AIMMS 3.10

Release Notes for Win32 Build 3.10 PR - SU6

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Paragon Decision Technology

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Chapter 1

System Requirements

System requirements

This chapter discusses the system requirements necessary to run the various components of your Win32 AIMMS 3.10 system successfully. When a particular requirement involves the installation of additional system software components, or an update thereof, the (optional) installation of such components will be part of the AIMMS installation procedure.

1.1 Hardware and operating system requirements

Hardware requirements

The following list provides the minimum hardware requirements to run your AIMMS 3 system.

- 1.6 Ghz or higher x86 or x64 processor
- XGA display adapter and monitor
- 1 Gb RAM
- 1 Gb free disk space
- A parallel or USB port (only when the hardware dongle is used)

Note, however, that performance depends on model size and type and can vary. It can also be affected by the number of other applications that are running concurrently with AIMMS. In cases of a (regular) performance drop of either AIMMS or other applications you are advised to install sufficiently additional RAM. If you are exceeding the limits of x86, you are advised to move to x64.

Supported Windows versions

The Win32 version of AIMMS 3.10 is designed to run under

- Windows 2000,
- Windows XP,
- Windows Server 2003,
- Windows Vista,
- Windows 7, and
- Windows Server 2008.

The Win32 version of AIMMS 3.10 Unicode is supported under

- Windows 2000,
- Windows XP,
- Windows Server 2003,
- Windows Vista,
- Windows 7, and
- Windows Server 2008.

Running the Win32 version of AIMMS 3.10 versions under the 32-bit Windows versions 95/98/ME/NT 4.0 is not supported.

1.2 ODBC and OLE DB database connectivity issues

Database connectivity

Before you can start using the database connectivity features built into the Win32 version of AIMMS 3.10, the following ODBC and OLE DB components need to be installed on your computer:

- the Microsoft Data Access Components (MDAC) version 2.5 or higher, and
- an ODBC driver for each database from which you wish to retrieve data from within your modeling application through ODBC.
- an OLE DB provider for each database from which you wish to retrieve data from within your modeling application through OLE DB.

This section discusses the compatibility issues between the various available ODBC and OLE DB components and AIMMS 3.

Microsoft Data Access Components

The MDAC components, as well as the Microsoft ODBC Jet drivers (which allow you to connect to, for instance, Microsoft Access databases), and OLE DB providers for the most commonly used databases, are available through the Microsoft web site. Please note that early versions of the Data Access Components (or of the OBDC Jet drivers) may exhibit problems that prevent AIMMS 3 from successfully connecting to certain databases. If you are using the ODBC connection layer, you are therefore strongly advised to install the latest version of the Microsoft Data Access Components.

Data Access Components installation

The AIMMS 3 CD-ROM contains the installation executable of both Microsoft Data Access Components version 2.7 and the Jet 4.0 ODBC drivers and OLE DB providers. You can install these using the CD-browser which automatically starts up when you insert the AIMMS 3 CD-ROM into your computer. Alternatively, if you have downloaded the AIMMS 3 installation executable from the AIMMS 3 web site www.aimms.com, you can download the installation executable for the latest Microsoft Data Access Components from the Microsoft web site www.microsoft.com.

Oracle ODBC drivers and OLE DB providers

If your model needs to retrieve data from an Oracle database, the following information may be relevant to you. The Oracle provided ODBC drivers for Oracle version 7 only support ODBC version 2.0. If you are using Oracle version 7, you should therefore use the Oracle ODBC driver that is distributed with the Microsoft Data Access Components. The Oracle provided ODBC drivers for Oracle versions 8 and higher support OBDC version 3.0, and can therefore use the ODBC 3.0 connection layer. Oracle versions 8 and higher also provides a native OLE DB provider. You can download the installation executables of the most recent version of the ODBC drivers and OLE DB providers for Oracle 8 and higher from the Oracle web site www.oracle.com.

Prefer native Oracle over MDAC drivers

We discourage the use of the ODBC drivers and OLE DB providers for Oracle that are distributed with the Microsoft Data Access Components, as these drivers only support a subset of the functionality provided by the native Oracle drivers. In addition, in our internal tests, they appear to have issues with certain ODBC/OLE DB functionalities that are used by AIMMS.

OLE DB issues

If you are using OLE DB for database connectivity, the following issues apply:

- Access stored procedures cannot be called (yet) with the Jet 4.0 OLE DB provider. There is no work around either. Try to replace stored procedures by an AIMMS `DATABASE PROCEDURE`. Access queries, which are not marked as 'stored procedure' by Access, are perfectly well possible through the AIMMS `DATABASE PROCEDURE`.
- Oracle's own OLE DB provider for Oracle generally performs better than Microsoft's OLE DB provider for Oracle.
- Using `long` column types (such as `text` or `ntext`) with SQL Server, may reduce your application's performance dramatically. Therefore (and because those column types hardly make sense in an AIMMS context), try not to use them. If you feel you really need them, it may be a wise choice to specify an ODBC data source for the database tables that contain these columns.
- Using the OLE DB provider for ODBC may result in errors. Try to use the database manufacturers' own OLE DB provider as much as possible to get better performance and more stable behavior.

1.3 Viewing help files and documentation

AIMMS documentation

The AIMMS 3 User's Guide, the AIMMS 3 Language Reference, the AIMMS 3 Function Reference, and the AIMMS book on Optimization Modeling are available online as Adobe Portable Document Format (PDF) files. In order to view or print PDF documents, Adobe Acrobat Reader version 8.1 or higher needs to be installed on your computer. Other PDF readers will not support the integrated documentation reference features such as Help on and Search all documents.

Acrobat Reader installation

The AIMMS 3 CD-ROM contains the Acrobat Reader 8.1 setup executable, and you can install it using the CD-browser which automatically starts up when you insert the AIMMS 3 CD-ROM into your computer. Alternatively, if you have downloaded the AIMMS 3 installation executable from the AIMMS 3 web site www.aimms.com, you can download the Acrobat Reader 6.0 installation executable from the Adobe web site www.adobe.com.

Chapter 2

Installation Instructions

Installation instructions

This chapter discusses all relevant issues related to the setup of AIMMS 3 on your computer. To install AIMMS 3 on your computer, you can

- run the AIMMS 3 setup program from the AIMMS 3 CD-ROM, or
- download the setup program for the latest release of AIMMS 3 from the download area of our web site, and run it from your hard disk.

The latter is the standard procedure for obtaining and installing AIMMS 3 Software Updates. Note that in order to run AIMMS properly, AIMMS requires some specific 3rd- party library versions to be installed (e.g. Microsoft Visual Studio runtime library, Microsoft .NET Framework). In the rest of this text, these libraries are called the prerequisites for running AIMMS.

2.1 Installation instructions

The AIMMS 3 CD-browser

When you install AIMMS 3 from the AIMMS 3 CD-ROM, a CD-browser will be started automatically when you insert the AIMMS 3 CD-ROM into your computer. Using this CD-browser, you can

- start the AIMMS 3 or AIMMS 3 Unicode setup program (these setup programs take care of installing the prerequisites as well),
- install any other third-party software or system components available on the AIMMS 3 CD-ROM which are required to use certain components of AIMMS 3 (as described in Chapter 1), and
- start the AIMMS 3 License Server setup program (for network licenses only).

Obtaining AIMMS 3 from the web

The download area of our web site www.aimms.com provides the AIMMS 3 setup program of the latest AIMMS 3 releases. If you have selected the AIMMS setup program that you want to install, the corresponding prerequisites are selected as well. Note that pressing 'Download.msi' does not include the prerequisites. Pressing the 'Download' button does result in all selected files (including prerequisites) being downloaded.

The AIMMS *3 setup program*

The AIMMS 3 setup program will guide you through the various steps that are necessary to successfully install AIMMS 3 on your computer. The AIMMS 3 setup program requires some prerequisites to be installed. When you install AIMMS 3 from an AIMMS 3 CD-ROM or from a downloaded package file, the AIMMS 3 setup program automatically takes care of of installing the prerequisites.

Administrative privileges required

Certain parts of the setup of AIMMS 3 may require administrative privileges. More specifically, you will need administrative privileges for

- the installation of the device drivers required to access the AIMMS hardware dongle (Windows only),
- the installation of, or updates to, any system components which access areas of the Windows registry in which you have no write access, or which write to the Windows system directory, if write access to that directory has been restricted, and
- the creation of writable directories in the common application directory on your computer where AIMMS will store its license configuration and any nodelock files associated with your AIMMS system, if write access to the common application area of your computer has been restricted.

Component selection

The AIMMS 3 setup program requires that you provide the specific selection of AIMMS 3 components you wish to install (the setup will select all common AIMMS features by default (Typical), which is recommended)

2.2 Solver availability per platform

Solvers in installation

In Table 2.1 you can find an overview of the solvers that are installed during a Typical and a Complete AIMMS installation on the several platforms on which AIMMS is supported. Note that it depends on your license whether you can use these solvers.

SSE2

Please note that the following solvers require a computer with a CPU that supports the SSE2 instruction set: GUROBI, MOSEK 6 or higher and CPLEX 12.2 or higher.

2.3 AIMMS 3 licensing

AIMMS 3 licensing

AIMMS offers the following two types of licenses:

- single-user licenses, and
- network licenses.

Each of these two types of licenses are protected in a different manner.

Solver	Version	Win 32 Typical	Win 32 Complete	Win 64 *	Linux 32 *	Linux 64 *
AOA		√	√	√	√	√
BARON	7.5.1	-	√	-	-	-
	7.5.2	-	√	-	-	-
	7.5.3	√	√	-	-	-
CONOPT	2.071 C	-	√	-	-	-
	3.11 B	√	√	-	-	-
	3.14 A	√	√	-	√	-
	3.14 G	√	√	-	-	-
	3.14 M	-	-	√	-	-
	3.14 Q	-	-	-	-	√
CPLEX	8.1	-	√	-	-	-
	9.0	-	√	-	-	-
	9.1	-	√	√	√	-
	10.0	-	√	√	√	√
	10.1	√	√	√	√	√
	11.0	-	√	√	√	√
	11.1	-	√	√	√	√
	11.2	√	√	√	√	√
	12.1	√	√	√	√	√
	12.2	√	√	√	√	√
GUROBI	1.0	-	√	√	√	√
	1.1	-	√	√	√	√
	2.0	√	√	√	√	√
	3.0	√	√	√	√	√
	4.0	√	√	√	√	√
KNITRO	5.1	-	√	√	√	√
	5.2	√	√	√	√	√
	6.0	√	√	√	√	√
	7.0	√	√	√	√	√
LGO	1.0	√	√	-	-	-
MINOS		√	√	√	√	-
MOSEK	6	√	√	√	√	√
PATH	4.4a	-	√	-	-	-
	4.6	√	√	-	-	-
SNOPT	6.1	√	√	√	√	√
	7.2	-	√	√	√	√
XA	13	-	√	-	-	-
	14	-	√	√	√	√
	15	√	√	√	√	√
XPRESS	15	-	√	-	-	-
	16	-	√	-	-	-
	17	-	√	-	-	-
	18	-	√	-	-	-
	19	-	√	-	-	-

* Typical and Complete installations are the same for Win 64 and Linux 32/64.

Table 2.1: Solvers included in the several types of AIMMS installations

Single-user license protection

Single-user licenses can be used by a single user on a single computer. To enforce the single-user character, AIMMS 3.10 requires that single-user licenses be protected by either

- a hardware dongle, which, depending on the type of dongle, must be connected to a USB or parallel port of your computer, or
- a nodelock file, which must be activated to match the hardware characteristic of your computer.

You can choose

When ordering the Windows version of the AIMMS software you can indicate whether you want your AIMMS system to be protected by a dongle or by a nodelock. Which choice to make is very dependent on your situation and the intended use of the AIMMS software. The Linux platform does not supports dongles.

Pros and cons of dongles

Dongles offer you the most flexibility when you want to use AIMMS on multiple computers, and do not want the hassle of having to deactivate and activate a nodelock on these computers. On the other hand, dongles occasionally break, you can forget to take the dongle with you, they can be stolen, and, because of their size, get lost quite easily, especially if you are moving them around a lot.

Pros and cons of nodelocks

Nodelock files are stored on the harddisk of your computer, and are, therefore, much less vulnerable to loss. Only if you computer is stolen, or in case of a harddisk crash, you must contact Paragon before being able to activate your nodelock on a replacement computer. On the other hand, if you are frequently working on multiple computers, you have to remember to deactivate the nodelock on the old computer, prior to being able to activate it on the new one, every time. In addition, you need access to the internet to activate or deactivate a nodelock.

Physical shipments

If you decide to request a dongle for license protection, a physical shipment of the dongle to your site is required before you can start using AIMMS. If you request nodelock protection, we will send you the AIMMS license number and activation code by e-mail, after which you can start using AIMMS directly.

AIMMS *dongles*

If you request your license to be protected by a dongle, an AIMMS dongle is sent to you along with your AIMMS 3 CD-ROM. If you upgrade from AIMMS 2.20, you can continue to use your existing green Activator dongles used by AIMMS 2.20, *but only with the Win32 version of* AIMMS. The green Activator as well as the grey Sentinel dongle must be connected to the parallel port of your computer. The purple Sentinel dongle must be connected to a USB port of your computer. The AIMMS 3.10 setup program will only install the required device drivers for accessing the grey and purple Sentinel dongles. If you still use the green Activator dongles supplied with AIMMS 2.20, you can obtain the required drivers separately from our FTP site ftp.aimms.com.

Network licenses

If you have ordered an AIMMS 3 network license, no license protection needs to be installed locally on your computer. Instead, you need the host name and port number of the server running the AIMMS 3 network license server. For more information about installing the network license server itself, please refer to the documentation of the AIMMS 3 network license server.

2.3.1 Personal and machine nodelocks

Two types of nodelocks

AIMMS offers two types of nodelocks:

- personal nodelocks, and
- machine nodelocks.

If you choose for nodelock protection you are free to choose between a personal or a machine type of nodelock. In this section you will find the characteristics of both types of nodelocks. If you are unsure which type of nodelock to choose, we recommend that you start with a personal nodelock, as you can change a personal nodelock into a machine nodelock at any time, but not the other way around.

Personal nodelock

Personal nodelocks are intended for use by a single AIMMS user, who still wishes to have the freedom to use AIMMS on multiple computers, for instance if you want to easily switch between your desktop computer at work, a notebook computer and your home computer. Personal nodelocks have the following characteristics:

- Personal nodelocks can be transferred to another computer 3 times per 24 hours. This allows you to take your AIMMS license home in the evening and back to work the next morning without any problems.
- Personal nodelocks have a limited lifetime of 60 days, and should be renewed within that period to extend the lifetime to its full 60-day period. If the nodelock is not renewed within its 60-day lifetime, this does not invalidate your AIMMS license in any way—you only have to renew your nodelock prior to being able to use your AIMMS system again. Note that the renewal process does not require any manual intervention, as AIMMS will try to automatically connect to our internet license database to renew your nodelock once every day you are using AIMMS.
- Both activation and nodelock renewal of personal nodelocks require a working connection to the internet. As a consequence, in the absence of an internet connection you can continue to work uninterrupted for a period of 60 days, before an internet connection is required to renew your nodelock.
- With every activation or nodelock renewal AIMMS will also update your license files if new license files are available (e.g. if your system is in maintenance), and will inform you of any messages that are available for you in our database.

- Because of their volatile nature, PDT will replace a personal nodelock without any questions asked in case of loss of or damage to your computer.
- You can switch your personal nodelock to a machine nodelock at any time.

Machine nodelock

Machine nodelocks are intended for permanent use on a single computer. They are recommended for server applications, and can also be used for personal use if you are sure you will be using AIMMS on a single computer, or do not have internet access. Machine nodelocks have the following characteristics:

- Machine nodelocks can be transferred to a replacement computer 3 times per 365 days.
- Machine nodelocks have an unlimited lifetime (unless deactivated).
- Machine nodelocks can be either activated online if your computer is connected to the internet, or offline through the license activation area on the AIMMS website.
- License files will only be retrieved when the machine nodelock is activated, or by explicit request.
- In case of failure, PDT will, in principle, only replace machine nodelocks on the same computer.
- Once you have chosen for a machine nodelock, it is not possible to switch back to a personal nodelock.

Privacy

Although a personal nodelock and the software version check on the start page make a regular connection to the internet (the personal nodelock connects to a license database for nodelock renewal and the version check connects to a version database), we do respect your privacy and will not register patterns in your personal usage of the AIMMS software in any way. During activation no personal information will be transferred, only your computer name and some of its hardware characteristics. During deactivation we register the date and time of deactivation to enforce the transfer limit.

Internet connection and proxy settings

The connection to our internet license database is implemented as a web service. Thus, if you are able to browse the web, you should also have no trouble activating an AIMMS nodelock. If your computer connects to the internet through a proxy server, AIMMS by default tries to detect and use the proxy settings also used by Microsoft Internet Explorer.

Automatic configuration scripts

It should be noted that the use of auto-configuration scripts in determining the proxy server will fail if these use any other scripting language than Javascript. This is due to the libraries underlying the SOAP library used by AIMMS to connect to our license server. If you are in this situation, you should manually configure the proxy settings, as described below.

Manual proxy setting

If AIMMS does not succeed in automatically detecting the proxy settings that apply in your network environment, AIMMS also allows you to manually set the proxy settings during the activation process. If the online activation process does not succeed directly, AIMMS gives you the option to either continue with an offline activation process, or to manually supply the proxy settings that apply to your network environment through the dialog box illustrated in Figure 2.1. In this dialog box you can choose between

- the *Current User* settings also used by Microsoft Internet Explorer (default),
- the `Local Machine` settings which are stored in the registry, if these are available on your machine, or
- *Custom* proxy settings that you have received from your IT department.

In the latter case, you can also (optionally) provide a user name and password to authenticate with the proxy server. In most cases, however, setting these will not be necessary, and Windows authentication will be sufficient.

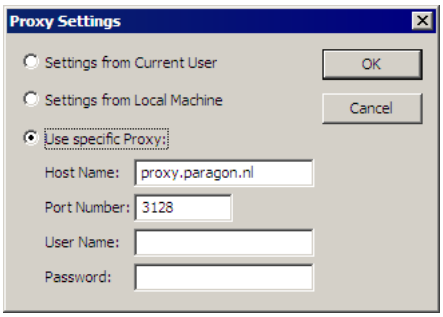

Figure 2.1: The AIMMS **Proxy Configuration** dialog box

2.3.2 Installing an AIMMS license

Managing your AIMMS licenses

When you start up AIMMS 3.10 for the first time after installation, AIMMS will open the **License Configuration** dialog box illustrated in Figure 2.2. Through this dialog box you can install new AIMMS licenses and manage all AIMMS licenses that already have been installed on your computer.

Installing a new license

To install a new license, press the **Install License ...** button in the **License Configuration** dialog box. This will start a wizard, that will guide you through the license installation procedure step by step. The wizard can help you to install

- existing AIMMS 3.9 licenses,
- nodelocked licenses,
- dongled licenses,

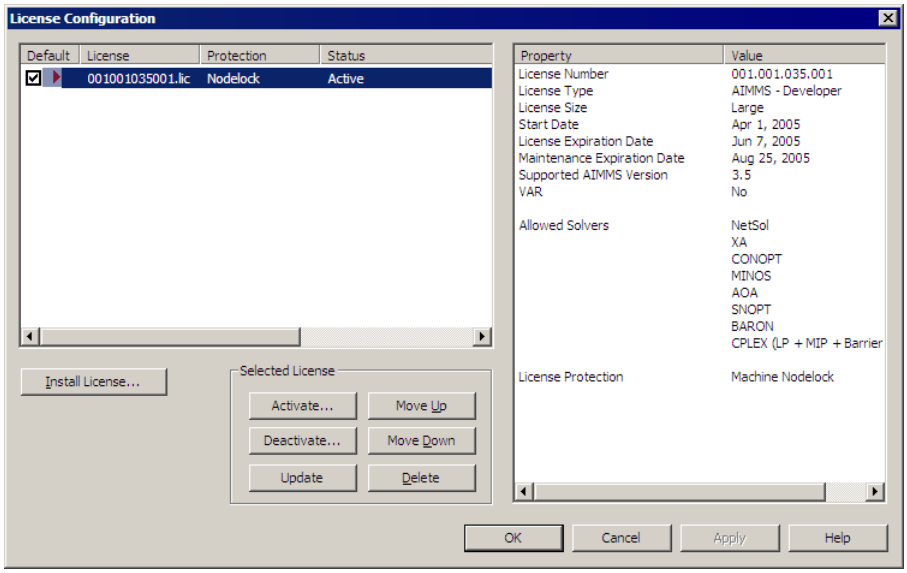

Figure 2.2: The **License Configuration** dialog box

- network licenses,
- evaluation licenses, and
- student licenses.

To successfully complete the installation of licenses of each type, you should make sure to have the following information available.

Single-user nodelocked licenses

To install a single-user AIMMS license that is protected by a nodelock, you need the following information:

- your AIMMS license number, and
- the associated activation code that you received from Paragon.

You have the choice to request a personal nodelock or a machine nodelock. A personal nodelock must be requested online, a machine nodelock can be requested online or offline. Refer to Section 2.3.1 for a more detailed introduction to personal and machine nodelocks.

Single-user dongled licenses

To install a single-user AIMMS license that is protected by a dongle, you need the following items:

- an AIMMS dongle attached to a USB or parallel port of your PC, and
- the associated set of license files that you received from Paragon.

Network licenses

To install an AIMMS network license, you need the following information from your system administrator:

- the name of the AIMMS network license server,
- the port number of the AIMMS network license server, and
- the name of the license profile to which you want to connect (optional).

Evaluation licenses

To install an AIMMS evaluation license you need the following information

- your AIMMS evaluation license number, and
- the associated activation code that you received from Paragon when requesting an evaluation license.

You must have a working connection to the internet (not necessarily on the machine on which you installed AIMMS) to activate an evaluation license. Evaluation licenses expire 30 days after activation. Note that each evaluation license can be activated only once, and that you can only activate a single evaluation license per AIMMS release on a specific computer, regardless of the number of evaluation licenses you have requested on our web site.

Student licenses

To install an AIMMS student license you need the following information:

- your AIMMS student license number, and
- the associated activation code that you received from the university that purchased the AIMMS Educational Package.

You must have a working connection to the internet to activate a student license. Student licenses expire one month after the end of the current academic year. Student licenses can be activated multiple times.

2.3.3 Managing AIMMS licenses

Managing multiple AIMMS licenses

AIMMS allows you to have multiple AIMMS licenses installed on your computer. You may have multiple licenses installed, for instance, for the following reasons:

- you have requested a trial license for a new AIMMS version which you want to run next to your existing license,
- you have temporarily borrowed or hired an AIMMS license with more capabilities than your regular license,
- your system administrator has created multiple network license profiles, each of which you may want to use to run AIMMS.

In this section we will describe how you can instruct AIMMS which license to use.

Default licenses

In the **License Configuration** dialog box displayed in Figure 2.2, all AIMMS licenses installed on your machine will be displayed in the left pane of the dialog box. The license details of each license are displayed in the right pane of the dialog box. During startup AIMMS will consider all licenses in the left pane of the **License Configuration** dialog box which have the **Default** column checked, and will use the first valid license it finds starting from top to bottom. Using the **Move Up** and **Move Down** buttons you can change the order in which AIMMS will search the list.

Transferring licenses

Both personal and machine nodelocks can be transferred to other computers. Personal nodelocks can be transferred upto three times a day, allowing you to take your license with you wherever you want. Machine nodelocks can be transferred three times per year, to a computer replacing the computer on which the nodelock is currently installed. To transfer a nodelocked license, you must

- deactivate the nodelock on the currently active computer, and
- activate it on the computer to which you want to transfer the license.

You can deactivate an active nodelock using the **Deactivate** button in the **License Configuration** dialog box. Deactivation will only succeed if there is no conflict with the transfer limit for the given nodelock type. This makes sure that there will never be a problem activating a deactivated license. After successful deactivation the license will not be removed from the list but be marked as inactive. If the license is not active on any computer, you can reactivate the license through the **Activate** button.

Emergency nodelocks

In case you want to activate a nodelock on a computer, but have forgotten to deactivate the nodelock on a computer to which you currently have no access, AIMMS allows you, as a courtesy, to request an emergency nodelock 3 times per 365 days. Emergency nodelocks have a lifetime of 7 days, and during this time you can arrange for someone to deactivate the license on the computer containing the active nodelock. During the activation sequence, AIMMS will automatically ask whether you would like to receive an emergency nodelock when it discovers that the license is active on another computer.

2.3.4 Location of license files

Location of license files

AIMMS keeps its license and configuration files in the folder

```
Paragon Decision Technology
```

of the common application area of your computer. On Windows 2000, Windows XP, and Windows Server 2003, the common application area is located, by default, at

```
C:\Documents and Settings\All Users\Application Data
```

On Windows Vista and Windows 7, this folder is located under `C:\ProgramData`. The `Paragon Decision Technology` folder contains three subfolders

- `Config`, containing the license and solver configuration files,
- `Licenses`, containing all license files,
- `Nodelocks`, containing all nodelock files installed on your computer, and
- `AnyUser`, containing the license configuration files for all users on your computer (see below).

The AIMMS installation makes sure that these subfolders are writable for everyone, allowing you to install and uninstall licenses on your computer.

Do not move nodelock files

To prevent tampering with nodelocked licenses, AIMMS keeps track of the location of the nodelock files associated with a license. You should, therefore, not manually move or copy the AIMMS nodelock files as this may invalidate your nodelock.

User specific configuration

You can specify whether the license and solver configuration that AIMMS uses is the same for any user of the machine, or different for each individual user. To prevent problems when running AIMMS as part of a computer service, AIMMS 3.10 will by default use the same configuration for any user. To modify this behavior, you should edit the file `UserDistinction.cfg` in the common `Config` folder. In the file `UserDistinction.cfg.default`, straightforward directions are given on how to edit it. If no `UserDistinction.cfg` file exists, AIMMS will use the `UserDistinction.cfg.default` file instead. You can use this file as a base for setting up your own configuration.

Any User

In the scenario where all users of the same pc use the same license and solver configuration, the configurations that are modified by a user are stored in the `AnyUser` folder of the `Common` folder.

Current User

In the scenario where each specific user of the pc has its own license and solver configuration, the configurations that are modified by a user are stored in the local application data folder. On Windows 2000, Windows XP and Windows Server 2003, this local folder is usually located at:

```
C:\Document and Settings\<UserName>\Application Data\Paragon
Decision Technology
```

On Windows Vista and Windows 7 it is:

```
C:\Users\<UserName>\AppData\Roaming\Paragon Decision Technology
```

Accessing configuration files

When AIMMS needs to read the current configuration, it will first look in the (any)user folder as specified by the aforementioned UserDistinction.cfg file; if it cannot be found there, it will try to read the configuration from the common application data folder. When saving a modified configuration, AIMMS always writes to the (any)user folder.

Version dependent configurations

Inside the Config folder of the (any)user folder, each major AIMMS version (3.6, 3.7, 3.8, etc.) will create its own specific subfolder when it needs to write a configuration file. During an attempt to read, AIMMS will first look for the specific file in the folder that matches its own major version number, and otherwise it will subsequently search through the folders of previous versions. In other words, when you upgrade to a new AIMMS version, initially your configuration will be the same as the one you were using for the previous AIMMS version, but if you change something in the configuration, this will only affect the configuration of the AIMMS version you are working with.

Network License Client Files

If you are using an AIMMS Network License, then your local machine does not need to have any license file installed. The only required file is the license configuration file, that contains the info of where the License Server is located on your LAN. When logging on to the License Server, the licensing info is sent directly from the server to the running AIMMS session, except for some secondary license related files:

- the .SLV file (containing the default solver configuration),
- the .VID file (containing the VAR identification info), and
- the .CPX file (the *CPLEX* license file).

These secondary license files are temporarily copied to the folder NetworkCache which is located in the (any)user folder as described above.

Project dependent configuration

You can specify a project dependent solver configuration by placing a solver configuration file with the name 'solvers.slv' in the project directory. AIMMS will first look for this file and if it cannot find it will look for other solver configuration files. See the AIMMS Help for more information.

2.4 OpenSSL license

OpenSSL included - in separate RPC installation only

The separate *RPC* installation file, which you can download in addition to the main AIMMS software, contains the OpenSSL and SSLeay libraries to provide the HTTPS transport for AIMMS web services. The following licenses apply to OpenSSL and SSLeay.

OpenSSL license

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   "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core @openssl.org.
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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

SSLeay license

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

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Chapter 3

Getting Support

Getting support

This chapter discusses the procedures that apply when you encounter problems in AIMMS 3. Please refer to the list of known and reported issues at the end of this chapter to verify whether a problem which you wish to report has already been reported before.

3.1 Reporting a problem

Problem fixing

When you encounter a problem in AIMMS 3, Paragon Decision Technology (PDT) will investigate the problem, and if applicable provide a fix for it. PDT always provides this service if your AIMMS version is the latest functional AIMMS release. In all other cases, you are only eligible to obtain a fixed release if your AIMMS license is in maintenance. Any problem fix will always be performed on the latest functional AIMMS release only, and may require that you upgrade your AIMMS system to that version.

Reporting a problem

Whenever you encounter a problem, PDT needs the following information to process the problem.

- **Computer information**
  - Brand and model
  - Operating system and version number (including any installed Service Packs)
  - CPU type and speed
  - Amount of installed RAM
  - MDAC and ODBC/OLE DB driver versions if the problem is database-related
- **AIMMS information**
  - License number (**Tools-License-License Configuration** menu)
  - AIMMS build number (**Help-About AIMMS** menu)
- **Problem details**
  - A detailed description of the problem
  - The type of the problem
    - Crash
    - Incorrect functionality
    - Cosmetic

    - Feature request
  - The severity of the problem
    - Crash
    - No work around available
    - Work around available
    - Cosmetic
- **Reproducibility** (if applicable)
  - A description of the steps required to reproduce the problem
  - A copy of your project files along with any other files used by your project, if such is necessary to reproduce the problem

Problem processing

You should e-mail your problem report containing the above information to Support@aimms.com. Upon receipt, PDT will investigate your report and notify you of its status, as well as the actions that will be undertaken to fix the problem. You will be notified when an AIMMS 3 version will be released, in which the problem is fixed.

Modeling support

Support requests other than bug reports will, in principle, only be dealt with at our regular consulting fee. This is especially true for when you request us to provide extensive modeling support. If you are new to AIMMS 3, and need some quick pointers to help you tackle a particular modeling problem, we may decide to honor such requests at our discretion. When you send support requests to our e-mail account Support@aimms.com, please always include your AIMMS license number.

Automatic Error Reporting

Reports collected via the AIMMS Error Report Service are actively used by Paragon Decision Technology to continuously improve the quality and reliability of AIMMS. This service is automatically called when a severe/fatal error appears. At Why Report Errors you can read why you should report these errors. At Data Collection Policy you can read what information is collected by the AIMMS Error Report Service and what we do with this information.

3.2 Known and reported issues

Known issues

The following issues are known in the present AIMMS 3 release.

RPC

- Due to a change in the AIMMS 3.8.6 RPC layer, just after the installation of the AIMMS 3.8.6 RPC layer, you might encounter an error message about the AIMMS handler service. Please see this Knowledge Base article.

- Deploying a web service with attachments in Windows Vista or Windows 7, with a manually started AIMMS agent project, may result in temporary attachment files not being removed from the system's temporary directory. This happens because the `AIMMS HTTP/RPC Handler Service` runs under the `SYSTEM` account, while a manually started AIMMS agent project usually does not. If the non-`SYSTEM` account under which the AIMMS agent project runs does not have deletion rights on the `SYSTEM` temporary directory (which usually is the case), the temporary attachment files cannot be deleted. There are two ways to work around this problem:
  1) By using an automatically started AIMMS agent (which, in a deployment scenario, is the preferred way of starting up AIMMS agents).
  2) By stopping the `AIMMS HTTP/RPC Handler Service` and instead starting the `AimmsServiceHandler.exe` executable. This file is located in the AIMMS `Common\Bin`-folder.

Windows Vista/Windows 7

Chapter 4

Release Notes

Release notes

This chapter contains a description of the new features developed for AIMMS 3.10. In addition, it contains the release notes of all AIMMS 3.10 releases. For each release, the following items are listed:

- the build number of the release,
- the release date, and
- a description of the changes and the issues resolved in this release.

AIMMS 3.10 versions

By default, the installation procedure will install the single-byte AIMMS executable. This version is sufficient for most application developers. However, if you need to distribute a localized version of an AIMMS application to, for instance, Asian or Russian end-users, use of the common single-byte AIMMS version may not be sufficient anymore, as many languages in these regions cannot be represented by means of single-byte characters. To support localization to such languages, a Unicode version of AIMMS is available, in which all strings are represented internally through double-byte characters. More details on the AIMMS Unicode version can be found in Section 23.2 of the User's Guide.

An overview of all known and reported issues which are still outstanding in the current release is given in Section 3.2.

What's new in AIMMS 3.10

This documentation reflects the state of the AIMMS 3.10 Production Release. Compared to AIMMS 3.9, the following major new and extended functionalities have been added to the system.

What's new in AIMMS 3.10 PR?

All 3.10 Feature Releases have built up to the Production Release of AIMMS 3.10. In this section you can read about the new features that have been introduced in Feature Releases 1, 2 and 3 of AIMMS 3.10, which now form AIMMS 3.10 PR.

Features added in AIMMS *3.10 FR3?*

For **AIMMS 3.10 FR3** the new features/extended functionality are:

- Installation-free AIMMS
- Gurobi 2.0*
- Error handling
- Interrupting slow statements
- New warnings
- New procedures
- Hide Y2-axis, use Y-scale
- Tag names for tabbed/indexed page objects
- Pivot Table: grid focus indicator

*Also available in the AIMMS 3.9 series, starting with AIMMS 3.9.4.

Installation-free AIMMS

AIMMS itself is now available as an executable file that requires no installation at all (for 32-bit Windows), similar to the Installation-free AIMMS Viewer that we already released with AIMMS 3.10 FR2. This installation-free AIMMS makes it very easy to run AIMMS without the need for administrator rights, for example when you're deploying your application to end-users. You can even deploy AIMMS plus your application in a single installation-free package. These installation-free versions of AIMMS also make it easy to run different Software Updates of AIMMS next to each other.

Some restrictions apply when using the installation-free AIMMS *versions. For details, please read this page on our website.*

Gurobi 2.0

AIMMS 3.10 FR3 supports the new Gurobi solver version, Gurobi 2.0. This version includes significant improvements in MIP performance (for difficult models, Gurobi 2.0 is roughly four times as fast as Gurobi 1.1), simplex performance (the new dual simplex optimizer is roughly twice as fast as Gurobi 1.1) and parallel MIP performance. Gurobi 2.0 allows you to store MIP nodes on disk and thus solve much larger MIP models. Gurobi 2.0 is also available in the AIMMS 3.9 series, starting with AIMMS 3.9.4.

Error Handling

To increase your control over AIMMS applications in deployment to end-users, we have added extensive error handling functionality to the AIMMS language. This language extension allows the model builder

- to tune the error reporting to the end-user by developing a global error handling procedure,
- to implement *continue upon failure* by handling errors occurring in a selected block of statements,
- to raise application-specific warning and errors,
- to catch errors issued by an intrinsic AIMMS procedure without having to test the return code of each procedure call, and

- to control the amount of warnings issued by AIMMS based on their seriousness.

Interrupting Slow Statements

In order to allow you to interrupt a long running AIMMS task, the tool AimmsInterrupt.exe can be used besides the existing key-combination Ctrl+Shift+S. This new tool is more powerful than the key-combination, because it is also able to interrupt a long running statement, definition evaluation or generation of a constraint. This tool will be available from the AIMMS submenu in the Windows Start - All Programs menu. Upon startup, it will place itself in the system tray. By right-clicking the AIMMS icon in the system tray, you'll obtain a menu of running AIMMS instances that can be interrupted.

New Warnings

New warnings have been added to the AIMMS compiler and execution engine in order to ease the tuning of an application:

- Warning unused index: an index in an iterative operator but not in an expression leads to unnecessary computations. An index in the index domain of a constraint but not used in the definition leads to duplicate rows.
- Warning duplicate column/row: besides requiring additional memory, duplicate columns and rows lead to non-unique solutions/shadow prices, respectively.

New Procedures

We have added three new procedures to AIMMS to facilitate data handling and exchange:

- `CloneElement`: This procedure copies all data associated with a particular element to another (new) element.
- `DirectoryGetFiles`: This procedure retrieves the names of the files in a given directory, optionally including the files in all subdirectories.
- `DirectoryGetSubdirectories`: This procedure reads the directory structure of a given directory, optionally including all subdirectories.

Hide Y2-axis, use Y-scale

In 2D Chart objects, it is now possible to hide the Y2-axis and still show its data, using the same scale as the Y1-axis. This can be done by setting the new property Hide axis, use Y-scale at the Y2-axis tab. This property allows you to hide the Y2-axis, but still display its associated data using a different chart type. You might want to use this if the value range of your Y-axis data and your Y2-axis data are quite close to each other, making a separate Y2-axis superfluous.

Math Program Inspector: IIS support for MIP

The AIMMS math program inspector (MPI) offers various tools to investigate causes of infeasibility, including finding an irreducible inconsistent system (IIS): a subset of constraints and variable bounds that contains an infeasibility. If at least one of the constraints or variable bounds in the IIS is removed, that

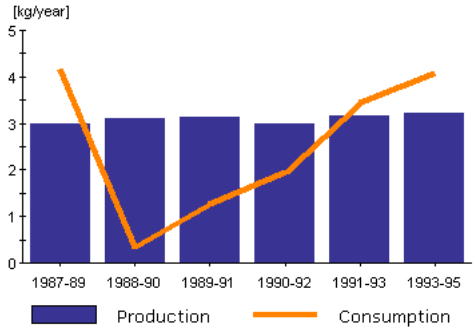

Figure 4.1: Hiding the Y2-axis

particular infeasibility is resolved. The MPI could already find an IIS for LP models, and can now also find an IIS for MIP models with an infeasible LP relaxation.

Tag names for tabbed/indexed page objects

`PageGetFocus` now returns a tag that includes the path of Indexed Page or Tabbed Page objects in which the focus page object is contained. With this extended tag, you can now reference any page object within an Indexed Page or Tabbed Page object when using any of the page functions that have a tag as input. This allows you e.g. to save and load Pivot Table states separately for each page in an Indexed Page or Tabbed Page object.

Pivot Table: Grid Focus Indicator

In the row and column areas of a Pivot Table, you can now show indicators for the focus cell in the grid area. Such an indicator consists of a different background color, text color and/or font. It is applied to the leaf node element in the row and/or column area that corresponds with the selected cell in the grid area, as you can see in the picture. The indicator properties can be specified via the Pivot Table properties dialog box, on the Row and/or Column Area tabs in the Grid Focus Indicator section.

	Month	January, 2003	February, 2003	March, 2003	April, 2003
Customer	Size				
Customer-06	Small	28.91	16.48	27.46	30.25
	Medium				
	Large	8.56	5.01	8.32	10.97
Customer-09	Small	17.64	20.35	25.23	14.95
	Medium				
	Large	11.75			

Figure 4.2: Grid Focus Indicators

Features added in AIMMS *3.10 FR2?*

For **AIMMS 3.10 FR2** the new features/extended functionality are:

- Database Tracing
- Assertions in the Pivot Table

- Installation-free AIMMS Viewer
- Bound analysis based on selection
- CPLEX 12.1*
- Circle Packing example*
- Support for Windows 7*

*Also available in the AIMMS 3.9 series, starting with AIMMS 3.9.3.

Database Tracing

The database communication of AIMMS can now be traced to one or more files. This tracing option allows you to see what exact statements AIMMS sends to a data source. This can be very helpful during the debugging of your database communication. Tracing is done on:

- read statements
- write statements
- SQLDirect statements
- transaction statements
- stored procedure calls

In the Transport Model example that comes with the AIMMS installation this database tracing functionality is illustrated.

```
Start executing database procedure
    Column 1; Type: WString; Value: "Milk"
    Column 2; Type: Double; Value: 1.600000
    Column 1; Type: WString; Value: "Coffee"
    Column 2; Type: Double; Value: 2.400000
    Column 1; Type: WString; Value: "Soap"
    Column 2; Type: Double; Value: 0.800000
End reading data from database procedure (3 row(s) read)
```

Figure 4.3: Example of database tracing

Assertions in the Pivot Table

In almost all modeling applications, it is important to check the validity of input data prior to its use. To provide you with a mechanism to implement data validity checks, AIMMS already offered a special ASSERTION data type. With it, you can easily specify and verify logical conditions for all elements in a particular domain, and take appropriate action when you find an inconsistency. It is now also possible to use this Assertion functionality in the Pivot Table.
In the Pivot Table example that comes with the AIMMS installation this Assertion functionality is illustrated.

Installation-free AIMMS Viewer

The AIMMS Viewer is now also available as an executable file that requires no installation at all. This makes it very easy to share your AIMMS projects results with e.g. managers or colleagues, who may not have an AIMMS license and/or administrator rights, thus making your communication more effective.

We plan to offer Installation-free executables of AIMMS (32-bit Windows) in

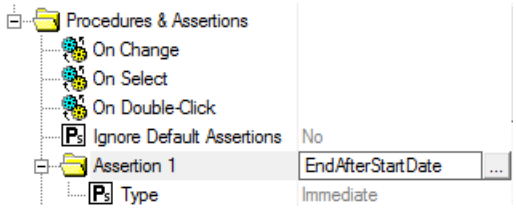

Figure 4.4: Example of the assertion property in the Pivot Table

the near future as well.

Some restrictions apply when using the installation-free AIMMS *Viewer. For details, please read this page on our website.*

Bound analysis based on selection

You can now restrict the Bound Analysis report in the Math Program Inspector to selected variables and constraints. This allows you to see the results of the Bound Analysis for a specific set of variables and constraints.

CPLEX 12.1

AIMMS 3.10 FR2 supports the new CPLEX solver version, CPLEX 12.1. This version includes improvements in the performance of solving MIP problems and the Barrier algorithm. Furthermore, parallel algorithms in CPLEX 12.1 are now included as a standard (i.e. no additional charge).

Circle Packing example

A new example in the area of object packing has been added to the AIMMS installation: the Circle Packing example. This example handles the mathematical problems in which

- identical circles (with an unknown, maximized radius) are to be packed into the unit square or the unit circle, or
- an arbitrary collection of circles in an optimized circle with minimal radius (see picture).

To solve object packing problems numerically, you often need nonlinear optimization tools. In case of the circle packing listed above, you have to handle non-convex models. For this, the global solver LGO is a suitable solver. We recommend having solver LGO installed in AIMMS before running this example.

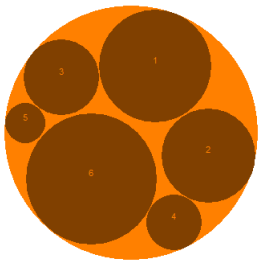

Figure 4.5: Example of a Circle Packing

Support for Windows 7

AIMMS 3.10 FR2 has been tested on the latest available beta versions of Windows 7. Future AIMMS 3.10 releases will be supported on Windows 7 as soon as Microsoft officially releases it. By extending the support for AIMMS to more computing platforms and updating the support for existing platforms, you are able to benefit from improved hardware and operating system architectures.

Features added in AIMMS *3.10 FR1?*

For **AIMMS 3.10 FR1** the new features/extended functionality are:

- Coordinates of Page Objects
- Text Representation menu
- Extract AIMMSpack to current folder
- Pivot Table State File Manager
- Pivot Table Page Functions
- Changing coefficients in the Math Program Inspector
- Tooltips for Buttons

Coordinates of Page Objects

When you select one or more page objects on a page in edit mode, the object coordinates, dimensions and type of object are displayed in the status bar. This further simplifies the alignment of your page objects, especially when these objects are located on different pages.

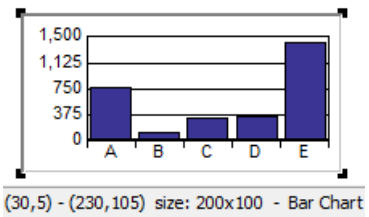

Figure 4.6: Example of coordinates in the status bar

Text Representation

To provide easier insight in a model, the possibility to look at a text file format of (part of) your model is now also available from the View windows. Via the Text Representation submenu in the right-mouse menu and View menu in the menubar and associated short-cut keys, you can view either the selected nodes (`Ctrl + t`), or the complete model (`Ctrl + Shift + t`) in its text representation. The new Text Representation submenu has replaced the View Flat Model menu item in the Model Explorer.

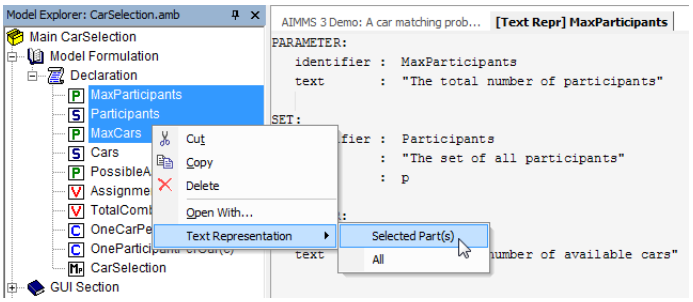

Figure 4.7: Example of the Text Representation menu.

AIMMSpack

The AIMMSpack is a convenient file format to pack all related files into a single file for distribution. When extracting a `.aimmspack` file, you can now directly select the current folder as the target location. This allows you to keep the extracted project close to the location of the `.aimmspack` file.

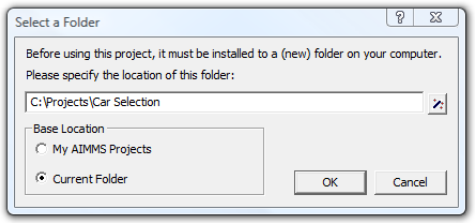

Figure 4.8: Example of extracting a `.aimmspack` to the current folder.

Pivot Table State File Manager

The versatile AIMMS Pivot Table allows developers and end-users to create their own data views, arranging the columns and rows as they wish. These views are stored as *states*. With this new tool the developer can now manage the Pivot Table states that are stored in the `.UserState` and `.DeveloperState` files of your project and libraries. The State File Manager gives you an overview of all states that are stored in a specific state file, from which you can delete states and/or jump to the pages on which the corresponding Pivot Tables are located.

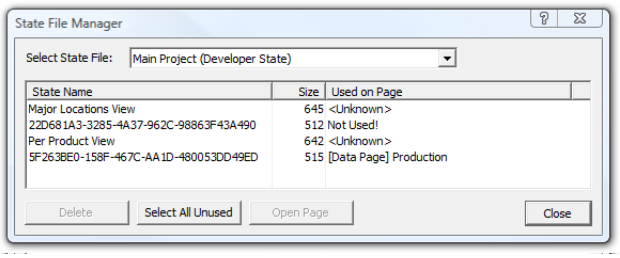

Figure 4.9: Example of the State File Manager

Pivot Table Page Functions

You can now specify a string parameter for the Pivot Table property Specific State Name (on the General tab). By changing the value of this string parameter, you can e.g. store several states for a single Pivot Table. To support you in saving, loading and deleting these states to/from the state files, three new page functions have been added:

- `PivotTableSaveState`
- `PivotTableReloadState`
- `PivotTableDeleteState`

Pivot Table Example

The Pivot Table example has been extended with a library that uses these new state functions. It includes a right-mouse menu that can be assigned to a Pivot Table, after which the user can save, load, or delete states for that Pivot Table. You can include this library in your own project as well.

Math Program Inspector

You can now change the value of linear matrix coefficients directly from within the Math Program Inspector. This allows you to interactively perform sensitivity analysis on the linear matrix coefficients of your problem, without the need to regenerate the matrix.

Tooltips for Buttons

AIMMS enables you to build very powerful interfaces around your model, with buttons that enable end-users to control and run optimizations. To help new end-users to understand the buttons that you provide, you can specify tooltips to provide extra information about the action(s) behind the buttons.

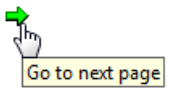

Figure 4.10: Example of the tooltip of a button

AIMMS 3.10 PR - SU6, release date 2012-01-18

In this sixth Software Update of the AIMMS 3.10 Production Release, the following issues have been fixed or improved.

Build 3.10 PR - SU6 2012-01-18

Issues ...

- The limit on individual sets in indexed sets is increased from 1 million to 4 million.
- AIMMS running on Windows queries the timezone information from the registry of Windows, which is regularly updated by Microsoft. To make sure that AIMMS running on Linux has this same time zone information, the latest time zone changes are included in this AIMMS version.

AIMMS 3.10 PR - SU5, release date 2011-06-27

In this fifth Software Update of the AIMMS 3.10 Production Release, the following issues have been fixed or improved.

Build 3.10 PR - SU5 2011-06-27

Issues ...

- When using the Excel functions from AIMMS, an `EXCEL.EXE` process remained persistent in the task manager upon closing the AIMMS project.
- When using dual monitors with the secondary monitor at the left of the primary monitor, the right mouse menu in an attribute window popped up on the wrong screen.
- Copying a module node in the model editor tree did not rename the copied prefix in the copied module. This could lead to name clashes of the nodes below the copied module.
- A fatal error could occur in the following situation: A set `S` (with index `i`) is initialized in `MainInitalization` and a parameter `P(i)` is initialized via a scalar value in its initial data attribute.

... GUI

- Sometimes, when changing the contents of the implicit set of identifiers, the **Pivot Table** object could cause a fatal error.
- Unit info was not always correctly updated when changing the `Show Unit` property in the **Defaults** section (on the **Contents** tab) of a **Pivot Table** object, of which the contents are determined by an implicit subset.

... Solving

- The postsolve objective value shown in the progress window was not always correct.
- A resolve in the **Math Program Inspector** could result in a crash with **GUROBI** because AIMMS passed incorrect model data.

AIMMS 3.10 PR - SU4, release date 2011-03-21

Beside the issues that have been fixed/improved in AIMMS 3.9.9, the following issues have been fixed or improved in this fourth Software Update of the AIMMS 3.10 Production Release.

Build 3.10 PR - SU4 2011-03-21

Issues . . .

- The `ExcelClearRange` function doesn't clear the cell formatting anymore. Instead, it only clears the content of the cells.
- The Circle Packing example has been removed from the 64-bit AIMMS installations, because it requires LGO or BARON, which are only available in the 32-bit version of AIMMS.

. . . GUI

- During a `PageRefreshAll`, page exit procedures could not be run. This caused problems when trying to change the current tab of a **Tabbed Page** object from within a procedure.
- When entering an element name in a page object (e.g. a **Table** object), leading and trailing spaces were removed before matching them against existing element names. Now, the name is first matched exactly as typed, and if no match is found a second attempt is made without leading and trailing spaces.
- When a page was set to 'Close when Inactive', the page exit procedure was not called.
- Values in a **Sparse List** object were not updatable.
- In the **Gantt Chart** object, selecting a bar could result in a long update sequence.
- Selecting a bar in a **Gantt Chart** object, sometimes put the mouse in the mode for dragging a selection rectangle.

. . . Pivot Table

- The **Pivot Table** copy command (**CTRL** + **C**) now also copies unit information of the headers (if present).
- Changing the contents of a **Pivot Table** object, in which the selected cell was on an aggregated value, to a situation in which the aggregated value was not present anymore, could lead to a crash.
- Specifying literal string properties containing `\n` characters for the **Pivot Table** object, caused a crash in the unicode version of AIMMS.

. . . Solving

- Inline variables were not always evaluated in case parallel threads were used by **CPLEX** or **GUROBI**.
- Retrieving the constraint solution for a large model from **GUROBI** could result in a crash.
- **GUROBI** no longer attempts to write a solution file if no solution exists.
- In rare cases, AIMMS could crash while deleting solver sessions when closing the project.

... Databases

- In the database tracing output, with the trace level set at 2, there is now a clearer distinction between lines which show argument instantiations for the AIMMS `Write` statement. Lines that refer to the UPDATE part of the statement, are preceeded with `[UPD]`, and lines that refer to the INSERT part of the statement, are preceeded by `[INS]`. Furthermore, lines that refer to the DELETE part of some forms of the `Write` statement, are preceeded by `[DEL]`.
- The `errors_until_execution_interrupt` AIMMS option is now affected by most database errors as well, because internally, the severity of most database error has been downgraded from 'fatal' to 'error'.

... Compiler and Execution

- Assertions declared in a library, using sets in a library, might not expand the indices referenced in the `Text` attribute.
- A severe internal error could be caused by emptying a slice of an identifier, sliced by a bound index whose range has just been reduced inside a for loop.
- Using a macro, for example `lib::mymac(o)`, in a library `lib`, could hide an index `o` declared in the main model, when opening a data page of a parameter declared in that library, for example `lib::p(o)`.

AIMMS 3.10 PR - SU3 (build 18285), release date 2010-12-16

3.10 PR - SU3 build 18285 2010-12-16

In this Patch on the third Software Update of the AIMMS 3.10 Production Release, the following issue has been fixed.

Issues

- The Help files for **GUROBI 3.0** and **GUROBI 4.0** were not included in the installation.

AIMMS 3.10 PR - SU3, release date 2010-12-08

3.10 PR - SU3 2010-12-08

In this third Software Update of the AIMMS 3.10 Production Release, the following issues have been fixed or improved.

Improvements

- There is a new version of KNITRO, i.e., **KNITRO 7.0**.
- There is a new version of GUROBI, i.e., **GUROBI 4.0**. GUROBI 4.0 can handle QP and MIQP models.

Issues ...

- The **CTRL-Z** key combination sometimes didn't work in attribute windows.
- A `return` statement in the `on-error` clause of a `block` statement would result in skipping the remaining statements of that block, but not in the skipping of the statements after the block. Now AIMMS will also skip the statements after the block.

- Objects depending on reverse links in other objects were sometimes not updated if the model produced a warning earlier.
- Tuning a model with lazy constraints or cut pool constraints failed.
- Importing a `.amb` file in which two procedures have declaration sections with the same name, could lead to missing declarations.

AIMMS 3.10 PR - SU2, release date 2010-09-22

In this second Software Update of the AIMMS 3.10 Production Release, the following issues have been fixed or improved. *3.10 PR - SU2 2010-09-22*

Issues . . .

- The AIMMS Unicode version did not correctly handle font names with non-ascii characters.
- After the project had already been closed, AIMMS unnecessarily kept a lock on the user database file.
- `.aimmspack` files with non-ascii (e.g. Chinese/Japanese) characters in their name, could result in AIMMS entering an infinite loop while trying to open a `.aimmspack` later on.
- Starting up AIMMS on an old computer (without support for SSE2 instructions) could fail if **MOSEK** was included in the license.
- The **Library Manager** did not determine the correct relative path of the model file, when that model file was located in a folder outside the main project folder.

. . . Pivot Table

- In some situations, moving indices to the outer area of a **Pivot Table** containing aggregated values, could lead to a fatal application error.
- Linked element parameters in the **Pivot Table** were not set correctly when you selected an entry in the row or column tree and the element related to the index to which that element parameter had been linked, was the only child node of its parent node.
- After a data change, restoring the state of a **Pivot Table** that contained aggregator references, could result in a fatal application error.

. . . Solving

- There is a new version of the **CPLEX** solver: **CPLEX 12.2**.
- If an older AIMMS version was present, an error could occur while reading the solver configuration file.
- The Best LP Bound shown in the **Progress window**, could be incorrect if **XA 15** was used as MIP solver.
- Solving a large RMIP with indicator constraints, could result in a severe internal error when marginals were passed from **CPLEX** to AIMMS.
- **BARON** sometimes did not return a solution after a user interrupt, although a solution was already found.
- In the **Math Program Inspector**, determining an IIS, followed by performing a bound analysis, led to a crash.

- Intrinsic functions such as `TimeslotToString` were not properly handled in the macro module of the compiler, which was being used by the stochastic preprocessor.

... Stochastic Programming

- After pressing F5 to recompile a model, a resolved error could remain in the error/warning window.
- A global error handler implemented in a library would not handle errors.
- The global error handler could be called for non-existing errors, when the global error handler communicated to the user via `PageOpen` and this `PageOpen` was cancelled by the user.
- `SectionIdentifiers` on an empty element now returns the empty set, instead of an error message.
- In rare cases, referencing non-existing identifiers in set expressions could lead to severe internal errors.
- A severe internal error could result from comparing an indexed element parameter in a case with another element, such as in the following expression: `IndexCases.ElemPar(i) = 'someElement'`.

... Compiler and Execution

AIMMS 3.10 PR - SU1, release date 2010-06-16

In this first Software Update of the AIMMS 3.10 Production Release, the following issues have been fixed or improved.

3.10 PR - SU1 2010-06-16

- The matching-algorithm to find the license that was specified via the `--license` command line option of AIMMS has been improved.
- An option has been added to the **Syntax Editor Settings** dialog (misc tab), with which you can toggle the automatic collapsing of `Block` statements on or off.
- There is a new version of **Gurobi**: 3.0. This version includes a parallel barrier optimizer.

Improvements

- After calling `GMP::SolverSession::Interrupt`, AIMMS could become non-responsive.
- If the `--com-log` option in the `Project.CommandOptions` construct of the AIMMS COM object was used, any subsequent options were not recognized.
- Using a `block` with an `on-error` clause directly inside a `for`-statement could lead to severe internal errors.
- Upgrading an AIMMS project developed by AIMMS 3.9 or an older AIMMS version, will set non-default values for several options. If the options are not modified during this session, but the model *is*, these settings were lost.

Issues ...

... GUI

- In the **Scalar** object, the text of an identifier with a suffix was not displayed correctly.
- When opening a **Pivot Table** object, outer indices that are fixed through an element parameter were not always taken into account correctly when showing the initial view of the **Pivot Table**. In addition, the remaining outer indices were not always set correctly to a value such that the first non-default entry in the identifier is visible.
- The dialog message that appears when a **Pivot Table** contains more rows and columns than specified through the property 'maximum number of tree entries', will not appear anymore in cases in which the row or column tree only contains a single index. This is because the **Pivot Table** *is* able to deal with this situation correctly.
- The function `PageSetCursor` for a dialog page did not work when running in the debugger.

AIMMS 3.10 PR, release date 2010-03-10

AIMMS 3.10 PR 2010-03-10

Beside the issues that have been fixed/improved in AIMMS 3.9.5, the following issues have been fixed or improved in this AIMMS 3.10 Production Release.

Improvement

- The intrinsic function `CloneElement` has been extended with an additional argument `includeDefinedsubsets`.

Issues ...

- Variables that are reported as candidates for tightening after a bound analysis in the **Math Program Inspector**, are now bookmarked in the variable tree.
- In the **Picture** object, the filename for the image did not allow foreign (Chinese) characters.
- The function `FileDelete` no longer raises an error if the file to delete does not exist.
- Consider the following parameter declarations:

```
PARAMETER:
identifier :  x_lo ;
PARAMETER:
identifier :  x_up ;
```

and variable declaration:

```
VARIABLE:
identifier:  x
range :  [x_lo, x_up]
```

Then a reference in an expression to the bound of such a variable may

give an unexpected value, for instance in a statement like (with the above declarations):

```
x_mid := ( x.lower + x.upper ) / 2;
```

This only happens when the parameters are scalar.
This effect can be suppressed via the new option

```
scalar_suffix_reference_substitution
```

with range {`off`, `on`}, which can be found in the compatibility option section. For AIMMS 3.10, the default value of the option is set to `on`.

AIMMS 3.10 FR3, release date 2009-12-16

AIMMS 3.10 FR3 2009-12-16

Beside the new features in **What's New in AIMMS 3.10**, and the issues that have been fixed/improved in AIMMS 3.9.4, the following issues have been fixed or improved in this AIMMS 3.10 Feature Release 3.

Improvements

- There is a new version of the **MOSEK** solver: **MOSEK** 6.0.
- If AIMMS is started with a project file given as a command line argument (`<MyProject>.prj` or `<MyProject>.aimmspack`), it will look for a file named `<MyProject>.cmdargs`, containing additional command line arguments.
- The **License Install/Activate** wizard has a new option to remember the activation code, so that you can re-activate a nodelock license on the same pc more easily.
- The option `communicate_warnings_to_end_users` has been added to the option category `Warnings`, with a default value of `off`. When AIMMS runs in end-user mode, via the command line or via an end-user license, all warnings are suppressed when this option is at its default value of `off`.

Issues ...

- The function `GeoFindCoordinates`, which internally uses a third party web server to obtain the coordinate data, does not work anymore, since the third party doesn't provide the data anymore. Unfortunately, at the moment of writing, it is not known whether this is only temporarily. In the meantime, we advise you not to use this function. If it turns out that the third party web server discontinues its support and that no alternative web server is found, we might remove the function in future AIMMS releases.
- If AIMMS starts in a folder that contains a folder named `StartupProject`, it will try to find and open a project file (`*.prj` or `*.aimmspack`) that is located in that folder.
- When the **Type** attribute of a **Mathematical Program** was left empty, AIMMS automatically decided on the type of the problem. Now the value

of the **Type** attribute is `Automatic` in this case and the wizard allows you to select this option as well.

- The option `warning_running_inactive_procedure` has been removed from the option tree, because it has become obsolete.
- When unpacking a developer `.aimmspack` file, you now get the option to overwrite the unpack folder with the contents of the `.aimmspack` file, even if the folder contents originated from exactly the same `.aimmspack` file.
- The default destination for a Project Export (**File** menu) is now set to `To a Single File (.aimmspack)` instead of a folder.
- There are two new intrinsic procedures: `DirectoryGetFiles` and `DirectoryGetSubdirectories`. See the AIMMS Functions Reference for details.
- The new option `variable_default_range_type` has been introduced, with which you can specify the default text used in the **range** attribute of variables.
- An assignment of the form

```
SomeSet += SetElementAdd( SomeSet, elemPar, newName )
```

  will not only add `newName` as an element to `SomeSet`, but also the return value (i.e. the integer 0 or 1) to the set `SomeSet`. This could result in illegal values for `SomeSet`. Now the compiler gives you an error message when you use such a construct.

- The function `PageGetFocus` now returns a tag that includes the path of **Indexed Page** or **Tabbed Page** objects, in which the focus page object is contained. With this extended tag, you can now reference any page object within an Indexed Page or Tabbed Page when using any of the page functions that have a tag as input: *... GUI*
  - `PageSetFocus`
  - `PageSetCursor`
  - `PageCopyTableToClipboard`
  - `PageCopyTableToExcel`
  - `PivotTableReloadState`
  - `PivotTableSaveState`
- Scheduled procedures will now also run when a dialog page is active that has been opened using the `PageOpen` procedure.

- The `BLOCK` statement has been changed in the following three ways: *... Syntax Editor*
  - It can now be used to support error handling via the `OnError` clause;
  - It can now be used for temporarily changing the values of options; and
  - It is now presented open instead of closed when opening the attribute window of a procedure or function.

  For more details see the Language reference Section Block statement 8.3.7

AIMMS 3.10 FR2, release date 2009-09-28

AIMMS 3.10 FR2 2009-09-28

Beside the new features in **What's New in AIMMS 3.10**, and the issues that have been fixed/improved in AIMMS 3.8.9 and/or 3.9.3, the following issues have been fixed or improved in this AIMMS 3.10 Feature Release 2.

Improvements

- In the **Model Explorer, Menu Builder, Template Manager** and **Data Manager**, if a specific node in the tree does not yet have any children, but the type of node is likely to have children, then the little `[+]` in front of the icon is displayed already.
- At startup of an existing project, the **Page Manager** is now opened automatically (next to the Model Explorer).
- In most of the trees in the IDE, the special `[empty]` node is replaced by a node with a more descriptive title (`Insert ... here`).
- A double-click in the **Page Manager**, **Template Manager**, **Data Manager** and **Menu Builder**, on the artificial node of an empty level (the node with the text `Insert ... here`) now also inserts a new node.
- When specifying a keyword property (for example in a **Pivot Table** or an **ActiveX** object), the dialog box now accepts entered text that is not specified in quotes and/or text that only differs in case with one of the allowed keywords.
- In the properties dialog (of, for example, the **Pivot Table**), when double-clicking to add a new identifier, the underlying selection wizard is started automatically.
- The new function `GMP::Solver::GetAsynchronousSessionsLimit` has been added. See the Function Reference for more information.
- Using a string parameter, you can now specify multi-line tooltip text for a button by specifying the `\n` character in a string parameter.

Issues

- Buttons now show the tooltip even if the button is disabled (readonly).
- By default, the **Pivot Table** shows checkboxes for parameters and variables with a binary range. For binary variables, for which at least one non-binary non-default value exists (e.g. by solving an RMIP), the **Pivot Table** now displays numbers again.
- The `Used Where` info in the **State File Manager** was not always determined correctly.
- Inside procedures, data assignment statements to defined parameters were not flagged as an error.
- For expressions in the GUI, for which no unit could be derived, the **Unit** tab of the object properties did not disable the corresponding controls.

AIMMS 3.10 FR1, release date 2009-06-23

AIMMS *3.10 FR1 2009-06-23*

Beside the new features in **What's New in AIMMS 3.10**, and the issues that have been fixed/improved in AIMMS 3.8.8 and/or 3.9.2, the following issues have been fixed or improved in this AIMMS 3.10 Feature Release 1.

Improvement

- The options Solution_listing_column_name_style and Solution_listing_row_name_style now also influence the style used when printing presolve reductions as controlled by the option List_presolve_reductions.

Issues

- In some cases, pressing the **Tab** key inside the model editor, caused AIMMS to terminate prematurely.
- The **AIMMS Viewer Test Mode** is no longer set when a project is closed and then reopened in end-user mode.
- PageGetActive and PageGetFocus now return a page name that is prefixed by the library in which it is located. This is needed when this name is passed as an argument to any of the other Page functions.
- The right-mouse popup menu of the **Pivot Table** only appeared when the focus was on a cell in the **Pivot Table**. Now, the right-mouse popup menu always appears.