Oz Panel

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mozart

Abstract

The Oz Panel is a graphical tool to visualize and control the most important parameters of a running Mozart system.

Credits

Mozart logo by Christian Lindig

License Agreement

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Usage

This chapter briefly outlines the features of the Oz Panel.

invoking The Panel is invoked by either feeding the expression

```
{Panel.object open}
```

or by selecting from the Oz Menu in the Oz Programming Interface the `Panel` entry. Furthermore, it is possible to invoke the Panel from the Oz Programming Interface with the key `C-C p`.

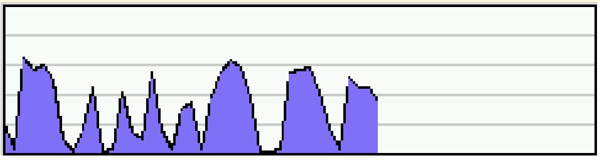
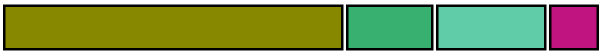
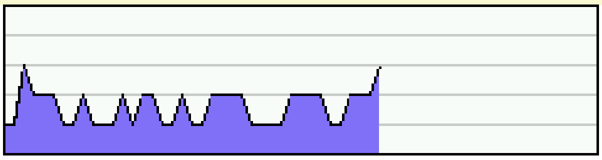
monitor The Panel monitors the most important system parameters. The Panel can be configured (see Section 2.2) to also allow to

configure configure system parameters. The Panel works as a graphical frontend for the procedures `Property.get` and `Property.put` that are described in Chapter *Emulator Properties:* `Property`, *(System Modules)*.

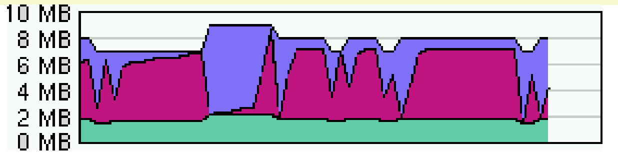
update The panel periodically updates its display. By default, only when the mouse pointer is over the Panel's window updating takes place. However, this can be changed (see Section 2.2).

The information the panel displays is described in Section 1.1, Section 1.2, Section 1.3, and Section 1.4.

1.1 Information on Threads

Runtime **Field**	**Explanation**
Run	Run time.
Garbage collection	Time spent on garbage collection.
Copy	Time spent on copying (that is, on cloning of spaces).
Propagation	Time spent on executing propagators.
	Operating system load of the Mozart engine.
	Relative distribution of entire computation time.
Threads **Field**	**Explanation**
Created	Total number of threads created.
Runnable	Number of currently runnable threads.
	Number of currently runnable threads..
Priorities **Field**	**Explanation**
High / Medium	Relation between time slices available for threads of priorities `high` and `medium`.
Medium / Low	Relation between time slices available for threads of priorities `medium` and `low`.

1.2 Information on Memory

Heap Usage	
Field	**Explanation**
Threshold	Heap size when next automatic garbage collection takes place. Gets recomputed after every garbage collection.
Size	Current heap size.
Active Size	Heap size after last garbage collection.
	Displays the three values from above.
Heap Parameters	
Field	**Explanation**
Minimal Size	Minimal heap size.
Free	Gives the percentage of free heap memory after garbage collection. For example, a value of 75 means that the heap threshold is set to approximately: Active Size$\,*\,100/(100-75)$ that is: Active Size$\,*\,4$.
Tolerance	Gives the percentage by which the system is allowed for purposes of better memory allocation to increase the heap threshold.
Garbage Collector	
Field	**Explanation**
Active	Whether garbage collection is invoked automatically.

1.3 Information on Problem Solving

Finite Domain Constraints	
Field	**Explanation**
Variables Created	Number of finite domain variables created.
Propagators Created	Number of finite domain propagators created.
Propagators Invoked	Number of finite domain propagators invoked.
Spaces	
Field	**Explanation**
Created	Number of computation spaces created by `Space.new`.
Cloned	Number of computation spaces cloned by `Space.clone`.
Committed	Number of computation spaces committed by `Space.commit`.
Failed	Number of failed computation spaces.
Succeeded	Number of succeeded computation spaces.

1.4 Information on Programming Interface

Status Messages	
Field	**Explanation**
Idle	Whether messages are printed when the Mozart engine gets idle.
Garbage Collection	Whether messages on garbage collection are printed.
Output	
Field	**Explanation**
Maximal Depth	Maximal depth used for `System.show` and `System.print` (See also Chapter *Miscelleanous System Support:* `System`, *(System Modules)*).
Maximal Width	Maximal width used for `System.show` and `System.print` (See also Chapter *Miscelleanous System Support:* `System`, *(System Modules)*).
Errors	
Field	**Explanation**
Show Location	Whether error messages contain location information.
Show Hints	Whether error messages contain hints.
Maximal Depth	Maximal depth used for printing values in error messages.
Maximal Width	Maximal width used for printing values in error messages.
Maximal Tasks	Maximal number of tasksk on the thread to be printed.

2

The Menu Bar

2.1 The `Panel` Menu

This menu contains operations to clear and close the panel and to stop the Oz system.

About...

Displays a window containing short information on the Panel.

Reset **`C-r`**

Clears all monitoring information of the Panel.

Save Parameters...

Save the current system parameters settings to a file. Feeding that file resets the system parameters to their saved values.

Shutdown System...

After confirmation with a dialog the entire Oz system is halted.

Close **`C-x`**

Closes the Panel window.

2.2 The `Options` Menu

Configure

Toggles whether the Panel provides for monitoring only, or for both monitoring and configuring.

Update...

Creates a dialog to set options when the Panel updates its display. `Update Time` gives the time period after which the display is updated. `Update Requirement` allows to toggle whether the display is updated, only if the mouse pointer is over the Panel's window.

History...

Creates a dialog to set the history range for the thread and memory graphs.

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The Panel Object

This chapter lists all methods of the Panel object. New Panels can be created by creating new objects from the class Panel.'class'. Execution of

```
MyPanel = {New Panel.'class' init}
```

creates a new Panel which can be accessed by the variable MyPanel.

3.1 Invoking

open

```
{Panel.'object' open}
```

Invokes the Panel.

3.2 Options

option

```
{Panel.'object' option(configure +B)
```

Toggles whether the panel allows to configure system parameters.

option

```
{Panel.'object' option(update time:  +I<=_
                              mouse: +B<=_)}
```

Sets the parameters for updating as described in Section 2.2.

option

```
{Panel.'object' option(history range: +I<=_)
```

Sets the parameters for the history range as described in Section 2.2.

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