

Cloud Storage Controller Development & Testing

For startup in the Cloud Storage technology,
headquartered in Campbell, USA.



OVERVIEW

The Cloud Storage Controller delivers cloud-integrated local NAS (Network Attached Storage) capabilities to a globally-distributed enterprise, allowing storage capacity to be centrally located managed, and protected. With storage capacity explosion and sharing of projects and workflows across multiple sites, enterprises are searching for a storage solution that allows workers to collaborate and share workloads at LAN-like speed, while keeping storage and networking costs minimized. The scope of the assignment was to develop and test the Cloud Storage Controller product.



THE CHALLENGE

The key challenge was to bring together a team with key skills in development, support and testing of SMB, CIFS and NFS protocols as well as with test automation capabilities to address the various scenarios as listed below:

- ⦿ Development & sustenance of Cloud Storage Controller features
 - File systems (ZFS, NFS, CIFS/SMB) and FreeBSD UNIX kernel modules
 - Support for key features such as Global Read Write, HABC, Disaster Recovery, Snapshots etc,
- ⦿ Functionality, system and performance testing
 - AD/NTACL/SMB testing
 - AD configuration (multi-domain, multi-site, trust) and join AD domain settings on all the Ccs
 - Cloud upload/download testing using 1Gig & 10Gig Ethernet cards
 - smbtorure, nbench, fstress, IOZone, makeset, modfile, IOMeter, Robocopy
- ⦿ Smoke, regression and cloud connector testing on cloud platforms such as Amazon, Nirvanix, HP, EMC etc,
- ⦿ Test Automation



THE PRODUCT

The product is a Cloud Storage Controller built on FreeBSD UNIX operating system.

Until now, the Global Cloud Storage System has been leveraging a high-performance, secured Internet technology to create an interconnected, unified global file system. With the Cloud Storage Controller product, persistent data can be centrally located, where it is easy for the IT to manage; yet remain fluid and easy to access, regardless of the physical location. Storage islands disappear, capacity and data protection costs go down, system management is simplified, and users collaborate and share workflows as needed, as if they were local.

The Cloud Storage Controller makes use of the full functionalities of FreeBSD operating system, along with the ZFS file system. The Cloud Storage Controller is designed on the concept of separating the file system metadata from the actual file system data. The File System metadata is everything that is not the actual data of the files in the file system. In a multi-site scenario, metadata is snapshotted across sites in a regular fashion. When the data is written at a site, the data is stored as drives in the cloud. When a user tries to read files from the file system at a remote site, the corresponding drives are downloaded on demand and are served to the user.



THE TEAM

ALTEN Calsoft Labs provides product engineering services for a diverse industry portfolio today. To address the requirements of the Storage industry, we have an experienced talent pool with capabilities across storage technologies, application/system development, firmware development, file system & device driver development on almost all the operating systems which exist in the market today.

To address the above challenges, we had set up an offshore development center in Bangalore with 15 subject matter experts in NAS product development and testing. This team worked on core system stacks like NFS, CIFS and SMB protocols as well as test automation.

ALTEN Calsoft Labs ensures to be always in the forefront of technology to remain competent in the services industry. Our key point to success has been the quality of the software development & services we offer, at affordable price and on-time delivery. This way, we make our customers achieve their business goals with respect to new product innovation and services, with the cost advantage.



TECHNOLOGY AND RESOURCES

- OS: Windows, FreeBSD UNIX, Linux
- Hardware Setup: Intel, AMD platforms
- File system Test Scripts/Tools: smbtorture, nbench, fsstress, IOZone, makeset, modfile, IOMeter, Robocopy
- Team Size: 15 engineers
- Test Automation: Robot framework
- Language/Skills used for automation: C, Perl and Python



ABOUT ALTEN CALSOFT LABS

ALTEN Calsoft Labs is a next gen digital transformation, enterprise IT and product engineering services provider. The company enables clients innovate, integrate, and transform their business by leveraging disruptive technologies like mobility, big data, analytics, cloud, IoT and software-defined networking (SDN/NFV). ALTEN Calsoft Labs provides concept to market offerings for industry verticals like education, healthcare, networking & telecom, hi-tech, ISV and retail. Headquartered in Bangalore, India, the company has offices in US, Europe and Singapore. ALTEN Calsoft Labs is a part of ALTEN group, a leader in technology consulting and engineering services.

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