Reviewer Report

Title: **Hot-starting software containers for STAR aligner**

Version: **Revision 1** **Date:** 5/13/2018

Reviewer name: **Björn Grüning**

Reviewer Comments to Author:

Thanks for addressing my comments. I have a few more comments to your adjustments.

>> In the last sentence it was mentioned that these snapshots are more or less not
transferable to arbitrary hosts because of the different kernel versions. This is a major
drawback of this approach and should be more prominently discussed. How stable is
the interface between kernel versions or operating systems? How is reproducibility
guaranteed? What can happen if I choose the wrong memory dump?

> Our response:
This is true of any containerized application. We rely on Docker to handle the low-level
interactions with the kernel and managing reproducibility. We have added more text to
the Discussion section to elaborate on this point. Specifically, we added the following
sentences on page 6:

This is not true. Docker images are following the OSI container specification and they can be exchanged and are not bound
to any specific kernel version. The limitation which kicks in here, is the limitation of the memory dump and this is new
and restricts the usefulness of the approach dramatically. For example the cluster which needs to run the workflow
needs to have the exact same kernel version as far as I understand.

> "There are several caveats to the hot-start strategy. One is that the CRIU tool is Linux
kernel version dependent [18]. Checkpoint files are not portable among hosts where
different versions of the Linux kernel are used. However, this is an implicit feature for
any container workflow: the reproducibility of components outside the container
depend upon a platform-specific implementation of the containerization software. "

All caveats should be discussed not only one.
I disagree with the "implicit feature", see above. We are discussing here the non-portable memory dump and not that Docker containers
are dependent on specific kernel features.
Also the term "implicit feature" is confusing here as this is a limitation.

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