CASESTUDY
THE CENTER FOR
OCEAN-ATMOSPHERIC
PREDICTION STUDIES
(COAPS) AT FLORIDA
STATE UNIVERSITY

(COAPS) at Florida State University

The Center is a center of excellence performing interdisciplinary research in ocean-atmosphere-land-ice interactions to increase our understanding of the physical, social, and economic consequences of climate variability.

COAPS AT FSU SELECTS NEXSAN HYBRID STORAGE FOR PERFORMANCE, RELIABILITY, AND CAPACITY

The Center for Ocean-Atmospheric Prediction Studies (COAPS) at Florida State University (FSU) required a new data storage platform to support the distribution of global ocean forecasts. COAPS worked with LH Computer Services to review its options and ultimately selected Nexsan's NST hybrid storage system. Since deployment three years ago, the Nexsan solution has delivered a strong return on investment and helped COAPS reliably scale its data center – so much so that other units within FSU are exploring the possible purchase and deployment of Nexsan storage.

SOLUTION

With the help of LH Computer Services, COAPS engaged in a thorough review process and ultimately decided that Nexsan's NST hybrid storage system was the best fit for the project. COAPS selected Nexsan's NST solution due to its reliability, density, and scalability, and purchased about 250 Terabytes (TB) of storage capacity. Today, more than 1PB of high-resolution data is stored and protected by the NST.

Also, initial deployment was turn-key, and COAPS' first systems went online the same day as deployment. As additional systems have been added over time, the infrastructure has scaled seamlessly; downtime was negligible integrating new systems.

RESULTS AND BENEFITS

The Nexsan data storage infrastructure has delivered a strong return on investment for COAPS at FSU since deployment.

- It has enabled the reliability COAPS desired, helping it scale from 250TB to more than 1PB.
- It has exceeded the project's requirements for performance, maintaining a high level of throughput as the number of registered users has grown to well over 1,000 and the number of data access servers has grown from one to 10.
- FASTier™ caching has silently maintained performance as the number of users has risen, servers have increased and capacity has grown.
- There has been negligible downtime – 99.99% uptime – since deployment.
- It has proven incredibly dense; COAPS houses more than 1PB of data today in a single rack.
- COAPS administrators have found the single management graphical user interface for the NST system remarkably intuitive and efficient.
- Utilizing the 10 Gigabit Ethernet interfaces on each NST head node, the HYCOM project now streams out more than 1.2PB of data each year to its users.
- The FASTier intelligent hybrid caching feature of the NST hybrid storage appliance has brought tremendous additional performance to the system and flexibility in administering the infrastructure. Both of those results have boosted project ROI and led to noticeable savings on operating costs.

NEXSAN

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PROBLEM

- Needed reliable uptime, which is essential to COAPS' project
- Required great density because of limited floor space
- Needed to scale seamlessly to accommodate new research partners and users from around the world
- Deliver the performance to accommodate the project's operations, myriad of users and scale-up over the years
- Support NFS protocol to unlock more interoperability and efficiency
- Offer all of the above features and capabilities at a low total cost of ownership

SOLUTION

- COAPS selected Nexsan's NST solution
- The initial purchase was about 250TB of storage capacity. The system has since scaled to 1PB

RESULTS

- Exceeded requirements for reliability and performance
- FASTier caching has silently maintained performance as the number of users has risen, servers have increased and capacity has grown
- 99.99% uptime since deployment
- Incredible density; more than 1PB of data today in a single rack
- The project now streams out more than 1.2PB of data each year to its users
- FASTier has brought tremendous additional system performance and flexibility, boosting project ROI and lowering operating expenses
- Other units at FSU are looking to Nexsan as they procure their own storage systems to satisfy their unique needs

THE IT INFRASTRUCTURE CHALLENGE

For more than 10 years, COAPS has worked closely with the United States Navy to develop a global ocean prediction system based on the Hybrid Coordinate Ocean Model (HYCOM). Three years ago, COAPS was tasked by the Office of Naval Research (ONR) to design a 1 Petabyte (PB) storage system to serve forecast data to the community at large. Currently, more than 1000 users from across the nation and around the world utilize this forecasting data.

COAPS did not have an adequate storage platform that could support the needs of the growing project. To effectively support the project, COAPS needed a data storage infrastructure that could.

- Operate reliably. Uptime is essential to the project and the infrastructure needed to operate without downtime – even as it scaled throughout the life of the project
- Offer great density. COAPS' data center floor space was limited
- Scale seamlessly. As more data was created, and more data files became high-resolution and high-value to the project, the infrastructure needed to be able to grow and accommodate new research partners and users from around the world
- Deliver the performance to accommodate the project's operations, myriad of users and scale-up over the years
- Support NFS protocol to unlock more interoperability and efficiency
- Offer all of the above features and capabilities at a low total cost of ownership

ABOUT NEXSAN

Nexsan® is a global enterprise storage leader since 1999 delivering the most reliable, cost-effective and highly efficient storage solutions. Nexsan's solution portfolio empowers enterprises to securely store, protect and manage valuable business data with a broad product line of unified storage, block storage, and secure archiving. www.nexsan.com.