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Hardware Workshop

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Hardware presentation

- What hardware do we have available?

Workshop goals

- Setting up a hardware based cluster similar to the cloud tutorial
- Additionally add an HPC interconnect.
- Measure fabric performance
- Optional: Optimize fabric settings
- Optional: VLANs for node or service separation

Tasks

- Cable the machines
- Setup networking on the admin node (nmcli)
- Create SSH key for root
- Setup yum/dnf to use the package repos in /home/repos
- Install and setup Warewulf as described in the Warewulf lecture
- Configure the compute nodes to boot from PXE
- Create a NFS Server for /home
- Add a user for all nodes (manual setup on admin node and in container)

Tasks(optional)

- Install Infiniband packages
- Start fabric manager service
- Configure IPoIB on all nodes
- Measure performance for IP traffic (iperf) and RDMA (ib_read_bw)
- Increase MTU of IPoIB to 4k
- Repeat performance measurements
- Install MPI
- Test MPI across all nodes with mpirun

Tasks(optional)

- Configure VLAN in the web interface of the Ethernet switch
- Add tagged VLAN to two nodes
- Test isolation between nodes