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National Laboratory

Experimental Computing Laboratory
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Advanced Computing Systems Research Section

Jeffrey Vetter, Section Head

Steve Moulton, Systems Engineer

U.S. DEPARTMENT OF ENERGY

Systems Status

- All new heterogeneous-support servers deployed
  - These four systems have 12-gpu or other accelerator-capable slots
  - Milan0: 2 * Nvidia A100 GPUs. Available.
  - Milan1, Milan2: Groq AI Accelerators
    - These cards can be paired – (re)deployment driven by researcher needs
    - No current usage
  - Milan3 is having difficulties
    - Likes to silent hang when 10g in use
      - 10g card has been replaced.
    - Looking at memory issues and moving card to different bus slot
      - If not resolved soon, will ask vendor to take the machine back

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System Status (2)

- ZFS file services in place
  - Awaiting user testing before switching all NFS to ZFS
    - Currently providing operational and DR backup.
    - ZFS Snapshots will provide operational backups
      - Snapshot schedule hourly/two days, daily/14 days, weekly/4weeks
      - Suggestions on scheduling welcome
      - /home, /noback
  - Old file server will lie fallow for a couple of months, then become DR backup
  - Will deprecate tape services, which aren't working well anyway.

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System status (3) – pending installation

- Xilinx U280 FPGA server-class card

- Next Silicon Maverick card

- Nvidia Jetson AGX Orins

- Nvidia Jetson Nanos – have several; might make nice minicluster?

- Achronix VectorPath S7t-VG6

- Nvidia Xavier board reflash – issue open w/ Nvidia

- Nvidia Bluefield 2 DPU reflash – issue open w/ Nvidia

- Snapdragons – not installed yet.

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Accounts and Other Management Activity

- All accounts requested in place, except for one pending PAS

- Will need to take full day outage to
  - Move to ZFS
  - Update networking on hypervisor 1
  - The usual updates and security changes
  - Planning on early April, depending on researcher exception

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Documentation

- Docs.excl.ornl.gov (user documentation) has received substantial work, and will continue to do so.   All researcher-facing systems will be documented there.

- Excl.ornl.gov is being moved from Wordpress (difficult to administer instance) to Jekyll produced in house.

- Internal documentation is in gitlab repo, can make available to anyone interested. Processes/procedure/notes/how-I-fixed-it stuff.

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Questions/Discussion?

- Slides to be posted in docs.excl.ornl.gov

- TRC is coming

- Query Users on outage timing

- Systems documentation lists merged

- ARC A770 Intel accelerator deployed on Clark
  - Zheming running kernel benchmarks, some results promising. Similar nbody performance as on RTX3080
  - Need to publish specs on memory architecture and quantity & powerpoint slides on cards in general. – clinfo output.
  - 16gb vs 4gb limitation. 32bit address space?

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