

# ROS Tools: rqt

ARRA / AR2A

**A**dvancements for **R**obotics in **R**escue **A**pplications

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## What do we want?

- ARRA / AR2A aims to improve the current state of technology of robotics in rescue applications.

## Who are we?

- A volunteer non-profit organisation of robotic enthusiasts.

## How can you help?

- Check us out at <https://github.com/ar2a>

## License information

- **CC-BY-SA 4.0**  
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- **rqt** is a software framework of ROS that implements the various GUI tools in the form of plugins.
- One can run all the existing GUI tools as dockable windows within rqt!
- There are different opportunities to debug with rqt plugins. For example with the **Console** plugin under **Plugins/Logging** displays messages as seen in example 1 and 2.

# rqt Example 1

The screenshot displays the rqt (Robot Query Tool) interface. The main window is titled "Default - rqt" and shows a console with 139 messages. The messages are filtered to show only "Warn" severity messages. The messages are as follows:

#	Message	Severity	Node	Stamp
#139	Oh no! I hit the wall! (Clamping from [x=2,9...	Warn	/sim	16:58:49.24...
#138	Oh no! I hit the wall! (Clamping from [x=2,9...	Warn	/sim	16:58:49.23...
#137	Oh no! I hit the wall! (Clamping from [x=2,9...	Warn	/sim	16:58:49.21...
#136	Oh no! I hit the wall! (Clamping from [x=2,9...	Warn	/sim	16:58:49.19...
#135	Oh no! I hit the wall! (Clamping from [x=2,9...	Warn	/sim	16:58:49.18...

Below the message list, there are sections for "Exclude Messages..." and "Highlight Messages...". The "Exclude Messages..." section has a checkbox for "...with severities:" and a dropdown menu showing "Debug", "Info", "Warn", "Error", and "Fatal". The "Highlight Messages..." section has a checkbox for "...containing:" and a text input field, with a "Regex" checkbox and a "Regex" button.

On the right side of the interface, there is a terminal window showing the output of a launch script. The output includes the following lines:

```
/home/robocop/workspace/tf_example/src/startup/laun
started core service [/rosout]
process[sim-2]: started with pid [7789]
process[teleop-3]: started with pid [7790]
Reading from keyboard
-----
Use arrow keys to move the turtle.
process[turtle1_tf_broadcaster-4]: started with pid [7805]
process[turtle2_tf_broadcaster-5]: started with pid [7821]
```

Below the terminal window, there is a "TurtleSim" window showing a 2D simulation of a turtle in a blue environment. The turtle is a small green robot with a yellow wheel, and it is surrounded by a complex network of white lines representing the environment's boundaries.

Figure: Read messages with rqt turtle demo.

# rqt Example 2

The screenshot displays the ROS rqt interface. The top window, titled 'Console', shows a table of messages and a detailed view of a specific message on the right.

#	Message	Severity	Node
#11246	http://chickenonaraft.com/12508	Info	/sim
#11245	http://chickenonaraft.com/12507	Info	/sim
#11244	http://chickenonaraft.com/12506	Info	/sim
#11243	http://chickenonaraft.com/12505	Info	/sim
#11242	http://chickenonaraft.com/12504	Info	/sim

Message details on the right:

- Node: /sim
- Time: 11:30:47.529397023 (2015-11-09)
- Severity: Info
- Published Topics: /chickenonaraft, /rosout
- http://chickenonaraft.com/12508
- Location: /home/robocop/catkin\_ws/src/chickenonaraft\_pub/src/chickenonaraft\_pub.cpp:main:73

The bottom terminal window shows the command `roboenv@roboenv: ~/catkin_ws` and the execution of `roslaunch chickenonaraft_pub launch/start.launch http://localhost:11311 134x8`. The output includes:

```
process[master]: started with pid [3718]
ROS_MASTER_URI=http://localhost:11311

setting /run_id to 06e3033a-86ca-11e5-9667-08002707ac30
process[rosout-1]: started with pid [3731]
started core service [/rosout]
process[sim-2]: started with pid [3748]
```

A red status bar indicates `roboenv@roboenv: ~/catkin_ws 134x8`. The terminal prompt is `roboenv@roboenv:~/catkin_ws$ rqt`.

Figure: Read messages with rqt from chicken demo.

# The End