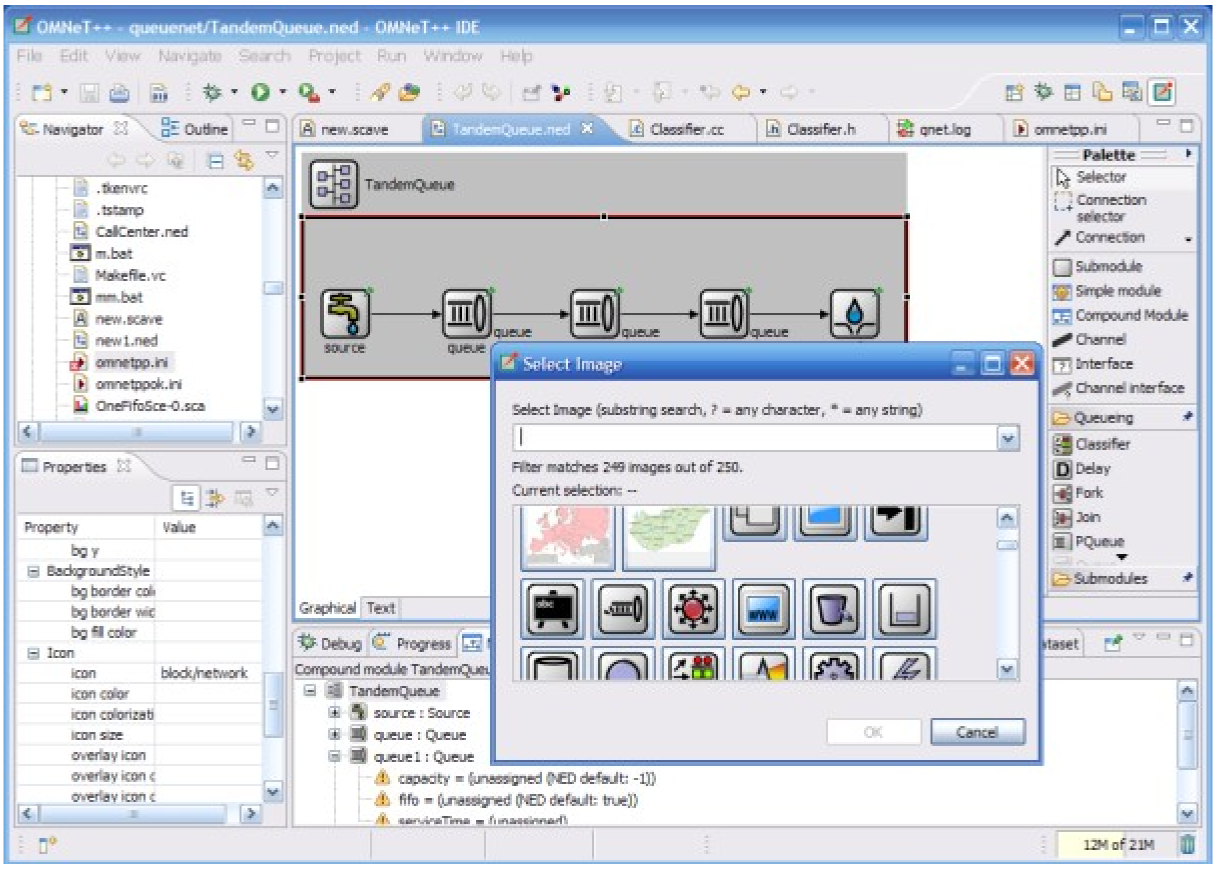
A QUICK OVERVIEW OF THE OMNeT++/OMNEST 4.0 IDE

Introduction

The OMNeT++ 4.0 Integrated Development Environment is based on the Eclipse platform, and extends it with new editors, views, wizards and other functionality. OMNeT++ adds functionality for creating and configuring models (NED and ini files), performing batch executions and analyzing the simulation results, while Eclipse provides C++ editing, CVS/SVN integration and optionally other features (UML modeling, bugtracker integration, database access, etc) via various open-source and commercial plug-ins.

The following screenshots introduce the main components of the OMNeT++ IDE.



Select Image (substring search, ? = any character, * = any string)

Filter matches 249 images out of 250.

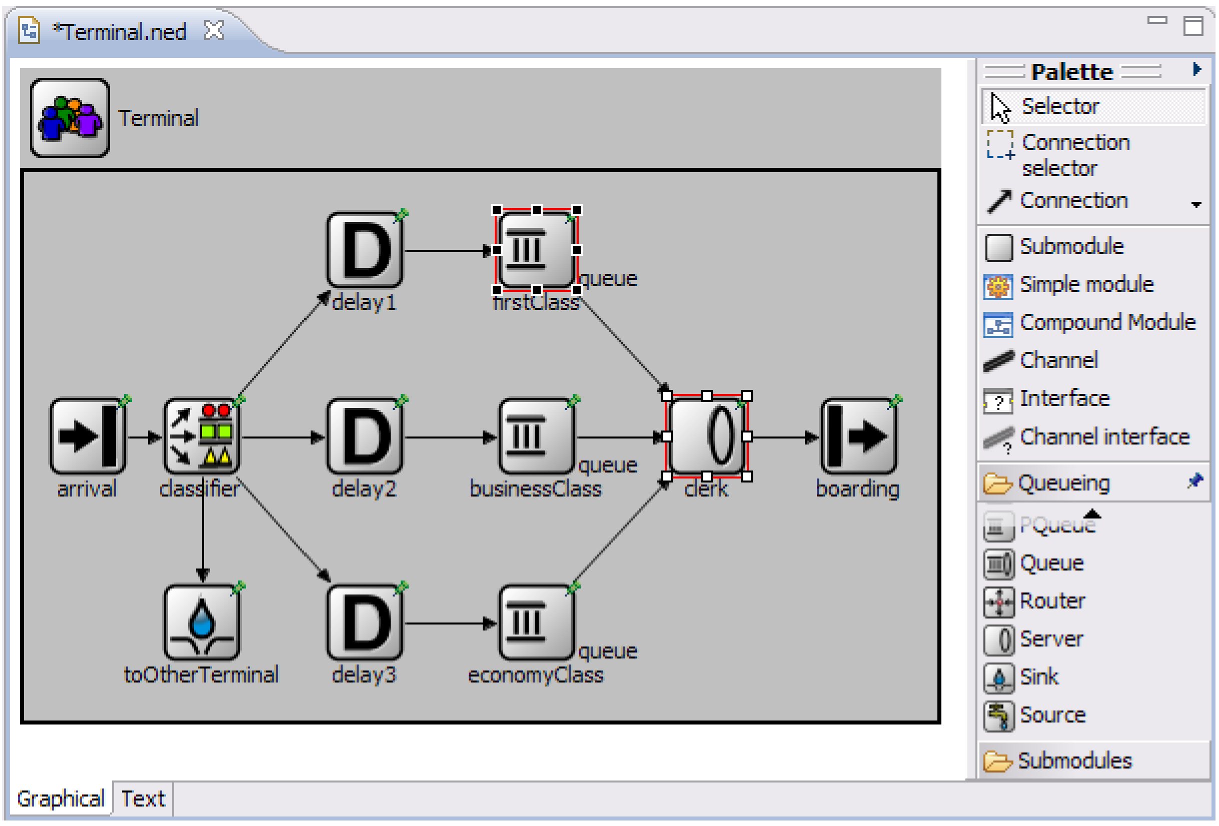
Current selection: --

Compound module TandemQueue
TandemQueue
source : Source
queue : Queue
queue1 : Queue
capacity = (unassigned (NED default: -1))
fifo = (unassigned (NED default: true))
serviceTime = (unassigned)

The OMNeT++ 4.0 IDE, editing a NED file

The NED Editor

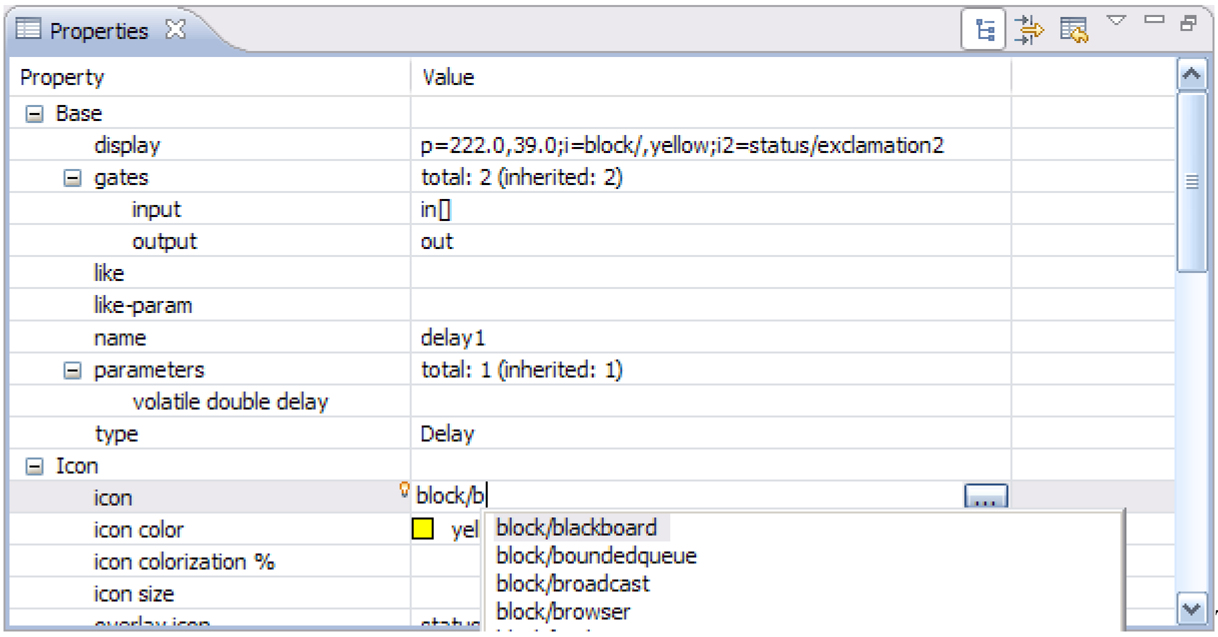
The NED Editor can edit NED files both graphically or in text mode, and the user can switch between the two modes at any time, using the tabs at the bottom of the editor window.



The NED Editor in graphical editing mode

In graphical mode, one can create compound modules, channels, and other component types. Submodules can be created using the palette of available module types. Visual and non-visual properties can be modified in the Properties View, or by dialogs invoked from the context menu. The editor offers unlimited undo/redo, object cloning, constrained move and resize, aligning objects, zooming, and many other possibilities.

Submodules can be pinned (having a fixed position), or unpinned (autolayouted). Graphical features that can be edited include background image, background grid, default icons (via display string inheritance), icon sizing and coloring, transmission range, and many others.


Properties

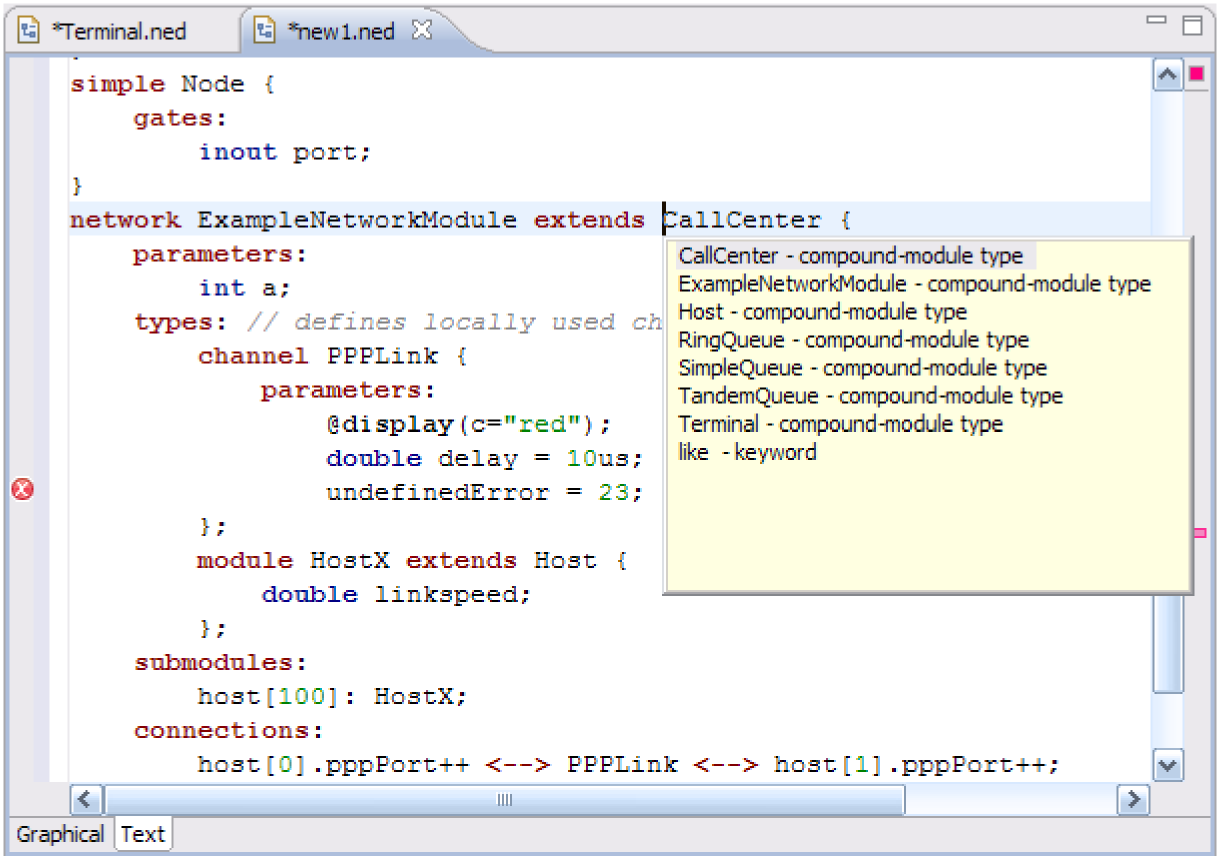
Property	Value
⊟ Base	
display	p=222.0,39.0;i=block/,yellow;i2=status/exclamation2
⊟ gates	total: 2 (inherited: 2)
input	in[]
output	out
like	
like-param	
name	delay1
⊟ parameters	total: 1 (inherited: 1)
volatile double delay	
type	Delay
⊟ Icon	
icon	block/b
icon color	🟨 yel
icon colorization %	
icon size	

```
block/blackboard
block/boundedqueue
block/broadcast
block/browser
```

TOD
O: view should be half as high

Properties view

The Properties View lets the user edit graphical and non-graphical properties of objects. Special cell editors facilitate selecting colors, icons, etc. Undo and redo is supported for property changes too. The Properties View is also used with other editors like Result Analysis, where the user can customize charts and other objects with it.


*Terminal.ned   *new1.ned

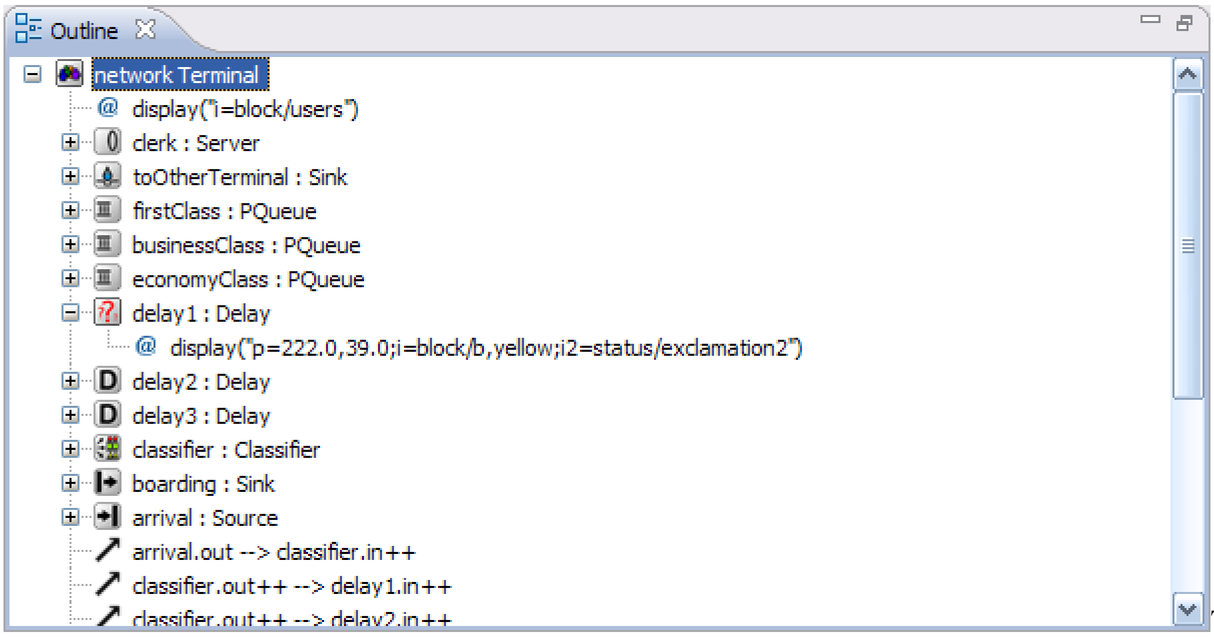
```
simple Node {
    gates:
        inout port;
}
network ExampleNetworkModule extends CallCenter {
    parameters:
        int a;
    types: // defines locally used ch
        channel PPPLink {
            parameters:
                @display(c="red");
                double delay = 10us;
                undefinedError = 23;
        };
        module HostX extends Host {
            double linkspeed;
        };
    submodules:
        host[100]: HostX;
    connections:
        host[0].pppPort++ <--> PPPLink <--> host[1].pppPort++;
```

```
CallCenter - compound-module type
ExampleNetworkModule - compound-module type
Host - compound-module type
RingQueue - compound-module type
SimpleQueue - compound-module type
TandemQueue - compound-module type
Terminal - compound-module type
like  - keyword
```

Graphical | Text

The NED Editor in source editing mode

Text mode lets the user work with the NED source directly. When hitting Ctrl+Space, the editor offers context-aware completion of keywords, module type names, parameter, gate and submodule names. Template proposals to insert full compound module skeletons, submodules, various connection structures etc. are also available. Documentation of referenced module types can be viewed by hovering over the NED type name. The NED source is continually parsed and validated as the user is typing, and errors are displayed at real time on the left margin. Syntax highlighting, automatic indentation, and automatic conversion from the OMNeT++ 3.x NED syntax are also provided.



```
network Terminal
    display("i=block/users")
    clerk : Server
    toOtherTerminal : Sink
    firstClass : PQueue
    businessClass : PQueue
    economyClass : PQueue
    delay1 : Delay
        display("p=222.0,39.0;i=block/b,yellow;i2=status/exclamation2")
    delay2 : Delay
    delay3 : Delay
    classifier : Classifier
    boarding : Sink
    arrival : Source
    arrival.out --> classifier.in++
    classifier.out++ --> delay1.in++
    classifier.out++ --> delay2.in++
```

TODO: smaller screenshot (height /= 2)

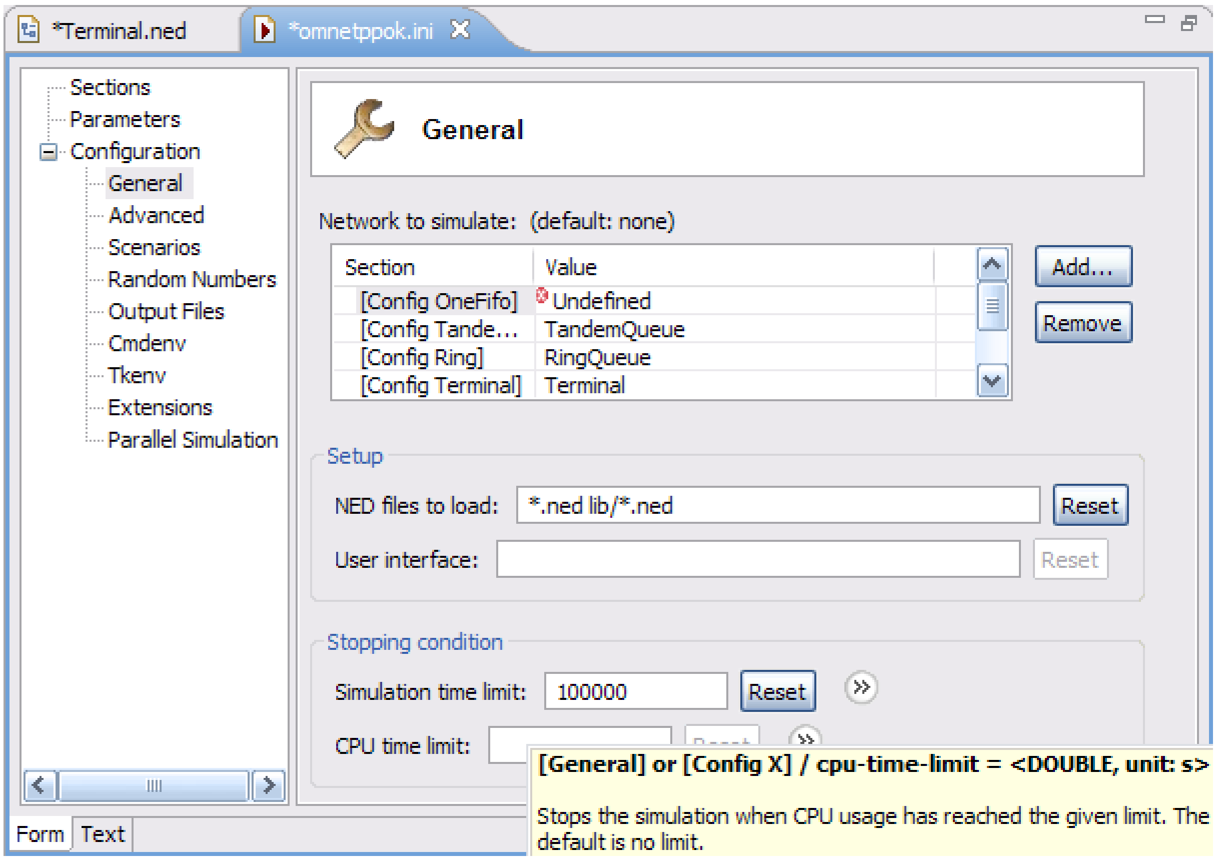
Outline View

The Outline View shows the structure of NED files in both graphical and text editing mode, and allows navigation as well.

Other Views. The Module Hierarchy View and the NED Parameters View can also be used with the NED Editor (they will display the submodule hierarchy and the parameters of the selected module or submodule) – these views will be described with the Ini File Editor. Further related views are the Problems View (which displays errors and warnings in NED files and other files), and Tasks View (which shows a list of all FIXME and TODO comments found in NED files and other source files.)

The Ini File Editor

The Ini File Editor lets the user configure simulation models for execution. It features both form-based and source editing.



Network to simulate: (default: none)

Section	Value
[Config OneFifo]	Undefined
[Config Tande…	TandemQueue
[Config Ring]	RingQueue
[Config Terminal]	Terminal

NED files to load: *.ned lib/*.ned

User interface:

Simulation time limit: 100000

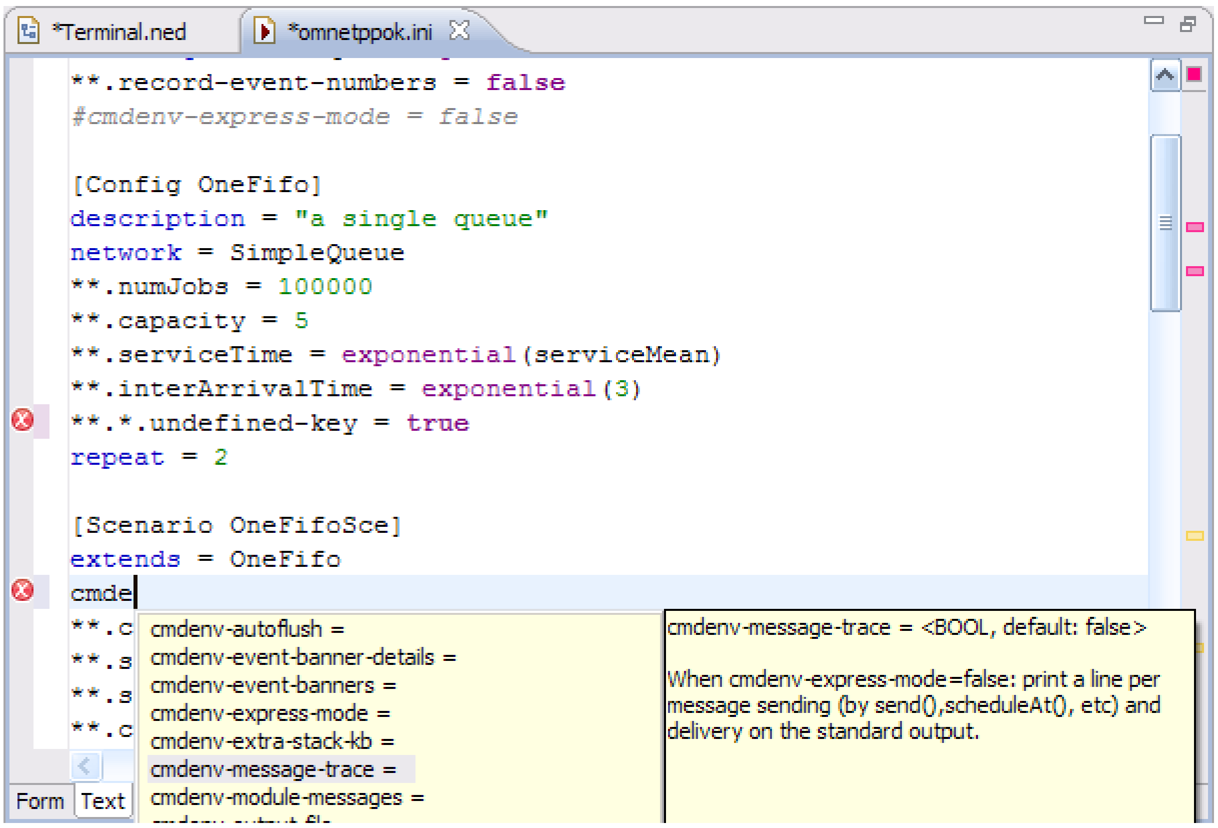
CPU time limit:

[General] or [Config X] / cpu-time-limit = <DOUBLE, unit: s>

Stops the simulation when CPU usage has reached the given limit. The default is no limit.

Form-based ini file editing

The Ini File editor knows about all supported configuration options and offers them on several forms, organized by topics. Descriptions and default values are displayed in tooltips, which can be made persistent for easier reading. The structure of the ini file (sections and their inheritance tree) is also visualized and editable via drag&drop and dialogs. Validation and content assist (Ctrl+Space) are also provided where needed. The editor supports unlimited undo/redo, and automatic conversion from OMNeT++ 3.x ini files.



```
**.record-event-numbers = false
#cmdenv-express-mode = false

[Config OneFifo]
description = "a single queue"
network = SimpleQueue
**.numJobs = 100000
**.capacity = 5
**.serviceTime = exponential(serviceMean)
**.interArrivalTime = exponential(3)
**.*.undefined-key = true
repeat = 2

[Scenario OneFifoSce]
extends = OneFifo
cmde
**.c
**.s
**.s
**.c
```

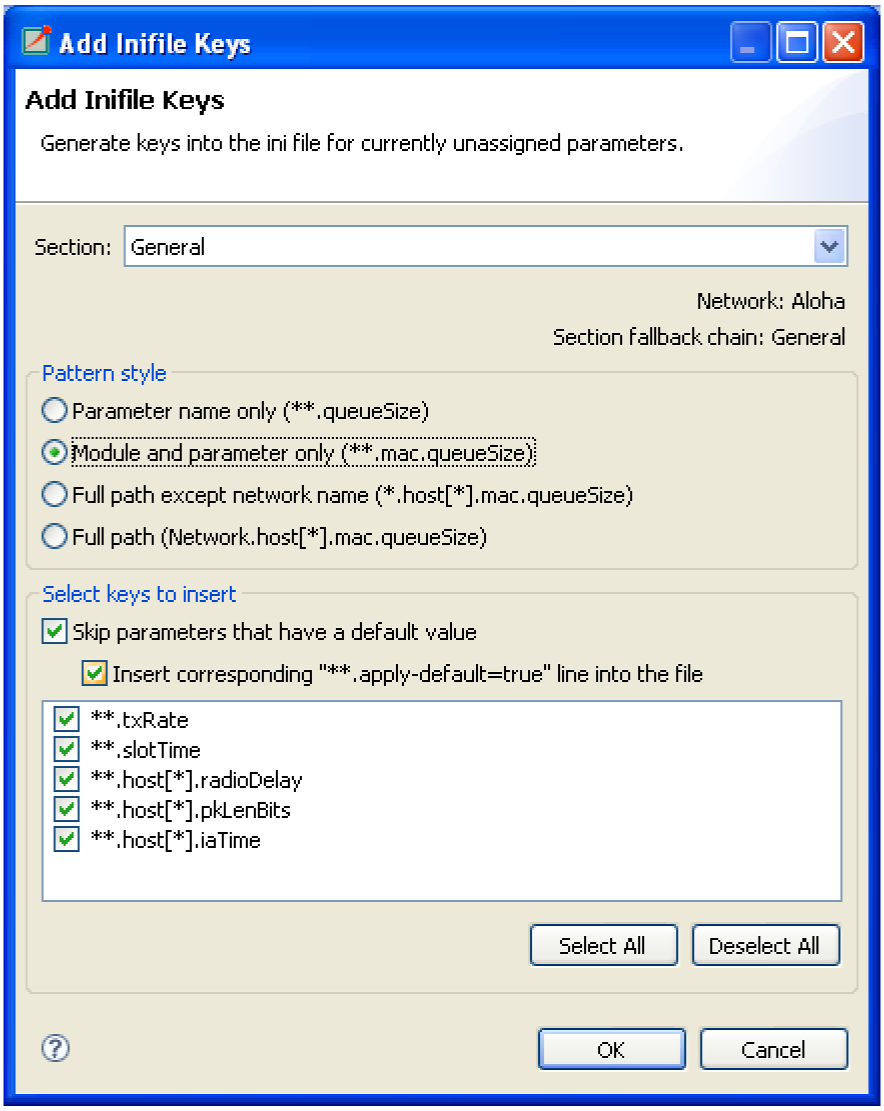
```
cmdenv-autoflush =
cmdenv-event-banner-details =
cmdenv-event-banners =
cmdenv-express-mode =
cmdenv-extra-stack-kb =
cmdenv-message-trace =
cmdenv-module-messages =
```

```
cmdenv-message-trace = <BOOL, default: false>

When cmdenv-express-mode=false: print a line per
message sending (by send(),scheduleAt(), etc) and
delivery on the standard output.
```

The ini file source editor

The text editor lets the user work with the ini file directly, which will be more efficient for advanced users than forms. Unlimited undo/redo, syntax coloring, completion of configuration keys, values and module parameter patterns (on Ctrl+Space) are provided. As the user types, the file is continually being analyzed, and errors/warnings are displayed at real time.

The editor knows about all NED declarations (simple modules, compound modules, channels, etc), and can fully exploit this information for providing diagnostics and assistance to the user. Looking at the *network*= configuration key, it knows the top-level compound module NED type, and internally builds a static picture of the network by recursively enumerating the top-level module's submodules, sub-submodules, sub-sub-submodules, etc – and continually relates this information to the ini file contents. Thus the editor always knows which ini file keys match which module parameters, which are the ini file keys that are unused (won't match anything), and which module parameters are still open (i.e. have no value assigned yet), and displays this information in tooltips, as warnings, and in various views.


Add Inifile Keys

Add Inifile Keys

Generate keys into the ini file for currently unassigned parameters.

Section: General

Network: Aloha

Section fallback chain: General

Pattern style

- ○ Parameter name only (**.queueSize)
- ● Module and parameter only (**.mac.queueSize)
- ○ Full path except network name (*.host[*].mac.queueSize)
- ○ Full path (Network.host[*].mac.queueSize)

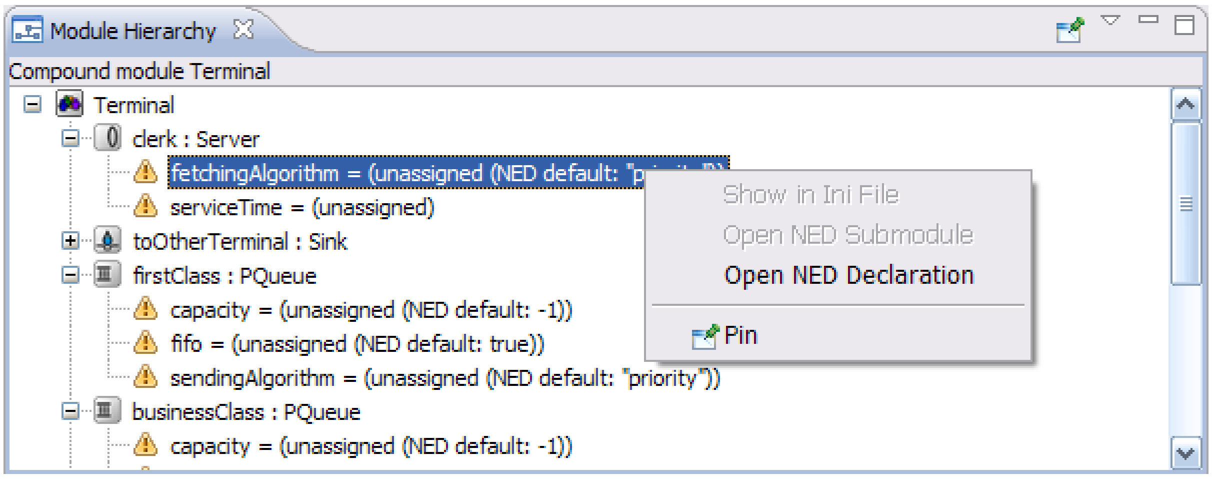
Select keys to insert

- ✓ Skip parameters that have a default value
  - ✓ Insert corresponding "**.apply-default=true" line into the file

- ✓ **.txRate
- ✓ **.slotTime
- ✓ **.host[*].radioDelay
- ✓ **.host[*].pkLenBits
- ✓ **.host[*].iaTime

The Add Missing Keys dialog

To speed up the process of creating ini files from scratch, the editor offers an *Add Missing Keys* dialog. On clicking OK, the editor will insert ini file keys for all open NED parameters, and the user only needs to supply the values.


Module Hierarchy

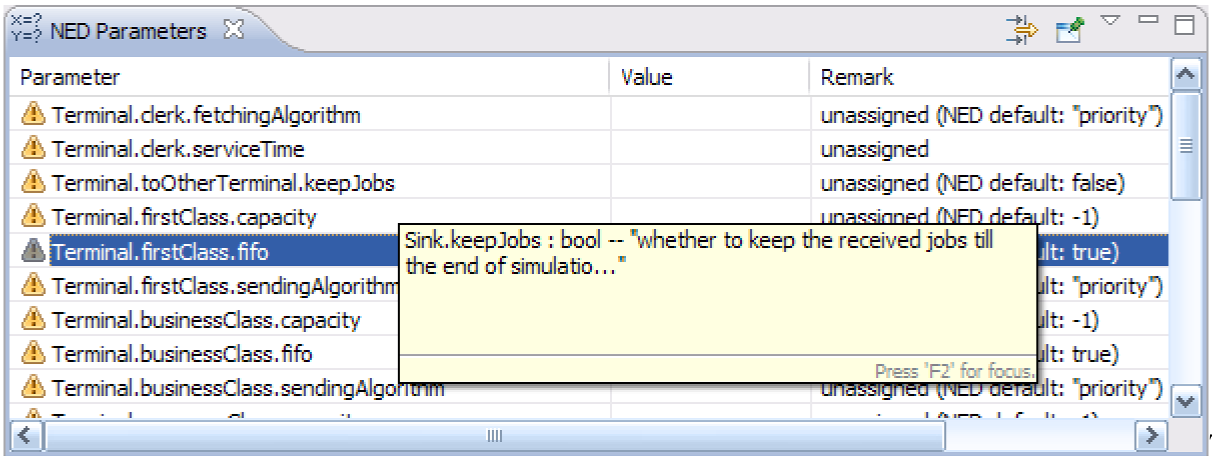
Compound module Terminal

```
Terminal
  clerk : Server
    fetchingAlgorithm = (unassigned (NED default: "p
    serviceTime = (unassigned)
  toOtherTerminal : Sink
  firstClass : PQueue
    capacity = (unassigned (NED default: -1))
    fifo = (unassigned (NED default: true))
    sendingAlgorithm = (unassigned (NED default: "priority"))
  businessClass : PQueue
    capacity = (unassigned (NED default: -1))
```

Module Hierarchy View

The Module Hierarchy View displays the submodule hierarchy of the network of the current configuration, together with the module's parameters. It shows how module parameters obtain their values (from NED, by applying a NED default value, or the from ini file). It is able to resolve simple cases where a submodule type comes from a string parameter (NED's *like* keyword). By using the context menu, the user can go to the NED declaration of a module, submodule, parameter, gate, or to the place where a parameter gets its value (in NED or in the ini file).

The View can be pinned to a particular editor, to prevent its contents from changing when the user switches across NED and ini file editors.



NED Parameters

Parameter	Value	Remark
Terminal.clerk.fetchingAlgorithm		unassigned (NED default: "priority")
Terminal.clerk.serviceTime		unassigned
Terminal.toOtherTerminal.keepJobs		unassigned (NED default: false)
Terminal.firstClass.capacity		unassigned (NED default: -1)
Terminal.firstClass.fifo		...lt: true)
Terminal.firstClass.sendingAlgorithm		...lt: "priority")
Terminal.businessClass.capacity		...lt: -1)
Terminal.businessClass.fifo		...lt: true)
Terminal.businessClass.sendingAlgorithm		unassigned (NED default: "priority")

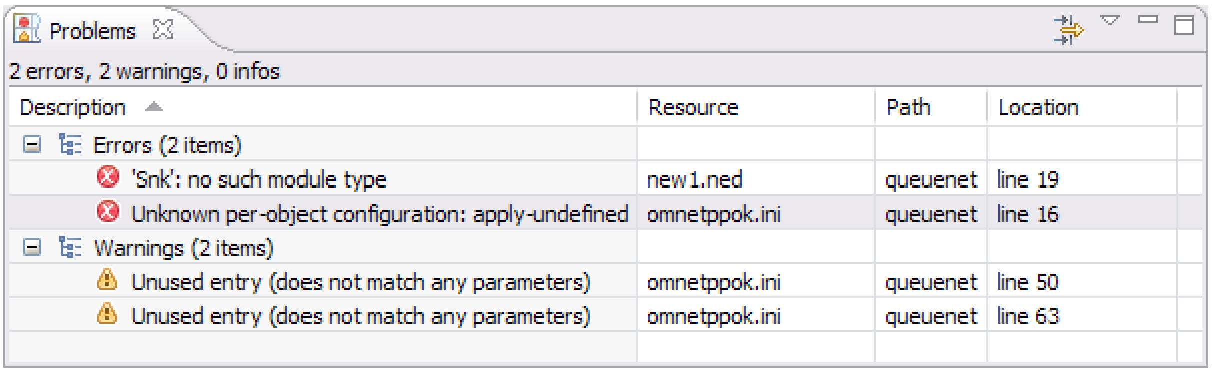
Sink.keepJobs : bool -- "whether to keep the received jobs till the end of simulatio..."

Press 'F2' for focus.

TODO: better screenshot

The NED Parameters View

By default, the NED Parameters View displays the table of all unassigned NED parameters in the network of the current configuration, and it can be switched over to show all parameters, assigned or unassigned. For assigned parameters, it shows how they obtain their values (from NED, by applying a NED default value, or the from ini file), and the user can open the relevant places in the NED files or the ini file. This View can also be pinned.



Problems

2 errors, 2 warnings, 0 infos

Description	Resource	Path	Location
Errors (2 items)			
'Snk': no such module type	new1.ned	queuenet	line 19
Unknown per-object configuration: apply-undefined	omnetppok.ini	queuenet	line 16
Warnings (2 items)			
Unused entry (does not match any parameters)	omnetppok.ini	queuenet	line 50
Unused entry (does not match any parameters)	omnetppok.ini	queuenet	line 63

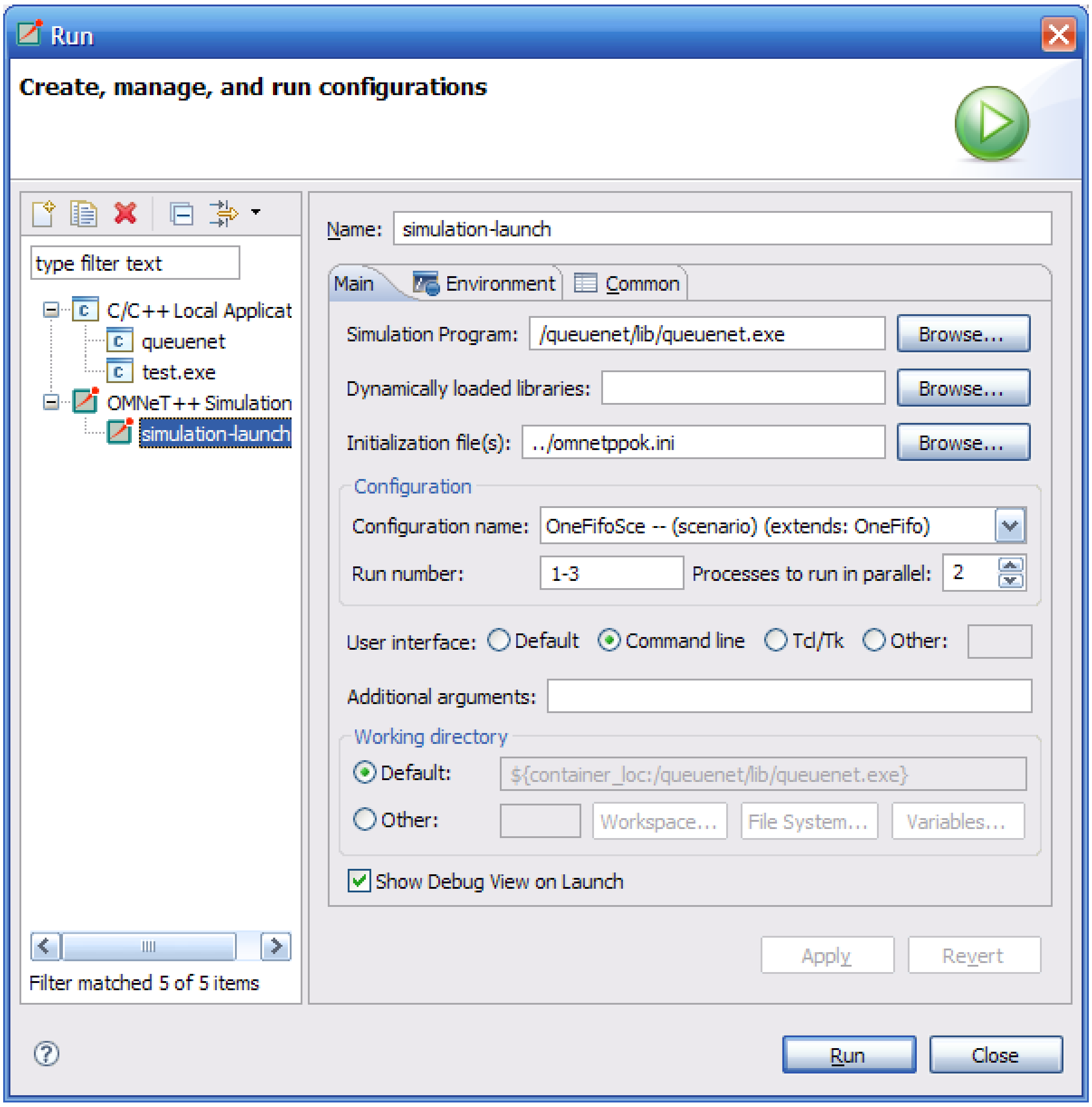
The Problems View

The Problems View presents errors, warnings and info messages in NED files, ini files and other source files in a unified manner. Double-clicking on an item opens the corresponding file and goes the error's location. The view's contents can be filtered in various ways (current file, current project, all projects, by severity, etc).

Other Views. The Outline View displays the list of sections in the current ini file, and can be used for navigation as well.

Simulation Launcher

The OMNeT++ IDE makes it possible to run simulations directly from the integrated environment. It is possible to run a simulation as a normal C/C++ application and perform C++ source-level debugging on it; to run it as a standalone application (under Tkenv or Cmdenv); or to run batches of simulations where runs differ in module parameter settings or random number seeds. (NOTE: an Eclipse-based runtime environment [“IDEEnv”] does not exist yet, it is planned for future releases.)


Run

Create, manage, and run configurations

type filter text

- C/C++ Local Applicat
  - queuenet
  - test.exe
- OMNeT++ Simulation
  - simulation-launch

Filter matched 5 of 5 items

Name: simulation-launch

Main | Environment | Common

Simulation Program: /queuenet/lib/queuenet.exe

Dynamically loaded libraries:

Initialization file(s): ../omnetppok.ini

Configuration

Configuration name: OneFifoSce -- (scenario) (extends: OneFifo)

Run number: 1-3 Processes to run in parallel: 2

User interface: Default [✓ Command line] Tcl/Tk Other:

Additional arguments:

Working directory

[✓ Default:] ${container_loc:/queuenet/lib/queuenet.exe}

Other:

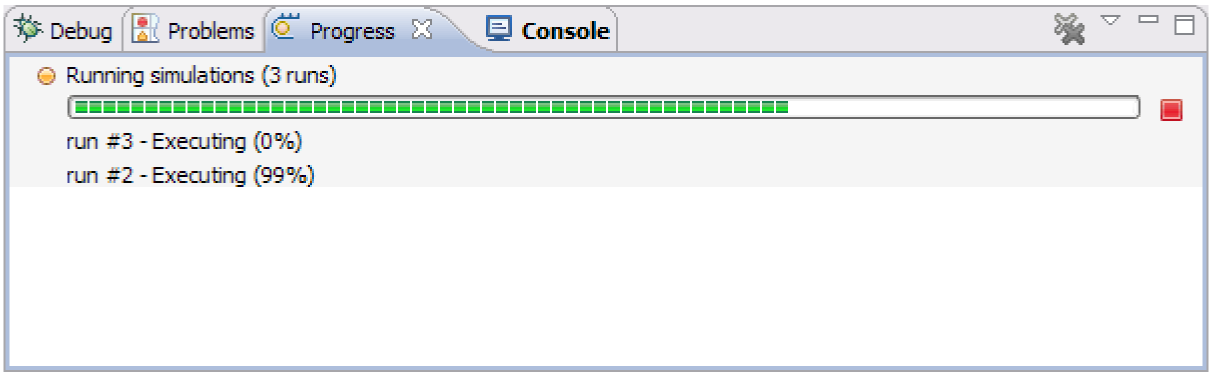
[✓] Show Debug View on Launch

The Run dialog showing a simulation launch configuration

In the Eclipse IDE, the various ways of launching a program being developed is described by launch configurations. There are various launch configuration types (C/C++ Application, Java Application, etc). To launch a program for the first time, the user creates an instance of a launch configuration, fills in a form (program name, command-line arguments, etc.), and hits the Run button. OMNeT++ provides launch configuration types for simulations: one extends the normal “C/C++ Local Application” launch type with a *Simulation* tab (for convenient editing of simulation-related command-line options), and a standalone launch type for launching a simulation or running simulation batches. The former can be used for C++ debugging as well.

The dialog shows a standalone launch type for the QueueNet example simulation model. Batch simulations can be launched by specifying more than one run number in the dialog. Ini files (enhanced in the 4.0 release) allow the user define various scenarios that iterate over a list of values for certain NED parameters, and/or do multiple runs with different seeds; the launch dialog helps the user select the desired run numbers by showing which runs correspond to which parameter and seed settings.

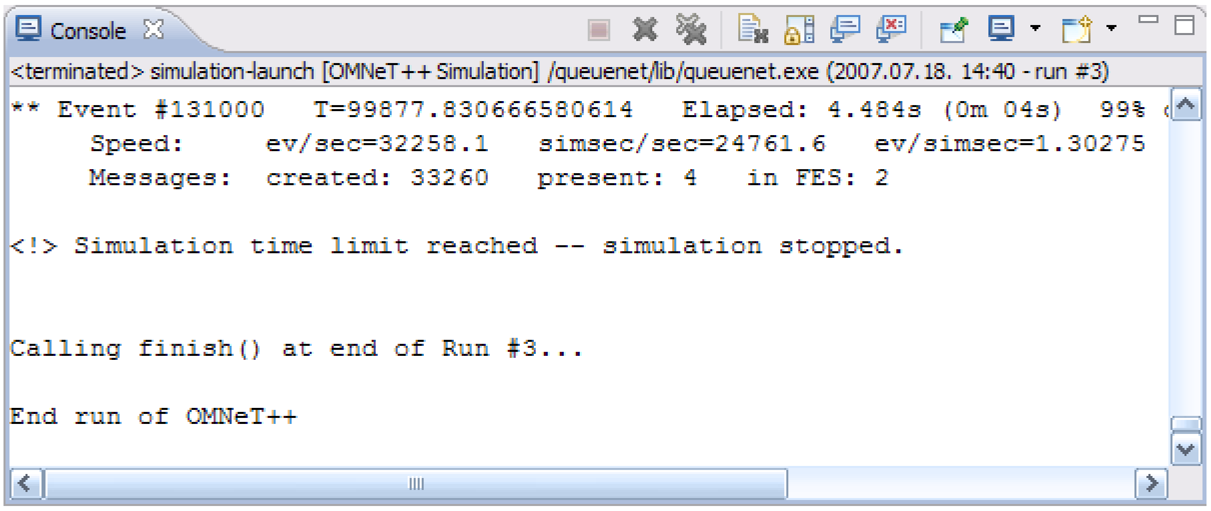
Multi-processor or multi-core computers can be exploited by specifying that more than one process may be launched (i.e. may be running) at a time.



Running simulations (3 runs)
run #3 - Executing (0%)
run #2 - Executing (99%)

Progress View

The Progress View reports the status of simulation execution when you have a long-running simulation, or you are executing several runs in a batch. It is possible to cancel the whole batch operation with a single click if it is necessary. Simulation runs are running in different processes that do not block the IDE, so the user can keep working while her simulations are running in the background. In the above screenshot, the number of processes to run in parallel was set to 2; run #1 has already terminated (and is no longer shown), and run #3 already got launched while run #2 is still running.

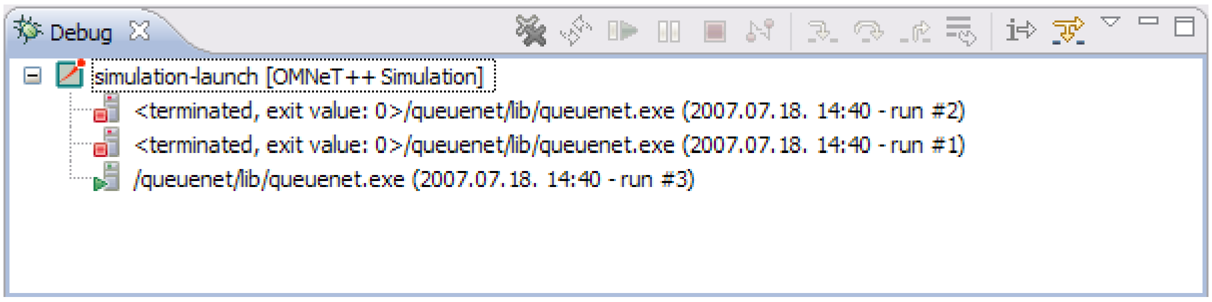


<terminated> simulation-launch [OMNeT++ Simulation] /queuenet/lib/queuenet.exe (2007.07.18. 14:40 - run #3)

```
** Event #131000   T=99877.830666580614   Elapsed: 4.484s (0m 04s)   99% 
     Speed:     ev/sec=32258.1   simsec/sec=24761.6   ev/simsec=1.30275
     Messages:  created: 33260   present: 4   in FES: 2

<!> Simulation time limit reached -- simulation stopped.


Calling finish() at end of Run #3...

End run of OMNeT++
```

Console View

Each running process sends its output to a separate console buffer within the Console View, so the user can review the output after the simulation(s) have finished. One can switch between console buffers using the Console View's menu or toolbar, or by double-clicking on a process in the Debug View.



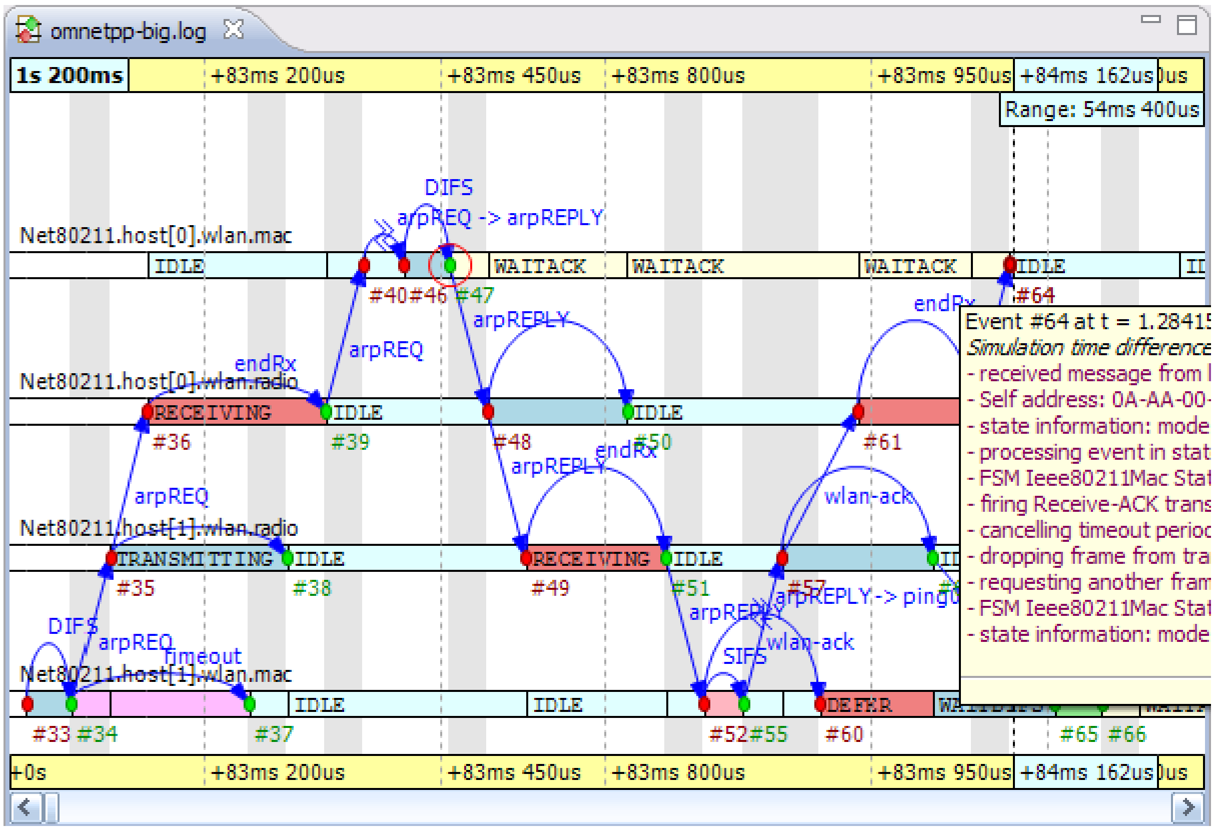
```
simulation-launch [OMNeT++ Simulation]
    <terminated, exit value: 0>/queuenet/lib/queuenet.exe (2007.07.18. 14:40 - run #2)
    <terminated, exit value: 0>/queuenet/lib/queuenet.exe (2007.07.18. 14:40 - run #1)
    /queuenet/lib/queuenet.exe (2007.07.18. 14:40 - run #3)
```

The Debug View showing three runs in a simulation batch.

The Debug View is another one of Eclipse's standard Views, but it is not only useful for debugging. While the Progress View only shows currently executing processes, the Debug View displays the ones already terminated as well, together with their exit codes. Processes are marked with the run number and launch time for easier identification. Double-clicking an item reveals the process' output in the Console View.

Sequence Chart

The OMNeT++ 4.0 simulation kernel is capable of logging various events during simulation: scheduling and canceling self-messages, sending messages, display changes, module and connection creation and deletion, user log messages, etc. The result is an event log file which contains detailed information of the simulation, and later can be used for various purposes, such as visualizing message exchange among modules on a sequence chart. The file format is line-based text to facilitate processing by third party tools.

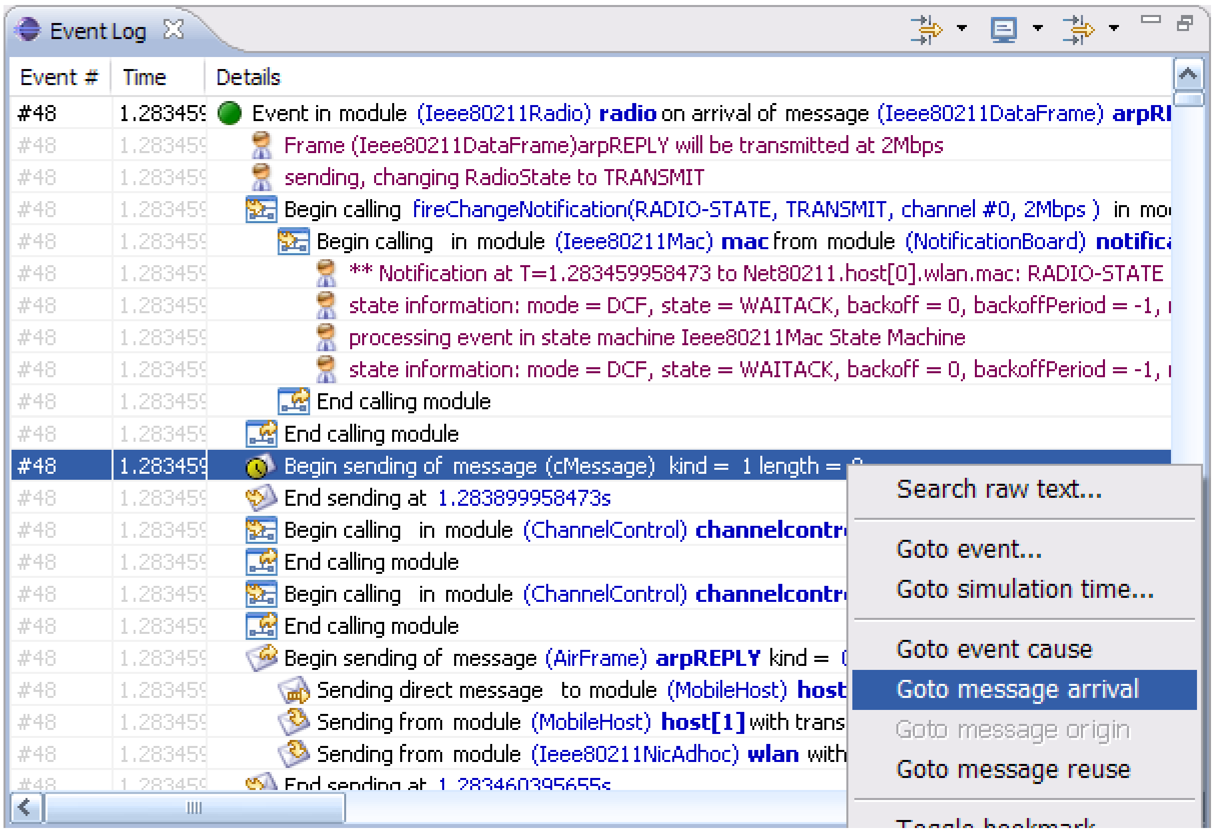


```
Event #64 at t = 1.28415
Simulation time difference
- received message from l
- Self address: 0A-AA-00-
- state information: mode
- processing event in stat
- FSM Ieee80211Mac Stat
- firing Receive-ACK trans
- cancelling timeout perioc
- dropping frame from tra
- requesting another fram
- FSM Ieee80211Mac Stat
- state information: mode
```

A Sequence Chart showing ARP on a wireless network

An event log can be visualized with the Sequence Chart in the IDE. On the Sequence Chart, events are represented with nodes, and message send/schedule/reuse operations with arrows. The chart can be filtered by modules, message types, and various other criteria. The chart can also be filtered to the causes/consequences of a particular event (this works by following message arrows backward and forward in simulation time). The chart timeline can be displayed in various modes, such as linear (simulation time), compact (non-linear), and event number-based. Sorting of module axes, displaying state vector data on axes (using output vector files), zooming, and special navigation options (bookmarks, zoom to message send, follow message send), and exporting the chart in SVG format.

Both the Event Log Table and the Sequence Chart are capable of efficiently displaying event log files of several gigabytes without requiring large amounts of memory.



Event #	Time	Details
#48	1.283459	Event in module (Ieee80211Radio) **radio** on arrival of message (Ieee80211DataFrame) **arpRI**
#48	1.283459	Frame (Ieee80211DataFrame)arpREPLY will be transmitted at 2Mbps
#48	1.283459	sending, changing RadioState to TRANSMIT
#48	1.283459	Begin calling fireChangeNotification(RADIO-STATE, TRANSMIT, channel #0, 2Mbps) in mo
#48	1.283459	Begin calling in module (Ieee80211Mac) **mac** from module (NotificationBoard) **notific**
#48	1.283459	** Notification at T=1.283459958473 to Net80211.host[0].wlan.mac: RADIO-STATE
#48	1.283459	state information: mode = DCF, state = WAITACK, backoff = 0, backoffPeriod = -1,
#48	1.283459	processing event in state machine Ieee80211Mac State Machine
#48	1.283459	state information: mode = DCF, state = WAITACK, backoff = 0, backoffPeriod = -1,
#48	1.283459	End calling module
#48	1.283459	End calling module
#48	1.283459	Begin sending of message (cMessage) kind = 1 length =
#48	1.283459	End sending at 1.283899958473s
#48	1.283459	Begin calling in module (ChannelControl) **channelcontr**
#48	1.283459	End calling module
#48	1.283459	Begin calling in module (ChannelControl) **channelcontr**
#48	1.283459	End calling module
#48	1.283459	Begin sending of message (AirFrame) **arpREPLY** kind =
#48	1.283459	Sending direct message to module (MobileHost) **host**
#48	1.283459	Sending from module (MobileHost) **host[1]** with trans
#48	1.283459	Sending from module (Ieee80211NicAdhoc) **wlan** with
#48	1.283459	End sending at 1.283460395655s

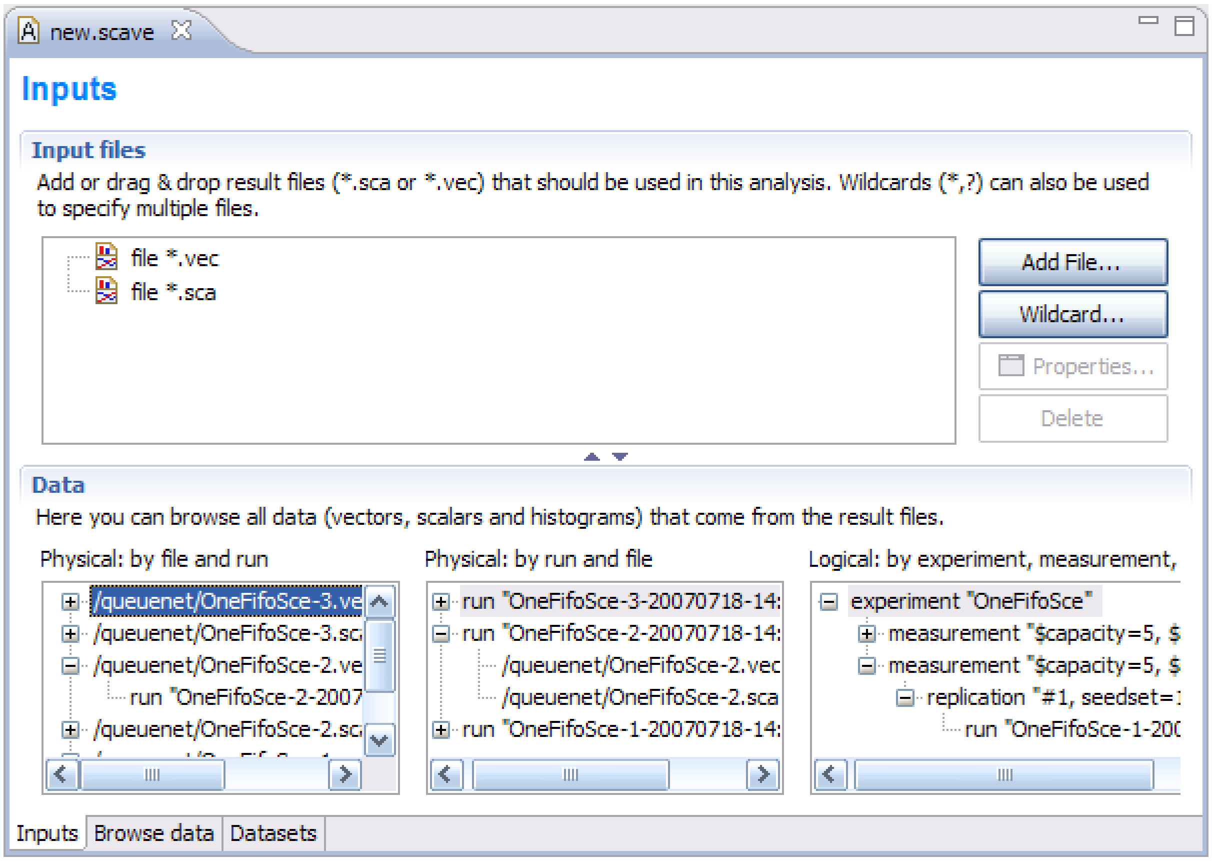
The Event Log View

The Event Log Table displays the content of an event log file recorded during a simulation. It supports raw and descriptive notations, line based filtering for event log entry types and various parameters, search for free text, bookmarks and special navigation options such as go to simulation time or message arrival. The Event Log Table supports the same filtering as the Sequence Chart.

Scave (Result Analysis)

Scave is the result analysis tool of OMNeT++, and its task is to help the user process and visualize simulation results saved into vector and scalar files. Scave is designed so that the user can work equally well on the output of a single simulation run (one or two files) and the result of simulation batches (which may be several hundred files, possibly in multiple directories). Ad-hoc browsing of the data is supported just as well as systematic and repeatable processing. The latter means that all processing and charts are stored as “recipes”; for example, if simulations need to be re-run due to a model bug or misconfiguration, existing charts need not be drawn all over again, but simply replacing the old result files with the new ones will result in the charts being automatically displayed with the new data.

Scave is implemented as a multi-page editor. What the editor edits is the “recipe”: what result files to take as inputs, what data to select from them, what (optional) processing to apply, and what kind of charts to create from them. The pages (tabs) of the editor roughly correspond to these steps. You will see that Scave is much more than just a union of the OMNeT++ 3.x Scalars and Plove tools.


new.scave

Inputs

Input files

Add or drag & drop result files (*.sca or *.vec) that should be used in this analysis. Wildcards (*,?) can also be used to specify multiple files.

file *.vec
file *.sca

Data

Here you can browse all data (vectors, scalars and histograms) that come from the result files.

Physical: by file and run
- /queuenet/OneFifoSce-3.ve
- /queuenet/OneFifoSce-3.sca
- /queuenet/OneFifoSce-2.ve
  - run "OneFifoSce-2-2007
- /queuenet/OneFifoSce-2.sca

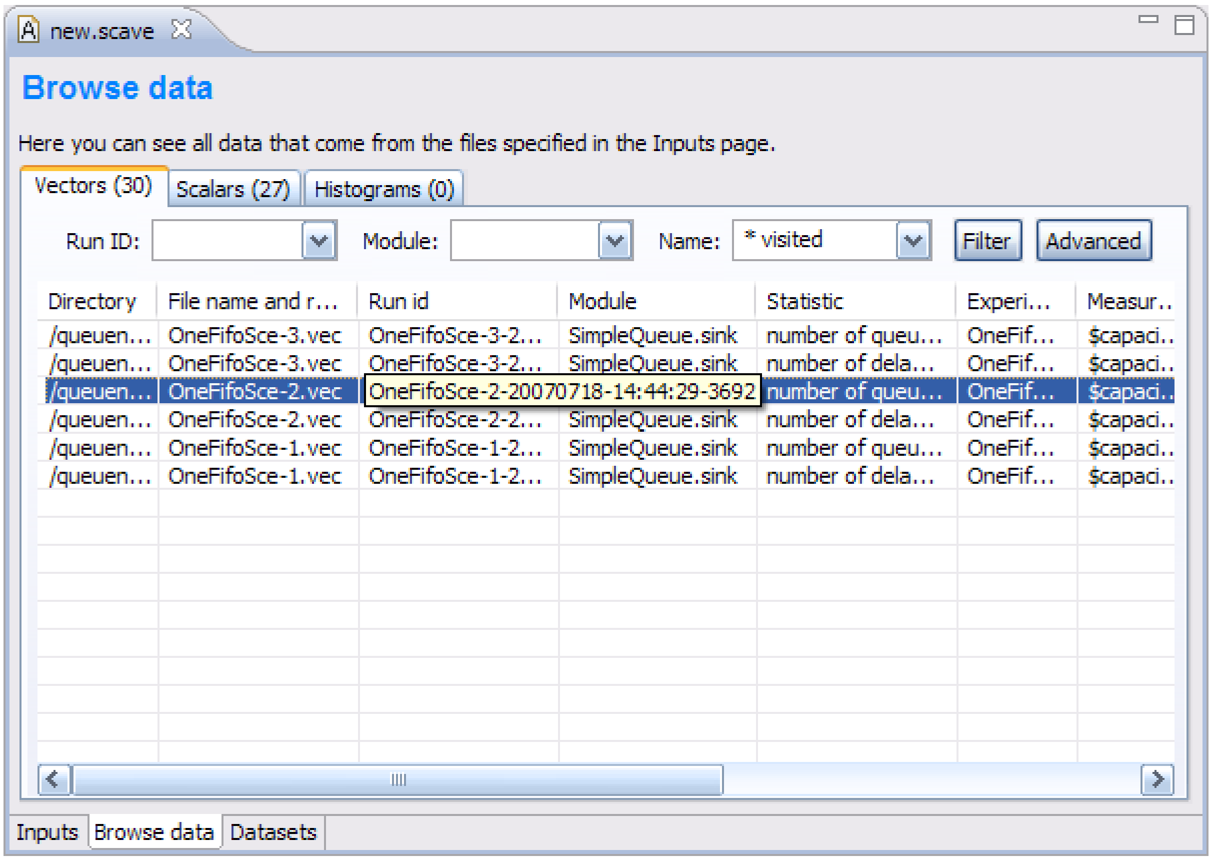
Physical: by run and file
- run "OneFifoSce-3-20070718-14:
- run "OneFifoSce-2-20070718-14:
  - /queuenet/OneFifoSce-2.vec
  - /queuenet/OneFifoSce-2.sca
- run "OneFifoSce-1-20070718-14:

Logical: by experiment, measurement,
- experiment "OneFifoSce"
  - measurement "$capacity=5, $
  - measurement "$capacity=5, $
    - replication "#1, seedset=
      - run "OneFifoSce-1-200

Specifying input files for data analysis

The first page displays the result files that serve as input to the analysis. The upper half specifies what files to select, by explicit filenames or by wildcards. The lower half shows what files actually matched the input specification, and what runs they contain. Note that OMNeT++ 4.0 result files contain a unique run ID and several metadata annotations in addition to the actual recorded data. The third tree organizes simulation runs runs according to their experiment—measurement—replication labels.

The underlying assumption is that users will organize their simulation-based research into various “experiments”. An experiment will consist of several “measurements”, which are typically (but not necessarily) simulations done with the same model but with different parameter settings; that is, the user will explore the parameter space with several simulation runs. And, to gain statistical confidence in the results, each measurement will be possibly repeated several times, with different random number seeds. It is easy to set up such scenarios with the improved ini files of OMNeT++ 4.0, and then the experiment-measurement-replication labels will be assigned more-or-less automatically – please refer to the Inifile document (“Configuring Simulations in OMNeT++ 4.0”) for more discussion.



new.scave

Browse data

Here you can see all data that come from the files specified in the Inputs page.

Vectors (30) | Scalars (27) | Histograms (0)

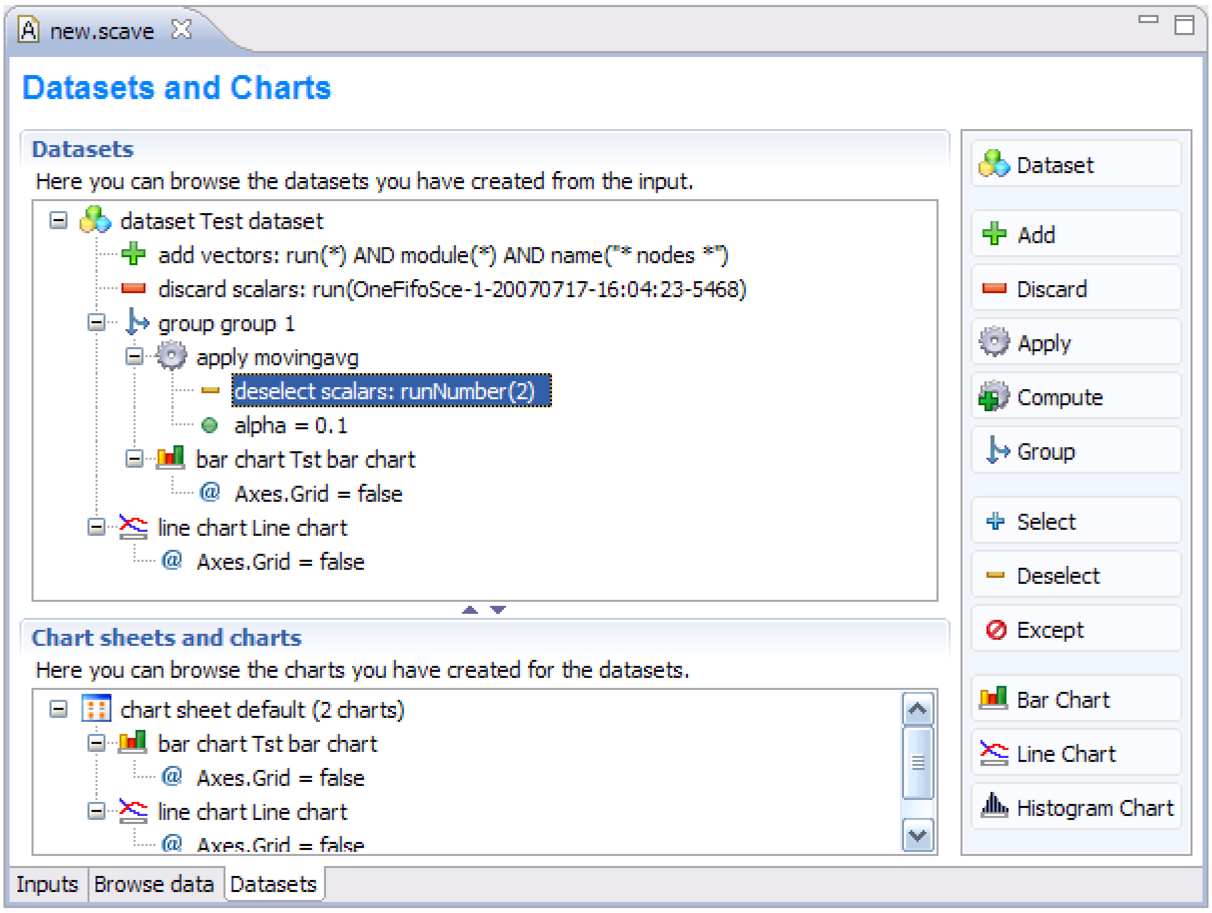
Run ID: Module: Name: * visited Filter Advanced

Directory	File name and r...	Run id	Module	Statistic	Experi...	Measur..
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	number of queu...	OneFif...	$capaci..
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	number of dela...	OneFif...	$capaci..
/queuen...	OneFifoSce-2.vec	OneFifoSce-2-20070718-14:44:29-3692		number of queu...	OneFif...	$capaci..
/queuen...	OneFifoSce-2.vec	OneFifoSce-2-2...	SimpleQueue.sink	number of dela...	OneFif...	$capaci..
/queuen...	OneFifoSce-1.vec	OneFifoSce-1-2...	SimpleQueue.sink	number of queu...	OneFif...	$capaci..
/queuen...	OneFifoSce-1.vec	OneFifoSce-1-2...	SimpleQueue.sink	number of dela...	OneFif...	$capaci..

Inputs | Browse data | Datasets

Browsing vector and scalar data generated by the simulation

The second page displays results (vectors, scalars and histograms) from all files in tables, and lets the user browse them. Results can be sorted and filtered. Simple filtering is possible with combo boxes, or when that's not enough, the user can write arbitrarily complex filters using a generic pattern matching expression language. Selected or filtered data can be immediately plotted, or remembered in named *datasets* for further processing.



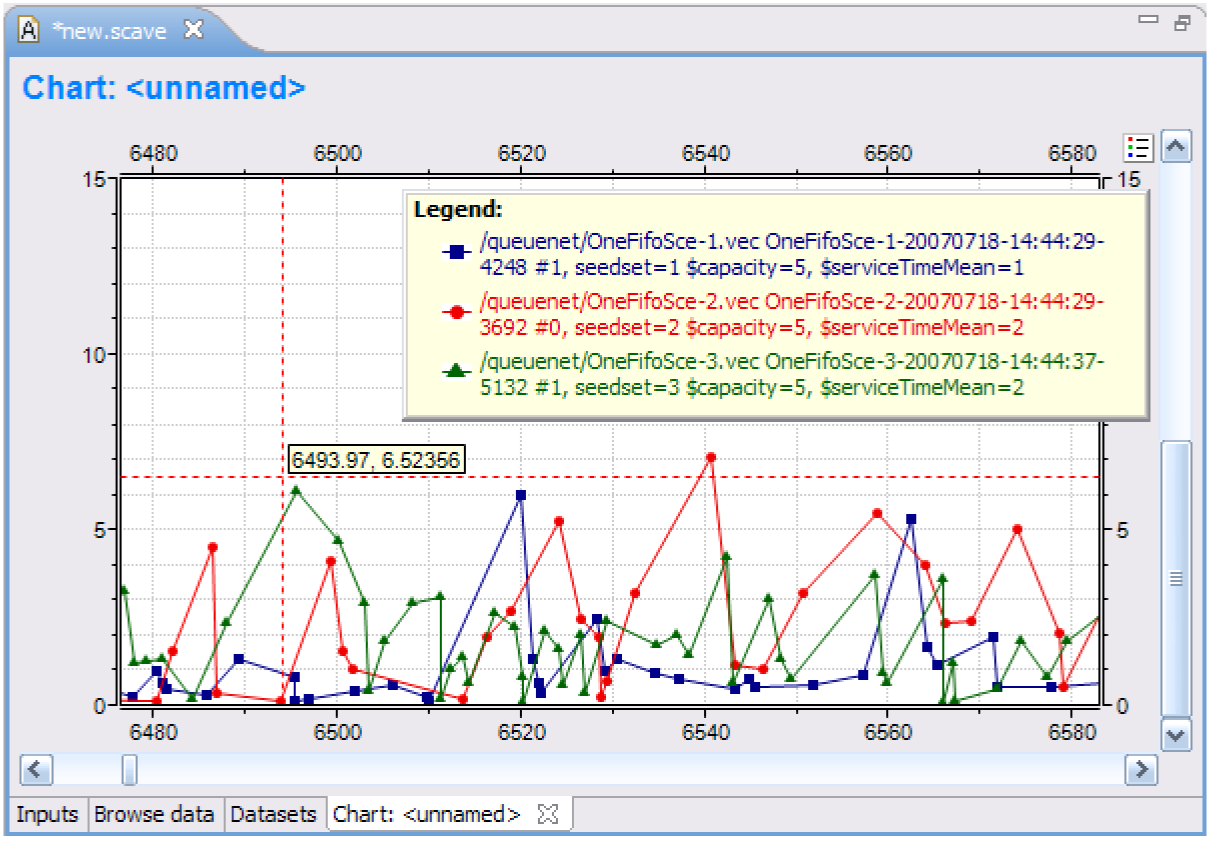
Here you can browse the datasets you have created from the input.

```
dataset Test dataset
    add vectors: run(*) AND module(*) AND name("* nodes *")
    discard scalars: run(OneFifoSce-1-20070717-16:04:23-5468)
    group group 1
        apply movingavg
            deselect scalars: runNumber(2)
            alpha = 0.1
        bar chart Tst bar chart
            Axes.Grid = false
    line chart Line chart
        Axes.Grid = false
```

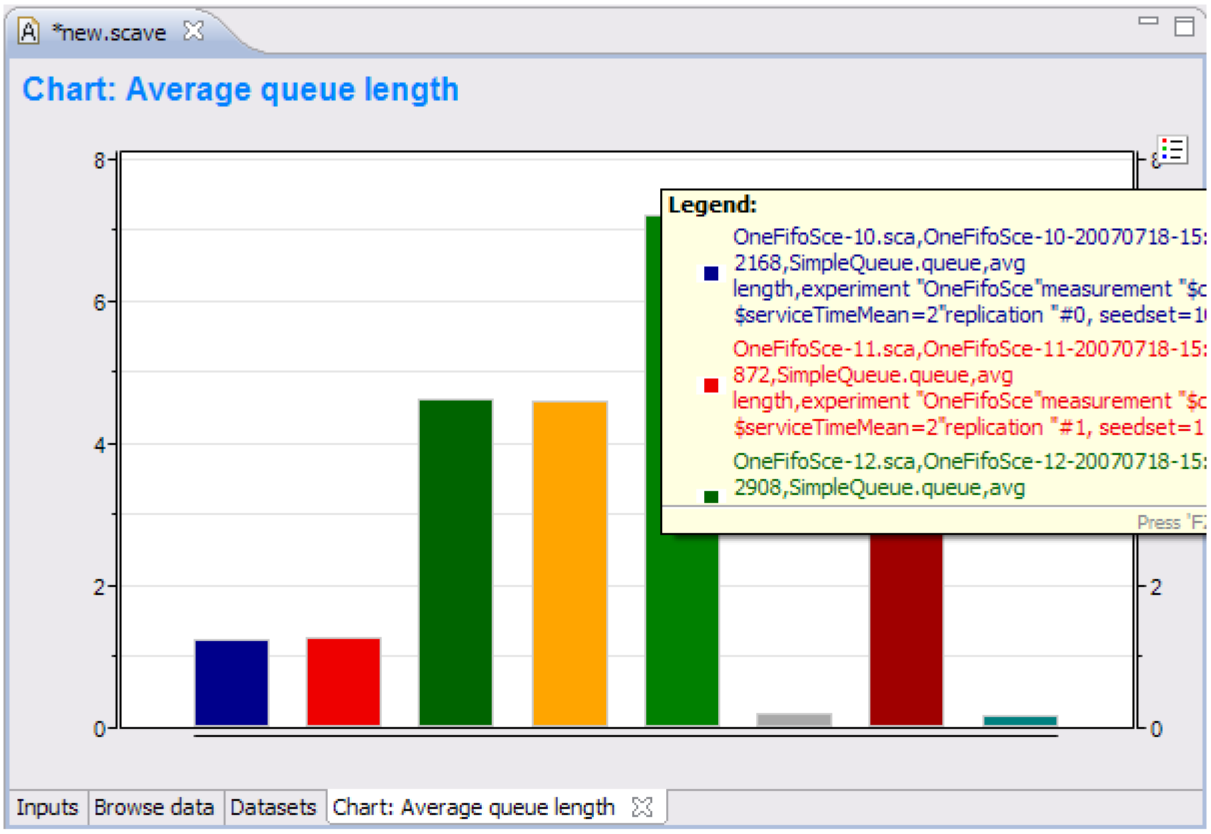
Here you can browse the charts you have created for the datasets.

```
chart sheet default (2 charts)
    bar chart Tst bar chart
        Axes.Grid = false
    line chart Line chart
        Axes.Grid = false
```

Defining datasets to be analyzed


*new.scave
Chart: <unnamed>
6480
6500
6520
6540
6560
6580
15
10
5
0
Legend:
/queuenet/OneFifoSce-1.vec OneFifoSce-1-20070718-14:44:29-4248 #1, seedset=1 $capacity=5, $serviceTimeMean=1
/queuenet/OneFifoSce-2.vec OneFifoSce-2-20070718-14:44:29-3692 #0, seedset=2 $capacity=5, $serviceTimeMean=2
/queuenet/OneFifoSce-3.vec OneFifoSce-3-20070718-14:44:37-5132 #1, seedset=3 $capacity=5, $serviceTimeMean=2
6493.97, 6.52356
Inputs
Browse data
Datasets
Chart: <unnamed>

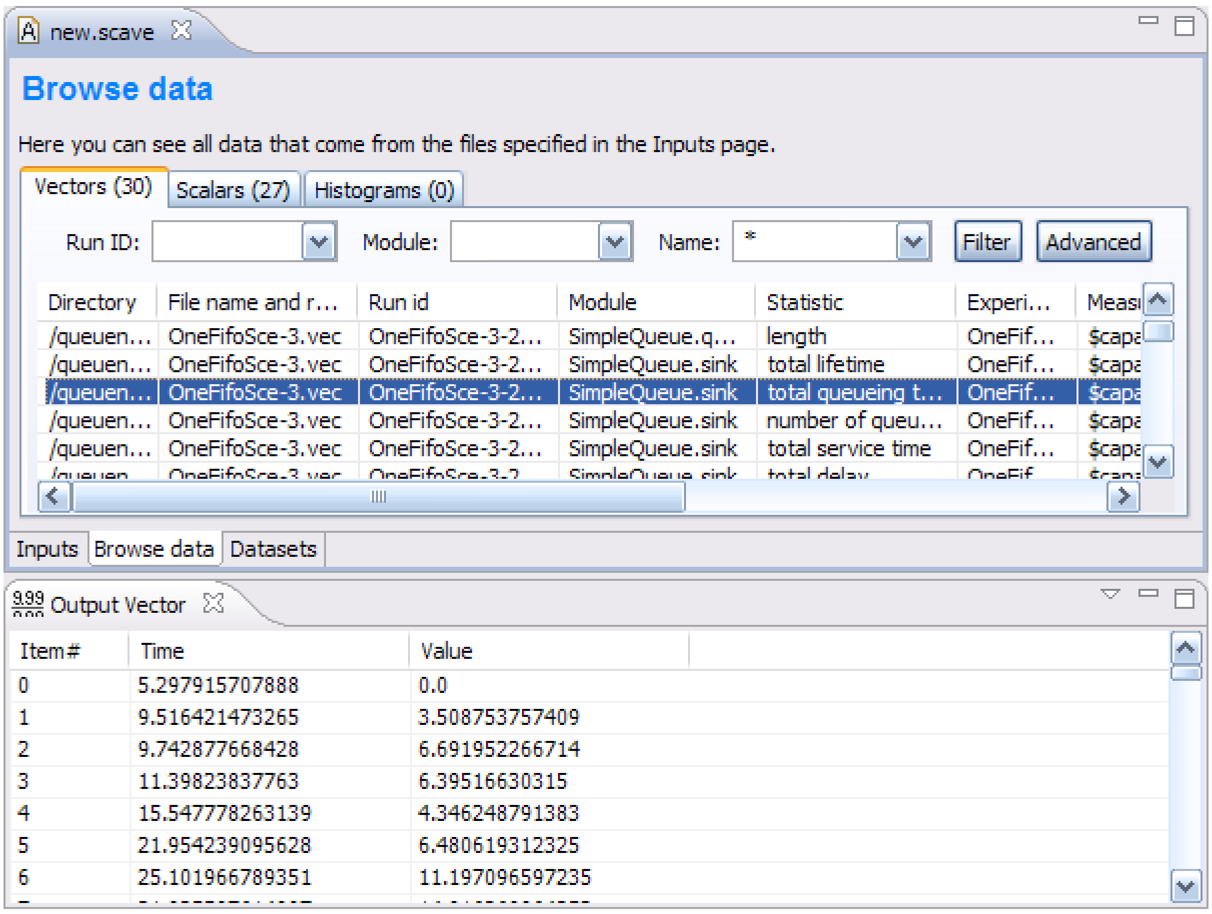
A Line Chart



Legend:

- 🟦 OneFifoSce-10.sca,OneFifoSce-10-20070718-15:2168,SimpleQueue.queue,avg length,experiment "OneFifoSce"measurement "$c $serviceTimeMean=2"replication "#0, seedset=1
- 🟥 OneFifoSce-11.sca,OneFifoSce-11-20070718-15:872,SimpleQueue.queue,avg length,experiment "OneFifoSce"measurement "$c $serviceTimeMean=2"replication "#1, seedset=1
- 🟩 OneFifoSce-12.sca,OneFifoSce-12-20070718-15:2908,SimpleQueue.queue,avg

A Bar Chart



Browse data

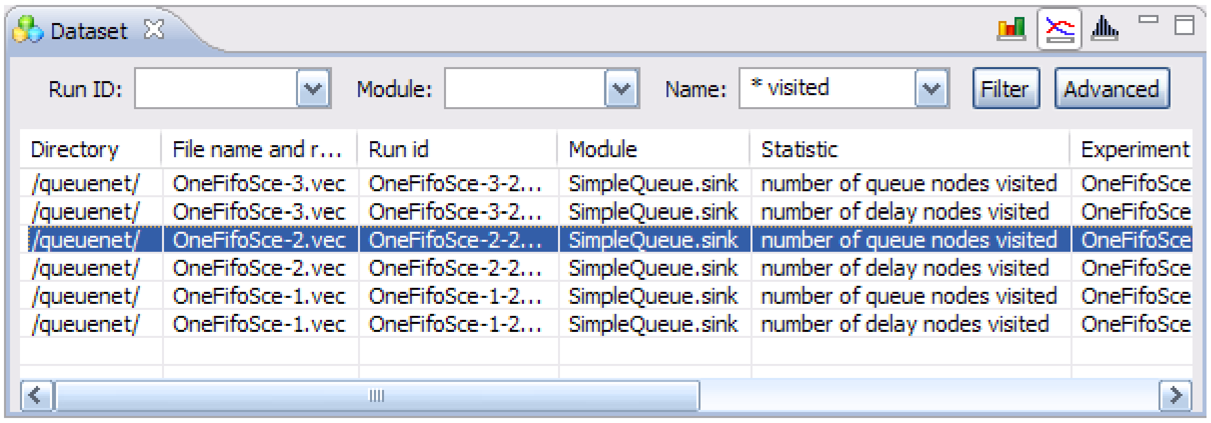
Here you can see all data that come from the files specified in the Inputs page.

Run ID: Module: Name: *

Directory	File name and r...	Run id	Module	Statistic	Experi...	Measi
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.q...	length	OneFif...	$capa
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	total lifetime	OneFif...	$capa
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	total queueing t...	OneFif...	$capa
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	number of queu...	OneFif...	$capa
/queuen...	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	total service time	OneFif...	$capa
/queuen	OneFifoSce-3.vec	OneFifoSce-3-2	SimpleQueue.sink	total delay	OneFif	$capa

Item#	Time	Value
0	5.297915707888	0.0
1	9.516421473265	3.508753757409
2	9.742877668428	6.691952266714
3	11.39823837763	6.39516630315
4	15.547778263139	4.346248791383
5	21.954239095628	6.480619312325
6	25.101966789351	11.197096597235
7	[illegible]	[illegible]

Output Vector View



Run ID: Module: Name: * visited

Directory	File name and r...	Run id	Module	Statistic	Experiment
/queuenet/	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	number of queue nodes visited	OneFifoSce
/queuenet/	OneFifoSce-3.vec	OneFifoSce-3-2...	SimpleQueue.sink	number of delay nodes visited	OneFifoSce
/queuenet/	OneFifoSce-2.vec	OneFifoSce-2-2...	SimpleQueue.sink	number of queue nodes visited	OneFifoSce
/queuenet/	OneFifoSce-2.vec	OneFifoSce-2-2...	SimpleQueue.sink	number of delay nodes visited	OneFifoSce
/queuenet/	OneFifoSce-1.vec	OneFifoSce-1-2...	SimpleQueue.sink	number of queue nodes visited	OneFifoSce
/queuenet/	OneFifoSce-1.vec	OneFifoSce-1-2...	SimpleQueue.sink	number of delay nodes visited	OneFifoSce

Dataset View