ATLAS Event Service

ATLAS can expect a min of 500TB of usable space. Larger usable space might be available depending upon disk organizational choices and demonstrated need.

Watching how OSiRIS scales as we ramp up ATLAS will be important. We have detailed monitoring of our RGW throughput and ops at storage level, network level, or Ceph service level. Example at right of requests/second to one RGW node during ATLAS proof-of-concept tests.

Ceph AAA Enhancements

OSiRIS Authentication, Authorization, and Accounting services are made up of three key components to bridge Ceph and institutional federations.

- stpd, short for St. Peter Daemon, is a Ceph Gatekeeper Daemon for OSiRIS resources that runs on the CephMon nodes
- oadid, short for OSiRIS Access Key Daemon, used to create, store, and retrieve access keys which grant access to specific resources
- mount.osiris, a filesystem utility that facilitates mounting of OSiRIS resources via web interfaces

Ceph Capabilities

One of our grant responsibilities is exploration of the limits of Ceph and our architecture. Resilience to network latency is a key determinant in how far we can scale geographically and whether projects like OSiRIS can be successful using Ceph as we are.

At the recent SC16 conference we deployed and operated a 4th OSiRIS site on the floor at Salt Lake City. Not only were we successful deploying the site repeatedly as a demonstration but we did so without disrupting ongoing data transfers in our other demos.

Supercomputing was a real-world verification of simulated latency testing we did with several Ceph components. The annotated dashboard below shows the cluster’s capability to continue background data replication (recover) even as we ramp up simulated latency on a storage block (50 OSD affected).

NMAL: Advanced Network Management

OSIRIS Network Management Abstraction Layer

Advanced network monitoring and control services

NMAL extends perfSONAR capabilities to include automated network topology discovery and tracking in the Unified Network Information Service (UNIS), and incorporate that into overall operations of the OSiRIS infrastructure.

Potential integrations include SDN control at the hardware switch and host vswitch level, Ceph cluster data map control, and data transfer node routing control.

Multi-Institute Deployment

Using Foreman and Puppet we’ve successfully built an infrastructure for efficiently deploying new OSiRIS sites and managing configuration across the project.

From a Foreman instance we can control provisioning “smart proxies” at each of our sites. Initial site setup requires only getting this proxy running from a pre-configured template we provide.

Collaborators at all of our institutions can deploy and test new changes in private environments without disrupting regular OSiRIS production.

OSiRIS is a multi-institutional collaboration

www.osiris.org

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