

Open Storage Research InfraStructure (OSiRIS)

OSiRIS combines a multi-site Ceph cluster with SDN and AAA infrastructure enabling scientific researchers to efficiently access data with federated institution credentials. The current OSiRIS deployment spans Michigan State University, University of Michigan, and Wayne State University. Indiana University is also a part of OSiRIS, working on SDN network management tools. At SC16, we have deployed a fourth site using the same techniques used to quickly deploy and manage our other sites. We hope not only to provide a useful service but also to demonstrate a model for deployment of future OSiRIS sites or similar projects.

Our demo at SC16 includes a live data movement exercise leveraging the Data Logistics Toolkit created at Indiana University. This demo will showcase the movement of USGS earthsat data from capture to storage not only in of the main OSiRIS Ceph cluster but also a dynamic OSiRIS Ceph cluster deployment built at Cloudfab.

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**For more, please attend talks at this booth scheduled for
11 a.m. Tuesday, Wednesday and Thursday.**

Virtualization host: This is a Dell R630 with a combination of RAID NVMe and spinning disk as well as sufficient CPU/Memory to support any VMs we might need to run for services. We use libvirt/kvm on the hypervisor hosts and Foreman's libvirt plugin to deploy new VMs via a smart proxy VM provided as a template for initial deployment.

perfSONAR host: We use a Dell R630 with sufficient specifications to run a standard perfSONAR installation. perfSONAR is augmented with the Periscope toolkit developed at Indiana University (also an OSiRIS participant) to feed data back to a central measurement store.

Cache hosts: These two Supermicro servers host 2 LIQID NVMe drives each. We plan to turn these into Ceph OSD and map a Ceph cache pool onto them to see how a fast, local cache pool might help local clients overcome the latency/speed issues of having a Ceph pool crossing long WAN distances.

