Breakit Documentation

Release 0.3

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Feb 12, 2018

Contents

NAME breakit - KSL many jobs automated submitter

SYNOPSIS

breakit –job=any-Slurm-Job –range=Total-number-of-jobs-to-submit [–chunk=Maximum-number-of-jobs-to-be-seen-in-the-queue]

DESCRIPTION breakit assists the user in submitting Slurm job array of important size on shaheen II. It has been designed, developped and officially maintained by the Kaust Supercomputing Laboratory.

By policy, on shaheen II, the maximum number of jobs authorized in the queue is limited per user. breakit seamlessly allows the submission of job arrays whose total number can be higher than this limit.

USE Not a single modification needs to be made to the Slurm job it self. Let assume 1000 occcurences of "my_job" needs to be submitted, the com- mand:

breakit –job=my-job –range=1000 –chunk=20

will submit the 1000 jobs to shaheen II in several chunks of 20 jobs. At a time, no more than 20 jobs will appear in the queue. In reality, breakit will use job dependency to automate the ongoing submission of the remaining jobs. These batches of 20 jobs will be seen as successive job arrays in the scheduling queue.

If no option –chunk is mentionned, default number of jobs queued simultaneously is set to 8.

To cancel the full set of jobs, an option –kill is under development and testing. In the meantime, when choosing a different name for all the jobs launched through breakit the following Slurm command can be used:

scancel -n=name-of-job

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REPORTING BUGS Report breakit bugs to help@hpc.kaust.edu.sa breakit home page: <https://github.com/samkos/breakit> KAUST Supercomputing Laboratory: <http://hpc.kaust.edu.sa/>

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SEE ALSO A comprehensive presentation of breakit has been given by Samuel Kortas during the KSL Workshop entitled 'Boost your efficiency when dealing with multiple jobs on the Cray XC40 supercomputer Shaheen II' held at KAUST On Sunday June 5th 2016. The workshop slides can be freely down- loaded from <https://www.hpc.kaust.edu.sa/sites/default/files/files/public/many_jobs.pdf>