Thread.sleep inside Scala actors

Asked 10 years, 3 months ago   Modified 1 year, 7 months ago

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Is it correct to use `Thread.sleep(5000);` inside an actor? Does it actualy make an actor sleep for 5 seconds? Is there a simple alternative to make an actor sleep for some seconds?

`scala`   `concurrency`   `actor`

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Anything that blocks a thread is not advised within Akka. If the Actor is configured with a a shared thread pool (default behavior) then using Thread.sleep will withhold a thread from that pool that could be doing work for other Actors.

If one really must block, then an actor may be configured to have its own thread. This can be done by configuring a

custom dispatcher for the actor to use, the full details are [here](#).

The recognized alternative to blocking is to schedule a callback to the actor via a timer, for example send a message after 5 seconds..

```
akkaSystem.scheduler.scheduleOnce(5 seconds, actor, "m
```

The Akka scheduler is documented here:
http://doc.akka.io/docs/akka/2.3.6/scala/scheduler.html

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edited Apr 13, 2015 at 13:23

answered Sep 11, 2014 at 14:26

Chris K

11.9k ● 1 ● 38 ● 53

What about non-akka actors? – As As Sep 11, 2014 at 14:29

@AsAs what Actor implementation are you using? I would imagine that the basic principles would be similar. – Chris K Sep 11, 2014 at 14:31

@AsAs what version of scala? After 2.11 Scala moved over to Akka. See docs.scala-lang.org/overviews/core/actors-migration-guide.html. – Chris K Sep 11, 2014 at 14:34

The older Scala Actors did use a shared thread pool, the details of which I am not familiar with. So if one was to call Thread.sleep, then it would starve any other actors that shared that pool. – Chris K Sep 11, 2014 at 14:36

I believe that these posts related to this topic are a bit old, and a few things has changed.

Taking this answer as starting point: "Don't sleep() inside Actors! That would cause the Thread to be blocked, causing exactly what you're trying to avoid - using up resources.

Instead if you just handle the message and "do nothing", the Actor will not use up any scheduling resources and will be just another plain object on the heap (occupying around a bit of memory but nothing else)." From this post: How to put actor to sleep?

Then, here is an example of what you could do to get the same behavior as `Thread.sleep()`

Inside the actor that you want to make "sleep"

```
   private void rescheduleActor() {
        // schedule to wake up
        logger.debug("rescheduleActor: Sleeping for 15
        getContext().getSystem().scheduler().scheduleO
                Duration.ofMillis(15000),
                getSelf(),
                new WakeUp(), getContext().getSystem()

   }


   @Override
   public void onReceive(Object msg) {

    if (msg instanceof WakeUp) {
            logger.debug("rescheduleDistributionTrackE
process.");
            methodToInvoke();
        }

 }
```

More details here:

https://doc.akka.io/docs/akka/2.5/scheduler.html

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                                    answered May 5, 2023 at 20:46

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