Hands-on Traning

01 - Cheyenne

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Tentative Schedule

- Cheyenne101
- WRF and WRF-Hydro on Cheyenne
- Step-by-step on WRF
- WRF-Hydro & NWM
  - Introduction
  - Hydrofabric
  - Pre-processing
  - WRF-HydroCase
  - Post-processing
- Discussion

Traning

Time	Tuesday 1-2 pm
Location	Ontario or Erie
Format	Hands-on
Discussion	Stop me anytime

Cheyenne 101

Cheyenne

Hardware

145,152 processor cores	2.3-GHz Intel Xeon E5-2697V4 (Broadwell) processors 16 flops per clock
4,032 computation nodes	Dual-socket nodes, 18 cores per socket
6 login nodes	Dual-socket nodes, 18 cores per socket, 256 GB memory/node
313 TB total system memory	64 GB/node on 3,168 nodes, DDR4-2400, 128 GB/node on 864 nodes, DDR4-2400
Mellanox EDR InfiniBand, high-speed interconnect	Partial 9D Enhanced Hypercube single-plane interconnect topology, Bandwidth: 25 GBps bidirectional per link, Latency: MPI ping-pong < 1 μs; hardware link 130 ns
3 times Yellowstone computational capacity	Comparison based on the relative performance of
3.5 times	5.34 peak petaflops (vs. 1.504)

Logging in

```
ssh -X -l cxiao cheyenne.ucar.edu
or
ssh -X cxiao@cheyenne.ucar.edu
```

If your PC or Mac has the same user name,
```
ssh -X cheyenne.ucar.edu
```

Environment modules

module av (**module avail**)	Show available modules with the current compiler.
module load R ncl/6.4.0	Load software package(s)
module list	List the modules that are loaded
module unload ncl	Unload the specified software package(s)

Job submission queues and charges

Queue name	Priority order	Wall clock (hours)	Description
premium	1	12	Jobs are charged at **150%** of the regular rate.
regular	2	12	Most production batch jobs run in this queue also accepts
share	NA	6	Interactive and serial batch use for debugging and other tasks on a single