

Gavin Cohen

Business Update

Multicloud Flash Fabric + InfoSight - Predictive Cloud Platform

Flash arrays

- all flash
- adaptive

Converged

- Cisco SmartStack
- Lenovo

Multicloud

- Nimble Cloud Volumes

NCV

- enterprise grade
- easy mobility
- global visibility

All Nimble arrays are cloud ready

Single architecture for on-premises and cloud

Flash optimised

- consistent performance - with always on data services and under heavy load
- advanced flash endurance - providing a 7 year flash lifespan
- 20% more usable capacity and inline variable block dedupe and compression
- integrated data protection and triple+ parity RAID

Scale-to-fit: flexible and non-disruptive scalability

Multicloud mobility

Supporting Amazon and Azure

Flexible application placement

Easy on ramp to the cloud

Backup and DR to cloud

easily move between clouds

\*Nimble Cloud Volumes

Applications moving to the cloud

1st stage - systems of engagement (web and mobile)

2nd - systems of insight (analytics and BI)

3rd - systems of record (transactional DBs)

Challenges with cloud block storage?

Durability and features - 0.1 - 0.2% annual failure rate, lack of data services

Cloud lock-in - data mobility is hard, data egress costs

“Black box penalty” - limits visibility

NCV - Enterprise-grade multicolour storage service for AWS and Azure

- own cloud, own technology
- close proximity to AWS and Azure DCs
- NCV for storage, AWS/Azure for compute

NCV - Benefits

Enterprise-grade

- millions of times more durable
- data protection & copy data management
- multi-host access

Easy Mobility

- cloud on-ramp
- multicolour
- no lock in

Global visibility

- Cloud and DC visibility
- predict, recommend and optimise
- predict and track usage

cloud.nimblestorage.com

- 10c / GB / month
- beta availability now
- customer preview available in the current quarter
- European and Asian sites by end of 2017

\*Sandeep - Demo (photo)

create cloud volumes using either GUI or API

can specify application that will run on the volume, provisioned IOPS, premium flash or general purpose flash

choose snapshot protection, retention and encryption options

\*Rod Bagg - InfoSight Predictive Analytics

App - data gap

Not all problems are with storage

endless fire-fighting

- constantly reacting to unexpected problems
- trying to interpret dozens of performance graphs
- calling vendor support just makes thing worse

You don't have to settle for the way that it has been

Building a foundation for predictive analytics from the start

Overcome complexity, eliminating anxiety

- predicts and prevents problems - 86% issues automatically opened and solved
- global visibility and learning - 99.9999% measured availability
- Support you like - 54% cases solved outside storage

## Differentiators?

- analytics from the start
- awareness beyond storage
- applied machine learning and data science
- prescriptive recommendations

## Handover to David Adamson, PhD

### New feature background

- since inception, InfoSight has provided hardware upgrade recommendations
- what workload changes could help customers use their hardware most efficiently?

### New feature overview

#### what workloads?

- periods of time to consider
- is the resource hungry job one off or regularly scheduled?

### Know when latency matters - Performance Impact Score

#### Visualise workloads activity - InfoSight Labs App

#### Calendar View - heat map of workload activity

## Performance Impact Models

Machine-learned model to predict how impactful latency will be based on the underlying IO signature

This model comes from the correlation of data from real-world support cases with our InfoSight telemetry

This model is several-fold more accurate than a raw latency average at predicting whether or not a customer will notice a performance issue

## InfoSight Labs App Demo

### Giving workload context

#### Workload and Resource Consumption Patterns

InfoSight has long been able to recommend hardware upgrades

New tools help give the infrastructure admin additional context about their environment to determine what alternative remediation(s) to pursue

- a noisy neighbour volume could have a QoS limit applied
- concerted activity across multiple volumes could indicate a need for staggering
- scheduled jobs or recurring periods of high demand merits a response more than a one-off event

Looking forward to building on this functionality, including automatic callouts for suggested remediations

\*Rod talking about Nimble availability

### How measured availability keeps getting better

- applied machine learning to predict and prevent problems
- infrastructure learns from Nimble installed base
- prevent known issues from being experienced by others

- solve storage and non-storage problems

Realising a future that's hands free

auto-pilot (today) -> self-managing (tomorrow)

- peer learning, simulations / modelling, unsupervised learning, artificial intelligence

\*Sakthi Chandra - Nimble Storage Docker Volume Plugin  
and Michael Mattsson (@drajen)

Docker Volume Plugin

- high availability
- performance policies
- volume placement
- protection templates
- locally scoped volumes
- encryption
- thin provisioning
- variable block dedupe and compression
- clones
- volume import
- permissions and ownership
- QoS limits

Roadmap

- Windows Docker plugin
- integration with Nimble Cloud Volumes

Containerized Apps

- best in class tools built-in for seamless cutover of legacy volumes on Nimble
- separate your data from your application
- validate cutover on clones

Continuous integration / delivery / deployment