

OSiRIS

Distributed Ceph and Software Defined Networking for Multi-Institutional Research



We proposed to design and deploy MI-OSiRIS (Multi-Institutional Open Storage Research Infrastructure) as a pilot project to evaluate a software-defined storage infrastructure based on [Ceph](#) for our primary Michigan research universities.

Our goals:

Provide [transparent, high-performance](#) access to the same storage infrastructure from well-connected locations on any of our campuses.

[Enable scientists to collaborate on data easily and without building their own infrastructure](#)

Project Challenges

Deploying and managing a fault tolerant multi-site infrastructure

Monitoring and proactively managing our infrastructure

Resource management and optimization to maintain a sufficient quality of service for **all stake-holders**

Enabling the gathering and use of metadata to support **data lifecycle management**

Research domain customization using CEPH API and/or additional services

Authorization which integrates with existing campus systems