Gantt Viewer Documentation

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Introduction

Gantt Viewer is a program that generates and checks Gantt charts.

Input Data

CSV Files

Open a CSV file with **File > Open CSV**. The file consists of a list of flows, tasks, and color settings. Here is an example of such a file:

```
TASKCOLOR  ;  HEATING       ; #FF0000
UNITCOLOR  ;  U2            ; #0000FF
U1         ;  REACTION1     ;   5      ;  10    ;    21;   #00FF00
U2         ;  REACTION2     ;   2      ;  10    ;    35
U2         ;  REACTION3     ;   11     ;  15    ;    35
M1         ;  REACTION4     ;   10     ;  25    ;    56
M1         ;  MIXING1       ;   25     ;  26    ;    56;   #00FF00
M1         ;  REACTION5     ;   26     ;  28    ;    34;   #0000FF
H1         ;  HEATING       ;   25     ;  50    ;    56
H2         ;  HEATING       ;   25     ;  50    ;    56
U1   REACTION1 ( 1 )   ->  M1   MIXING1(  -1 ) =  21
U2   REACTION2 ( 1 )   ->  M1   MIXING1(  -1 ) =  35
M1   MIXING1   ( 1 )   ->  H1   HEATING(  -1 ) =  56
```

A new task is added with the following syntax:

```
<UNITNAME> ; <TASKNAME>     ;   <START>; <END>   ; <AMOUNT>;<COLOR>
```

If no color is given, the task will assume the default task color. If no default task color was defined, the task will generate a random color for itself.

Default task color can be set with the following syntax:

```
TASKCOLOR  ;  <TASKNAME>    ; <COLOR>
```

Unit color can be set with the following syntax:

```
UNITCOLOR  ;  <UNITNAME>    ; <COLOR>
```

Unit colors are only shown if “Color by Unit” is checked.

If a task is added without a default color being set for it, the task will set its color as the default task color for any preceding tasks, wether its color was user defined or randomly generated. The same behavior goes for the unit color.

A new flow is added with the following syntax:

```
<unit1> <task1> (production rate) -> <unit2> <task2> (consuming rate)
= amount
```

GDX Files

Gantt Viewer can also open GDX files. Here is an example of a file:

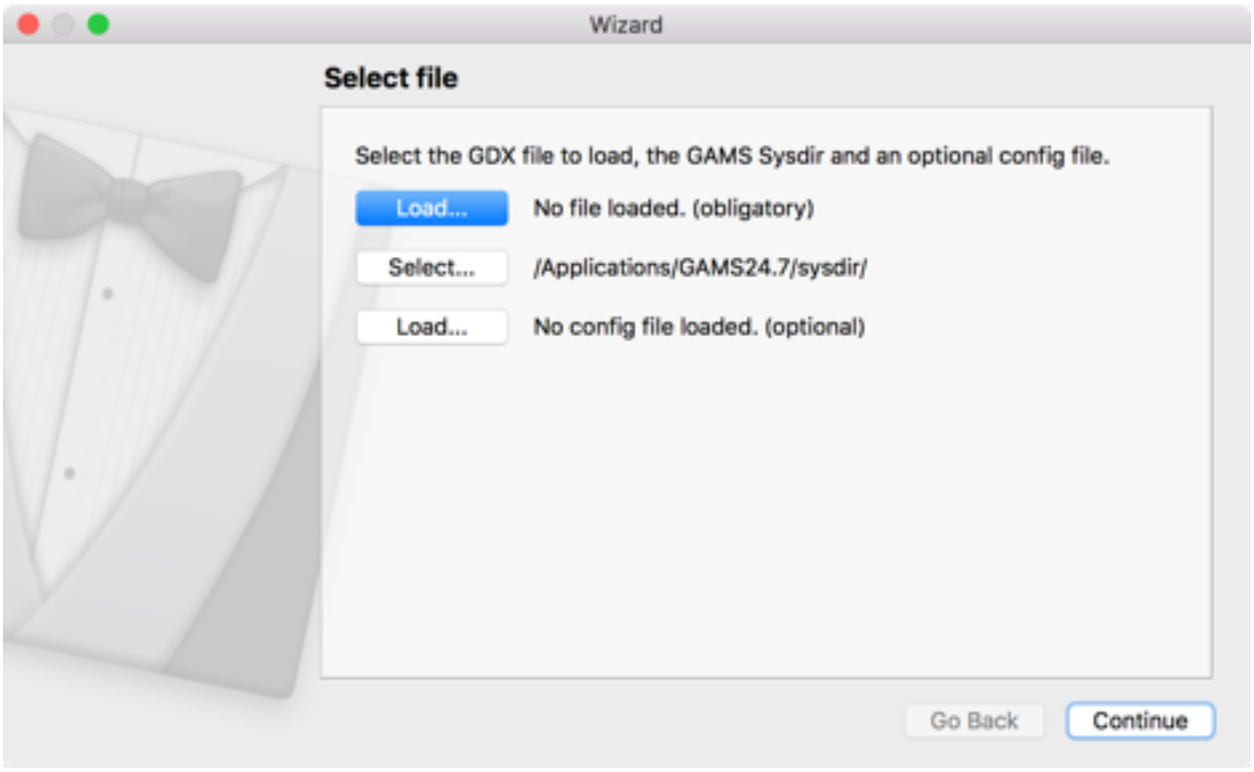
```
Parameter GanttData(*,*,*,*) /
'unit1'.'task1'.'1'.'Start' 10,
'unit1'.'task1'.'1'.'End' 20,
'unit1'.'task1'.'1'.'Color' Eps,
'unit1'.'task1'.'1'.'Amount' 30,
'unit2'.'task2'.'192'.'Start' 46.266667,
'unit2'.'task2'.'192'.'End' 47.99998,
'unit2'.'task2'.'192'.'Amount' 28.665,
'unit2'.'task2'.'192'.'Color' 65280 /;

Parameter FlowData(*,*,*,*,*) /
'unit1'.'task1'.'unit2'.'task2'.'Amount' 23.665,
'unit1'.'task1'.'unit2'.'task2'.'ProductionRate' 1,
'unit1'.'task1'.'unit2'.'task2'.'ConsumptionRate' -1/;
```

Task attributes are stored in variables of four dimensions. The first three dimensions consist of unit name, task name and an index for distinguishing between different tasks with same name and unit. The 4th dimension consists of different symbols for task properties.
The color is defined with a number from 0 to 16^6, which is equivalent to Hexadecimal color coding. The color attribute is optional, it can be left out. Random colors will be generated with the same behavior of a CSV file. (Tasks with the same name will have the same color etc).
Flow attributes are stored in variables of five dimensions. The first four dimensions consist of origin and destination task and unit. The 5th dimension consists of different symbols for flow properties.

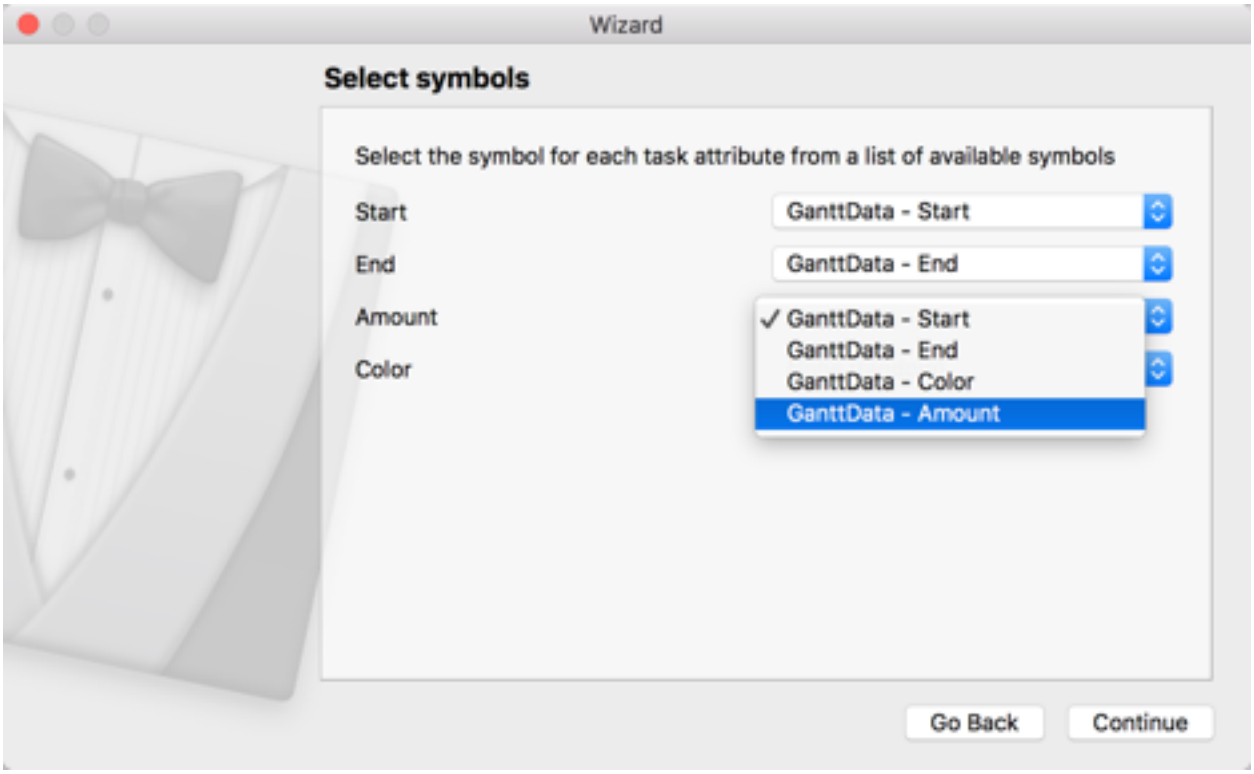
The properties can be stored in different variables. The meaning of each symbol can be selected with the GDX wizard.

File > Open GDX… will launch a wizard to open GDX files.

This will allow the selection of a GDX file, the GAMS sysdir directory (if this wasn't automatically recognized) and an optional config file.



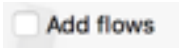
Once **Continue** is clicked, the wizard will scan the selected GDX file for available symbols to read the Task and Flow attributes.



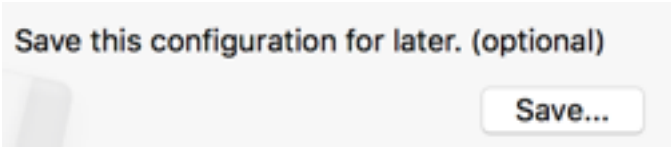
To find flow attribute symbols, the wizard looks for unique symbols in every four-dimensional variable, in the last dimension.
To find task attribute symbols, the wizard looks for unique symbols in every five-dimensional variable, in the last dimension.

If no colors are defined in the GDX, the option “None (random)” will generate random colors as explained earlier.

If the GDX only defines tasks, flows can be disabled by unchecking “Add flows”

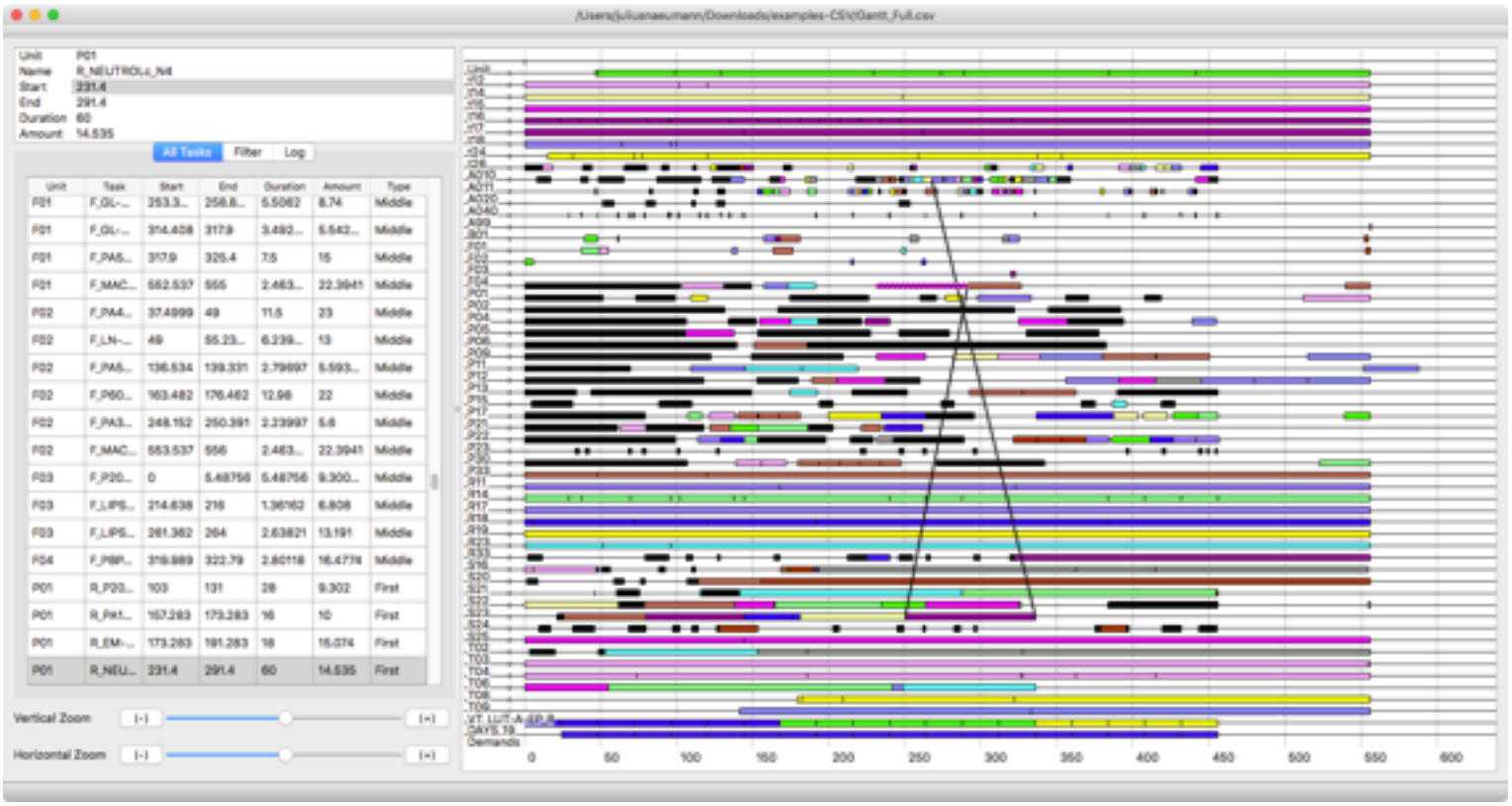


The selected configuration can be saved.



If the wizard is launched and a configuration is loaded, the wizard will reload the saved settings.

Task View



Once data has been loaded, the gantt chart will be shown. If a task is clicked, all flows connected to this task will be visualized. Task attributes will be displayed in the information table, and the according entry is selected in the Tasks Table.

NAVIGATION

The view can be zoomed with Ctrl + scroll wheel. Alternatively, the axes can be scaled individually and more accurately with the zoom buttons or sliders.

Zooming in will activate scroll bars to pan the view. Panning is also possible with shift + drag.

The view can be centered to fit its content with **View>Center View**.

COLORS

There are four different coloring options:

-Color by Color:
Color each task individually, with predefined colors.

-Color by Unit
Color each task by unit. tasks on the same unit will have the same color. This overrides the preset color for individual tasks.

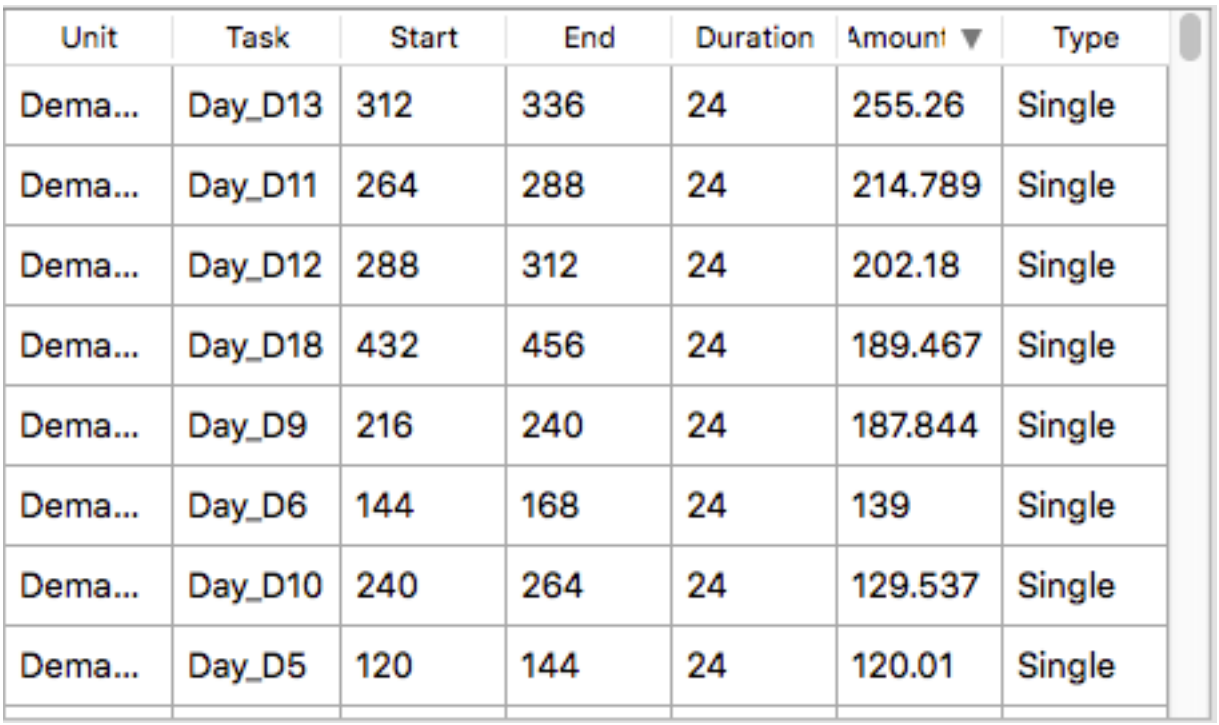
-Color by Task
Color each task by default task color. Tasks with the same name (independent of unit) will have the same color. This overrides the preset color for individual tasks.

-Color by Amount
Tasks will be colored relative to the largest amount on each unit. The task with the most amount on a unit will always be red. If all task amounts on a unit are 0, the tasks will be black.

0% 50% 100%

Tasks Table

The tasks table displays all tasks in a sortable table.



Unit	Task	Start	End	Duration	Amount ▼	Type
Dema...	Day_D13	312	336	24	255.26	Single
Dema...	Day_D11	264	288	24	214.789	Single
Dema...	Day_D12	288	312	24	202.18	Single
Dema...	Day_D18	432	456	24	189.467	Single
Dema...	Day_D9	216	240	24	187.844	Single
Dema...	Day_D6	144	168	24	139	Single
Dema...	Day_D10	240	264	24	129.537	Single
Dema...	Day_D5	120	144	24	120.01	Single

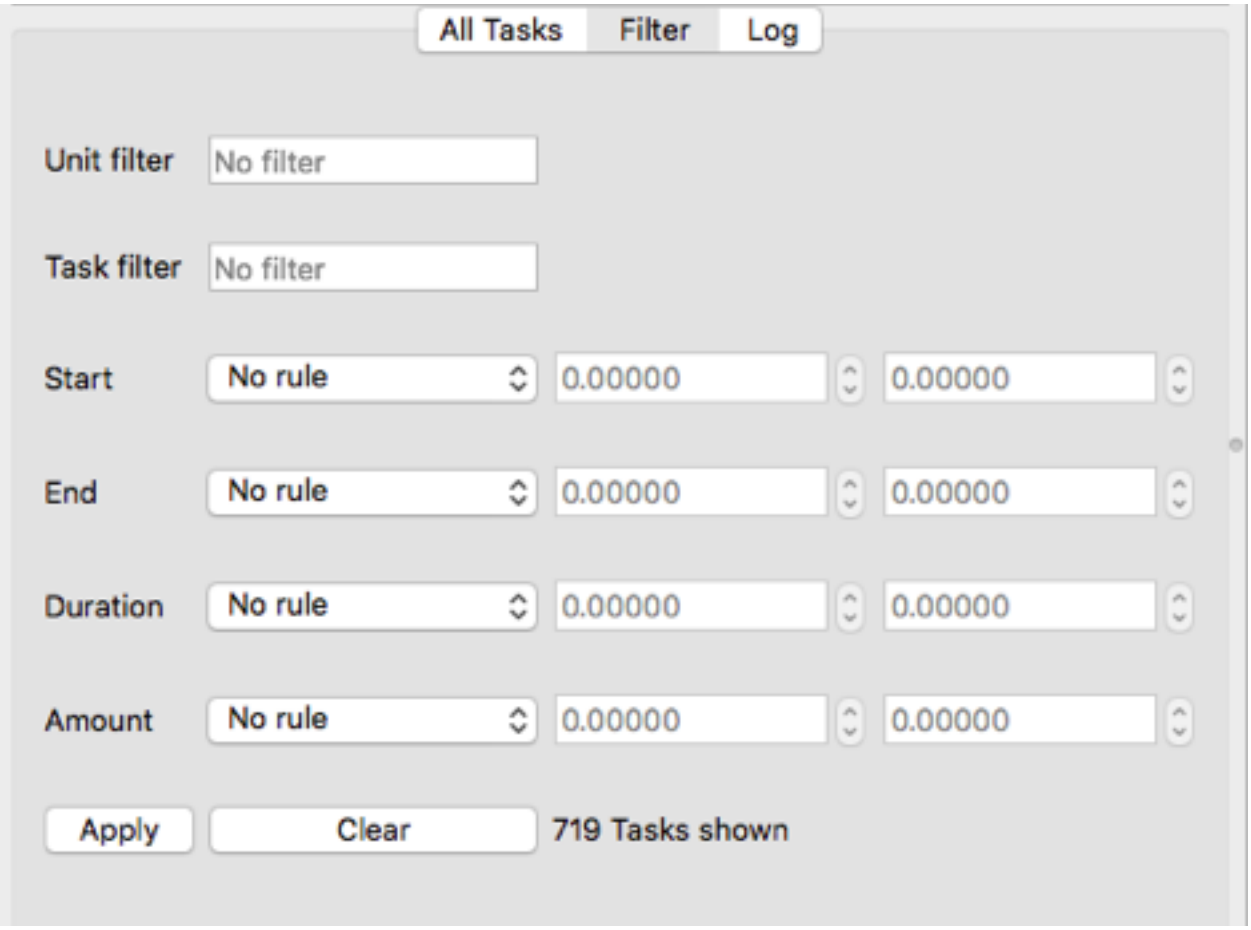
The *type* attribute indicates the position of a task in a flow.

Single:	no connected flows.
Final:	final task, no outgoing flows
First:	first task, no ingoing flows
Middle:	outgoing and ingoing flows

The filter tab allows filtering. Operators for each attribute are:

Greater than	$x > a$
Less than	$x < a$
Between	$a \leq x \leq b$
Outside of	$x \leq a$ or $x \geq b$

The unit and task filter check if the unit or task name contain the search string.



Once a value is changed or **Apply** is clicked, Only tasks conforming to these criteria are shown in the task table and view.

Clear will reset the search and display all tasks.

Checks

A check can be run with **Check > Check**. A dialog asks for the maximum overlap tolerance and shows the check result in the **Log** tab.

WHAT IS CHECKED?

- Overlapping tasks on the same unit
- Unmatched sum of amounts of ingoing and outgoing flows

For every task, the sum of amounts of ingoing flows is compared to the sum of amounts of outgoing flows. It must be equal.