

Ilifu Nextflow demo

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Background

- Nextflow - <https://www.nextflow.io/docs/latest/getstarted.html>
 - Workflow language (Groovy syntax) and workflow engine.
 - Supported for various batch schedulers (LSF, PBS, SLURM). Also support for AWS batch and Kubernetes.
 - Ideal for high throughput problems. Split by sample, chromosome, position, iterate over a range of variables to test/evaluate.
 - Singularity and docker support.
 - Can specify job walltime, memory and core requirements.
 - Good documentation and user support.
 - Go through example (channels, processes, caching, resume).

Running

- Explain code - <https://github.com/grbot/run-fastqc>
- Setup Nextflow on headnode
- Run code, show modifications in queue, input and output settings

```
nextflow -log nextflow.log run grbot/run-fastqc -w  
/net/il-galaxy.sanbi.ac.za/data/scratch/gbotha/nextflow-work --rawReads  
/net/il-galaxy.sanbi.ac.za/data/scratch/gbotha/dataset --outDir  
/net/il-galaxy.sanbi.ac.za/data/scratch/gbotha/nextflow-out --queue debug -profile slurm  
-with-report run-fastqc_report.html -with-trace run-fastqc_trace.tsv -with-timeline  
run-fastqc_timeline.html -with-dag run-fastqc_flowchart.png -resume
```

- Check job status
 - https://slurm.schedmd.com/man_index.html
 - <https://slurm.schedmd.com/pdfs/summary.pdf>
- View job results and nextflow reports
- [Demo](#)