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Getting started with roswtf

Description: Basic introduction to the roswtf (/roswtf) tool.

Keywords: roswtf

Tutorial Level: BEGINNER

Next Tutorial: Navigating the wiki (/ROS/Tutorials/NavigatingTheWiki)

Before you start this tutorial, please make sure your `roscore` is NOT running.

1. Checking your installation

roswtf (/roswtf) examines your system to try and find problems. Let's try it out:

```
$ roscd
$ roswtf
```

You should see (detail of the output varies):

```
Stack: ros
=====================================================
Static checks summary:

No errors or warnings
=====================================================


Cannot communicate with master, ignoring graph checks
```

If your installation ran correctly you should output similar to the above. The output is telling you:

- "Stack: ros": roswtf (/roswtf) uses whatever your current directory is to determine what checks it does. This is telling us that you started roswtf in the ros stack.
- "Static checks summary": this is a report on any filesystem issues. It's telling us that there were no errors.
- "Cannot communicate with master, ignoring graph checks": the roscore isn't running, so roswtf didn't do any online checks.

2. Trying it online

For this next step, we want a Master (/Master) to be up, so go ahead and start a roscore.

Now, try running the same sequence again:

```
$ roscd
$ roswtf
```

You should see:

```
Stack: ros
=====================================================
Static checks summary:

No errors or warnings
=====================================================
Beginning tests of your ROS graph. These may take awhile...
analyzing graph...
... done analyzing graph
running graph rules...
... done running graph rules

Online checks summary:

Found 1 warning(s).
Warnings are things that may be just fine, but are sometimes at fault

WARNING The following node subscriptions are unconnected:
 * /rosout:
    * /rosout
```

`roswtf` did some online examination of your graph now that your `roscore` is running. Depending on how many ROS nodes you have running, this can take a long time to complete. As you can see, this time it produced a warning:

```
WARNING The following node subscriptions are unconnected:
 * /rosout:
    * /rosout
```

`roswtf` is warning you that the rosout (/rosout) node is subscribed to a topic that no one is publishing to. In this case, this is expected because nothing else is running, so we can ignore it.

3. Errors

`roswtf` will warn you about things that look suspicious but may be normal in your system. It can also report errors for problems that it knows are wrong.

For this part, we are going to set your `ROS_PACKAGE_PATH` to a *bad* value. We're also going to stop our `roscore` to simplify the output that you see.

```
$ roscd
$ ROS_PACKAGE_PATH=bad:$ROS_PACKAGE_PATH roswtf
```

This time we see:

```
Stack: ros
=====================================================
Static checks summary:

Found 1 error(s).

ERROR Not all paths in ROS_PACKAGE_PATH [bad] point to an existing directory:
 * bad


=====================================================

Cannot communicate with master, ignoring graph checks
```

As you can see, `roswtf` now gives us an error about the `ROS_PACKAGE_PATH` setting.

There are many other types of problems that `roswtf` can find. If you find yourself stumped by a build or communication issue, try running it and seeing if it can point you in the right direction.

Now that you know how to use roswtf, take sometime to learn more about how ros.org is structured and navigating the wiki (/ROS/Tutorials/NavigatingTheWiki).