Memory Unsafe Processes with Parsl

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The MaPPeRTrac workflow uses Parsl to orchestrate probabilistic tractography
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Limiting memory usage across parallel processes

Sub-tasks for each edge wait until sufficient memory available
Limiting memory usage across parallel processes

- Estimate memory usage based on data size
- Unix file locking on shared record file
- Sleep until shared record file shows free memory
Current Limitations

- Only useful for memory-unsafe applications that ignore paging
- Potential incompatibility with certain Unix systems
- Imprecise memory estimates can waste resources