Welcome to NERSC TotalView Tutorial

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User Engagement Group
Tutorial on Using TotalView

- Presented by Bill Burns and Dean Stewart of Perforce Software Inc.

- Training agenda and presentation slides, etc. available at https://www.nersc.gov/users/training/events/totalview-tutorial-december-9-2020/

- Training hands-on materials available in /global/cfs/cdirs/training/2020/totalview
Running Jobs

- Only a few Haswell nodes are reserved for today’s tutorial (8:30 am-1:30 pm)

```bash
$ salloc -N 1 -C haswell -t 30:00 -q debug --reservation=tv_res -A nintern
```

- To run on KNLs or Cori GPUs, use your own project account
  - See [https://docs-dev.nersc.gov/cgpu/access/](https://docs-dev.nersc.gov/cgpu/access/)
TotalView UI - Classic vs. New

- New UI keeps getting improved, but some features (e.g., MemoryScape) still available in Classic UI only
  - Today’s tutorial using New UI
  - With totalview/2020.3.11, NERSC has adopted New UI
  - NERSC webpage
    (https://docs.nersc.gov/development/performance-debugging-tools/totalview/) based on Classic UI; will soon be updated with info on New UI

- Which UI am I using:
  - Check ~/.totalview/.tvnewui: ‘true’ for New UI

- How to override/change UI
  - Edit the file ~/.totalview/.tvnewui
  - Use -newUI or -classicUI command-line flag
  - Set the TVNEWUI environment variable to True or False
  - Remove the ~/.totalview directory and then start TotalView
If You Work Far Away From NERSC

- Running X11 GUIs over network: it's responds painfully slow due to intrinsically high latency and inefficient bandwidth between X11 client and server

- Two solutions
  - Use NoMachine (NX) to improve the speed
    - Works for X11 window applications
    - [https://docs.nersc.gov/connect/nx/](https://docs.nersc.gov/connect/nx/)
  - Use TV Remote Display Client (RDC)
    - Run on your desktop/laptop
    - Submit a debugging batch job on a NERSC machine and display results in real time
    - Settings for Cori will be available later
    - Linux, macOS and Windows 10 (64 bit) installation package in $TOTALVIEW_DIR/remote_display
      - There seems to be a problem on macOS Big Sur
Thank You!