



Flux (and a bit of Slurm)

LC User Meeting
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Documentation

- <https://hpc.llnl.gov/banks-allocations-and-jobs>
- <https://hpc-tutorials.llnl.gov/flux/>
- <https://flux-framework.readthedocs.io/en/latest/>
- <https://github.com/LLNL/mpibind/blob/master/tutorials/flux/module1.md>
- <https://hpc.llnl.gov/documentation/tutorials/using-lc-s-sierra-systems>
- ``man flux-COMMAND``, ``flux -h``, ``flux COMMAND -h``

--exclusive and mpibind

- `--exclusive`` is weird in Slurm.
 - ``salloc | sbatch | srun (outside of an allocation)`` : all of the resources.
 - ``srun (inside of an allocation)`` : minimal resource set.
 - ``srun -N1 -n4 --exclusive -p pdebug my_program`` : probably won't do what you want.
 - ``salloc -N1 --exclusive -p pdebug srun -n4 my_program`` : for 4 tasks that see the whole node.
- Flux defaults to giving a minimal resource set.
 - ``--exclusive`` : always gives you all of the resources on the node(s).
 - Mpibind works best with all of the resources.
 - ``flux run -N1 -n4 my_program`` : will only see one GPU on elcap.
 - ``flux run -N1 -n4 --exclusive my_program`` : will see all 4 GPUs.

Other Flux notes for ElCap and Tuolumne

- ``-b standby`` : jobs automatically killed if doing so would allow highest priority job to run.
- ``flux update JOBID duration=...`` : users can shorten their jobs. LC Staff can extend them.
- ``flux urgency JOBID ...`` : users can hold/release their jobs. LC Staff can expedite them.
- LC Staff can create limited access queues for DATs.
- SPINDLE is on by default. ``-o spindle.level=off`` or ``-o fastload`` to turn it off.
- Mpibind will try to avoid noise reduction / system cores unless you ``unset MPIBIND_RESTRICT``.
- If using ``--setattr=gpu_mode=...``, also set ``--conf=resource.rediscover=true``.

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