

# CASE STUDY: The Cecil H. and Ida M. Green Institute of Geophysics and Planetary Physics (IGPP)

Unified Primary and Secondary Storage with TrueNAS®



*“Our department has a complex multi-OS environment and there was a niche that we needed in filled in storage. iXsystems checked all the boxes. We’ve been very pleased with TrueNAS as our storage solution.”*

## - Say Ho Tan

Systems Administrator for The Institute of Geophysics and Planetary Physics, UCSD

## THE STORAGE CHALLENGE

The IGPP at UCSD serves about 200 internal users. To reduce costs associated with direct attached storage, they needed a unified storage solution that could act as primary storage for students and faculty in a complex, heterogeneous environment. The IGPP runs various operating systems throughout their department, including Windows, OS X, Virtual Red Hat, and Solaris. Over the course of time, they tried multiple large vendors, but had difficulty finding a platform that met all of their requirements. In one instance, their platform did not support AFP shares, so they had to run NFS exports to an XServe, then AFP re-share. This added an undesirable level of complexity to their network that was difficult to manage.

The network administrators for the IGPP required snapshots, AFP shares, off-site mirroring and replication, LDAP, and Active Directory. All of the storage vendors (NetApp, Qnap, and Oracle) they tried didn’t meet one requirement or another until they found iXsystems.

*“If a user accidentally deletes important information, we can just roll back to another day. And having replication gives us another layer of security if data gets lost on the primary storage. This gives us the peace of mind that the valuable data being produced at our Institute is secure.”*

- Say Ho Tan

## TRUENAS “CHECKS ALL THE BOXES”: PRIMARY AND SECONDARY STORAGE IN A MULTI-OS ENVIRONMENT

Having evaluated other solutions with varying degrees of success, the IGPP approached iXsystems in regard to their TrueNAS Storage appliances. They liked the fact that it was based on open standards, which meant that there was already a large user base and good deal of technical documentation and support in the FreeNAS and FreeBSD communities to pull from. It also meant that TrueNAS came equipped with some key features from those operating systems that the staff needed to serve their department and were unable to find elsewhere. In April of 2011, the IGPP decided to move ahead and acquired a TrueNAS from iXsystems. The system came equipped with a high-performance flash-based ZFS Intent Log for write caching with high capacity enterprise drives in a RAID-Z2 (dual disk parity with ZFS) configuration and aggregated 4 x 1 GbE ports with LACP (Link Aggregation Control Protocol) for greater network stability. The system is accessed primarily from user workstations and laptops over Cisco 6500 and 3700 switches alongside Intel MFS Modular Servers.

The system is accessed mainly over NFS and AFP protocols and serves as primary storage for the departments 200 users. The IGPP also utilizes their TrueNAS system for its ZFS snapshots feature, providing added security for the users' files. In November of 2011, they purchased a second identical system for the purposes of replication, added data security, and availability.

## IXSYSTEMS AS AN EXTENSION OF THE IGPP STORAGE TEAM

The IGPP worked with the iXsystems staff from planning stage to deployment and provided a constant safety net for post-deployment support. The support staff made sure that their TrueNAS Pro met their expectations, responding to their individualized requirements to provide technical assistance, even integrating a new feature that came out of a support ticket.

*“The responsiveness of the iXsystems support team impressed us. In one instance, the Umask settings in AFP were unavailable from the TrueNAS webGUI. The support team assisted us in configuration from the Command Line and then actually implemented those options in the next release’s webGUI.”*

- Say Ho Tan

## CONCLUSION

The IT department which serves the Institute of Geophysics and Planetary Physics has found TrueNAS to be instrumental in serving all the work it does. From providing its faculty and staff with its primary storage over NFS and AFP to creating data redundancy through the use of ZFS snapshots and replication, TrueNAS meets a number of critical needs and are currently looking to scale their systems with expansion shelves as capacity and utilization continue to grow.

## ABOUT THE INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS (IGPP)

The Cecil H. and Ida M. Green branch of the University of California’s Institute of Geophysics and Planetary Physics was established in 1964 and is located in La Jolla, California at the University of California, San Diego (UCSD). The IGPP works with with Scripps Institution of Oceanography (SIO). There are also IGPP branches at the Los Angeles, Irvine, Santa Cruz and Riverside Campuses.

The IGPP was founded to become a center for non-traditional physics with a focus on the earth-moon system and planetary physics. This institute aims to expand our understanding of the structure, origin, and evolution of the solar system and its planets.

## ABOUT IXSYSTEMS

By leveraging decades of expertise in hardware design, its contributions to many Open Source software communities, and corporate stewardship of leading Open Source projects (FreeNAS and TrueOS), iXsystems has become an industry leader in building innovative storage solutions and superior enterprise servers for a global marketplace that relies on open technology.

Thousands of companies, universities, and government organizations have come to rely on iXsystems' storage, servers, and consultative approach to doing business. Headquartered in the heart of Silicon Valley since its founding in 1996, the dedication to white-glove customer service, industry-leading support, and transparent technological contributions has never wavered and continues to help lay the foundation for a new era powered by open technology.