# change publish rate of a topic

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publisher subscriber topic rate hz

Is there any way to change the rate at which messages are published?

Edit: To update with more information. I would like to know all ways to throttle a node without using programming practices that don't involve the ROS Api. E.g nothing that does (if loop_count % 5) -> Publish(msg)

1. How to throttle the topic via roslaunch
2. via command line ROS commands
3. via ROS api

Thanks!

asked Oct 7 '14
DevonW
614 ●13 ●19 ●29

updated Oct 7 '14

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Sure there is, but it depends on what you really want to do: is this in your own node (read: own code), are you trying to throttle an existing node, or something else?

answered Oct 7 '14

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Please update your question with some more information.

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updated Oct 8 '14

Edit:

> 1 . How to throttle the topic via roslaunch

Your statement is a bit ambiguous (what should `roslaunch` do in your opinion?), but if starting another node is acceptable, then I think the `throttle` or `drop` nodes from topic_tools should work for you.

> 2 . via command line ROS commands

Afaik, no such thing exists. That would probably have to rely on a built-in throttling capability, which doesn't exist at the moment.

> 3 . via ROS api

Personally, I always think of topics & services as *the ROS API*, but I think you're referring to the functionality exposed by the C++/Python/X client libraries. See my comment on your 2nd bullet. There is no direct support for expressing don't-publish-this-at-more-than-X-hz right now.

> [..] E.g nothing that does (if loop_count % 5) -> Publish(msg)

Do these options fall into that category?

1. use a `ros::Rate` with an appropriate period, see C++/Time - Sleeping and Rates. This obviously only works if your node is a source, or if you can somehow coalesce all messages received during `r.sleep()`, and base your own publications on that coalesced state.
2. use `ros::Timer` with an appropriate period, see C++/Timers. You'll have to deal with similar issues as with `ros::Rate` though.
3. use `if ((now() - previous_) > desired_)`: admittedly primitive, but at least time-based (in contrast to your counting example) and the ROS C++ API supports it easily.

Finally, throttling / rate limiting / any kind of QoS will be much easier to achieve in ROS2.0: one of the fundamental properties of DDS middleware is their support for QoS policies, and any system built on top of such a middleware should be able to

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exploit that.

PS: this has been asked before, see (for instance):

- Creating a throttle node
- Throttle message rate for subscribers

link

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