

Experimental Computing Laboratory

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Advanced Computing Systems
Research Section

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Infrastructure/System Status

- Old file server (fs00) redeployed as ZFS server; DR backups done nightly
 - Can function as (semi) HA file server in case of fs01 failure
 - Major limitation was failure of RAID battery backup and unavailability of replacement. No longer using RAID (using HBA mode only)
- Some networking fixes to improve reliability (primarily switch configurations)
- MIG enabled on A100s, available on request
 - Linux kernel version required incompatible with some other devices
- Gradual move to Ubuntu for all research systems and Rocky9 for infrastructure systems, can do RH9 on request.

Infrastructure/System Status 2

- All new heterogeneous-support servers deployed
 - 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
 - Milan 3 difficulties resolved
 - BlueField 2 cards and IB switch moved to Milan rack
 - Project investigating A100 and BlueField

Accounts and Other Management Activity

- All requested accounts in place
- Siemens project in place, awaiting account requests
 - Siemens licenses received today; will deploy to license server
- Ft.ornl.gov shut down and deleted.
 - Internal documentation on devdocs.ornl.gov
- Excl.ornl.gov moved entirely in house
 - Transient certificate warning issues when accessing from outside ORNL networks – networking staff working (or has completed) issue
 - News feed capability (currently being used to host meeting slides)

FY 2023 purchases

- Unusual approval delays (not CSMD), some product orders not completed
- In house, or in transit
 - RFSOC 4x2.
The RFSOC 4x2 board is a complete, ready-to-use system built around AMD's ZYNQ Ultrascale+ RFSOC ZU48DR device. Featuring four 5 GSPS ADCs with 6 GHz RF input ...
 - Zenith V2
Heterogeneous development system based on consumer-grade GPUs, FPGAs
 - DVXplorer
Dynamic Vision Sensor for neuromorphic projects
 - Connectx-6 Network adapters and cabling for SDR (2 * 100Gb interfaces)
 - Multimeter (ooooooh! aaaaah!)
Useful lab tool

TRC (Translational Research Center) is coming

- But so is Christmas (but maybe not this year)
- Appears that construction activity safety issues continue
- No additional information since last meeting
- Will house design projects
 - Will have at least 10Gb ExCL network access

Plans for next three months

- Deploy all received systems
- Redeploy Bluefield 2 DPUs to increase utility
 - Proposal in for BF3 DPUs – anyone interested in using them?
- Continued documentation improvements
- Looking into acquiring Hopper GPUs and other wish-list items.
- Move Justify & Pharoah (sp!) to Ubuntu 22.04
 - Makes a nice homogeneous mini-cluster
 - Dependencies on Centos7 disappearing (EOL 6/24)
- Move oswald02 & 03 to Ubuntu 22.04

Questions/Discussion?

- Where to deploy RFsoc? Use VMs or native.
- RFSOC licensing location discussion
- Documentation how tos.
- Discussion of potential ExCL 1-day workshop
 - AM training session and project discussion
 - PM lightning talks
 - Highlight current work and previous successes