

## Reliable NAS Allows The Street to Move Out of Own Data Center into AWS Virtual Private Cloud

After suffering numerous outages and business impacts due to shortcomings of clustered file systems, The Street now have a commercial-grade NAS storage and disaster recovery solution in place for their AWS-based IT infrastructure. Applications like Oracle, custom Java, video streaming, Drupal and other line of business applications are now running fast and reliably. In addition, near real-time block replication to a different availability zone provides the disaster recovery and redundancy required.

TheStreet.com and the company's other websites and applications are now fully operational in the AWS cloud using SoftNAS.

## Clustered file systems do not work or scale as expected in the cloud

When the decision was made to move out of its own data center, where the traditional EMC appliance was no longer available, IT needed something else... The Street originally chose a popular clustered file system to deploy on Amazon EC2. In practice, the promise of the "scale out" clustered file system architectures just did not actually work as expected.

The Street began with three EC2 instances running the clustered file system. Within weeks, they were down to one instance, due to "split-brain" issues, where the different instances would get out of sync with each other, then self-healing didn't work, and it would eventually take the Apache webservers down and then everything went offline. Worse yet, since it was community-supported software, "when something breaks, nobody cares..." so support was a major issue.

And because The Street has millions of files, file replication can't keep up – it just chugs along trying to compare and replicate all the files, and can't finish – sort of like painting the Golden Gate Bridge – by the time you eventually finish, you need to start over again.

At this point, the businesses, website, end-user and customer impacts became unbearable, so a better storage solution for Amazon Web Services was demanded.

“Unfortunately, first we chose a clustered file system – a horrible mistake... Nothing but disastrous issues”

– Chris Mays,  
IT Consultant The Street

## The Solution – An enterprise-grade Cloud NAS designed for Amazon EC2

After suffering numerous outages caused by the clustered file system failures and shortcomings, The Street's CTO found SoftNAS™ and recommended it to IT.

An IT consultant was tasked with installing and testing SoftNAS. It was installed and configured on EC2 with elastic block storage (EBS) configured as RAID 10 for best IOPS, throughput and redundancy.

A second SoftNAS instance was configured in a different availability zone (AZ) as a failover target, in case of any outage or equipment failure in the primary AZ.

Then, RSYNC was used to migrate data off the remaining clustered file system node to SoftNAS.

Next, SnapReplicate™ was configured. Snap Replicate uses "block replication" instead of file replication. This means the only data transmitted from the primary SoftNAS controller node to the secondary in the other AZ are those data blocks that actually changed.

Block replication scales to handle millions of files. Once per minute, snapshots pick up the data blocks that changed during the last minute, then replication sends the changed data blocks. Scheduled file system snapshots were also configured to provide several weeks of recovery points, plus hourly snapshots, to quickly recover any corruption or other potential data integrity issues from lost or deleted files.



"We moved from EMC in our own data center to AWS in the cloud... We initially tried another vendor's clustered file system product – a horrible mistake – we had nothing but issues, like "split-brain", that caused Apache web servers to fail and everything would go offline. And because we have millions of files, the clustered file system replication just would not scale and work at all...

With SoftNAS, we have twelve workload instances running on EC2 on NFS. We use RAID-10 to get the IOPS and redundancy we need from EBS.

SnapReplicate™ is working great for real-time backups for DR to another AZ. The block replication scales and handles our millions of files nicely...

I like the dashboard, like EMC we're used to using.

SoftNAS does everything we need."

– Chris Mays,

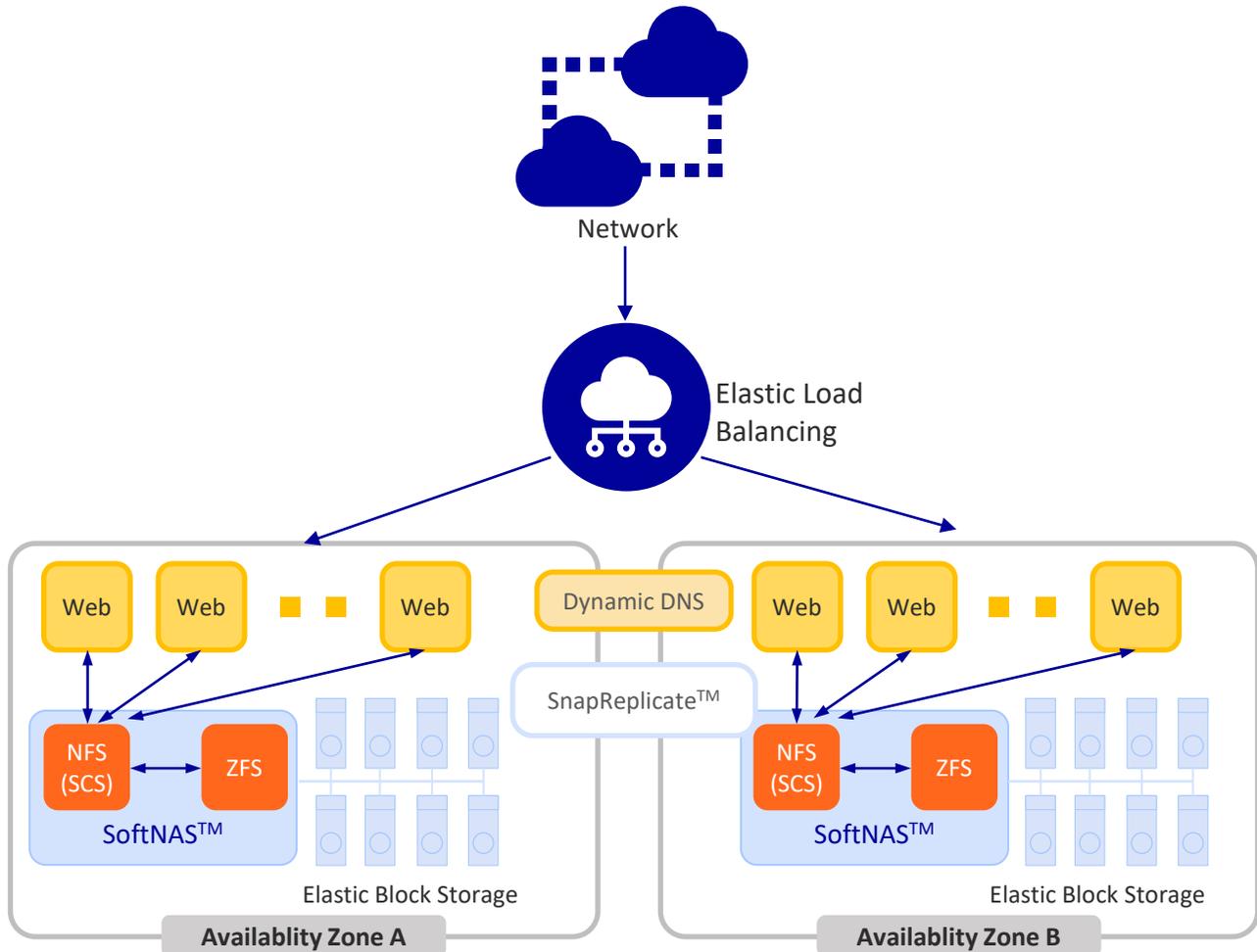
IT Consultant The Street

## Annual Cost – \$1,990 for SoftNAS, \$9,095 for AWS

For 1 terabyte of usable, replicated storage, the redundant controller SoftNAS solution on Amazon EC2 costs \$1,990 per year (or \$198 per month), including support and maintenance.

The Amazon Web Services costs for such a system is approximately \$757.96 per month (\$9,095.52 per year) for 2 Large EC2 instances running SoftNAS, including 4 TB of EBS volume storage.

This does not include the customer's EC2 workload instances, elastic load balancing, bandwidth, volume snapshots for backups, or other AWS service charges that may be included in an overall solution.



Solution Architecture

Rick Braddy is an innovator, leader and visionary with more than 30 years of technology experience and a proven track record of taking on business and technology challenges and making high-stakes decisions.

Rick is responsible for Buurst business and technology strategy, product development and e-commerce infrastructure. Rick also oversees online marketing, lead-generation and product launch strategy for the company.

Rick is a serial entrepreneur and former CTO of Virtual-Q, a hosted virtual desktop company, former Chief Technology Officer of the CITRIX Systems XenApp and XenDesktop group, and former Group Architect with BMC Software.

During his 6 years with CITRIX, Rick led the product management, architecture, business and technology strategy teams that helped the company grow from a \$425 million, single product company into a leading, diversified, global enterprise software company with more than \$1 billion in annual revenues.

Throughout the 1980's, he developed real-time process control, SCADA and manufacturing automation software, including the first Unix-based process control system.

Rick is a United States Air Force veteran, with military experience in top-secret, cryptographic voice and data systems at NORAD/Cheyenne Mountain Complex.

Today, Rick's experience as both a Fortune 500 and start-up CTO, as well as a software and IT solutions architect, guides the team to develop and deliver the Buurst storage-as-a-service product line.

## About Buurst™

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Buurst™ Inc. is a privately held cloud NAS and virtual NAS software company, with headquarters in Houston, Texas.

Buurst addresses the unmet needs of enterprises moving from their own data center into the cloud, and for small to medium enterprises and small businesses who need enterprise-grade NAS capabilities for virtualization and cloud computing – without having to pay the price premiums commanded by the big brand NAS vendors.



## Rick Braddy

Founder

Chief Technology Officer  
SoftNAS, Inc.