IBM ILOG CPLEX Optimization Studio V12.4 delivers advanced analytics that enable better decisions faster

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At a glance

IBM® ILOG® CPLEX® Optimization enhancements:

- IBM ILOG CPLEX Enterprise Server enhances scalability in large-scale optimization-based decision support applications.
- IBM ILOG CPLEX Optimization Studio V12.4 improves performance and ease of use in solving real-world optimization problems and, through the connector from SPSS® Modeler, combines the power of predictive and prescriptive analytics.

To order, contact your IBM representative, an IBM Business Partner, or the Americas Call Centers at 800-IBM-CALL.

Reference: YE001

Overview

IBM ILOG Optimization products and solutions have broad applicability to a multitude of challenges in nearly every industry. They help organizations quickly determine how to most effectively allocate limited resources and to automatically balance trade-offs and business constraints, helping you achieve maximum operational efficiency and improved profitability. IBM ILOG Optimization products deliver measurable return on investment (ROI) through effective analytical decision-support solutions. IBM ILOG Optimization products and solutions support decision-making processes in situations where complexity and urgency limit the ability of human beings to consider multiple trade-offs. Users can implement better decisions faster by focusing their attention on critical complexities rather than on routine matters.

IBM ILOG CPLEX Optimization Studio offers a consolidated toolkit enabling efficient modeling and solving of analytical optimization problems. It supports end-to-end mathematical modeling from prototyping through operational deployment. It includes the cutting-edge CPLEX Optimizer solvers for mathematical programming and constraint programming that are robust, high speed, accurate, and reliable. It provides an open architecture that facilitates interoperability with other modeling languages, tools, and systems.

CPLEX Optimization Studio V12.4 offers a number of enhancements that improve performance and ease of use as well as facilitating deployment of optimization applications in enterprise environments.

- IBM ILOG CPLEX Enterprise Server, a new component, provides the capability to deploy optimization-based decision support applications in enterprise environments.
environments using a client-server architecture. This architecture enables separating the computationally intensive algorithms of the CPLEX Optimizers onto dedicated hardware to alleviate the burden on more routine data handling and user interface tasks on database servers and desktop clients. This separation facilitates the scalability and throughput needed in large-scale deployments and can support applications shared among multiple decision makers.

- V12.4 offers improvements in speed, reliability, and robustness that support solving larger and more complex real-world optimization problems. CPLEX Optimizers have a 20-year history of continuous innovation and a track record of increasing performance that has produced a nearly thousand-fold reduction in solution time over 10 years, due to improvements in solution algorithms, in addition to the advances in processor hardware. The result is that problems that might have taken hours to solve 10 years ago, now can solve in seconds. These performance improvements have allowed business planning cycles to shrink dramatically, resulting in faster and more flexible responses to changing market conditions. For instance, near-real-time production scheduling is now feasible in semi-conductor fabrication.

- V12.4 improves the connection from SPSS Modeler to CPLEX Optimization Studio, first introduced in V12.3. The connector enables CPLEX Optimization Studio to read data directly from SPSS Modeler streams and to visualize SPSS streams in CPLEX Optimization Studio’s integrated development environment. Using this capability, analytics specialists can create decision-support solutions that utilize the statistical and data mining capabilities of SPSS predictive analytics together with the optimization capabilities of ILOG prescriptive analytics. The result is even more powerful and deeper insights leading to better decisions faster. For instance, marketing professionals can now achieve the most effective use of their campaign budgets by selecting media and ad spots to target specific customer segments.

- V12.4 also provides a number of other enhancements including computation of dual values for quadratic models, used especially in finance applications, and deterministic parallel search for constraint programming models, used especially in detailed scheduling.

Key prerequisites

For details, refer to the Software requirements section.

Planned availability date

December 2, 2011: Electronic availability

January 6, 2012: Media availability

Description

IBM CPLEX Optimization Studio V12.4 provides the ability to quickly and reliably develop and maintain mathematical optimization models that automatically determine the best combination of decisions to achieve key performance indices within prescribed rules and resource limits, considering complex trade-offs. Through the use of these capabilities, the IBM ILOG Optimization products have a proven track record of using IBM ILOG Optimization in analytical decision support applications, achieving substantial return on investment (ROI) within months or even weeks.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via the IBM website

## Availability of national languages

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## Program number

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## Education support

IBM training provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM training website

http://www.ibm.com/services/learning/

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## Offering Information

Product information is available via the Offering Information website

http://www.ibm.com/common/ssi

Also, visit the Passport Advantage® website

http://www.ibm.com/software/passportadvantage

## Publications

No publications are shipped with this product.

The IBM Publications Center

http://www.ibm.com/shop/publications/order
The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card (in the U.S.) or customer number for 20 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries.

**Technical information**

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### Specified operating environment

**Software requirements**


Operating systems

- AIX® V5.3, V6.1, V7.1
- Microsoft® Windows® XP SP3
- Microsoft Windows Vista SP2
- Microsoft Windows 7 SP1
- Microsoft Windows Server 2008 SP2
- Microsoft Windows Server 2008 R2 SP1
- Red Hat Enterprise Linux® 5, 6
- SUSE Linux Enterprise 10, 11
- Sun Solaris 10

Languages supported

- Java™ 5.0, or later, Java 6.0, or later
- C
- C++
- .NET Framework 3.5 and 4.0
- Python 2

Connectors

- MathWorks MATLAB 7.5 to 7.12
- Microsoft Excel 2003, 2007, and 2010
- Microsoft Solver Foundation 3.0
- AMPL
- IBM SPSS Modeler V14.1

Databases as OPL Data Sources

- Oracle Database 10g, 11g
- DB2® V9
- Microsoft SQL Server 2005 and 2008 R2
- OLE DB
- ODBC

Support for Oracle databases does not include support for the Oracle Exadata platform.
IBM ILOG CPLEX Enterprise Server V12.4

Operating systems

• AIX V5.3, V6.1
• Microsoft Windows Server 2008 SP2
• Microsoft Windows Server 2008 R2 SP1

Languages supported - client side

• Java 5.0, or later, Java 6.0, or later

Application servers

• IBM WebSphere® Application Server Community Edition V2.1.1
• IBM WebSphere Application Server V7.0

Databases to store server jobs

• Oracle Database 11g
• DB2 V9
• Microsoft SQL Server 2008 R2

Support for Oracle databases does not include support for the Oracle Exadata platform.

The program’s specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

Compatibility

IBM ILOG CPLEX Optimization Studio

CPLEX Callable Library routines (CPXwritesol, CPXbinsolwrite) to write solution files in binary format or in a user-selected format were deprecated in CPLEX V10.0 and are removed in V12.4.

Planning information

Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express®. Product upgrades and technical support are provided by the Software Subscription and Support (also referred to as Software Maintenance) offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software, and technical support provides voice and electronic access to IBM support organizations, worldwide.

IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with each program license acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available.

Packaging

The IBM ILOG product packages comprise:

• Product CD-ROMs, DVDs, or both
• Printed Quick Start Guide
This program, when downloaded from a website, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

**Security, auditability, and control**

IBM ILOG products use the security and auditability features of the host hardware or 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**

This product is only available via Passport Advantage. It is not available as shrinkwrap.

**Product information**

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<tr>
<th>Licensed function title</th>
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**Charge metrics definitions**

**Authorized User**

Authorized User is the unit of measure by which this program is licensed. An Authorized User is an individual (named or unnamed) within or outside of your enterprise. The program may be installed on one or more computers or servers and accessed by the number of users authorized by the Proof of Entitlement (PoE). You must have an entitlement for each Authorized User accessing the program or any program component in any manner directly or indirectly (for example, via a multiplexing program, device, or application server) through any means.

**Processor Value Unit (PVU)**

PVU is a unit of measure by which the program can be licensed. The number of PVU entitlements required is based on the processor technology (defined within the PVU Table by processor value, brand, type, and model number at http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html
and the number of processors made available to the program. IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip. A dual-core processor chip, for example, has two processor cores.

Licensee can deploy the program using either full capacity licensing or virtualization capacity (sub-capacity) licensing according to the Passport Advantage Sub-Capacity Licensing Terms (refer to the webpage below). If using full capacity licensing, licensee must obtain PVU entitlements sufficient to cover all activated processor cores* in the physical hardware environment made available to or managed by the program, except for those servers from which the program has been permanently removed. If using virtualization capacity licensing, licensee must obtain entitlements sufficient to cover all activated processor cores made available to or managed by the program, as defined according to the Virtualization Capacity License Counting Rules at


* An activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.

Notes:

- Some programs may require licenses for the program and what is being managed. In that case, the following applies. In addition to the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- Some programs may be licensed on a managed basis only. In that case, the following applies: Instead of the entitlements required for the program directly, Licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- A few programs on an exception basis may be licensed on a referenced basis. In that case, the following applies. Rather than obtaining entitlements for the activated processor cores available to the program, licensee must obtain PVU entitlements for this program sufficient to cover the environment made available to the referenced program as if the program itself were executing everywhere the referenced program was executing, independent of the basis on which the referenced program is licensed.
- Express and workgroup programs may be licensed with maximum use terms. In that case, the following applies. The maximum authorized use terms and conditions for PVU licensed IBM express and middleware programs can be found in the IBM Express and Middleware Licensing Guide.

### Passport Advantage program licenses

**IBM ILOG CPLEX Optimization Studio**

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IBM ILOG CPLEX Optimizer Deployment Ed PVU SW S&S Reinstate 12 Mo DOCV3LL

IBM ILOG CPLEX Optimization Studio

Part description Part number

IBM ILOG CPLEX Enterprise Server
ILOG CPLEX Enterprise Svr Per Value Unit (PVU) SW S&S Reinstate 12 D0LF2LL
ILOG CPLEX Enterprise Svr Per Processor Value Unit (PVU) Annual SW S&S Rnw D0CUZLL
ILOG CPLEX Enterprise Svr Per Processor Value Unit (PVU) Lic + SW S&S 12 Mo D0LF1LL

Passport Advantage supply

Program name/description Part number

ILOG CPLEX Enterprise Server V12.4.0
IBM ILOG CPLEX Enterprise Server V12.4 MP ML Media Pack B800XML
ILOG CPLEX Opti Studio V12.4.0
IBM ILOG CPLEX Optimization Studio V12.4 MP ML Media Pack B800WML

Passport Advantage customer: Media pack entitlement details

Customers with active maintenance or subscription for the products listed are entitled to receive the corresponding media pack.

ILOG CPLEX Opti Studio V12.4.0

Entitled maintenance offerings description Media packs description Part number

IBM ILOG CPLEX Optimization Studio IBM ILOG CPLEX Optimization Studio V12.4 MP ML Media Pack B800WML
Authorized User
IBM ILOG CPLEX Optimizer Deployment Edition IBM ILOG CPLEX Optimization Studio V12.4 MP ML Media Pack B800WML
Authorized User

ILOG CPLEX Enterprise Server V12.4.0

Entitled maintenance offerings description Media packs description Part number

IBM ILOG CPLEX Enterprise Server per Processor Value Unit IBM ILOG CPLEX Enterprise Server V12.4 MP ML Media Pack B800XML

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**License Information form numbers**

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The program’s License Information will be available for review on the IBM Software License Agreement website


**Limited warranty applies**

Yes

**Limited warranty**

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

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**Volume orders (IVO)**

No

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Other terms

System i Software Maintenance applies
No

Educational allowance available
Not applicable.

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Passport Advantage

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Fax: 800-2IBM-FAX (242-6329)

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