GAMS IDE
Documentation

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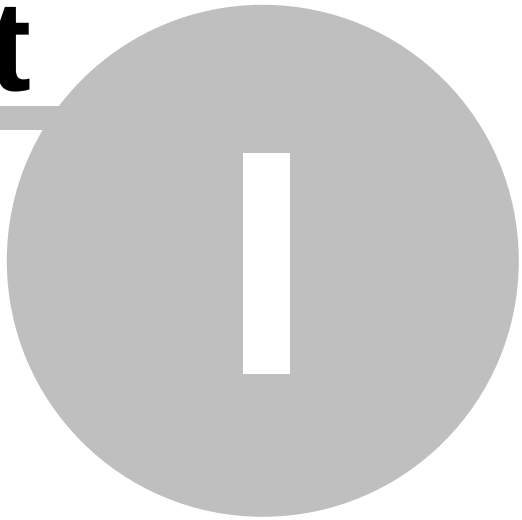
This document contains the on-line help of the GAMS IDE. Its main purpose is to provide this documentation in a printable format.

Part



1 Contents

The GAMS IDE is a general text editor with the ability to launch and monitor the compilation / execution of GAMS models. Progress of a compilation / execution can be monitored in the process window. The process window is also used as a navigation tool to locate syntax errors in the source code and to find various anchor points in the listing file. The IDE also facilitates the selection of default solvers and manages GAMS parameters on a file by file basis.

The IDE uses some new GAMS features which are not available in versions prior to version 95.

The on-line help only covers the use of the IDE, not the GAMS language. There is a mechanism however to access the GAMS documentation from the editor; see Online Documentation.

The interactive nature of the Windows environment often makes it difficult to reproduce a program bug reported by a user. If possible, try to reproduce the bug after a fresh start, noting the steps leading to the problem.

1.1 Online Documentation

The GAMS IDE has its own integrated help system. This system documents the use of the IDE.

To allow for GAMS language documentation, solver documentation and user model documentation a file access mechanism is available from the IDE. See MainForm | Help

1.2 What is new

Level 238

- gdxdataviewer remembers the current row in the plane when there is a match with the previous display (same symbol, same type and dimensions)
- Some extra menu items can be added to the main menu to display a document, a logo and to select model libraries.

Level 236

- Open in new window creates now a single new window when multiple files have been selected
- Spelling menu entry added to Edit menu
- Gdx viewer can write a single symbol or all symbols to an Excel file
- Added an option to start a GAMS run in low priority

Level 235

- Spelling checker
- Search / navigate in the gdx viewer
- Copy to ClipBoard in gdx viewer
- A letter drive connection will be created automatically for network based project directory
- Fixed issue with ref file viewer (generated by a file without any declarations)

Level 234

- Increased capacity of the clipboard for the lst viewer
- Added a shape graph type (rectangle and ellipse)
- Added more context menus

- Option to open lst file in editor
- Switching tabs or switching back to the IDE will check for files that changed
- Added an editor for solver option files

Level 233
- Added simple scripting
- GDX data browser is faster and can sort indices by name vs entry order
- A symbol shown in the GDX data browser can be written to an Excel file
- Option to set the default number of decimals displayed in the GDX data browser

Level 232
- Added a viewer for lst files. In contrast to the editor, this viewer does not load the complete file in memory.
- Added a navigation tree for the lst file
- Added the option to generate charts from the GDX data browser
- All viewers, except the process window, are now organized as tabbed windows
- The GDX data browser remembers that last symbol viewed for a GDX file and will select the symbol when opening the file
- A GDX file that is open and modified will be reloaded when selecting a different symbol.

Level 231
- Added option to save a file in Unix format.
- Added option to save and email the current file.
- Added option to launch Windows Explorer showing directory of the current file with the current file selected.
- gamsdir is now a sub-directory of 'My documents'; gamside.ini file now stored in the gamsdir directory.
- Reload file now also works for GDX files and RefFiles (in addition to regular source files).
- When starting the IDE or opening a project, a scan is made for GAMS temporary directories which can be deleted. This option was also added under the Utilities menu.
- $ONECHO/$OFFECHO work now like $OFFTEXT/$ONTEXT for syntax coloring.

1.3 Contact Information

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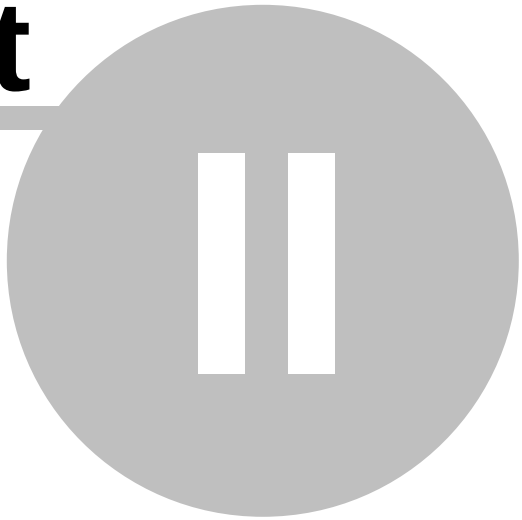
Part



2 Guided Tour

This section is a hands-on demonstration of some of the features of the GAMS IDE.

2.1 Open a model in the model library

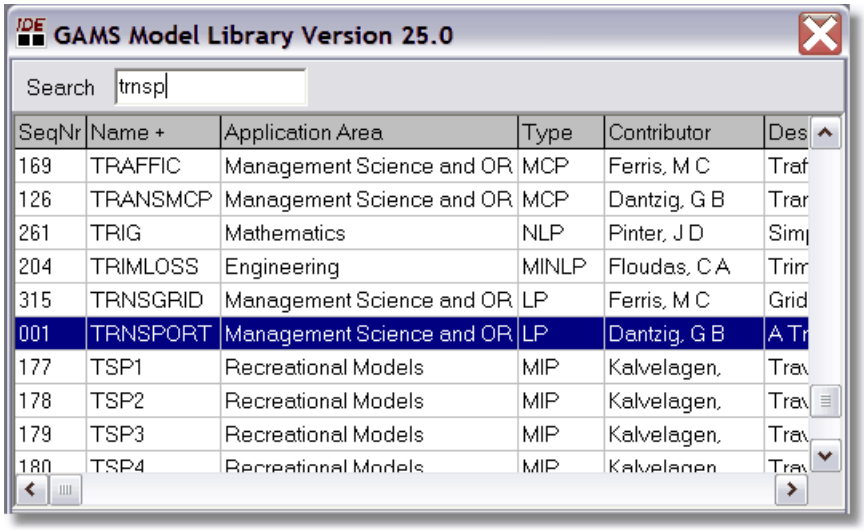
When you run the GAMS IDE for the very first time, the program may ask you to create a project. The project file is used to remember the various settings for the editor; the file does not contain any GAMS source code. When installing the GAMS IDE, a default project file is created; more details about this can be found in the Installation Notes.

After creating the project, you will see the main window; no text file is shown. Note that the file name of the project is shown in the title bar of the main window.

We can enter a small GAMS model now, but it will be easier to open one of the existing models in the model library. On the menu, use the mouse and click on 'File'; on the sub-menu shown, select 'Model library', and select 'Open GAMS Model Library'. These steps can be abbreviate as follows:
MainForm: File | Model library | Open GAMS model library

This will show all the models available in the GAMS Model library. Using the mouse, move the button in the scroll bar and use the mouse to select the model 'TRNSPORT'. Double-click using the mouse, or press the Enter key to select the model.

Typing the first characters of the model name in the Search field helps to locate the model:



GAMS model library with TRNSPORT model selected

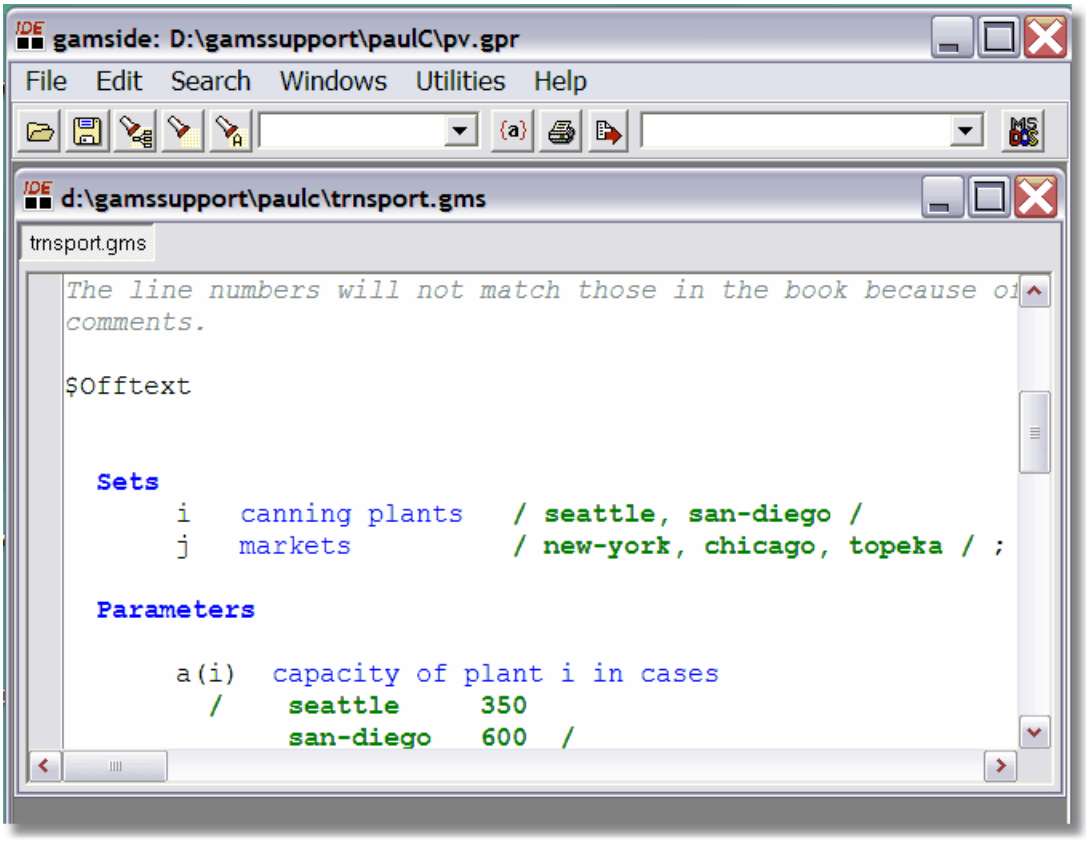
2.2 Edit source

The TRNSPORT model will be opened in the editor, and the title bar of the edit window will show the complete file name. The model file and required data files, if any, are copied to the current project directory.

The edit window is organized as a tabbed notebook. The tabs allow you to navigate quickly between various files by clicking on the corresponding tab.

On the bottom of the main window you see 1:1. This indicates that the edit cursor is on line one, column one. This box will be updated as soon as the cursor moves to a different location. The next box does not show any text at this time. As soon as the file is modified, it will show 'Modified'. The next box shows 'Insert'; this indicates that any text entered in the editor will be inserted rather than overwrite existing text. Pressing the Insert key will toggle between Insert and Overwrite, and the shape of the text cursor will change. The last box will show additional information when moving the mouse over buttons, menu items etc.

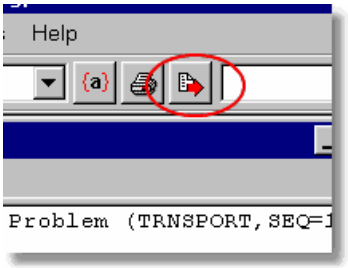
The editor uses colors to differentiate between various syntactic elements of the language. The color scheme used depends on the file extension of the current file. By default, the editor recognizes '.gms' as the file extension for GAMS files. Additional file extensions can be identified as GAMS files; see Options | Editor.



Edit window showing color syntax

2.3 Running a model

To run the TRNSPORT model, use the mouse and click on the run button on the main window. When moving the mouse over various buttons, a small yellow box will appear indicating the function of the button. You can also start a run from the File menu. The File menu has a Run command, and the F9 in the right margin of the menu indicates that pressing the F9 key can also be used for this command.



GAMS run button

Like many other edit commands, the run or compile command will always use the current (active) file as the file to use.

2.4 Selecting Solvers

When this is the very first time you execute the run command, you will be asked if you want to select your default solvers. Selecting solvers for the various model types will let you override the defaults assigned when you installed the software. It is also a good idea to revisit this option screen after installing a different GAMS license file.

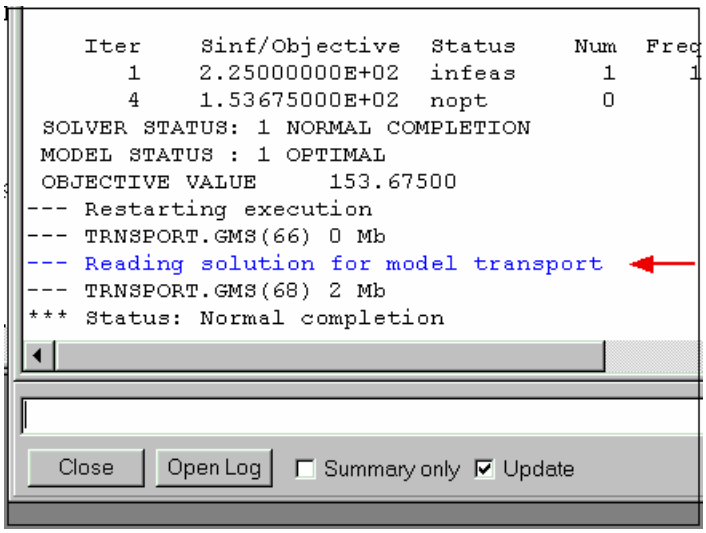
Pressing F1 while viewing the solver selection screen will give more help, or click on the following link to the solver selection help screen, and come back to this point by clicking the 'back' button.

2.5 Navigating the listing file

After starting the run, a new window, called the Process Window, will be shown. The Process Window shows the progress of the GAMS execution. You can change the size of the Process Window and move it to a more convenient location.

The Process Window can show multiple GAMS processes running at the same time. Like the Edit Window, it is organized like a notebook with tabs. The top of the windows will show how many processes are active.

After the run has finished, we can use this window to open the listing file and position the cursor. Use the mouse and double-click on the line "---Reading solution for model TRANSPORT". This line is shown in blue. The listing file will be opened, and the cursor is positioned on the "Solve Summary".



Process window with a clickable line

2.6 Correcting a syntax error

The edit window will show two tabs on the notebook; one for the '.gms' file, the second for the '.lst' file. Select the trnsport.gms tab, so we can modify the model.

After selecting the gms file, we want to introduce a syntax error. Position the cursor on line 37 for the table statement and type a comma after the j. You can use the mouse or the up- and down arrow keys to move to line 37. You can also specify a line number directly by pressing Ctrl+G and enter the line

number.

Click the run button again to run the model. The gms file will be saved automatically. Notice that the lst file disappeared from the editor. The process window will show the GAMS errors in red; double-click on the red line with "*** Error 2". In stead of showing the lst file, the cursor will move to the gms file and the position of the cursor will be close to the syntax error.

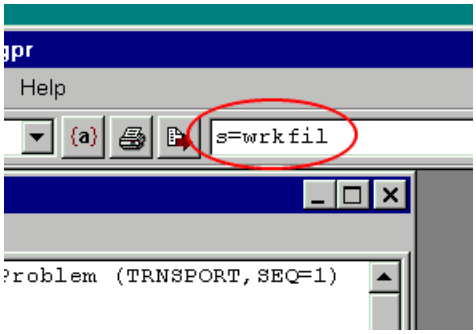
A double-click in the process window will position the cursor in the lst file when the line is black, and position the cursor in the gms file when the line is red. To position the cursor in the lst file when the line is red, hold down the Shift key when double-clicking.

2.7 Using the IDE for existing GAMS models

When you want to use the GAMSIDE to edit an existing GAMS model, create a new project file in the same directory used for starting the GAMS run from the DOS prompt. See File | Project | New Project.

A project file is used to store various options, such as search strings etc., but more important, it defines the starting directory for the GAMS run.

When you want to run GAMS with additional command line parameters, these parameters can be specified in the right-most entry field on the main window.



Main window with parameter field

For example, to save a workfile after the run is complete, enter S=wrkfil. To make a second run using the previously saved workfile, specify R=wrkfil. The parameters you specify in this field are associated with the current edit file. There are more options to specify parameters, see GAMS Parameters.

The parameters used are saved between edit sessions and can be used again by clicking on the down-arrow in the parameter field.

2.8 Using the mouse in the Edit window

The mouse can be used to position the cursor, select and move text, or get access to the PopUp menu.

Getting access to the PopUp menu:
A right mouse click will provide access to the PopUp menu.

Positioning the cursor:
To position the cursor, move the mouse to the desired location and click once using the left mouse button.

Selecting text:

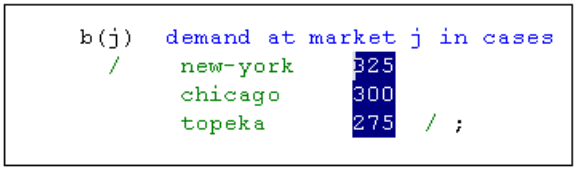
Word
Double click on the word using the left mouse button.

Text
Position the cursor on the first character you want to select, and while holding down the left mouse button, move the cursor to the last character to be selected.

Second method:
Position the cursor on the first character you want to select using single click with the left mouse button. While holding down the Shift key, select the last character you want to include with a single left mouse click.

Text in columns
Position the cursor on the first character you want to select, and while holding down the left mouse button and the Alt key, move the cursor to the last character to be selected.

Second method:
Position the cursor on the first character you want to select and single click the left mouse button. While holding down the Alt key and the Shift key, select the last character you want to include with a single left mouse click.



Moving text using the mouse:
When text has been selected, it can be moved (dragged) to a different location. Click inside the selected text and hold down the left mouse button. Moving the mouse will change the cursor and when you reach the new location for the text, release the mouse button.

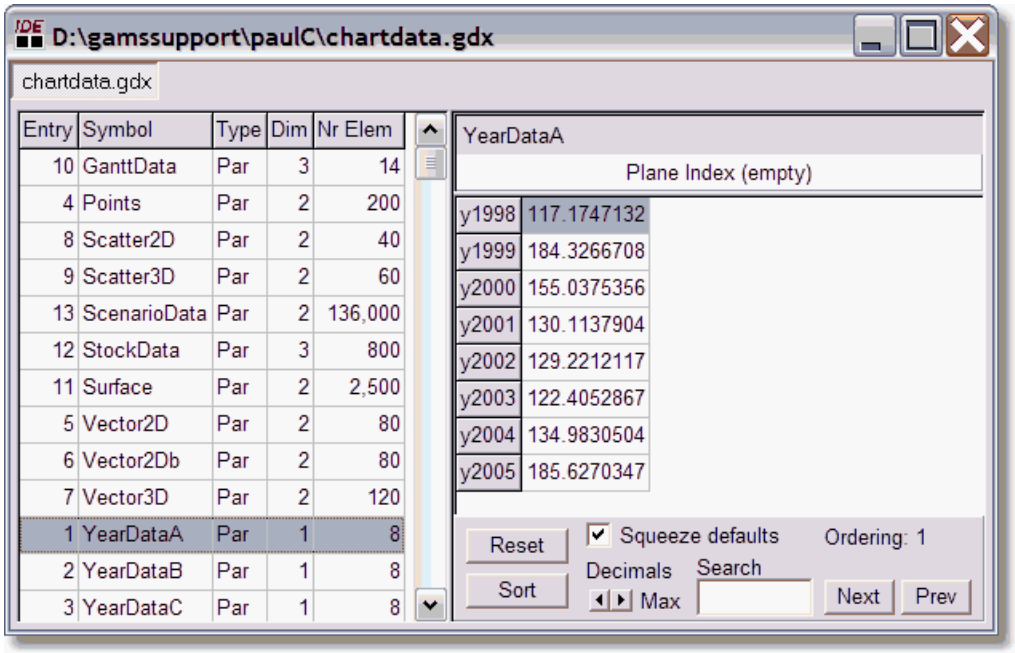
2.9 Creating Charts

Charts are created based on data in a GDX file. This can be done using the GDX Data Browser to create a text file containing charting instructions, or create / edit such a text file using an editor or even a GAMS program.

2.9.1 Creating charts using the GDX Data Browser

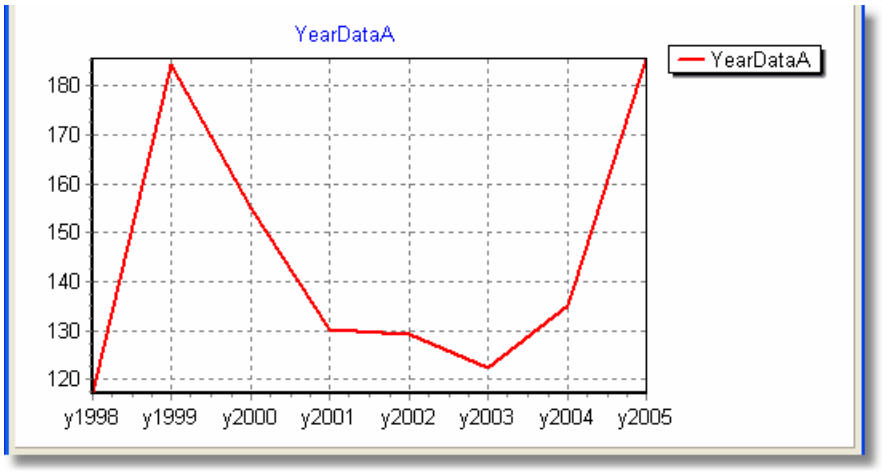
The GAMS model library contains a GAMS model chartdat.gms. Running this model will create a GDX file called chartdata.gdx which will be used in the following examples.

The Graph sub-menu contains dimension entries, with only one entry enabled. The dimension that is enabled reflects the dimension of the data shown in the data viewer. To follow along, open the chartdata.gdx file, and select the symbol YearDataA.



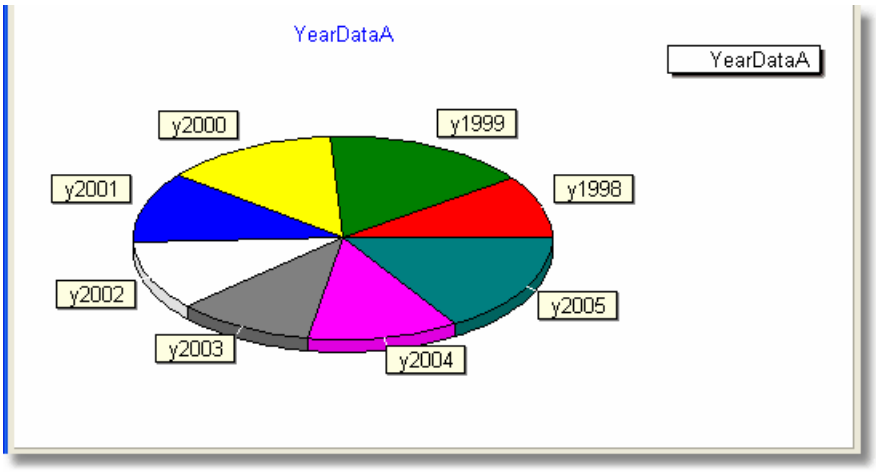
GDX DataViewer with parameter YearData selected

On the PopUp menu, select: **Graph | One dimension | Line chart**. A new tab will be created showing the resulting chart. Many aspects of a chart, such as axis titles, titles, colors etc. can be changed using the Chart Editor.



Line chart for YearDataA

The same data can be displayed as a Pie chart: Select the tab showing chartdata.gdx
On the PopUp menu, select: **Chart | One dimension | Pie chart**.



YearDataA as a Pie chart

Note that the filename used for this chart is based on the name of the GDX file and the name of the symbol. Creating the Pie chart replaced the file we just used for the Line chart. This could have been avoided by saving the line chart under a different name:
Main menu: **File | SaveAs**

Using the GDX Data Browser, we can only make a chart for a single symbol. Multiple symbols can be combined in a single chart when we edit the Chart file

2.9.1.1 Special values

A GDX file can contain special values, like +Inf, -Inf, Eps etc. The only special value used for charting is Eps, and will be treated as zero.

The use of Eps is required when we want to pass a value of zero in a GDX file because GAMS does not store zeroes.

For example, consider how the values for the parameter Points are generated in the file GraphDat.gms

```
delta = 2.0 * Pi / (Card(p) - 1);
x = 0.0;
Loop(p,
   Points(p, 'x') = Eps + sin(x);
   Points(p, 'y') = Eps + Cos(3*x);
   x = x + delta;
   );
```

This will assure that the zero values are stored in the symbol Points and can be charted correctly.

2.9.2 Chart files

When we use the GDX Data Browser to generate a chart, it creates a simple text file. The file extension of this file is used to display the file as a chart. We can tell the IDE to open the file as a text file, using the PopUp menu, and select: Edit as text.

When we do this for the file ChartData.YearDataA.gch we see the following:

```
[CHART]
VERID=GAMSIDE Chart(s) V1
GDXFILE=chartdata.gdx
TITLE=YearDataA

[SERIES1]
SYMBOL=YearDataA
TYPE=line
```

Note that only the name of the GDX file is present, not its full path. Using the filename only allows us to move chart files and corresponding GDX file, to a different GAMS project directory. The disadvantage of this approach is that we can only create charts using a GDX file that is stored in the project directory.

We can edit this file to combine three different symbols in the same GDX file and show the result on a single chart:

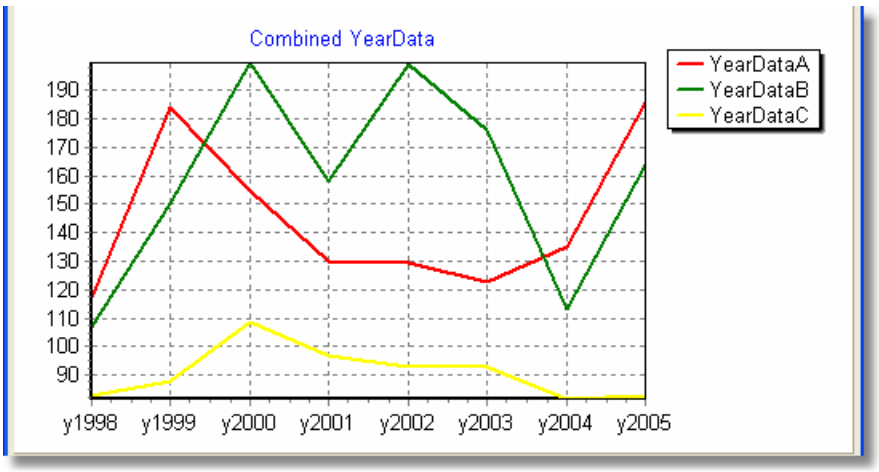
```
[CHART]
VERID=GAMSIDE Chart(s) V1
GDXFILE=ChartData.gdx
TITLE=Combined YearData

[SERIES1]
SYMBOL=YearDataA
TYPE=line

[SERIES2]
SYMBOL=YearDataB
TYPE=line

[SERIES3]
SYMBOL=YearDataC
TYPE=line
```

Save the file and reopen the file **MainForm: File | Save** followed by **MainForm: File | ReOpen** or using menu shortcuts Ctrl+S and Alt+R.



Three symbols combined in a single chart

2.9.2.1 Index order and filters

When we reorder the view in the GDX data viewer, the changed order is also stored in the chart file:

Reorder the display of the Gantt data from:

		start	length
task1	resource1	1	8
	resource3	12	2
task2	resource2	2	4
	resource3	7	3
task3	resource1	10	1
	resource2	8	3
	resource3	4	2

Original order

Using the mouse, move over the resource column, hold down the left button, move the mouse pointer over the task column and let go of the mouse button. This results in:

		start	length
resource1	task1	1	8
	task3	10	1
resource2	task2	2	4
	task3	8	3
resource3	task1	12	2
	task2	7	3
	task3	4	2

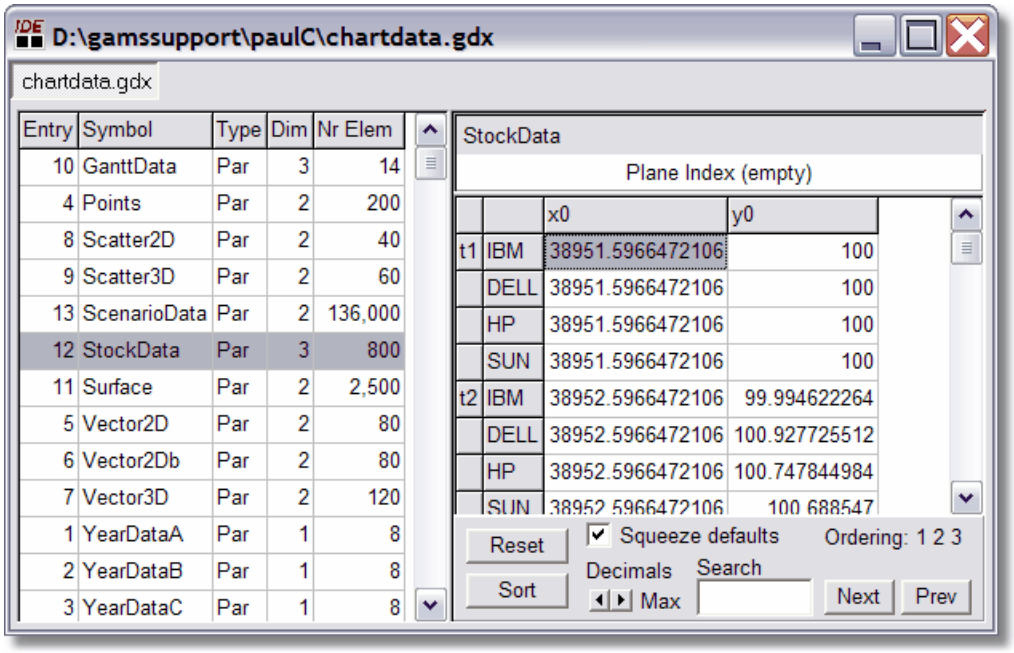
Order changed

Creating the Gantt chart with this ordering adds a map entry to the chart file:

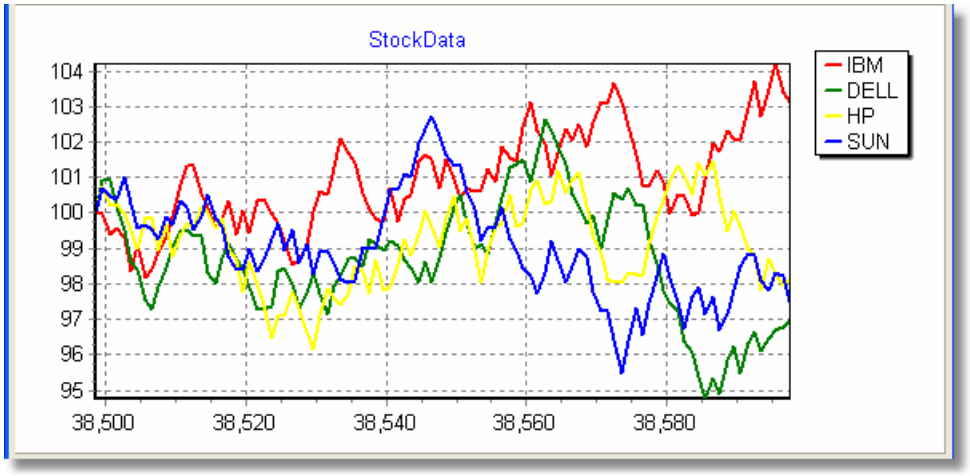
```
[CHART]
VERID=GAMSIDE Chart(s) V1
GDXFILE=ChartData.gdx
TITLE=GanttData

[SERIES1]
SYMBOL=GanttData
TYPE=gantt
MAP=2,1,3
```

Moving one or more 'dimensions' to the plane index, we filter the data used for the chart:

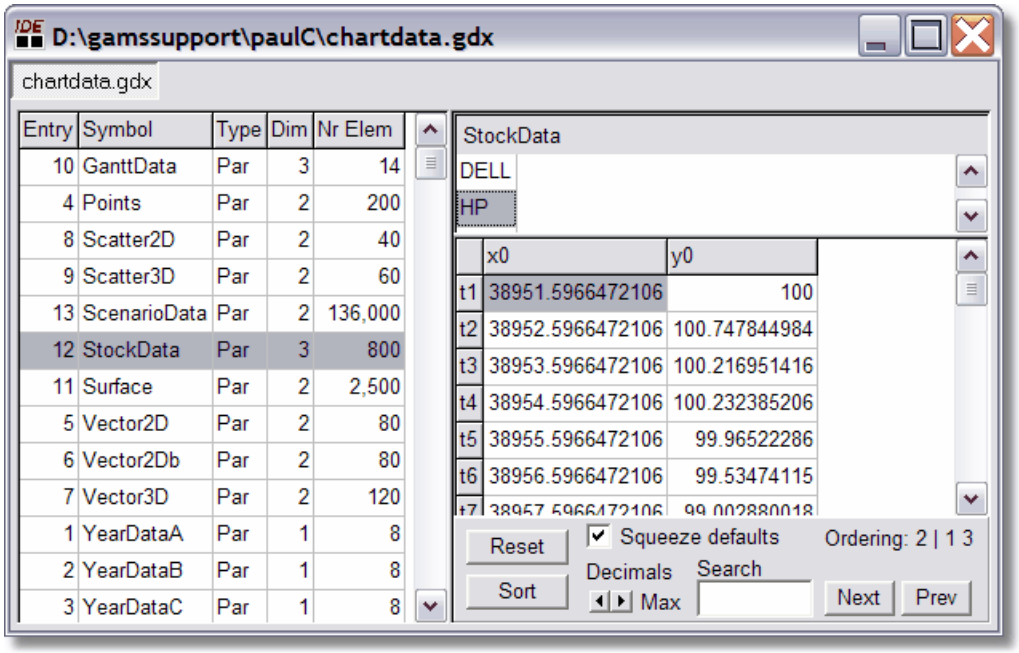


Graphing StockData as a multi-line chart:(Chart | Three dimensions | Multi line)



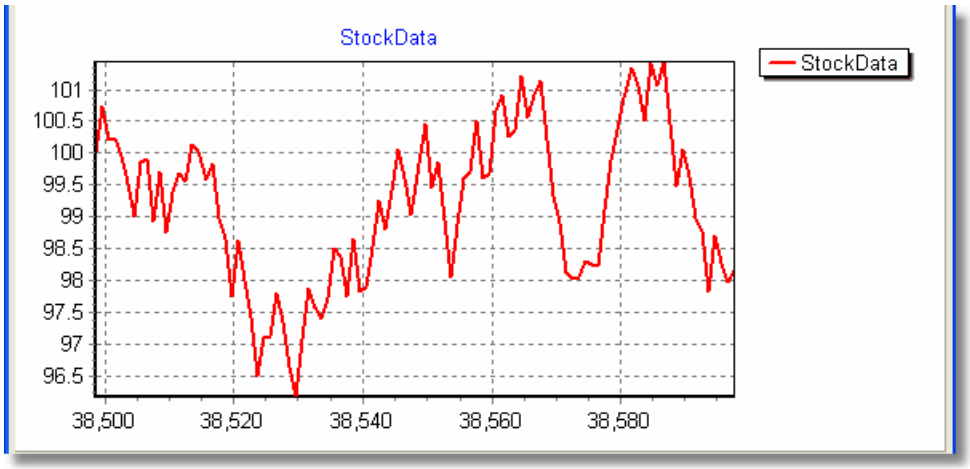
StockData without filtering

Now we select a filter for 'HP'; move the mouse pointer to the 'company' column, hold down the left mouse button, move the mouse pointer to the plane index and let go of the mouse button. In the plane index, select 'HP'.



StockData with filter for HP

Make a single line chart for 'HP'; PopUp menu: **Chart | Two dimensions | Function**. This will result in the following chart:



Stockdata filtered for HP

Opening the generated chart file as a text file shows the index mapping and the filter:

```
[CHART]
VERID=GAMSIDE Chart(s) V1
GDXFILE=ChartData.gdx
TITLE=StockData

[SERIES1]
SYMBOL=StockData
TYPE=function
MAP=2,1,3
FILTER=*,"HP",*
```

Note that the filter is used in its original position; not its mapped position.

2.9.3 GDX data conventions for charts

We have seen already that the number of dimensions shown in the data section of the GDX viewer determines what charts we can create. For a given dimension, the number of elements in the last dimension also determines what kind of chart we can create. For example, a 2D scatter chart requires a point (x0,y0) and a 2D vector chart requires a line (x0, y0) (x1, y1).

The table that follows summarizes the GDX file conventions for the various chart formats. It also includes the names used in the chart files for the TYPE parameter.

Note that the label names for the columns, like x0, y0 etc are arbitrary. The sequence of the labels is important however and this can be seen in the GDX data viewer.

Entry	Symbol	Type	Dim	Nr Elem
8	Scatter2D	Par	2	40
9	Scatter3D	Par	2	60
13	ScenarioData	Par	2	54,400
12	StockData	Par	3	800
11	Surface	Par	2	2,500
5	Vector2D	Par	2	80
6	Vector2Db	Par	2	80
7	Vector3D	Par	2	120

Vector2D

	x0	y0	x1	y1
d1	6.30	8.48	6.99	7.98
d2	1.99	5.52	8.85	3.39
d3	6.35	7.50	5.17	4.72
d4	3.83	1.42	2.64	6.81
d5	7.93	3.68	7.80	6.65
d6	1.78	1.92	5.91	1.28

GDX data convention for 2D vector

Dim	TYPE	Dim1	Dim2	Dim3	Value(s)
1	line	Label X			Y
	area	Label X			Y
	bar	Label X			Y
	horizbar	Label Y			X
	pie	Label segment			Segment
2	function	Place holder	Place Holder		X, Y
	parametric	Place holder	Place Holder		X, Y
	multi-line	Label X axis	Label line		Y
	multi-area	Label X axis	Label area		
	multi-bar	Label X axis	Label bar		Y
	horz-bars	Label Y axis	Label bar		X
	multi-pie	Label segment	Label pie		Segment
	scatter2d	Place holder			X, Y
	scatter3d	Place holder			X, Y, Z
	vector2d	Place holder			X0, Y0, X1, Y1
	vector3d	Place holder			X0, Y0, Z0, X1, Y1, Z1
	grid	Label X axis	Label Y axis		Color
	surface	Label X axis	Label Z axis		Y and Color
	fanhisto	Label time	Label scenario		Y (see note)
	fanvalues	Label time	Label scenario		Y (see note)
	fanprob	Label time	Label scenario		Y (see note)
	shaperect	Place holder			X0, Y0, X1, Y1, Legend, Color (see note)
	shapeellipse	Place holder			X0, Y0, X1, Y1, Legend, Color (see note)
3	multi-linex	Place holder	Label line	Place holder	X, Y
	mult-barx	Place holder	Label bar	Place holder	X, Y
	multi-areax	Place holder	Label area	Place holder	X, Y
	horz-barsy	Place holder	Label bar	Place holder	X, Y
	gantt	Label resource	Label task	Place holder	Start, Length

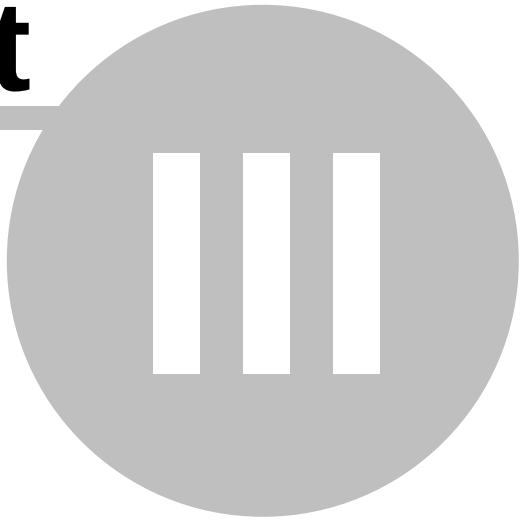
Note: Fan charts assume that the first time slot contains the probability for the scenarios. Probabilities have to be positive and their sum should equal one.
For shapes, rectangle and ellipse, the legend and color are optional value. A non-zero value for the legend will draw the string of the place holder in the center of the shape. Color is codes as an RGB value. Reds in the range 0..255, Green in the range 256 * (0..255) and Blue 256 * 256 * (0..255)

2.10 Editing a chart

Many properties of a chart can be changed using the chart editor. Examples are titles, axis titles, colors etc.

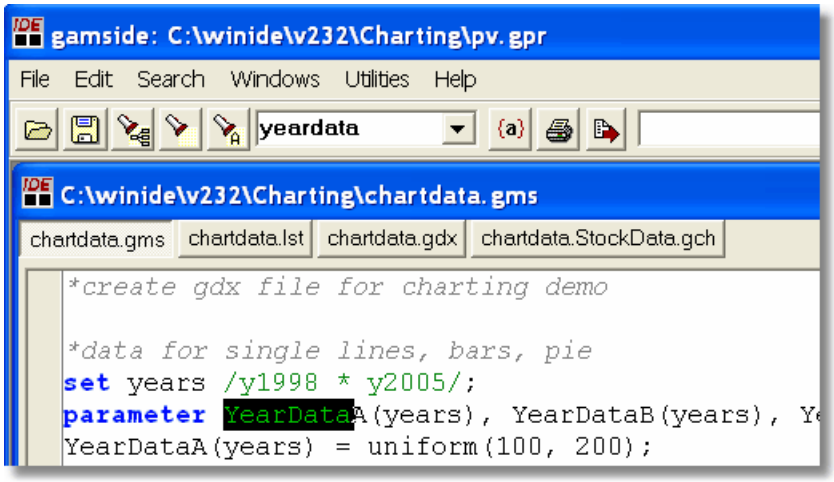
See Chart Window for the details.

Part



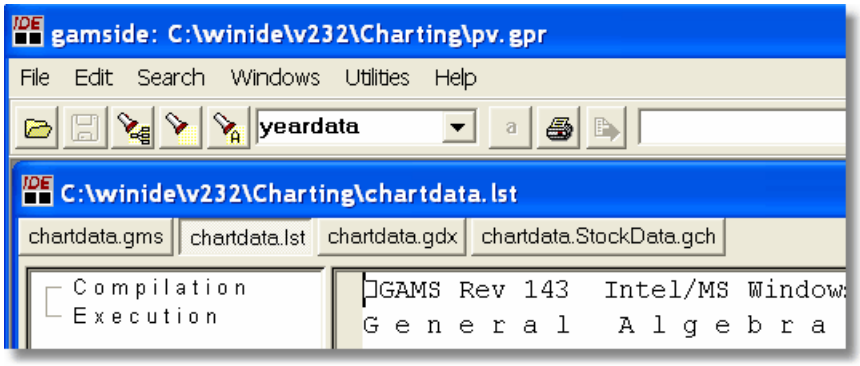
3 GAMSIDE Windows

Many of the different windows, like the editor, listing file, charts etc are organized in a single window using tabed sheets:



GAMSIDE main window with tabbed sheets

Above, we see the main window with the current project shown in the title bar of the window. The tabbed window below shows the filename of the active tab. A single mouse click on a tab will select the corresponding file for display. After a mouse click on chartdata.lst we see the listing file:



GAMSIDE showing listing file

3.1 Main Window

The main window provides access to the various options of the tabbed windows. The menu options that are enabled depend on the type of window that is currently active.

Buttons and entry fields

Menu

File Menu

Search Menu
Edit Menu
Windows Menu
Utilities Menu
Model Libraries
Help Menu

3.1.1 Buttons and entry fields

The main form shows a number of buttons and entry fields. The buttons are available to ease the use of the mouse, and all have equivalent menu commands.

Entry Field:

Search string
The current search string used. This field shows the same information as the 'Text to find field' of the Find Window. Likewise, it will remember previous searches. Click on the down-arrow to see the previous values used.

GAMS parameters
Specify parameters for the GAMS system when executing / compiling the current model file. The parameters are associated with the GAMS file name, excluding the file path. This field is a drop down box, which allows you to review and select previous values.
Pressing the Enter key in this field will start a GAMS run (F9); pressing Shift+Enter will start a compile only GAMS run.

Buttons:

File Open
File Save
Search in Files
Search
Find again
Match parenthesis
Print file
Run
Command prompt

3.1.1.1 Command prompt

Create a command prompt window.

The current directory will be the same as the current project directory.

The system PATH will be extended by adding the GAMS system directory.

3.1.1.2 GAMS Parameters

When running or compiling a GAMS model, the GAMS system is called with the current file name and a number of parameters. There are various methods to specify these parameters:

- The GAMS system default parameters. These parameters are stored in a file called GMSPRM95.TXT (or GMSPRMNT.TXT for Windows/NT)
- The parameters added internally by the GAMS IDE; these include the default solver selections.

- Parameters specified in Options | Execute; these parameters are project specific.
- Parameters specified on the main window that are associated with a specific GAMS file.

The parameters are processed in the order specified above. When a parameter is specified multiple times, the one specified last will be used.

3.1.2 File Menu

New	Ctrl+N
Open	Ctrl+O
Open in editor	
Open in Project directory	
Reopen	Alt+R
Open in New Window	Ctrl+Shift+O
View in Explorer	
Diff TextFiles	
Model Library	
Project	
Run	F9
Compile	Ctrl+F9
Save	Ctrl+S
Save in Unix format	
Save As	
Save in Project directory	
Save All	Ctrl+Shift+S
Close	
Options	
Print	
Previous	
Exit	

3.1.2.1 File | Close

Close current file

Close the current file in all edit windows. If the current file was modified, you will be asked to save the file. If you created a new file, save the file under a different name than the default name provided.

3.1.2.2 File | Compile

Compile current file

The current file is used for a compile only step

See Gams Parameters for the use of parameters

See also Process Window

3.1.2.3 File | Diff TextFiles

Open a window to compare two text files.

The files to be compared are read from the disk; so in order to compare a file that has been modified in the IDE save the file first before making a comparison.

This first version of this utility has no knowledge about the syntax used in the files; no distinction is made if two comments are different for example.

After loading the two files to compare and optionally selecting an option, press F9 to start the comparison. If for some reason this takes too long, the process can be aborted by pressing the Esc key. When the comparison is finished, the differences between the files are shown as modifications, additions and deletions. The bottom part of the window shows the counts in each category. Selecting a changed line will color the two corresponding lines using the same color scheme to highlight the differences.

Menu structure:

File

Open 1 **Ctrl+1**
Open the file for the left pane

Open 2 **Ctrl+2**
Open the file for the right pane

Compare **F9**
Start the comparison

Cancel **Esc**
Cancel the comparison

Exit
Close the window and return to the IDE

View

Previous Changes **Ctrl+P**
Move the line selection to the previous change

Next Changes **Ctrl+N**
Move the line selection the the next change

Options

Ignore Case
Toggle the option if upper/lower case is significant

Ignore White Space
Toggle the option to treat multiple blanks as a single blank. When enabled, a leading blank or a trailing blank is ignored. A Tab character is treated as a single blank.

3.1.2.4 File | Exit

Exit the program

If there were any files modified, you will be asked to save these files first. Clicking Cancel or pressing

the Esc key will cancel the exit

3.1.2.5 File | Model Library

Open GAMS Model Library
Open User Model Library

Browse a model library.

From this menu you can open the GAMS standard model library or open a custom model library. A model library is identified by a file with the extension '.glb'.

After opening a model library, a list will be shown of the models found in the library. Select the model by double-clicking the entry or by pressing the Enter key. The columns can be sorted by clicking on the column header. A second click on the same header will reverse the sort order. A '+' or a '-' indicates the current column header.

The Search field can be used to search for a string of characters in a model entry. The search is applied to all the columns shown. To search for the next or previous occurrence of the search string, use the down- and up-arrow respectively.

When opening a model from the library, existing files in the current project directory with the same name will not be overwritten unless you confirm the overwrite.

Some models require one or more data files; these data files will not be opened in the editor automatically, but they will be copied to the current project directory.

3.1.2.6 File | New

Create a new file.

A Tab is added to the current edit window, and a temporary name is assigned.

See also Mini Explorer for details how to use the file dialog.

3.1.2.7 File | Open

Open one or more existing files

You will see a file dialog; in this dialog you can select various file types, like GMS (GAMS) LST (GAMS listing file) TXT (regular text file) etc. Selecting more than one file is allowed.

If a file was open already; it will not be opened again. Instead, the edit window and the Tab for that file will become the active edit window. If the file was modified in the editor, you will be asked if you want to reload the file from disk.

To open a file in a new window, see: **MainForm: File | Open in New Window**, or hold down the Shift key while selecting a file.

You can also open files by dragging the file to the editor. Select one or more file in the Windows Explorer, and while holding down the right mouse button, move the selection to the editor and release the mouse button.

The file open dialog remembers the last directory used for opening a file. Use **MainForm: Open in project directory** to reset the directory to the project directory.

See also Mini Explorer for details how to use the file dialog.

When opening a file, the file extension determines which editor / viewer will be used to display the file. When a file extension is not recognized as a special file extension, the editor will be used to display the file. The following table summarizes the special file extensions recognized:

Extension	Edit / Viewer
lst	Listing file viewer
gdx	GDX data browser
ref	Reference file viewer
gch	Chart viewer

Instead of using the special viewer, we can force the file to be opened by the editor by using Open in editor.

When the 'Read Only' box is checked in the file open dialog, the file will be shown using the Listing file viewer. This allows for viewing large files, but such a file needs to be closed before another program can rewrite the file.

3.1.2.8 File | Open in editor

Open a file in the editor.

File extensions are used to determine the viewer / editor to be used for the file. This command ignores the file extension and opens the file in the text editor.

See also File | Open

3.1.2.9 File | Open in New Window

Open one or more files in a new window.

With the regular File | Open command, a file will be added as a tab to an existing window. This command will force the creation of a new window. Creating an additional window will let us view or edit the file without switching back and forth between different tabs.

See also Mini Explorer for details how to use the file dialog.

3.1.2.10 File | Open in project directory

Reset the current directory for opening files to the project directory and show the file open dialog.

See also File | Open.

3.1.2.11 File | Previous

Shows a list of files that have been viewed recently but are currently closed.

The files shown are project specific; each project has its own list of recently used files.

Selecting a file will open that file by adding a tab to the current window. Holding down the Shift key when selecting a file will open the file in a new edit window.

3.1.2.12 File | Print

Print the current file

When showing the Print Dialog you can select the printer, preview the text to be printed and print a selected range of pages on the printer.

3.1.2.13 File | Project

A Project file serves as a place holder to remember which edit windows and which files were open when the project was closed in order to restore these windows in the same state when the project is opened again.

In addition, the directory where the project file is located is used:

- As the destination directory for GAMS models opened in the Model Library
- As the default directory for file operations when GAMS executes, such as searching for INCLUDE files and writing the LISTING- and PUT files
- To write temporary files

When the IDE is installed, a directory is created to serve as the initial project directory; see Installation Notes.
During installation, the file extension '.gpr' is registered with Windows to open a project; so a double-click in the Windows Explorer will launch the GAMSIDE and open the specified project file.

Project Menu

Open Project
Open an existing project. After selecting an existing project file, all modified files will be saved and the selected project will be opened. All files which were open when this project was closed will be opened in the editor.

New Project
Create a new project. After selecting the directory and the name for the new project, all modified files will be saved and all active edit windows will be closed.

A project can be created in a networked directory. If such a directory is not mapped to a drive letter, the IDE will create such a mapped drive before calling GAMS or opening a command prompt window. When closing the IDE or changing the current project, the drive will be disconnected from the directory. Disconnecting the mapped drive is only possible as long as the files are no longer in use.

Previous Projects
Shows a list of previous used projects; click on the name to close the current project and open the new project. If any files were modified, you will be asked to save the modified files.

3.1.2.14 File | Reopen

Reopen the current file.

The current file is loaded from disk again, and any changes made will be lost. When the file was modified, you will be asked to confirm the action, because all changes made will be lost.

3.1.2.15 File | Run

Run the current file as a GAMS input file

The file is used for a compile and execute step.

See Gams Parameters for the use of parameters

See also Process Window

When starting a compile or run of a GAMS model, the IDE will close the lst, log, gdx and gch files automatically. After the run is finished, the lst file is opened automatically (but see File | Options | Execute) The other files can be opened quickly by using the **MainForm: File | Previous** list of files.

3.1.2.16 File | Save

Save the current file

The current file will be saved. If the file has a temporary name, like Untitled_1, you will be prompted for a new name.

3.1.2.17 File | Save All

Save all modified files

If any file has a temporary name, like Untitled_1, you will be asked to specify a new file name; see File | Save As

3.1.2.18 File | Save As

Save current file with a new name

You will see a window in which you can navigate to a new directory and specify a new name for the file. Note that you can also create a new directory using this window.

See also Mini Explorer for details how to use the file dialog.

3.1.2.19 File | Save in Project directory

Save the current file in the project directory.

The current file will be saved. If the file has a temporary name, like Untitled_1, you will be prompted for a new name.

3.1.2.20 File | Save in Unix format

Save the current file in Unix formatted line endings.

The current file will be saved using Unix line endings (LF characters). If the file has a temporary name, like Untitled_1, you will be prompted for a new name.

3.1.2.21 File | View in Explorer

Open Windows Explorer and show the directory containing the current file.

If the file does not exist, the Explorer will select the current project directory.

3.1.3 Search Menu

The search menu has a number of commands to search for text in the current edit window or to search for text in files stored on disk.

Find	Ctrl+F
Replace	Ctrl+R
Find Again	F3
Search backward	Shift+F3
Match Parenthesis	F8
Goto Line	Ctrl+G
Find in Files	

When enabled, we can search for strings using regular expresions.

3.1.3.1 Search / Replace Text

The find / replace window is organized as a notebook with tabs. Clicking on a tab will show the parameters controlling the action. The last tab, 'Search Results', will be shown automatically when searching for text in files commences.

When closing the window, in addition to all parameter settings, the search results will be preserved during the same edit session. Ending the edit session will clear all search results.

Some parameters, like 'Whole words', are repeated for multiple search functions. Changing such a value will affect the value in all notebook pages.

The 'Text to find field' and 'Replace with' field will remember previous searches. Click on the down-arrow to see the previous values used.

Also see Find in Files

Case sensitive
When enabled, the case of the search string is used to find a match. When disabled, the case of the search string is ignored for finding a match.

Whole Words
When enabled, a match will only occur if the specified string is surrounded by a word separator. Word separators include parenthesis, brackets etc.

Direction: Forward / Backward
Indicates direction from the current cursor location

Scope: Global / Selected text
When text was selected in the editor prior to executing the search command, a search can be limited to the selected text.

Origin: From Cursor / Entire scope
A search can start from the current cursor location or at the beginning of the text.

3.1.3.2 Search | Find Again

Find next match in the current file. When replacing text, you will be prompted to confirm the replacement of the text found.

See Find / Replace text for how to start a text search.

3.1.3.3 Search | Find in Files

Search for a text string in files on the disk (see also Find / Replace text)

After specifying the search parameters, you can search for a text string occurring in files stored on disk. If you did not save your current files, some strings may not be found, because the files were not written to disk. Use the mouse to click on the search button, or press the Enter key, to start the search.

After a search is complete, you can double-click on a file name shown and open that file in the editor. When you double-click on the text found, the cursor will be positioned on that line. In addition, the options used for the search are copied to the search parameters, so you can use the F3 key to search for the next occurrence for example.

The search window will only display a limited number of characters to the left of the text that was found. The symbol '«' will be shown if one or more characters are not displayed.

The options of the search dialog are extended with the following check boxes:

File names only
When enabled, only the name of the file in which the search text occurred will be shown. When disabled, all matching lines in which the search text occurs will be shown as well.

Include sub-directories
When enabled, all sub-directories will be searched; when disabled, only the specified directory will be searched.

The following parameters can be specified:

File Path
Name of a directory where the search should start. You can enter the directory name from the keyboard, or click on the button to get a directory dialog window.

File mask
The file pattern used for the search. To search GAMS files, specify *.gms; all files can be searched by specifying *.* . Multiple patterns can be specified when they are separated by a ; (semi-colon)

Exclude folders
One or more strings separated by ; (semi-colon). When a sub-directory matches one of the strings, it will be excluded from searches in that directory.

3.1.3.4 Search | Goto Line

Position the cursor on the specified line number.

3.1.3.5 Match Parenthesis

Find the matching parenthesis.

Position the cursor after a parenthesis (or a curly brace or a square bracket.) Pressing the F8 key will position the cursor after the matching parenthesis. If a matching parenthesis cannot be found, the cursor will not move.

3.1.3.6 Regular Expressions

Regular expressions are used to search text using patterns. This section only documents the regular expressions as they are implemented in the GAMSIDE. We do not attempt to explain how regular expressions are used, but the simple examples provide a start.

Syntax for regular expression

```
<regular expression> ::=
<expr> |
'^' <expr> |
<expr> '$' |
'^' <expr> '$'

<expr> ::=
<term> |
<term> '|' <expr>                 // Alternation

<term> ::=
<factor> |
<factor> <term>                   // Concatenation

<factor> ::=
<atom> |
<atom> <iterator>

<atom> ::=
<char> |
'(' <expr> ') |                   // Sub expression
'[' <charclass> ']' |             // Character class
'[^' <charclass> ']'              // Negated character class

<charclass> ::=
<charrange> |
<charrange><charclass>

<charrange> ::=
<ccchar> |
<ccchar> '-' <ccchar>             // Character range

<char> ::=
<any character except meta characters> |
'\' <any character at all> |
<escape sequence>

<ccchar> ::=
<any character except '-' and ']'> |
'\' <any character at all>
```

This syntax implies that parentheses have maximum precedence, followed by square brackets, followed by the closure operators, followed by concatenation, finally followed by alternation.

Meta characters

.	Any character
^	Start of line
$	End of line
\w	Alphanumeric including '_'
\W	Non alphanumeric character
\d	Numeric character
\D	Non numeric character
\s	Any space character
\S	Any non space character
\b	Word boundary
\B	Non word boundary
\1 thru \9	Back reference. \<n> matches previous matched sub-expression number <n>

Escape sequence

\xnn	Character with hex value nn
\t	Tab, same as \x09
\f	Formfeed, same as \x0c
\a	Bell, same as \x07
\e	Escape, same as \x1b

Iterator

Greedy	Non-greedy	
*	*?	Zero or more; same as {0,}
+	+?	One or more; same as {1,}
?	??	Zero or one; same as {0,1}
{n}	{n}?	Exactly n times
{n,}	{n,}?	At least n times
{n,m}	{n,m}?	At least n but not more than m times

3.1.3.6.1 Regular Expressions -- Examples

```
[a-zA-Z]+\w*
```

Match a GAMS identifier

```
('|").*?\1
```

Match text starting with a single or double quote, zero or more characters (non-greedy) and the matching closing quote.

3.1.3.6.2 Regular Expression Replacing string

When using regular expressions to search for a pattern, the replacement string will be scanned for the $ character. Use the \$ escape to enter a $ character in the replacement string.

$0	The complete pattern found
$nn	The sub expression <nn> found.

To enter a digit after a $ that is not part of the sub expression number, enclose the digit in curly braces, like
$1{2} to refer the sub expression 1 followed by the digit 2.

3.1.4 Edit Menu

On the edit menu you find a number of edit commands in addition to the many keyboard commands available; see Editor Keys

Edit Window PopUp Menu
Edit | Copy (Ctrl+C)
Edit | Copy as RTF
Edit | Cut (Ctrl+X)
Edit | Paste (Ctrl+V)
Edit | Redo (Shift+Ctrl+Z)
Edit | Select All
Edit | Undo (Ctrl+Z)
Edit | Delete
Edit | Word Wrap
Edit | View in Hex

3.1.4.1 Edit Window PopUp Menu

The PopUp Menu can be activated with a right mouse click or with the special key available on some Windows keyboards.

In addition to the regular editing keys, the following commands are available:

Close File (Shift+F4)
Close the current file in all edit windows. If the current file was modified, you will be asked to save the file. If you created a new file, save the file under a different name than the default name provided.

Close Window (Ctrl+F4)
Close the current Edit Window. If any of the files in the current edit window was modified, you will be asked to save the file(s).

Next File (Alt+N)
Switch to the next file in the edit window.

Previous File (Alt+P)
Switch to the previous file in the edit window

New Edit Window
Open an additional edit window for the current file. Having a file open in two edit windows allows you

to edit lines in one window while you can display different lines in the other window.

Save and Email
Save the current file and activate the email program to send the file as an attachment.

3.1.4.2 Edit | Copy (Ctrl+C)

Copy the selected text to the ClipBoard

3.1.4.3 Edit | Copy as RTF

Copy the selected text to the ClipBoard preserving the syntax colors.

When pasting the copied text in an application able to handle formatted text, such as WordPad, the pasted text will be colored as in the IDE.

3.1.4.4 Edit | Cut (Ctrl+X)

Copy the selected text to the clipboard and delete the text

3.1.4.5 Edit | Paste (Ctrl+V)

Insert text stored in the ClipBoard at the current cursor location

3.1.4.6 Edit | Redo (Shift+Ctrl+Z)

Redo the last Undo command

When using the undo command, a change made can be undone by using the Redo command

3.1.4.7 Edit | Select All

Select all text in the current file

3.1.4.8 Edit | Spelling

Check for spelling mistakes in the current file.

If no text has been selected, the spelling check will start at the cursor location. When the check reaches the end of the document, it will continue at the start of the document. With text selected, the check will be limited to the selected text.

The default dictionary is American English, but a few other dictionaries are available in the Dictionaries directory of the GAMS system directory. Additional dictionaries can be downloaded from: http://www.addictivesoftware.com/dicts-extern.htm

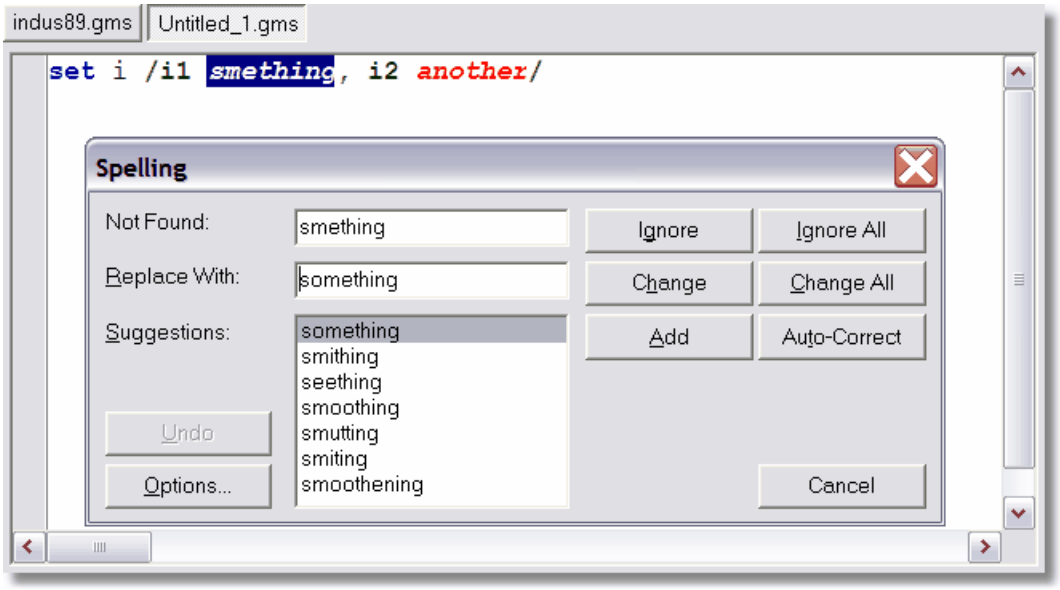
Spelling | Configure
Show the spelling configuation dialog.

There are three options to check for spelling:

Spelling | Check
This will check all words in the text

Spelling | Check Comments
The check is limited to comments

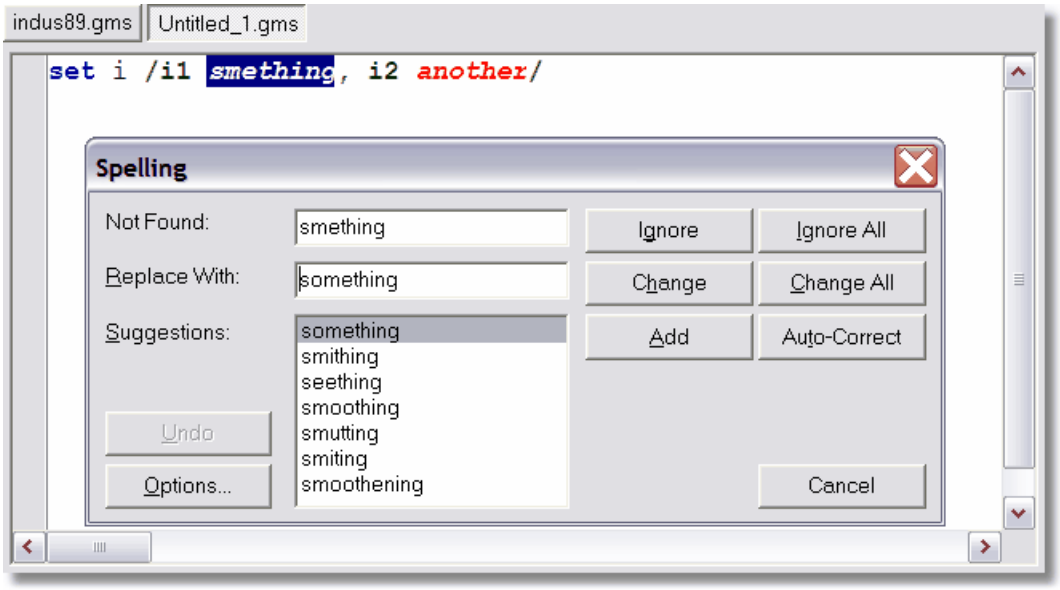
Spelling | Check Strings
The check is limited to strings; for GAMS files, the check is also applied to set associated texts.



Spelling correction dialog

The screenshot above shows the spelling dialog with a set associated text selected for correction.

3.1.4.8.1 Spelling Dialog



To be completed!

3.1.4.8.2 Spelling configuration

To be completed

3.1.4.9 Edit | Undo (Ctrl+Z)

Undo the last change

The undo command will undo the last change made. After using the command, you can use the undo command again, until there are no more changes to be undone or the capacity of the undo stack is exhausted. The undo commands can be 'undone' by using the redo command.

3.1.4.10 Edit | Delete

Delete the selected text.

The content of the ClipBoard is not affected.

3.1.4.11 Edit | Word Wrap

Select if long lines should be wrapped inside the edit window.

This is a global display option; it does not affect the content of a file.

3.1.4.12 Edit | View in Hex

Switch between regular text view and hex view of a file.

The listing file is opened by the listing viewer by default. Other files can be opened by the listing viewer by selecting the read-only option in the file open dialog.

3.1.4.13 Editor Keys

The following tables show all the available key combinations that are available when editing text.

In addition to the keyboard, the mouse can be used to position the cursor and select text; see using the mouse.

Please note that Up, Down, Left and Right refer to the arrow keys on the keyboard.

3.1.4.13.1 Copy / Paste & Delete (ClipBoard)

Function	Key(s)
Copy block	Ctrl+C or Ctrl+Insert
Cut block	Shift+Delete or Ctrl+X

Delete block	Ctrl+Delete
Delete character left	Backspace
Delete character right	Delete
Delete Line	Ctrl+Y
Delete to end of line	Ctrl+Shift+Y
Delete word left	Ctrl+Backspace
Delete word right	Ctrl+T
Duplicate line	Ctrl+Shift+L
Paste block	Shift+Insert or Ctrl+V

3.1.4.13.2 Cursor Movement

Movement	Key(s)
Cursor to bookmark	Ctrl+0 to Ctrl+9
Set bookmark on/off	Ctrl+Shift+0 to Ctrl+Shift+9
Cursor to begin file	Ctrl+Home
Cursor to end of file	Ctrl+End
Cursor to line number	Ctrl+G
Cursor to matching parenthesis	F8
Cursor down one page	PgDn
Scroll down	Ctrl+Down
Cursor down	Down
Cursor left	Left
Cursor left previous word	Ctrl+Left
Cursor right	Right
Cursor right next word	Ctrl+Right
Cursor to end of line	End
Cursor up	Up
Cursor up one page	PgUp

3.1.4.13.3 Files and Windows

Operation	Key(s)
Close edit window	Ctrl+F4
Close file	Shift+F4
Execute compile	Shift+F9
Execute run	F9
Next file tab	Alt+N
Open file	Ctrl+O
Open file in new window	Ctrl+Shift+O
Previous file tab	Alt+P
Read file at cursor	Alt+Shift+R

Reload file	Alt+R
Save all files	Ctrl+Shift+S
Save file	Ctrl+S
Write block to file	Alt+Shift+W

3.1.4.13.4 Find and Replace

Function	(Key(s)
Find and Replace text	Ctrl+R
Find next (continue replace)	F3
Find previous (continue replace)	Shift+F3
Find text	Ctrl+F
Match parenthesis	F8

3.1.4.13.5 Selecting Text

Selection	Key(s)
Select all	Ctrl+A
Mark down	Shift+Down
Mark line	Ctrl+L
Mark text left	Shift+Left
Mark text right	Shift+Right
Mark page down	Shift+PgDn
Mark page up	Shift+PgUp
Mark to begin of file	Ctrl+Shift+Home
Mark to end of file	Ctrl+Shift+End
Mark to end of line	Shift+End
Mark to begin of line	Shift+Home
Mark to top of screen	Ctrl+Shift+PgUp
Mark up	Shift+Up
Mark word left	Ctrl+Shift+Left
Mark word right	Ctrl+Shift+Right
Select text from cursor to bookmark	Alt+0 to Alt+9

3.1.4.13.6 Selecting Text in Columns

Selection	Key(s)
Mark column down	Alt+Shift+Down
Mark column left	Alt+Shift+Left
Mark column left word	Alt+Ctrl+Shift+Left
Mark column page down	Alt+Shift+PgDn
Mark column page up	Alt+Shift+PgUp
Mark column right	Alt+Shift+Right
Mark column right word	Alt+Ctrl+Shift+Right

Mark column to bottom	Alt+Ctrl+Shift+End
Mark column to end of file	Alt+Ctrl+Shift+PgDn
Mark column to end of line	Alt+Shift+End
Mark column to file begin	Alt+Ctrl+Shift+PgUp
Mark column to line begin	Alt+Shift+Home
Mark column to top	Alt+Ctrl+Shift+Home
Mark column up	Alt+Shift+Up
Mark text from cursor to bookmark	Alt+Shift+0 to Alt+Shift+9

3.1.4.13.7 Special Edits

Action	Key(s)
Insert line break	Enter
Convert selected text to lower case	Alt+Shift+L
Convert word to lower case	Alt+L
Tab	Tab or Ctrl+I
Toggle Insert / Replace	Insert
Convert selected text to upper case	Alt+Shift+U
Convert word to upper case	Alt+U
Capitalize word	Alt+C
Indent block	Ctrl+Shift+I
Outdent block	Ctrl+Shift+U

3.1.4.13.8 Undo and Redo changes

Action	Key(s)
Redo	Alt+Shift+Backspace or Ctrl+Shift+Z
Undo	Alt+Backspace or Ctrl+Z

3.1.5 Windows Menu

The window menu has commands to open additional views of the same file and help you to arrange the multiple window shown.

Window | Cascade
Window | Tile Horizontal
Window | Tile Vertical
Window | Process window

3.1.5.1 Window | Cascade

Arrange all edit windows on top of each other with the current window on top

3.1.5.2 Window | Tile Horizontal

All visible edit windows will be arranged horizontally.

3.1.5.3 Window | Tile Vertical

All visible edit windows will be arranged vertically.

3.1.5.4 Window | Process window

Bring the process window to the front

3.1.6 Utilities Menu

The sub-menu lists the utilities that can be called from the GAMSIDE:

Utilities | GDXDIFF
Utilities | Diff TextFiles
Utilities | Delete 225 Directories
Utilities | Scripting
Utilities | Option editor

3.1.6.1 Utilities | Delete 225 Directories

Delete temporary GAMS directories in the current project directory.

When GAMS runs, it creates a temporary directory. After a normal completion of the run, this directory will be deleted automatically. When aborting a run, or after an abnormal program termination, the directory may not be deleted.

When opening a GAMS project, this command is executed automatically.

3.1.6.2 Utilities | Diff TextFiles

Open a window to compare two text files.

The files to be compared are read from the disk; so in order to compare a file that has been modified in the IDE save the file first before making a comparison.

This first version of this utility has no knowledge about the syntax used in the files; no distinction is made if two comments are different for example.

After specifying the two files to compare and optionally selecting an option, press the Ok button to start the comparison. The differences will be shown in the TextFile difference window. If for some reason the analysis takes too long, the process can be aborted by pressing the Esc key. When the comparison is finished, the differences between the files are shown as modifications, additions and deletions. The bottom part of the window shows the counts in each category. Selecting a changed line will color the two corresponding lines using the same color scheme to highlight the differences.

Parameters:

Input file 1

File name for the file shown in the left pane. Click the button next to this field to use an Explorer dialog to locate the file.

Input file 2
File name for the file shown in right pane. Click the button next to this field to use an Explorer dialog to locate the file.

Ignore character case
Toggle the option if the difference between upper and lower case is significant.

Ignore white space
Toggle the option to treat multiple blanks as a single blank. When enabled, a leading blank or a trailing blank is ignored. A Tab character is treated as a single blank.

Ok button
Start the comparison; a new window will be created showing the differences between the two files

Cancel button
Close the window

TextFile difference window

The following menu options are available in this window:

File | Esc
Abort the comparison

File | Exit
Close the difference window and return.

View | Previous Changes Ctrl+P
Move the line selection to the previous change

View | Next Changes Ctrl+N
Move the line selection the the next change

Options | Ignore case
Toggle the option if the difference between upper and lower case is significant.

Options | Ignore white space
Toggle the option to treat multiple blanks as a single blank. When enabled, a leading blank or a trailing blank is ignored. A Tab character is treated as a single blank.

3.1.6.3 Utilities | GDXDIFF

Parameters used to call the GDXDIFF utility.

GDXDIFF compares two GDX files and creates a third GDX file indicating the differences between the two files. After executing the program, the log will be shown, and the difference file will be shown in the data viewer.

The parameters used are stored with the current project.

GDX files and the GDXDIFF program are described in a separate document.

Parameters:

Input file one
The full path name of the first GDX file. Click the button next to this field to use an Explorer dialog to locate the file.

Input file two
The full path name of the second GDX file. Click the button next to this field to use an Explorer dialog to locate the file.

Difference file
The full path name of the difference file. When this field is empty, the file 'diffile.gdx' will be written in the current project directory. Click the button next to this field to use an Explorer dialog to locate the file.

Eps
Two values are considered equal when their absolute difference is smaller than the Eps value.

RelEps
Two values are considered equal when their relative difference is smaller than the RelEps value.

Ignore set text
When enabled, difference in explanatory texts for set tuples is ignored.

Field to compare
Specifies the field(s) to compare for variables and equations.

FldOnly

Used in combination with the *Field* option; all variables and equations will be written as parameters using the value of the field specified. This option cannot be used in combination with the *DiffOnly* option.

DiffOnly

Differences for Variables and Equations will be written as parameters; each parameter will have an additional index which is used to store the field name. Only fields that are different will be written. This option cannot be used in combination with the *FldOnly* option.

3.1.6.4 Utilities | Option editor

The option editor can be used to edit an existing option file or to create a solver specific option file.

Menu:

File Menu:

Read option file
Show a file open dialog to select an existing option file. Only the options that have been modified will be shown.

Create option file
After selecting this item, you will see a list of solvers of which one can be selected to create a new option file; a filename is not yet assigned.

Save option file
A save dialog will be shown to save the option file.

Option Menu:

Reset
Reset the current option to its unassigned value.

Reset all options
Reset all options to their unassigned values.

Reset recent changes
Options that were modified while editing will be reset to their unassigned values.

PopUp Menu:

Option help (F2)
Shows a simple html viewer showing additional information for the current option.
Note that the full product documentation can be reached by clicking the the link in the beginning of the document shown. Ctrl+Home moves to the beginning of the document where this link can be found.

Help (F1)
Shows this help.

3.1.6.5 Utilities | Scripting

The GAMSIDE has a very simple scripting facility. A script can be created by entering commands in a text file or by recording a script.

Start recording
After selecting a file for the script file, simple file commands will be written to the script file. Commands such as file open file close, run and compile allow these commands to be played back later.

Stop recording

Stop recording script commands

Play script
Execute the commands stored in the selected script file.

Available script commands

Command	Argument1	Argument2	Notes
FileOpen	<filename>		
ViewClose	<filename>		Close file only when displayed in viewer
FileClose	<filename>		
FileSave	<filename>		
FileSaveAll			
FileCompile	<filename>	<parameters>	
FileRun	<filename>	<parameters>	
FileWait	<filename>		Wait for compile/run to finish
Message	<text>		Display a message box

Example:

The following example shows a run of the trnsport.gms mode. The file was recorded and later edited to add the message command.

```
*GAMSIDE script V1
fileopen;%ProjDir%trnsport.gms;
filerun;%ProjDir%trnsport.gms; gdx=trnsport
filewait;%ProjDir%trnsport.gms;
fileopen;%ProjDir%trnsport.lst;
fileopen;%ProjDir%trnsport.gdx;
message;The example is finished
```

3.1.7 Help Menu

The help menu provides access to various help and documentation files.

Help | Help topics
Help | About
Help | GAMS Users' Guide
Help | Solver Manual
Help | McCarl Guide
Help | Docs

3.1.7.1 Help | Help topics

Open the GAMSIDE help file at the Contents topic

3.1.7.2 Help | About

Shows a window with information about the GAMS system in use and the active license file.

3.1.7.3 Help | GAMS Users' Guide

Open the GAMS Users' Guide file

3.1.7.4 Help | Solver Manual

Open the Solver manual file.

3.1.7.5 Help | McCarl Guide

Open the McCarl GAMS Users Guide file.

3.1.7.6 Help | Docs

As the user selects the help menu, the last menu entry is extended with all 'document' files in the 'docs' directory. Selecting a file from the menu will launch the program associated with that file. 'Document' files are files with extension .chm, .htm, .html or .pdf .

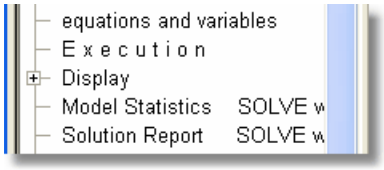
Note: The 'document' files found in the McCarl document directory are not added to the list.

3.2 Listing Window

The listing window shows two panes; the left pane is the index of the listing file and the right pane the listing file itself.

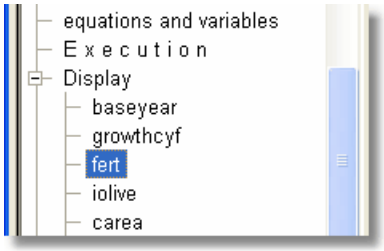
The listing file viewer does not use the editor to display the listing file. The viewer used does not store the complete file in memory, it buffers a number of lines needed for the display. To allow for this file buffering, a listing file is opened as read-only and cannot be overwritten by other programs as long as it remains open. Close a file before executing a program that creates or modifies the file that is open. Note that the listing file is closed automatically when starting a GAMS model; other files are not.

The index pane is organized a tree, where similar elements are collected under a tree node. A tree node can be opened by clicking on the plus (+) symbol.



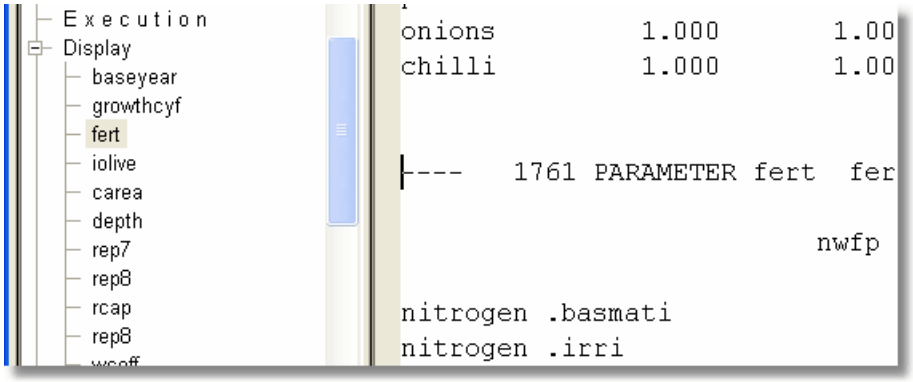
Index pane with Diplay node closed

After a click on the + symbol, the node opens showing multiple display entries:



Display node open

A double click in the index pane allows for quick navigation in the listing file. For example, a double-click on 'fert' will position the listing file on the display for fert:



Listing file position after double-click

In the previous examples we used the tree view to position the cursor in the listing file. When moving the cursor in the listing window, the closest matching tree node will be selected.

3.3 Process Window

The process window shows the progress of a GAMS job during the compilation / execution and solution phases.

Multiple jobs can be running at the same time; the different jobs are organized in the form of pages in a notebook. Clicking on a tab will show the current status for that job.

Error messages are shown in red with an indication where the error occurred. A double-click with the mouse will open the file and position the cursor on the error. If you want to see the error in the listing file, hold down the Shift key while double-clicking the red line.

Important locations in the listing file are shown in blue. A double click on such a line will position the cursor in the listing file.

A double-click on a line which is not red or blue, will position the cursor in the listing file.

Buttons:

Depending if a process is still running or has finished, the following buttons are available:

Interrupt

Signal the solver to stop at a convenient point.
Typically, solvers will check for a user interrupt in the same places where the resource limit is checked. A user might wish to trigger an interrupt in order to stop a MIP job that has found a good integer feasible point but does not yet satisfy the convergence tolerances, or to return an intermediate point for an LP or NLP. The solver will return the current point and the appropriate model status, with a solution status of 8 (USER INTERRUPT), and the GAMS run will continue.

Stop

Stop the current Job.
The job will be stopped as soon as possible, and some files may be left in the process directory. No solution file will be written either.
It may be necessary to send the stop signal a few times to actually stop the process.

Close
Close the current process

Open Log
The LOG file for the current job will be opened in an edit window.

Options

Summary only
When enabled, the process window will only show lines that are red or blue or that start with '----'. This will reduce the number of lines displayed in the process window by eliminating lines showing solver iteration information etc.

Update
When enabled, the status information shown in the process window will be updated continuously and the text will scroll up, so the last line is always visible. When disabled, the text will not scroll. (This is the same option as described under File | Options | Execute | Update Process Window.)

3.4 GDX data browser

The GDX data browser shows the contents of a GDX file. GDX files can be created by GAMS or by some utilities included with a GAMS system. To view a GDX file, use **MainWindow: File | Open** and select the file extension '.gdx'.

When a GAMS run produces a gdx file, the file name is shown in the Process Window. The GDX file can be opened by a double-click on the file name.

The grid on the left side shows all symbols found in the GDX file, and is sorted by the symbol name. A mouse click on the top row will select a different column for the sort, or will reverse the sort order for that column. Typing a character in the symbol listing of the data viewer will try to select the next symbol name starting with that character.

Entry	Symbol	Type	Dim	Nr Elem
10	GanttData	Par	3	14
4	Points	Par	2	200
8	Scatter2D	Par	2	40
9	Scatter3D	Par	2	60
13	ScenarioData	Par	2	136,000
12	StockData	Par	3	800
11	Surface	Par	2	2,500

Symbol table of GDX file. The highlight indicates the selected symbol

See Next:
GDX data browser display
GDX data browser fields and buttons
GDX data browser search
GDX data browser navigation

GDX data browser PopUp menu
Sorted index positions

3.4.1 GDX data browser display

Using the mouse, we can rearrange the data display:

GanttData

Plane Index (empty)

task1	resource1	start	1.00
		length	8.00
	resource3	start	12.00
		length	2.00
task2	resource2	start	2.00
		length	4.00

The data grid shows the values for the symbol

After selecting a symbol, the window on the right shows the data for the selected symbol. The data window is divided in two areas: the plane index and the data. The indices used can be re-arranged, using the mouse using a drag and drop mechanism. To move an index, move the mouse cursor to the source location, select the source my pressing down the left mouse button and while holding down the button, move to the target location and release the mouse button.

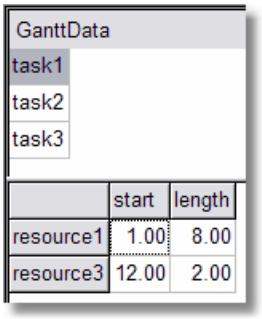
GanttData

Plane Index (empty)

		start	length
task1	resource1	1.00	8.00
	resource3	12.00	2.00
task2	resource2	2.00	4.00
	resource3	7.00	3.00

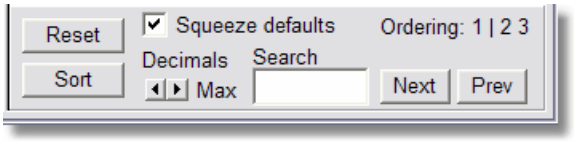
The last column was dragged to be display as the header

An index can be moved between rows and columns in the data display, and be moved between the data and the plane index. Such an arrangement is stored in the project file, and will be used when the symbol is displayed again.



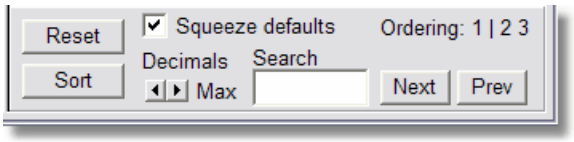
The left most column was moved to the plane index. The data displayed is now filtered for the selected row in the plane index

When we rearrange the data display, the current re-arrangement of the indices is displayed at the bottom of the screen. The vertical bar indicates where the plane index stops and where the displayed data begins.



Ordering of indices

3.4.2 GDX data browser fields and buttons



Reset button

A mouse click on the reset button restores the indices to their default display, and enables squeezing of default values. The sort order for all indices is reset to entry order.
Holding down the Shift key while clicking the Reset button will erase the display preferences for all symbols found in the project file.

Sort button

A mouse click on the sort button shows a window where one can select which index will be sorted by name or by entry order. The sort order for an index position is ignored when generating charts; charts always use the entry order of the unique elements.

seattle	new-york	50.00
	chicago	300.00
san-diego	new-york	275.00
	topeka	275.00

Entry order

san-diego	new-york	275.00
	topeka	275.00
seattle	chicago	300.00
	new-york	50.00

Alphabetical order

Squeeze defaults checkbox

When enabled, default values for a variable or equation will not be displayed. When disabled, all available values will be displayed.

		Level	Marginal	Lower	Upper	Scale
seattle	new-york	50.00	0.00	0.00	+Inf	1.00
	chicago	300.00	0.00	0.00	+Inf	1.00
	topeka	0.00	0.04	0.00	+Inf	1.00
san-diego	new-york	275.00	0.00	0.00	+Inf	1.00
	chicago	0.00	0.01	0.00	+Inf	1.00
	topeka	275.00	0.00	0.00	+Inf	1.00

A variable without filtering for default values

		Level	Marginal
seattle	new-york	50.00	
	chicago	300.00	
	topeka		0.04
san-diego	new-york	275.00	
	chicago		0.01
	topeka	275.00	

The same variable with filtering enabled

Decimals selector

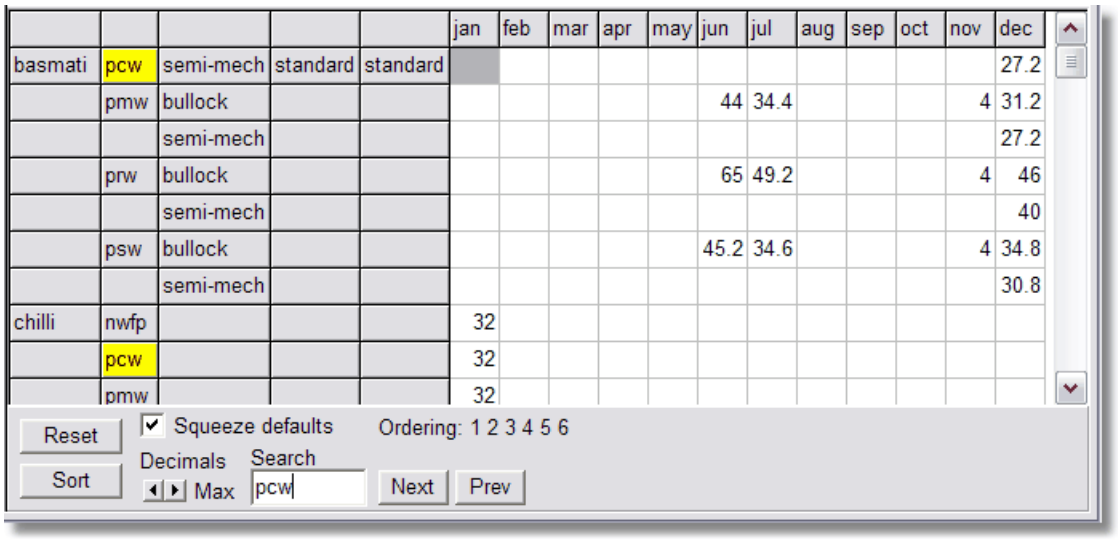
Using the mouse, one can select the number of decimals to be displayed. The default number of decimals can be set in **File | Options | Charts/GDX**.

Search field, Next and Prev

See GDX data browser search

3.4.3 GDX data browser search

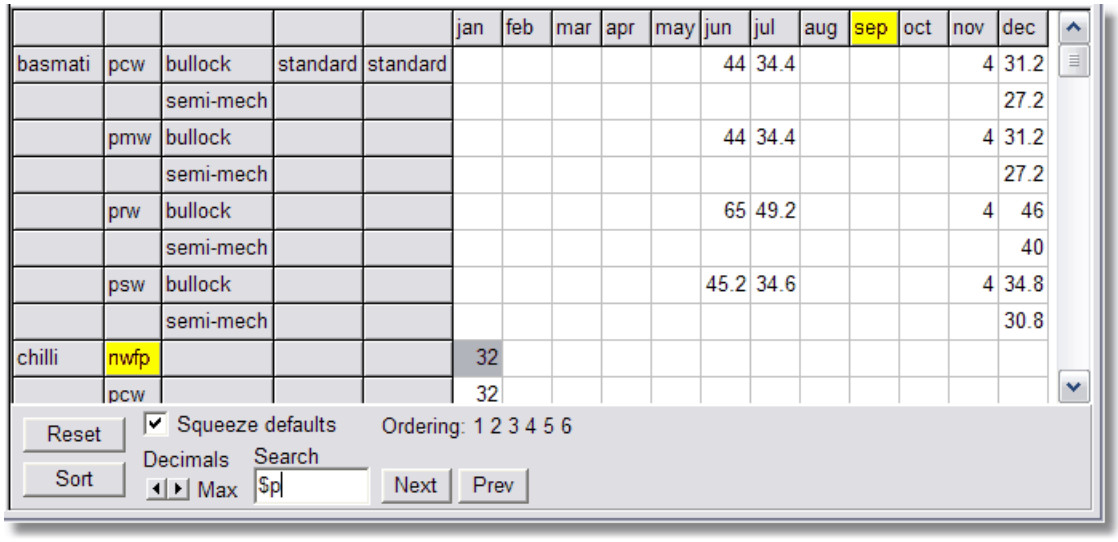
As gdx files become larger, finding certain data elements becomes cumbersome. To get around this, we can search for unique elements by entering text in the search box.



Search for pcw

When we enter pcw in the search box, the matching elements will be highlighted in yellow; clicking on the Next button or pressing the F3 key will move the current cell to the next occurrence of the element.

By default, the search text is used to match elements *starting* with the text specified. To indicate that the text can occur *anywhere* in an element, prefix the search text with a * (asterisk). To indicate that the text should match the end of the element, prefix the search text with $ (dollar sign.)



Search for elements that end in p

Notes:

- When selecting a different symbol, the search text is not erased and the search will be performed for the new selected symbol.
- When there is no element, or no next or previous element, that matches the search string, the search box will be shown with a red background to indicate this.
- A search starts with the row labels, followed by the column labels.

3.4.4 GDX data browser navigation

The arrow keys can be used to move up, down, left and right in the data grid. When we use an arrow key while holding down the Ctrl key, the cell will move to the next non-empty cell. Holding down Ctrl +Shift will move to the next empty cell.

3.4.5 GDX data browser PopUp menu

The PopUp menu can be activated with the PopUp key on the keyboard or using a mouse click with the right button. The following options are available:

Chart

Use this symbol and current index arrangement to create a graphics chart; see Creating charts.

Write

Write symbol to HTML file
Write the current symbol formatted as an html table to a file.

Write ALL symbols to HTML file
All symbols will be written as html tables. The sequence the symbols are written is the same as the sequence shown in the left window. Note that the sequence can be changed by clicking on the column headers.

Write symbol to XLS file
Write the current symbol to an Excel file. Only the filtered data will be written to the XLS file; i.e. in the same order as displayed in the data grid, including the same sort order for every index. This command also writes a second sheet with information about the GDX files, index order etc. If the number of rows or columns exceeds the Execl limits, a warning messages is included as well.

This option requires that Excel is installed on your system.

Write symbol to XLS filtered
Write the current symbol to a new Excel file and prepares the sheet for a filtered view. See also configuration file.

This option requires that Excel is installed on your system.

Write All symbols to XLS
Write all symbols to a new Excel file. Scalars are written on a separate page and so is a table of contents. Non scalar symbols will be written on a separate sheet. See also configuration file.

This option requires that Excel is installed on your system.

Copy to ClipBoard
Copy the selected range of cells to the ClipBoard. The data can be pasted again in other applications like Excel, Word etc.

Search Next (F3)
Search for next cell matching the search string; see data browser search.

Search Previous (Shift+F3)
Search for next cell matching the search string; see data browser search.

ReOpen File (Alt+R)

The current file is loaded from disk again.

New Window (Alt+W)
Open the current file in a new window. Using multiple windows allows one to view different symbols in the same file simultaneously.

Close File (Shift+F4)
Close the current file.

Next File (Alt+N)
Show the next file in the tabs of the window.

Previous File (Alt+P)
Show the previous file in the tabs of the window.

Email File
Activate the email program to send the file as an attachment.

3.4.5.1 Configuration file for writing to XLS file

A number of options for writing symbols to a XLS file can be specified in an .ini file. An .ini file can be be created / edited using the GAMSIDE or any other text editor. See also location of ini file.

The ini file has two sections; settings and colors. The table below summarizes the available options:

section	key	type	default	remarks
settings	autofilter	bool	true	Generate *autofilter* enabled tables
	eps	string	EPS	String for the Eps value
	freezeheader	bool	true	Keep headers fixed so they do not scroll off the screen
	indexformat	string		Custom format for index columns
	inf	string	INF	String for the +Inf value
	mininf	string	-INF	String for the -Inf value
	mintoc	integer	5	Minimum number of symbols needed to generate a table of contents; see also toc
	na	string	NA	String for the NA value
	scalarsheet	bool	true	Generate a separate sheet for all scalar symbols (dim=0)
	sorttoc	bool	true	
	tableformatting	bool	false	Embellish tables with fonts and colors
	toc	bool	true	Generate a table of contents for all symbols; see also mintoc
	undf	string	UNDF	String for the UNDF value
	valueformat	string		Custom format for value columns
colors	body	integer	19	Color index for the background of a table
	header	integer	24	Color index for the background of a table header
	italics	integer	48	Color index for writing explanatory text

Example of a configuration file:

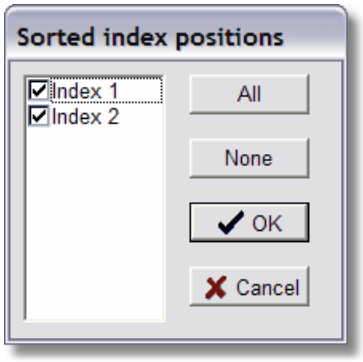
```
[settings]
eps=0
scalarsheet=1
[colors]
```

```
header=17
```

Location of the configuration file
The configuration file used, if any, is determined in three steps:
1. If the file <xlsfile>.ini exists, use that file
2. If the file <gdxfile>.ini exists, use that file
3. If the file gdx2xls.ini exists in the GAMS system directory, use that file

3.4.6 Sorted index positions

Select which index positions in the GDX display are sorted alphabetically or by entry order.



In the example above both index positions are sorted alphabetically. The sorting information is stored for each symbol in the project file and will be used again next time the symbol is displayed.

```
set i /i, i7, i8, i9, i1*i6/;
set j /j3, j2, j1/;
parameter A(i,j);
A(i, j) = 10 * Ord(i) + Ord(j);
```

	j3	j2	j1
i	11.00	12.00	13.00
i7	21.00	22.00	23.00
i8	31.00	32.00	33.00
i9	41.00	42.00	43.00
i1	51.00	52.00	53.00
i2	61.00	62.00	63.00
i3	71.00	72.00	73.00
i4	81.00	82.00	83.00
i5	91.00	92.00	93.00
i6	101.00	102.00	103.00

Entry order

	j1	j2	j3
i	13.00	12.00	11.00
i1	53.00	52.00	51.00
i2	63.00	62.00	61.00
i3	73.00	72.00	71.00
i4	83.00	82.00	81.00
i5	93.00	92.00	91.00
i6	103.00	102.00	101.00
i7	23.00	22.00	21.00
i8	33.00	32.00	31.00
i9	43.00	42.00	41.00

Alphabetical order

Using the GAMS code above, and showing the symbol A in the GDX data browser without and with sorting.

Note that the comparison of the unique elements is not simple alphabetic. If two strings in the comparison start with the same text, but have different numerical tails, the tails will be compared numerically; not alphabetically.

Using alphabetical comparison, the following holds: A1 < A11 < A2
The viewer however will sort this as: A1 < A2 < A11

3.5 Chart Window

Besides the chart, the chart window shows a number of icons used to change the appearance of the chart. The chart also has a PopUp menu which can be accessed with a right mouse click. See also chart editor

The icons:

	Normal mode; holding down the left mouse button while moving the mouse to the right and downward will zoom. Holding down the left mouse button while moving the mouse to the left and upward will reset the zoom. When zoomed in, the image can be scrolled by holding down the right mouse button and move the mouse.
	Hold down left mouse button and move the mouse to rotate the chart in three dimensions.
	Hold down the left mouse button to drag the chart to a different location.
	Hold down the left mouse button and move the mouse down to zoom out; move the mouse up to zoom in.
	Hold down the left mouse button and move the mouse up or down to increase / decrease the depth of the 3D chart.
	Click to toggle the chart display between 2D and 3D
	Click the start the chart editor

3.5.1 Chart PopUp menu

PopUp menu available in the Chart window:

Chart | Edit as text
Chart | Save format
Chart | Load format
Chart | ReOpen (Alt+R)
Chart | Close file (Shift+F4)
Chart | Save image
Chart | Copy to ClipBoard
Chart | Print

3.5.1.1 Chart | Edit as text

Close the current chart and open the chart as a text file. See Chart files

3.5.1.2 Chart | Save format

Save the formatting of the current chart. The filename for the format file is based on the filename of the chart by changing the file extension from `'.gch'` to `'.gchf'`

3.5.1.3 Chart | Load format

Load the formatting of the current file from the format file. The filename for the format file is based on the filename of the chart by changing the file extension from `'.gch'` to `'.gchf'`.

A format file can be applied automatically when a chart is created; see MainForm: File | Options | Chart

3.5.1.4 Chart | ReOpen (Alt+R)

Recreate the chart from the data found in the corresponding GDX file.

After creating a chart or opening a chart again, the formatting information can be automatically applied; see **File | Options | Charts | Chart format files**

3.5.1.5 Chart | Close file (Shift+F4)

Close the chart.

3.5.1.6 Chart | Save image

Save the current chart as an image.

The image of the chart can be saved as a '.png' file or as an '.emf' file. The '.emf' format is a suitable format for inclusion in a document because it can be scaled without loosing image quality.

See also **Chart | Copy to ClipBoard**

3.5.1.7 Chart | Copy to ClipBoard

Copy the current chart to the Windows ClipBoard.

Using the ClipBoard, a chart can be pasted in WordPad, or Microsoft Word document.

Note that a chart pasted this way is static; the chart in the document is not updated when the chart is regenerated with new data.

3.5.1.8 Chart | Print

Print the current chart on the default printer.

Note that the proportions shown in the chart window will be reflected in the print. Consider adjusting the size of the window before printing.

Alternatively, use the Copy to ClipBoard command to get the chart in a document and use the word processor to print the chart.

Chart | Edit as text
Chart | Save format
Chart | Load format
Chart | ReOpen (Alt+R)
Chart | Close file (Shift+F4)
Chart | Save image
Chart | Copy to ClipBoard
Chart | Print

3.5.2 Chart Editor

The chart editor is launched by clicking on the  icon in the chart window.

Using the chart editor we can make changes to the appearance of a chart. Many, but not all, of these changes can be saved as chart formatting information and re-applied to the chart when new data is available. A number of these changes can be applied as a group automatically when creating a chart; see **File | Options | Charts | Themes**.

Below, the most important features of the chart editor:

Series | select series | Format | Color
To change the color of a single series

Series | select series | Point | Visible
To make the data points visible

Series | select series | General | Horizontal Axis | Date time
To display the X-axis as date / time values

Series | select series | General | Vertical Axis | Date time
To display the Y-axis as date / time values

Series | select series | General | Formats
To change the format and number of decimals displayed for the axis

Series | select series | Marks | Visible
To display the value(s) for each point

Chart | Axis | any axis | Inverted
To change the direction of the selected axis

Chart | Axis | any axis | Minimum (Maximum)
The change the minimum (maximum) values used for the selected axis

Chart | Titles | Title (sub-title, Footer, Sub Footer)
The change the text and appearance of the chart title

3.6 Reference Window

A reference file is created using the rf parameter when running the model.

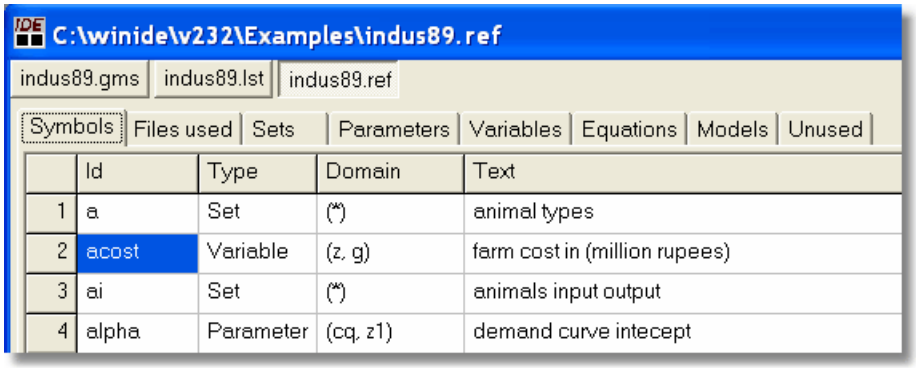
GAMSIDE main window showing reference file generation

When the model is compiled, the reference file can be opened using the **MainWindow: File Open**, or by a double-click in the Process Window on the RefFile entry:

```
--- Starting compilation
--- indus89.gms(3622)  4 Mb
--- RefFile C:\winide\v232\Examples\indus89.ref
--- indus89.gms(3622)  4 Mb
```

Process Window showing clickable entry for the reference file

The Reference viewer is a handy tool to navigate the source code of large GAMS models, especially when multiple files are involved. The window is organized in a number of tabs:



Refrence file viewer showing multiple tabs

Tabs in Reference file viewer

Symbols
Shows an alphabetical listing of all symbols used in the model. A double-click on the symbol identifier will position the cursor in the source file whre the sysmbol has been declared

Files used
Shows an alphabetical listing of all files including the full file path.

Sets, Parameters, Variables, Equations and Models
An alphabetical listing of symbols of the same type. A double-click in a cell of the grid will position the cursor in the corresponding file. The columns in the grid are:

declared:
Declaration of the symbol

defined
Defined using a data statement,

assigned
When the symbol appears on the left side of an assignment statement

Ref
Referenced in a statement

Control
When the set is used as a control set

Impl-Asn
Implicit assignment like a variable in a model

Unused
Alphabetical listing of all symbols that have been declared but are not used anywhere. A double click

will position the cursor in the file where the symbol is declared.

3.7 Print Dialog

Specify various options before printing or previewing the current file.

The following options are available:

Print Selected Block
When enabled, only the selected text will be printed

Header & Page Numbers
When enabled, every page will have the file name, date and page number printed.

Line numbers
Places line numbers in the left margin.

Syntax print
Uses text attributes, such as bold and italic, to indicate elements with syntax highlighting.

Page Control Codes
When enabled, a line feed character in the text will cause a new page to be printed

Two Pages
When disabled, the pages will be printed in the current printer paper orientation (landscape or portrait.)
When enabled, the pages will be printed depending on the current page orientation. If the page orientation is set to portrait, every sheet will be printed in landscape, with two facing pages. If the page orientation is set to landscape, every sheet will be printed in portrait with a single long page.

Color print
Uses color to indicate elements with syntax highlighting. Requires a color printer.

Printer font
The font used for printing. Double-click this field to get a list of fonts from which you can select the new printer font.

Font Size
The font size used for printing

All Pages
When selected, all pages will be printed

Page Range
When selected, you can specify page ranges, for example, 1,5-6 will print page one, five and six.

BUTTONS

Ok
Use the selected parameters and show the printer selection dialog. This window allows the selection of the destination of the output (printer, preview or file) and allows the selection of a different printer. .

Close
Save all parameters and close the window.

3.8 Options Window

Specify various options

The options are presented in the form of a notebook with tabs. Using the mouse to click on a tab will show different options. After changing one or more options, click on OK to accept all changes, or on Cancel to ignore all changes made.

With a few exceptions, the options are all global, i.e. they apply to all projects. When an option is project specific, it will be indicated.

The following tabs are available:

Options | Editor
Options | Execute
Options | Output
Options | Solvers
Options | Licenses
Options | Colors
Options | File Extensions
Options | Charts/GDX
Options | Execute2

3.8.1 Options | Editor

Specify options for the editor

Font
The font to be used. Double-click to get a list of fonts from which you can select the new editor font. This font will also be used in other windows when showing a list of items.

Font Size
Size of the font to be used

Auto Indentation
When enabled, pressing the Enter key will position the cursor on the next line under the first non-blank character facilitating indented text entry.

Syntax colors
When enabled, color the text based on the syntax of the language. The syntax used depends on the file extension of the file being edited. GAMS files always have the 'gms' file extension. The colors used for the syntactical elements can be specified in the colors options.

Highlight URLs
When enabled, a URL, like www.gams.com can be shown in a different color. Clicking on a URL will

launch the default web browser with the selected URL as the active page.

Show special characters
When enabled, the Tab and End of Line characters will be visible.

Maximum lines for Syntax colors
Syntax colors will be disabled for files with a number of lines exceeding the specified number. Determining syntax colors for large files can slow down the editing of text. Reduce this number to increase the responsiveness of the editor.

GAMS file extensions
In addition to the 'gms' file extension, additional file extensions can be specified to enable GAMS syntax colors. Multiple file extension should be separated by a comma (,).

A file with a 'GAMS file extension' can be run or compiled as a GAMS model. The run button and the additional parameters will be enabled. See also File Extensions.

Files to save before Run or Compile
Select which modified files you want to save before making a run or a compile.

Right margin position
Indicates the position of the thin vertical line drawn in the editor to indicate the right margin. A value less or equal to two will hide the line. This line only serves as a visual indicator of the right margin and has no impact on the text entered.

Keyboard mapping
In addition to the GAMS standard mapping, the IDE also supports a small subset of the Epsilon editor.

Tab keys

A number of things to consider when dealing with Tabs:

- When reading a file, Tabs can be left untouched or can be converted to spaces using the value of **Tab size**.
- When pressing the Tab key, the editor can insert a Tab character or insert a number of spaces. The number of spaces inserted depends on the options selected under **Automatic spaces**.
- If a file contains Tab characters, or we insert Tab characters in the text, the editor will simulate the inserted spaces on the screen without changing the text. The tab positions used for display purposes are taken from the **Tab stops**.

Tab key use

This option determines what happens when a file is read containing Tabs or when the Tab key is pressed:

Use Tabs:

Leave Tabs as is when reading a file.

Insert a Tab character when pressing the Tab key.

Simulate spaces on the screen using the tab positions entered under Tab stops.

Warning: It is possible to select Tab stops that are different from the specified Tab size; this can lead to

unexpected results when the tabs will be interpreted with a fixed tab size.

Hint: If it is more convenient to view the Tabs in a file without any additional space characters, select a single tab stop of 1 or 2.

Use Spaces:

Convert Tabs to spaces using the value of Tab size when reading a file.

Insert spaces when pressing the Tab key. The number of spaces inserted is determined by the option selected under **Automatic spaces**.

Automatic spaces:

Option for the number of spaces that will be inserted when pressing the tab key.

Use tab stops

The **tab stops** field determines how may spaces will be inserted to reach the next tab stop position

Smart tabs:
Spaces are inserted until the cursor is under a non-blank character of the previous line that is not empty.

Show Hints
When enabled, the little yellow rectangles (balloon help) will be shown with Hint text for the selected item. The bottom of the main window will always show the hint text regardless of this setting.

3.8.2 Options | Execute

Specify the execution environment for a GAMS run.

The following options are available:

GAMS system directory
This is the directory where GAMSIDE.EXE is located and is assumed to be the directory where the GAMS system has been installed. This field is read-only.

Use alternate GAMS system directory
When enabled, the GAMS system directory specified below will be used instead of the default directory.

Alternate GAMS system directory
A directory with a complete GAMS system which will be used as the GAMS system directory when the `Use alternate GAMS system directory` checkbox is enabled.

Update button
Checks if there are any .zip or .pck files in the GAMS system directory and runs GAMSINST.EXE if any of these files can be found. The system cannot be updated when a GAMS run is still active or when the GAMS system directory is located on a network drive. Note that the directory searched for .zip and .pck files depends on the setting of `Use alternate GAMS system directory` checkbox.

DOS Window
The GAMS system executes in a DOS window; this window can be completely hidden, be minimized on the task bar or shown while GAMS executes. The latter is intended for debugging purpose.

Max Processes
The maximum number of tabs used in the process window.

Max lines in process window
Specifies the maximum number of lines in the process window. When the number of lines in the process window exceeds this number, the lines will be written to the log file. After the job has finished, the log file can be opened in the editor for further inspection.

Update Process Window
When enabled, the status information shown in the process window will be updated continuously and the text will scroll up, so the last line is always visible. When disabled, the text will not scroll.

Open listing file after model completion
When enabled, the listing file (.LST) will be opened in the editor as soon as the model execution has finished. When disabled, the listing file can be opened using the file open command or by double clicking a line of text in the process window.

Process window part of edit window
When enabled, the process window acts like one of the edit window, and can move within the boundaries of the mainform. When disabled, the process window can float around anywhere on the desktop.

Check file date and time when opening a file automatically
Some files can be opened automatically, like the LST file when a GAMS run has finished, or by a double-click on the name of a PUT file shown in the process window. When this option is enabled, a warning message will be given when the time on the file precedes the start time of the GAMS run.

Warn if file for the run is not in the project directory
Running a file that is not in the current project directory can lead to unexpected errors, like include files that cannot be found etc. It can also be used to run a model with different data sets without changing the model source code. When the option is enabled, trying to run a file that is not in the project directory will result in a warning.

Run GAMS with low priority
When enabled, a new GAMS run will be started at a low priority.

Use Following Additional Parameters
When enabled, the parameters following will be added to the parameters passed to GAMS.EXE The parameters shown will be used when the option is enabled. Use the down arrow key, or click on the down arrow, to see and re-use previous parameters. The use of additional parameters and the text for the parameters are project specific options.

Additional parameters can be specified which are specific for a file; see GAMS parameters.

3.8.3 Options | Output

Options that control the format of the GAMS listing file.

Page Width
Print width, in characters, for the listing file

Page Height

Number of lines used on a page for the listing file

Date Format

Time Format

Page Control

3.8.4 Options | Solvers

Shows a matrix of available solvers and model types.

Three types of solver defaults can be displayed: the system defaults as determined by the GAMS installation files, the defaults managed by the IDE and the defaults for the current project.

The first column shows all available solvers. The second column shows the license status of the solver obtained from the GAMS license file (gamslice.txt). When a solver is enabled for a limited time period, this column will show the number of days remaining for evaluation.

Use the mouse to select an entry in the matrix to select a default solver for a given model type. A mouse click in the license column will make the selected solver the default solver for all applicable model types.

The matrix shows the available solvers for all types of GAMS models. A small rectangle indicates that the solver is the default solver for the model type; a dot indicates a possible selection, and the dash indicates a possible selection for a special solver. Special solvers are only shown for information, they cannot be selected from the matrix. To select a special solver, you will have to specify the solver using additional parameters (see GAMS Parameters) or with an option statement in the GAMS model. The 'Legend' button will show the meaning of the symbols used; a mouse-click will make the legend disappear again.

The 'Reset' button above the matrix will remove all default assignments. When the button is disabled, this is an indication that the system defaults cannot be modified. (This can happen in a network environment when you do not have write permission for the GAMS system directory.)

The solver selection is processed in the following order:

System defaults
Local defaults
Project defaults

The last solver specified will be used.

Note that the GAMS option statement can overwrite your default selections also.

3.8.5 Options | Licenses

Let you specify a different GAMS license. By default, GAMS will look for a file called GAMSLICE.TXT in the GAMS system directory. Here you can specify a different license file.

3.8.6 Options | Colors

Specify the colors used for the syntactic elements.

The syntax used to color the text depends on the file extension of the file being edited.

Select a syntactic element, like reserved word. The current settings for Foreground and Background

color will be shown. When selecting a different color, the text below will show the effect of the selection made.

Note: Use Copy as RTF, to copy the selected text to the ClipBoard including the colors shown.

3.8.7 Options | File Extensions

Associate file extensions with the GAMS IDE.

Using the Windows Explorer, a program can be started with a double-click on the file name. The program executed depends on the file extension. For example, a 'txt' file extension will launch NotePad to edit the file. The file extensions specified do not make these files GAMS file automatically. i.e. apply GAMS syntax colors and enable the Run/Compile for these file. See GAMS file extensions.

You can associate the GAMS IDE with one or more file extensions using the following options. Under WinNT/Win2000 you may have to log in as administrator to make these changes.

When the GAMS IDE starts, the program will look for file extensions associated with the GAMSIDE. Files that are associated with other versions of the IDE will be associated with the running version automatically.

GAMS IDE file extensions
Lists the file extensions associated with the IDE.

Delete
Remove the association between the selected file extension and the IDE.

Add
The file extension entered in the edit field will be added to the list of extensions associated with the IDE. The edit field will only accept letters and digits.

Defaults
Replace all file extensions with the GAMS standard file extensions ('gms', 'gpr', 'log' and 'lst').

Enable CMD file execution
When checked, a .cmd batch script can be executed and output will be visible in the process window.

CMD parameters
The parameters passed to the command processor. At a minimum, the %filename% macro should be specified:
The following macros are available:

%filename%:
The name of the file selected in the editor.

%projdir%:
The directory of the active project.

%sysdir%
The GAMS system directory

%options%:
The text specified in the editor next to the run button.

3.8.8 Options | Charts/GDX

Options for creating and loading charts:

Chart format files:
After creating a chart, or opening an existing chart, the formatting can be applied automatically, be ignored or applied after a prompt.

Default chart theme:
A number of changes to the appearance of a chart can be applied automatically as soon as the chart is displayed. After selecting a different theme, the changes will not be applied to the charts that are already open.

Decimals in GDX display:
The default number of digits shown in the GDX data browswer

3.8.9 Options | Execute2

Specify parameters for another system to execute the current file in the editor.

The following options are available:

Executable
The fully qualified name of the EXE file. This file will be used when executing file with the given file extension(s). Click the button next to this field to use an Explorer dialog to locate the file.

Parameters
This string describes the command line of the program to be called. The text will be copied, and the following macros are recognized:

%filename%:
The name of the file selected in the editor.

%projdir%:
The directory of the active project.

%sysdir%
The GAMS system directory

%options%:
The text specified in the editor next to the run button.

File extensions
One or more file extensions, separated by commas. The file extensions in this field are used to recognize files associated with the executable program.

3.9 Mini Explorer

When opening or saving files, the IDE uses a file dialog to identify files. The dialog allows the selection of one or more files, the type of file and the directory to be used.

In addition to these functions, you can create a new directory, and show more details of the files in the current directory. When showing more file details, a mouse click on the name of a column, will sort the files by that column. The mini explorer also allows for deleting files and creating a directory.

Note that the question mark icon will provide more help for the selected items.

Part

4 Installation Notes

The gams IDE can be installed in any directory of your choice; this directory can be set to read-only after the installation is complete.

In addition to the standard GAMS files, the IDE is comprised of the following files:

gamside.exe	the IDE
gamside.chm	the help file

During installation, a few additional files and directories are created in the user's My Documents directory.

gamsdir	initial project directory
gamsdir\gamside.ini	system settings
gamsdir\project.gpr	initial project file

The gamsdir directory is created in the user's My Documents directory. The files gamside.ini and project.gpr are created in the gamsdir directory.

The installation process also registers the .gpr and .gms file extensions so you can launch the GAMSIDE by clicking on a GAMS project file or GAMS model file. Additional extensions can be added using **MainWindow: File | Options | File extensions**.

If the My Documents directory is not suitable to store the gamside.ini file, a new location can be specified as a parameter when executing gamside.exe. The file name gamside.ini is required to be recognized as the initialization file. A new directory can be specified when creating a windows shortcut to the executable.

For example: when the executable is located in the directory \\server\gams, and the initialization is located in c:\Local Users, the Target in shortcut can be specified as:

```
\\server\gams\gamside.exe "c:\Local Users\gamside.ini"
```

The file `idecfg.ini` in the GAMS system directory can be used to add menu items to the main menu in order to display a document, a logo and to select model libraries

4.1 idecfg.ini file

This file, in the GAMS system directory, can be used to extend the menu in the Main Window.

- If file exists, it is expected in the same directory as the file `gams.exe` file used by GAMSIDE (not necessarily next to the file `gamside.exe`)
- The IDE only checks if the file exists on startup
- idecfg.ini currently has the following optional entries:

```
[logo]
file=myimage.bmp
```

Used to display an image in the Process Window. The 'image' field contains the name of a .bmp file

in the GAMS system directory. The reserved size for the image is 24x144 pixels.

```
[menu]
text=MyMenu
file=myfile.html
```

Used to display a .html file using the build-in html viewer. The 'text' field contains the text for the menu item. The 'file' field contains the name of the .html file in the GAMS system directory.

```
[library1]
text=GAMS model library
file=gamslib_ml\gamslib.glb
```

Used to add model library selection(s) to the Main Window. The 'text field contains the text for the sub-menu. The 'file' field contains the index file for the model library. A relative path is assumed to be located in the GAMS system directory. Up to 10 libraries can be specified as [library1] .. [library10]

Example content for idecfg.ini:

```
[logo]
file=myimage.bmp

[menu]
text=MyMenu
file=myfile.html

[library1]
text=GAMS model library
file=gamslib_ml\gamslib.glb

[library2]
text=GAMS Test Library
file=testlib_ml\testlib.glb
```

4.2 Known Problems

Some known problems when running the GAMSIDE:

Help file located on network drive does not display
Floppy Disk Drive Spins
Error Opening a File

4.2.1 Help file located on network drive does not display

Microsoft Security Update 896358 disabled the use of .chm files when they are located on a network drive. See MS knowledge base article http://support.microsoft.com/?kbid=896358 for the details.

In summary, there are two solutions. Both solutions require changes to the registry, so proceed with caution; better yet, ask your system administrator!

To enable ALL access to .chm files on any network location:

Locate the key:
`[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\HTMLHelp\1.x\HHRestrictions]`

and set the value of `MaxAllowedZone` to 1

To enable access to .chm files in a specific folder only:

Locate the key:
`[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\HTMLHelp\1.x\ItssRestrictions]`

and create a string value called `UrlAllowList` and give it a value of

`\\hostname\sharename\;file://\\hostname\sharename`

where *hostname* is the name of your server and *sharename* is the folder path where the .CHM files are located. This method can be deployed on all PCs on your intranet by using a Group Policy object.

4.2.2 Floppy Disk Drive Spins

Floppy disk drive spins when starting a solver

This has been observed when a virus checking program is active. Try to add the GAMS system directory to the list of directories to be ignored by the virus checker, or disable the virus checker when running the GAMS IDE.

4.2.3 Error Opening a File

Some users are getting an error trying to read a large file into the GAMS IDE.

The message reads something like: 'value must be between 0 and 65538'

The problem is most likely caused by an old DLL. To verify the version of the DLL causing the problem, use explorer, and select the file: `Windows\System\comctl32.dll`
Right mouse click,
select Properties,
select Version.

If the version indicates 4.0, then the outdated version of the DLL is causing the problem.

The DLL cannot be replaced while Windows is running! To replace the DLL, the user needs to obtain a later version (version 4.70 and later works correctly)

1. Put the new version of `comctl32.dll` on a floppy disk
2. On the Start menu, select Shutdown
3. Select Restart computer in MSDOS mode
4. Copy the file from the floppy disk to the `Windows\System` directory
5. Reboot the computer

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