BMP) regions and Data Language/I (DL/I) batch jobs. Restarting IMS jobs is potentially error prone, as manual job control language (JCL) changes are required to add the checkpoint ID and the log data set name that contains the restart checkpoint. If either of these manual changes are incorrect or omitted, or if a job that should be restarted is not restarted, database corruption can occur.

IBM Tivoli® OMEGAMON® XE for IMS on z/OS 5.1.0 (5698-T02) provides a system programmer with the ability to detect and quickly identify looping and poor performing transactions that impact CPU utilization and service level agreements of the users and business applications of those IMS systems. This capability includes an improved Application Trace Facility (ATF) with usability enhancements as well as additional application metrics to enable customers to analyze the performance and operational characteristics of their applications.

IBM Operational Decision Manager for z/OS (5655-Y17) family provides multiple business-rule execution choices for z/OS customers. This includes a business rule deployment option for Enterprise COBOL, PL/I, and IMS batch applications, which can run stand-alone or hosted within CICS 4.x or CICS 5.x region. IBM ODM for z/OS also provides support for decision evaluation for COBOL and PL/I applications in IMS environments, both online and batch (support of IMS V10 and later) with the zRule Execution Server for z/OS .

IBM IMS Explorer for Administration, a replacement for IMS Control Center, is introduced as a web-based console to operate and administer IMS . IMS Explorer for Administration can query, start, and stop IMS resources from an easy-to-use browser interface. It can discover IMS resources, show the health of the resources,

and show relationships between them. Resources can be filtered and context sensitive help is provided.

IMS Explorer for Administration connects to the IMS Operations Manager through IMS Connect. Customers currently using the IMS Control Center should use IMS Explorer for Administration. IMS Explorer for Administration is available through APAR PM94292 as an extension of the Administration Console component of IBM Tools Base for z/OS , V1.4 (5655-V93).

The following separate product offers additional integration for IMS 12 and 13 users

The IBM Problem Determination Tools, V13.1 family delivers cost-effective and highly functional application performance analysis, source code debugging, application abend analysis, and data management capabilities. This powerful family of tools helps to improve application delivery throughout the development lifecycle. You can use them in a variety of z/OS environments, such as CICS , IMS , DB2 , and UNIX™ System Services.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on the product's accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

IMS is IBM's premier transaction and hierarchical database management system. Exclusive to the z/OS platform, IMS 13 complements DB2 , CICS , and WebSphere servers for database and transaction management. Ongoing integration efforts mean that IMS can continue to add significant value to a multi-tier enterprise architecture.

IMS Database Manager is a hierarchical model; DB2 , Oracle, and desktop systems use a relational model. Each database model continues to evolve with unique roles to play. Mission-critical processing that requires unparalleled performance is best served by a hierarchical model. Analytics and business intelligence are best served by a relational model. The world's largest banks and financial institutions use both.

Operational data is stored in hierarchical form and can be accessed easily by BI and analytics tools. IMS data can be accessed directly or propagated and replicated with relational data in support of BI. IBM includes standard application interfaces and drivers to access IMS as well as other data. Both relational data and hierarchical IMS data can be efficiently accessed, together or independently, using the IMS Transaction Manager and IBM WebSphere servers.

IMS Transaction Manager is one of three strategic IBM application managers, with CICS and WebSphere Application Server. Each provides unique capabilities. IMS Transaction Manager excels in application management, data storage, and data access and applies strict rules for this access. WebSphere applies simplified access rules, serving the web and integrating data that may be less defined. Enterprise clients use both application managers for specific purposes: IMS Transaction Manager for mission-critical high-performance processing and WebSphere for web-based applications.

IMS , IBM Rational , and WebSphere products continue to deliver new levels of tooling and integration. Enterprise clients can take advantage of Rational Developer for System z to maintain and enhance trusted IMS applications and develop web applications. Using the IMS Universal database drivers WebSphere applications can access IMS database data directly using industry standard JDBC and SQL.

IBM continues to invest in new IMS features to help clients improve business efficiency and lower costs. Compared to previous IMS versions, some clients may achieve CPU savings for traditional and nontraditional workloads. Productivity

improvements in IMS 13 for database and systems administrators can drive additional operational efficiencies and cost savings. Synergy with System z platform components can reduce CPU use by leveraging the latest processor improvements, larger amounts of memory, solid-state disk, and z/OS enhancements. IMS 13 delivers savings you can count on and is a great fit for your IT future.

Statement of direction

IBM intends, at a future time, possibly via its support and service processes, to make available IMS Data Provider for Microsoft .NET as part of the IMS Enterprise Suite for Distributed Systems offering. IMS Data Provider for Microsoft .NET will be designed to provide standard SQL access to IMS data from Microsoft .NET applications. The intention is to allow Microsoft .NET applications to transparently and directly read and manipulate IMS data without the need for intermediate steps and additional tooling to accomplish these tasks.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Hardware and software support services

SmoothStart/installation services

IBM Installation Services are provided for IMS by IBM Global Services or your IBM Business Partner at an additional cost. For additional information, contact your IBM representative and ask for Installation Services for IMS .

Additional technical services (planning and migration assistance, performance tuning, and other services) can be obtained through the Worldwide IMS Product Affinity Services team. For more information, contact the team at dmservices@us.ibm.com

Reference information

- Software Announcement [213-394](#), dated October 01, 2013 , IBM DB2 for z/OS , Value Unit Edition, V11, IBM IMS Database Value Unit Edition, V13
- Software Announcement [213-374](#), dated October 01, 2013 , IBM IMS tools enhancements
- Software Announcement [213-378](#), dated October 01, 2013 , IBM Problem Determination Tools, V13
- Software Announcement [213-192](#), dated May 28, 2013 , IBM IMS Database Value Unit Edition for net new workloads on IBM System z servers
- Software Announcement [213-211](#), dated April 23, 2013 , IBM Rational Integrated Development Environments deliver enhanced customer value and help to raise developer productivity
- Software Announcement [213-177](#), dated April 23, 2013 , IBM CICS Transaction Server for z/OS feature packs further enhance service agility and operational efficiency
- Software Announcement [213-144](#), dated April 23, 2013 , IBM Enterprise COBOL for z/OS Version 5 Release 1
- Software Announcement [213-141](#), dated April 23, 2013 , IBM Explorer for z/OS , V2.1 delivers extensible workstation access to key IBM z/OS functions

- Software Announcement [213-127](#), dated April 23, 2013 , IBM Operational Decision Manager for z/OS , V8.5 provides end-to-end, lifecycle support for decisions
- Software Announcement [212-383](#), dated October 09, 2012 , IBM InfoSphere Guardium S-Tap for IMS V9.0
- Software Announcement [212-325](#), dated October 03, 2012 , CICS Transaction Server for z/OS Version 5.1
- Software Announcement [212-341](#), dated October 03, 2012 , IBM DB2 and IMS database tools enhanced
- Hardware Announcement [112-155](#), dated August 28, 2012 , IBM zEnterprise EC12
- Software Announcement [212-186](#), dated May 29, 2012 , IBM Rational Developer for System z , V8.5 speeds deployment and provided better compatibility
- Software Announcement [212-135](#), dated May 08, 2012 , IBM DB2 and IMS database tools enhanced to help better manage your database environments
- Software Announcement [212-119](#), dated April 24, 2012 , IBM Problem Determination Tools help expedite your move to smarter development
- Software Announcement [211-504](#), dated December 13, 2011 , Replication, Change Data Capture, and Change Data Delivery enable IBM Netezza® appliances to be used as targets for applying data
- Software Announcement [211-394](#), dated October 04, 2011 , IBM WebSphere MQ for z/OS V7.1
- Software Announcement [211-306](#), dated September 06, 2011 , IBM InfoSphere IMS Replication for z/OS enhanced to better manage IMS to IMS replication and better integrate with InfoSphere Change Data Capture and DataStage®
- Software Announcement [211-252](#), dated July 12, 2011 , IBM z/OS Version 1 Release 13
- Software Announcement [208-208](#), dated September 09, 2008 , IBM WebSphere Application Server for z/OS V7.1

Program number

Program number	VRM	Program name
5635-A04	13.1.0	IMS Transaction and Database Servers

Education support

The following IMS classes are available now:

Course title	Course number
IMS Fundamentals	CMW01
IMS System Programming: DBCTL	CMW12
IMS System Programming: Database and Transaction Management	CMW11
IMS Database Recovery and Sharing Control (DBRC)	CMW20
Operating your IMS environment	CMW35
Implementing IMS Security	CMW43
Implementing IMS Security	CMW43
IMS Database Repair	CMW44
IMS Database Recovery	CMW45
IMS Parallel Sysplex® Workshop	CM621
IMS DB Application Programming	U3717
IMS DC Application Programming	U3718
IMS Physical Organization of Databases Workshop	CMW22
IMS Fast Path Implementation	CMW64
IMS DB Performance and Tuning	CMW30

IMS DC TM Performance and Tuning	CMW21
IMS Logical Relationships	CM241
IMS Installation Workshop	U3759
IMS V11 Product Enhancements	CMWB0
IMS V12 Product Enhancements	CMWC0
IMS V13 Product Enhancements (at GA)	CMWD0
IMS Transaction Manager Performance and Tuning	CMW21
IMS Diagnostic Approaches	CMW66
IMS High Availability Large Database (HALDB)	CMW46
IMS Data Sharing	CMW50
IMS Shared Queues (HALDB)	CMW61

Call IBM training at 800-IBM-TEACH (426-8322) for catalogs, schedules, and enrollments.

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=213-381>

Technical information

Specified operating environment

Hardware requirements

Processors: IMS 13 operates on 64-bit IBM processors capable of running z/OS V1.13, or later, and supports the Long Displacement Facility of the z/Architecture .

Additional line-item requirement information and a list of supported terminals is provided in the *IMS 13 Release Planning Information* from the IMS Resources section and following the product documentation link at

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

Software requirements

IMS 13 Transaction and Database Servers

IMS 13 operates under z/OS V1.13 configurations, or subsequent versions, releases, and modification levels, unless otherwise stated, and requires the following minimum version, release, or modification levels:

- z/OS V1.13 (5694-A01) with DFSMSdfp (a base element of z/OS V1.13)
- RACF (included in a separately orderable Security Server feature of z/OS V1.13), or equivalent, if security is used
- IBM High-Level Assembler Toolkit, a separately orderable feature of z/OS V1.13

IMS 13 also operates in a virtual machine under control of z/OS V1.13 and is intended for use in a customer program development, testing, and non-XRF production environment, with some restrictions.

Additional line-item requirement information and a list of supported terminals is provided in the *IMS 13 Release Planning Information* from the IMS Resources section and following the product documentation link at

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

IMS 13 Database Manager can be connected using the appropriate interface to IMS 13 Transaction Manager (5635-A04), CICS Transaction Server for z/OS V3.2 (5655-

S97), or later, WebSphere Application Server V7 (5655-N02), or later, DB2 for z/OS V9 (5635-DB2), or later, and user-written software.

IMS 13 Transaction Manager can be connected using the appropriate interface to IMS 11 Transaction Manager (5635-A02), or later, IMS 13 Database Manager (5635-A04), or later, CICS Transaction Server for z/OS V3.2 (5655-S97), or later, WebSphere Application Server V7 (5655-N02), or later, DB2 for z/OS V9 (5635-DB2), or later, WebSphere MQ for z/OS V7.0.1 and V7.1 (5655-R36), and user-written software.

The IMS Extended Terminal Option (ETO) feature requires the IMS Transaction Manager feature.

The IMS Remote Site Recovery (RSR) Record Level Tracking (RLT) feature requires either the IMS Transaction Manager or the IMS Database Manager feature.

The IMS RSR Database Level Tracking (DLT) feature requires the IMS RSR RLT and IMS Database Manager features.

IMS 13 Intersystem Communication (ISC) TCP/IP connection support with CICS requires CICS Transaction Server V5.1 (5655-Y04) or later, the IMS Extended Terminal Option (ETO) feature, and IMS Connect.

The IMS Native SQL Support for COBOL requires IBM Enterprise COBOL for z/OS 5.1 (5655-W32) and APAR PM92523.

The IMS zIIP Utilization support requires z/OS V1.13 and the z/OS APAR OA39392.

IMS 13 is written in High Level Assembler, PL/X, C, C++, and JDK Version 6.0.1.

Compatibility

- IMS 13 is upwardly compatible from previous versions, allowing existing applications and data to be used without change. Migration and coexistence support is provided for IMS 11 and 12. Review the Preventative Service Planning (PSP) information for the latest details.
- IMS 13 is the last release to support the IMS Connect SSL function. Customers using this function should migrate to 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 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.
- IMS Explorer for Administration, part of the IBM Tools Base Administration Console for z/OS V1.4 (5655-V93) replaces IMS Control Center, and will be available in the IBM Tools Base for z/OS V1.4 service process. Customers using the IMS Control Center should use IMS Explorer for Administration. The IMS Control Center is no longer available.
- Prior to IMS 12, the STCK timestamp in each log record suffix (field LOGRC_STCK) was a unique value for each record in the IMS log. In IMS 12, it is possible for consecutive log records from the same IMS to have the same value in this field. Customers using the LOGRC_STCK alone to establish a unique, time-ordered key for sorting log records, if needed, should now use the concatenation of LOGRC_STCK and the log suffix sequence number (field LOGRC_SEQUENCE_NUMBER).
- IMS 12 is the last release to support the SECURITY macro in system definition. Customers using the security macro should migrate to use the initialization parameters. New parameters introduced to IMS 11 and IMS 12:
 - Allows preconditioning by specifying new security settings prior to IMS 13
 - RCLASS added to DFSPBxxx
 - SECCNT added to DFSDCxxx

- IMS 11 PM48203; IMS 12 PM48204
- If specifying RCLASS in DFSPBxxx, the following APARs avoid an unnecessary error message
 - IMS 11 PM72199; IMS 12 PM73558
- IMS 11 is the last release to support the SMU-to-RACF utilities. Customers need to migrate to RACF or an equivalent product with an earlier IMS version.
- 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), or to other complementary products, such as IMS Problem Investigator, IMS Performance Analyzer, or similar products.
- IMS information continues to be available online (including the diagnosis information) as PDF files and in XHTML in the Information Management Software for z/OS Solutions Information Center at

<http://pic.dhe.ibm.com/infocenter/dzichelp/v2r2/index.jsp>

IMS 13 product documentation information is also available from the IBM Publications Center at

<http://www.ibm.com/shop/publications/order>

Performance considerations

IMS 13 continues the focus on performance with a new milestone for Fast Path benchmark: high-volume transaction processing reaching 100,000 transactions per second on a single system. The IMS 13 Fast Path benchmark for high-volume transaction processing shows the capabilities of a single IMS subsystem processing IMS Fast Path transactions driving a workload via TCP/IP on the zEC12 and DS8870 direct access storage devices (DASD). Performance is based on measurements from testing a single IMS, using IBM's Fast Path benchmark. The IMS application workload is run on a specific hardware and software configuration in a controlled laboratory environment. The results that any user will experience will vary depending upon many factors, including considerations such as the type and configuration of the hardware and software, the amount of multiprogramming used in the user's job stream, the I/O configuration, the storage configuration, and the workload processed.

Therefore, results may vary significantly and no assurance can be given that an individual user will achieve results similar to those stated here. These results should be used for reference purposes only.

IBM will publish a white paper from which IMS users can learn how IMS 13 improvements can also provide performance improvements in existing IMS systems with similar attributes and that the improvements are not only limited to high throughput scenarios.

IMS 13 continues to build on its tradition of high-performance, low-cost transaction processing by removing constraints and reducing path length while also taking advantage of new system functions.

IMS 13 provides several enhancements to reduce internal IMS path length, which may reduce overhead and thus cost per transaction. These enhancements are spread throughout the product where IMS was able to find improved methods to accomplish the same function more efficiently.

In IMS 13, a Java application using the IMS 13 Universal Database Driver type-2 connectivity achieved *up to 62%* in CPU time savings and *up to 17%* in elapsed time savings in the Java Batch Processing (JBP) region when compared with the IMS V12 Universal Database Driver.

With IMS 13, IBM lab measurements show multiple concurrently-executing BMP jobs performing large numbers of inserts and deletes complete in *up to 29%* lower elapsed time compared with IMS 12.

With IMS 13, IBM lab measurements show a log latch contention reduction of *up to 80%* compared with IMS 12. This contention reduction may improve your overall throughput and cost per transaction.

IMS continues to demonstrate that it can provide the highest performance, lowest cost transaction performance with absolute integrity for both messages and database.

User group requirements

This announcement satisfies or partially satisfies requirements from one or more of the worldwide user group communities.

- MR0531114545 - Make JVM Persistent in MPPs but not the used COBOL modules
- MR0823112442 - Keep Modules Resident in an IMS Region even throughout transaction switches
- MR082311206 - Make Last Used State Feature configurable
- MR0531114533 - Print -Xoptionsfile= parameters from DFSJVM00
- MR0909112122 - Preload for IMS JDRS
- MR0504113839/RFE 32766 - RACF Passphrase Support for OTMA and 3270 logon/signon
- MR0312122426/RFE 32753 - Avoid U0367 abend when an OTMA transaction reaches the MAXTP condition at a shared queues back-end system
- MR0715083323 - IMS ISC SNA Enhancement Request
- MR0914077243/RFE 33311 - Early OTMA notification to clients when IMS is shutting down
- MR010610736/RFE 35738 - IMS as a Flows Process Application Server
- MR0805102410/RFE 32869 - Call the OTMA routing exits with descriptor information passed and let the exits make the final routing decision
- MR0805103025 - Provide MQ/Series support for IMS OTMA Destination Routing descriptors
- MR0929113115/RFE 33295 - Synchronous Callout ICAL Call feature should be modified to allow easy retrieval of the truncated response data in case partial data has been returned
- MR1117103338/RFE 33319 - Increase the number of IMS PSTs
- MR053111373/RFE 32782 - ESAF for Java Dependent regions
- MR1217096450/RFE 33332 - IMS TM Java applications with MQ API
- MR1116117148/RFE 36300 - Program-to-Program Message Switches should be eligible for the "Local-first" Shared Queues processing option
- MR0416123047/RFE 36268 - ISC over TCP/IP for CICS to Support Asynchronous communications with CICS
- MR0516125459 - Increase converter cache in IMS Connect
- MR012012447 - Add IMS SQL co-processor to COBOL compiler
- MR0329124712/RFE 35766 - EAV Support for GSAM datasets
- MR011111225 - Recovery needed flag on for DB after an Online Reorg Facility run
- MR00027053 - Dynamic Loading for IMS Exits
- MR1029126956/RFE 33306 - /DIS ACT Command to show OLR-RUNNING status for a BMP type region started by IMS to process the OLR
- MR0609056753 - /DIS POOL QBUF command should show more comprehensive information about allocated and in-use Qbuffers in a Shared Queues environment
- MR0323121934/RFE 32756 - New way to specify global MAXTP for IMS
- MR0614117835/RFE 35789 - IMS Connect client in CONN status not cleaned up after it goes away ungracefully
- MR0403084148 - Support Online Reorg of DEDB with the capability of DBD change
- MR0805103723/RFE 32870 - Expand support for IMS OTMA Destination Routing Descriptors to MQ/Series
- MR0613057119/RFE 33308 - Capability to change the basic structure of DEDB without taking DEDB areas offline
- MR1101076833/RFE 33308 - Need to dynamically change UOW and ROOT parms

MR041311310 - Dynamic reflection of DEDB database structure change
 MR0124114458 - Extend the IMS /DIAG command to avoid the need to take console dumps of IMS.
 MR0128041515/RFE 32656 - Provide Command to identify CQS Clients
 MR0819082459 - Provide Command to identify CQS Clients
 MR0315124456 - No any IMS utility or IMS TOOL support online dynamic reload the updated randomizer routine?
 MR0509014555/RFE 36269 - Replace the need of coding the OTMA-exits for MQ-destinations. Re-enter old REQ00063659
 MR0611102035/RFE 32783 - NOTIFY.CA needs to support to set LSN, DSSN, LRID and USID
 MR0717067051/RFE 32682 - SQL Support for COBOL and PL/I to access IMS Databases with SQL
 MR0801081613/RFE 36276 - Deliver all exits sample with AMODE 31 RMODE ANY even if in the IMS nucleus
 MR0819082459/RFE 33281 - Provide Command to identify CQS Clients
 MR0826082217 - IMS RACF RCLASS OPTION OVERRIDE IN DBCNTL SYSTEM
 MR1219005228 - ACEE refresh capability in IMS Connect

Planning information

Direct customer support

Direct customer support is provided by IBM Operational Support Services - SoftwareXcel Enterprise Edition or SoftwareXcel Basic Edition. These fee services can enhance your productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services - SoftwareXcel Enterprise Edition or SoftwareXcel Basic Edition will help answer questions pertaining to usage, how-to, and suspected software defects for eligible products.

Installation and technical support is provided by IBM Global Services. For more information on services, call 1-888-426-4343.

Security, auditability, and control

The announced program uses the security and auditability features of the host hardware or operating system software. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Ordering information

The following publications are available from the IBM Publications Center at

<http://www.ibm.com/shop/publications/order>

The following softcopy publications are also available in the IBM Information Management Software for z/OS Solutions Information Center at

<http://pic.dhe.ibm.com/infocenter/dzichelp/v2r2/index.jsp>

Title	Order number
IMS Version 13 Application Programming	SC19-3646
IMS Version 13 Application Programming APIs	SC19-3647
IMS Version 13 Commands, Volume 1: IMS Commands A-M	SC19-3648
IMS Version 13 Commands, Volume 2: IMS Commands N-V	SC19-3649
IMS Version 13 Commands, Volume 3: IMS Component and z/OS Commands	SC19-3650
IMS Version 13 Communications and Connections	SC19-3651
IMS Version 13 Database Administration	SC19-3652
IMS Version 13 Database Utilities	SC19-3653
IMS Version 13 Diagnosis	GC19-3654
IMS Version 13 Exit Routines	SC19-3655

IMS Version 13 Installation	GC19-3656
IMS Version 13 Messages and Codes, Volume 1: DFS Messages	GC18-9712
IMS Version 13 Messages and Codes, Volume 2: Non-DFS Messages	GC18-9713
IMS Version 13 Messages and Codes, Volume 3: IMS Abend Codes	GC19-9714
IMS Version 13 Messages and Codes, Volume 4: IMS Component Codes	GC19-9715
IMS Version 13 Operations and Automation	SC19-3657
IMS Version 13 Release Planning	GC19-3658
IMS Version 13 System Administration	SC19-3659
IMS Version 13 System Definitions	GC19-3660
IMS Version 13 System Programming APIs	SC19-3661
IMS Version 13 System Utilities	SC19-3662

The following IMS Redbooks® are available now from Mechanicsburg or at

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

Title	Order number
IMS 12: The IMS Catalog red paper	REDP-4812
IMS 12 Technical Overview	SG24-7972
IMS 12 Selected Performance Topics	SG24-8071
IMS 11 Open Database	SG24-7856
IMS V11 Technical Overview	SG24-7807
IMS Performance and Tuning Guide	SG24-7324
Publishing IMS and DB2 Data Using WebSphere Information Integrator: Configuration and Monitoring Guide	SG24-7132
IMS Connectivity in an On Demand Environment: A Practical Guide to IMS Connectivity	SG24-6794

The following materials are available in PDF or HTML format and can be obtained from the IMS Resources section at [ibm.com/ims](http://www.ibm.com/ims), following the Product documentation link

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

Title

IMS 13
IMS Presentations and White papers on Enterprise Integration,
Performance, Connectivity, and other IMS topics

The following book is available from IBM Press:

Title

An Introduction to IMS - Second Edition

For details, visit the IMS Resources section at the following website, following the product documentation link

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

Ordering instructions and order processing availability will be communicated when IBM announces general availability of this product.

A memo and one copy of the following publications are supplied automatically with the basic machine-readable material:

Hardcopy:

- Licensed Programming Specifications (GC19-3663)

- Program directory for Information Management System Transaction and Database Servers V13.1 (GI10-8914)
- IMS V13R1 Product Kit CD (SK5T-8864)

All the IMS product information is available in the Information Center at

<http://pic.dhe.ibm.com/infocenter/dzichelp/v2r2/index.jsp>

Ordering z/OS through the Internet

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS . Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the US, Canada, and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries website at

<http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

New licensees

Orders for new licenses can be placed now.

Registered customers can access IBMLink for ordering information and charges.

Shipment will not occur before the availability date.

Unless a later date is specified, orders entered before the planned availability date will be assigned a schedule date of one week following availability.

Unless a later date is specified, an order is scheduled for the week following order entry.

New users of IMS 13 should specify:

Type: 5635 Model: A04

CFSW configuration and order entry capability are available.

Parallel Sysplex license charge (PSLC) basic license

To order a basic license, specify the program number and quantity of MSU.

If there is more than one program copy in a Parallel Sysplex , the charge for all copies is associated to one license by specifying the applicable PSLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex . For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Program name: Information Management System Version 13
Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option / pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, PSLC(ABCD)
S0171RT	IMS DB-Level Tracking V13	Basic MLC, PSLC(ABCD)
S0171RV	IMS Extended Terminal Option V13	Basic MLC, PSLC(ABCD)
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, PSLC(ABCD)
S0171RX	IMS Transaction Manager V13	Basic MLC, PSLC(ABCD)

Advanced Workload License Charges (AWLC) basic license

AWLC pricing metric leverages the reporting mechanisms and existing Millions of Service Units (MSU) per hour tiers of the Variable Workload License Charges (VWLC) pricing model while extending the software price performance provided by the VWLC tiers. For details, refer to Software Announcement [210-238](#), dated July 22, 2010 .

To order a basic license, specify the program number and quantity of MSUs. If there is more than one program copy in a Parallel Sysplex , the charge for all copies is associated to one license by specifying the applicable AWLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex . For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Program name: IBM IMS 13 Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, AWLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, AWLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, AWLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, AWLC
S0171RX	IMS Transaction Manager V13	Basic MLC, AWLC

Advanced Entry Workload License Charges (AEWLC) Basic License:

The AEWLC pricing metric leverages the reporting mechanisms and existing Millions of Service Units per hour (MSU) tiers of the Entry Workload License Charges (EWLC) pricing metric while extending the software price performance provided by EWLC. For details, refer to Software Announcement [211-250](#), dated July 12, 2011 .

Advanced Entry Workload License Charges (AEWLC) basic license

To order a basic license, specify the program number and quantity of MSUs.

Program name: IBM IMS 13 Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, AEWLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, AEWLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, AEWLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, AEWLC
S0171RX	IMS Transaction Manager V13	Basic MLC, AEWLC

Workload License Charge (WLC) Basic License

If there is more than one program copy in a Parallel Sysplex , the charge for all copies is associated to one license by specifying the applicable WLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex . For all other program copies, specify the Workload Registration Variable WLC Identifier on the licenses.

Program name: Information Management System Version 13
Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, V-WLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, V-WLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, V-WLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, V-WLC
S0171RX	IMS Transaction Manager V13	Basic MLC, V-WLC

Entry Workload License Charge (EWLC) Basic License

To order a basic license, specify the program number and the quantity of MSUs.

Program name: Information Management System Version 13
Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, Entry WLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, Entry WLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, Entry WLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, Entry WLC
S0171RX	IMS Transaction Manager V13	Basic MLC, Entry WLC

S/390® and System z Usage License Charge, basic license: Specify the applicable S/390 and System z Usage License Charge option.

Charges will be based upon the Peak MSUs. Usage reported between thresholds of features 1, 2, or 3, will be rounded up to the next MSU level. Above 1.0 MSU, usage will be rounded to the nearest whole MSU. For example, 2.4 MSUs would round to 2.0 MSUs for pricing, and 2.5 MSUs would round to 3.0 MSUs for pricing.

Program name: Information Management System Version 13
Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, ULC(ABCD)
S0171RT	IMS DB-Level Tracking V13	Basic MLC, ULC(ABCD)
S0171RV	IMS Extended Terminal Option V13	Basic MLC, ULC(ABCD)
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, ULC(ABCD)
S0171RX	IMS Transaction Manager V13	Basic MLC, ULC(ABCD)

Growth opportunity license charge (GOLC)

To order a basic license, specify the program number and the correct level.

Specify the GOLC monthly license option.

Program name: Information Management System Version 13
Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option / pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, GOLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, GOLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, GOLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, GOLC
S0171RX	IMS Transaction Manager V13	Basic MLC, GOLC

System z entry license charge (zELC)

To order zELC software, specify the program number and the zELC Processor Group.

Specify the zELC monthly license option.

Program name: Information Management System Version 13
Transaction and Database Servers

Program PID: 5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, zELC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, zELC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, zELC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, zELC
S0171RX	IMS Transaction Manager V13	Basic MLC, zELC

Single version charging

To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on.

Basic machine-readable material

Orderable supply ID	Language	Distribution medium	Description
S017B62	English	3590 Tape Cartridge	IMS Database Manager V13, ENU
S017B60	English	3590 Tape Cartridge	IMS DB-Level Tracking V13, ENU
S017B63	English	3590 Tape Cartridge	IMS Extended Terminal Option V13, ENU
S017B64	English	3590 Tape Cartridge	IMS Recovery Lvl Tracking, V13, ENU
S017B61	English	3590 Tape Cartridge	IMS Transaction Manager V13, ENU

A memo and one copy of the following publications are supplied automatically with the basic machine-readable material:

Hardcopy

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- IMS V13R1 Product Kit CD (SK5T-8864)

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<http://pic.dhe.ibm.com/infocenter/dzichelp/v2r2/index.jsp>

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

Customized offerings

Product deliverables are shipped only via CBPDO, ServerPac, SystemPac® .

CBPDO and ServerPac are offered for Internet delivery in countries where ShopzSeries product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options for CBPDO, ServerPac, SystemPac include:

- 3590
- 3592

Most products can be ordered in ServerPac and SystemPac the month following their availability on CBPDO. z/OS can be ordered via all three offerings at general availability. Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability
- SystemPac shipments will begin four weeks after general availability due to additional customization, and data input verification.

Terms and conditions

Agreement

IBM Customer Agreement

Variable charges apply

No

Indexed monthly license charge (IMLC) applies

No

Location license applies

No

Use limitation applies

No

Educational allowance available

Yes, 15% education allowance applies to qualified education institution customers.

Volume orders

Not applicable.

Replaced Programs		Replacement Programs	
Program number	Program name	Program number	Program name
5655-B01	IMS V7	5635-A04	IMS V13
5655-C56	IMS V8	5635-A04	IMS V13
5655-J38	IMS V9	5635-A04	IMS V13
5635-A01	IMS V10	5635-A04	IMS V13
5635-A02	IMS V11	5635-A04	IMS V13
5635-A03	IMS V12	5635-A04	IMS V13
5635-A04	IMS V13	Follow-on	if any

Warranty applies

Yes

Licensed program materials availability

Restricted Materials of IBM: None
 Non-Restricted Source Materials: Some
 Object Code Only (OCO): Some

Program services

Support Center applies: Yes
 Access is available through the
 IBM Support Center
 Available until discontinued: 12 months' written notice
 APAR Mailing Address: IBM Corporation
 555 Bailey Avenue
 San Jose, CA 95141

IBM Operational Support Services -- SupportLine

Yes

IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support all at no additional cost to you.

Now integrated into the base operating system of AIX® 5.3, AIX 6.1, and AIX 7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type "smitty esa_main", and select "Configure Electronic Service Agent ." In addition, ESA now includes a powerful Web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, refer to

<http://www.ibm.com/support/electronic>

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the "symptoms," diagnosing the error, and manually calling IBM Support to open a problem record. Its 24x7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM . The Electronic Service Agent tool securely transmits either via the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by the customer and IBM . The customer's business applications or business data is never transmitted to IBM .

More accurate reporting: Since system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, customers are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM , problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, customers can view system and support information in the "My Systems" and "Premium Search" sections of the Electronic Support website at

<http://www.ibm.com/support/electronic>

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent . Reports are available for any system associated with the customer's IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, customers are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

<http://www.ibm.com/support/electronic>

Prices

For additional information and current prices, contact your local IBM representative.

Program number MLC

5635-A04

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, GOLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, GOLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, GOLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, GOLC
S0171RX	IMS Transaction Manager V13	Basic MLC, GOLC

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, ZELC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, ZELC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, ZELC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, ZELC
S0171RX	IMS Transaction Manager V13	Basic MLC, ZELC

Entitlement identifier	Description	License option / pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, PSLC(ABCD)
S0171RT	IMS DB-Level Tracking V13	Basic MLC, PSLC(ABCD)
S0171RV	IMS Extended Terminal Option V13	Basic MLC, PSLC(ABCD)
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, PSLC(ABCD)
S0171RX	IMS Transaction Manager V13	Basic MLC, PSLC(ABCD)

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, AWLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, AWLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, AWLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, AWLC
S0171RX	IMS Transaction Manager V13	Basic MLC, AWLC

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, AEWLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, AEWLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, AEWLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, AEWLC
S0171RX	IMS Transaction Manager V13	Basic MLC, AEWLC

Variable Workload License Charges

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, V-WLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, V-WLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, V-WLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, V-WLC
S0171RX	IMS Transaction Manager V13	Basic MLC, V-WLC

Entry Workload License Charge (EWLC)

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, Entry WLC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, Entry WLC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, Entry WLC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, Entry WLC
S0171RX	IMS Transaction Manager V13	Basic MLC, Entry WLC

Entitlement identifier	Description	License option/ Pricing metric
S0171RS	IMS Database Manager V13	Basic MLC, ULC
S0171RT	IMS DB-Level Tracking V13	Basic MLC, ULC
S0171RV	IMS Extended Terminal Option V13	Basic MLC, ULC
S0171RW	IMS Recov Lvl Tracking V13	Basic MLC, ULC
S0171RX	IMS Transaction Manager V13	Basic MLC, ULC

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

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Order now

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Fax: 800-2IBM-FAX (242-6329)
For IBM representative: callserv@ca.ibm.com
For IBM Business Partner: pwcs@us.ibm.com
Mail: IBM Teleweb Customer Support
ibm.com® Sales Execution Center, Americas North
3500 Steeles Ave. East, Tower 3/4
Markham, Ontario
Canada
L3R 2Z1

Reference: LE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

Note: Shipments will begin after the planned availability date.

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