



Novel TCT: A brief demo on using TCT with alternative cloud gateways

Laurence Horrocks-Barlow, Wednesday 18th April 2018

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Who am I?

Laurence Horrocks-Barlow

OCF Lead Storage Consultant

In the industry for almost 15 years

- Research
 - Customer requirements
 - New methods
 - New technologies
- Architect
 - Design novel solutions for **Proof of Concepts**
 - Design solutions for customer requirements
- Installation
 - Team work
 - Hands on
- Support
 - Post installation escalation point



Who is OCF

- HPC Integrator
 - Systems
 - Storage
 - Cloud
 - Data Analytics
- Over 15 years of experience
- We integrate and innovate using a variety of vendors
 - Vendor agnostic
 - Flexible design and implementations



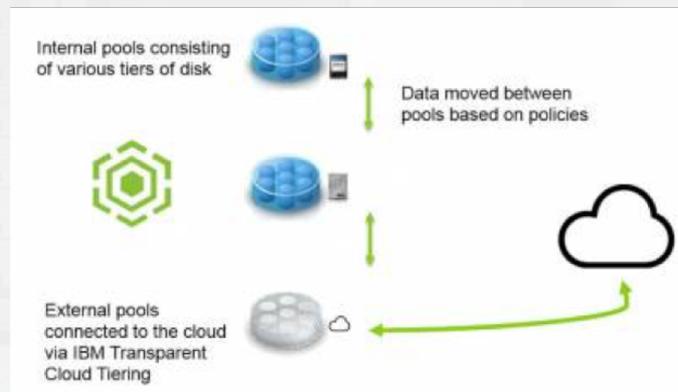
Quick Thanks

- Eran Tamir – NooBaa
 - Supported the PoC
 - Provided demo instances
 - Continual extensions of the demo instance

What's TCT

- **Transparent Cloud Tiering**
 - Allows the addition of a cloud based storage tier
 - Think TSM Space Management for the cloud
 - Migrate or co-exist files
 - Import to another GPFS filesystem
 - Uses S3 object protocol

Requires Advanced or Data Management Edition



Novel TCT?

- Idea came from a Proof of Concept
 - Solved a customer requirement
 - Customer had already implemented Azure....
 - I thought it was rather cool
- Spectrum scale TCT supports S3
 - IBM Cloud Object Storage (Cleversafe)
 - AWS S3
 - Openstack Swift
- No support for other native object protocols
 - Google Cloud (Google has S3 “compatibility”)
 - Azure



Amazon
S3



Google
Cloud Platform

Solution?

- Use an S3 Gateway
- Investigated several.....
 - Minio
 - S3 Proxy
 - S3 Ninja
- Support
 - Open Source or Commercial
 - Inhouse skills, paid skills, community skills



Flexibility

The freedom to adopt new technologies and cloud services without the fear of lock-ins

Simplicity

Consume and create data and resources anywhere, with full visibility and control of what goes where

Compliance

Meet all infrastructure regulatory requirements, while containing costs



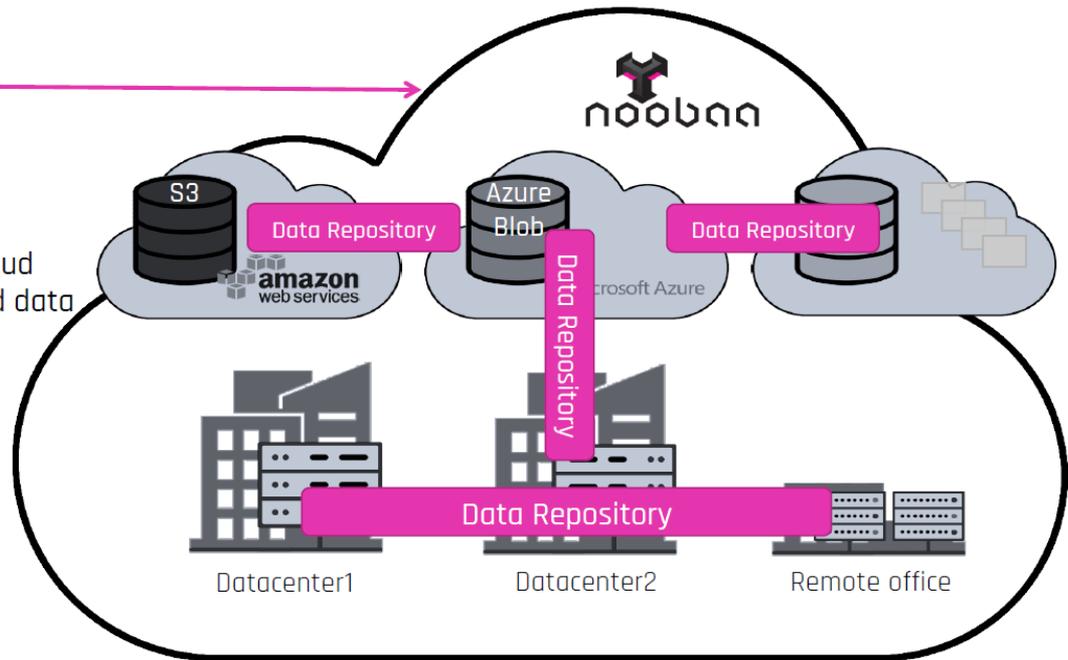
Applications

High stack – Data management

- Active Active – Keep your data available.
- Flexible – Any resource, on premises or cloud
- Metadata - easily create your personalized data flow using serverless functions
- Secured – All data encrypted, managed

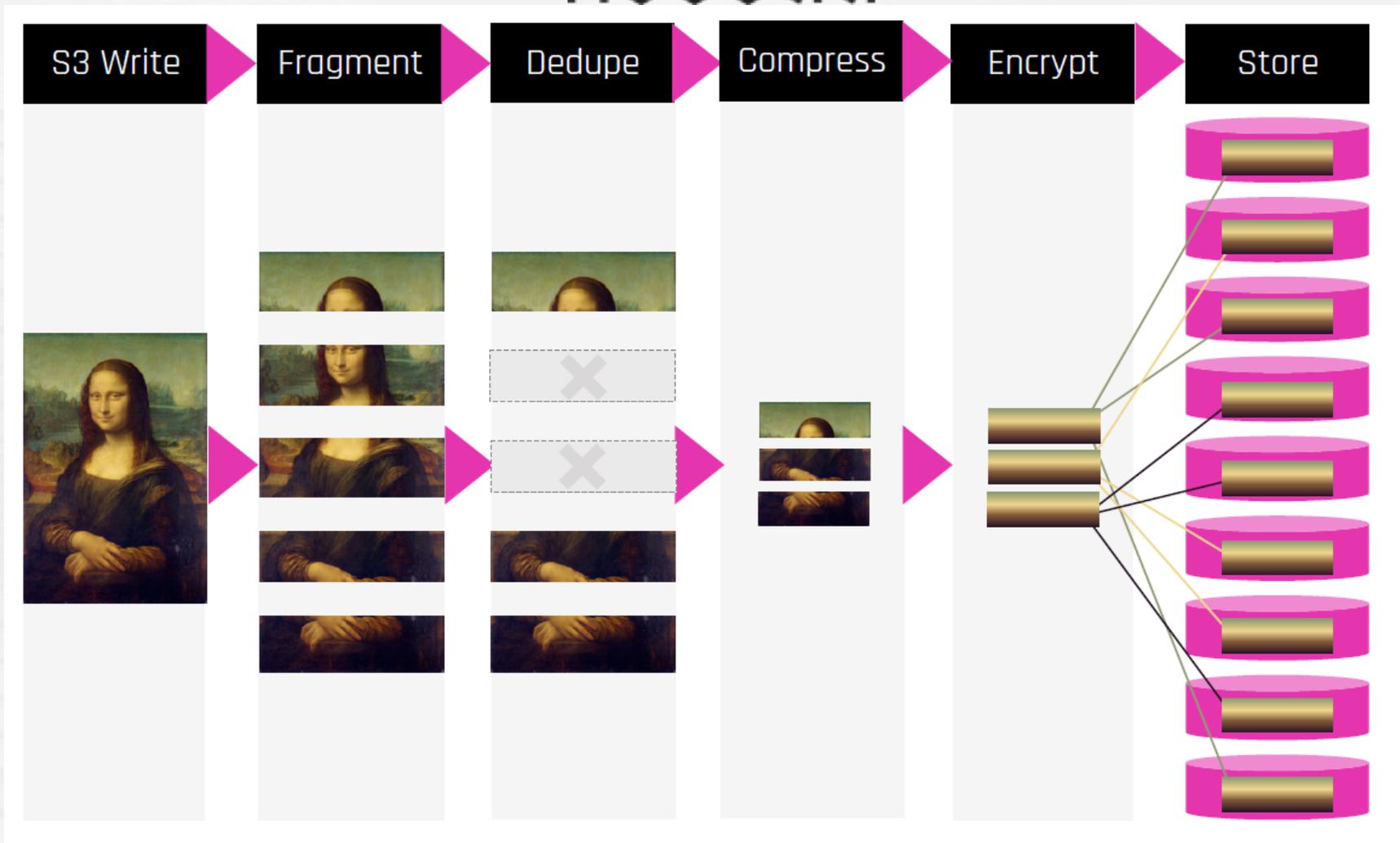
Low Stack – Storage

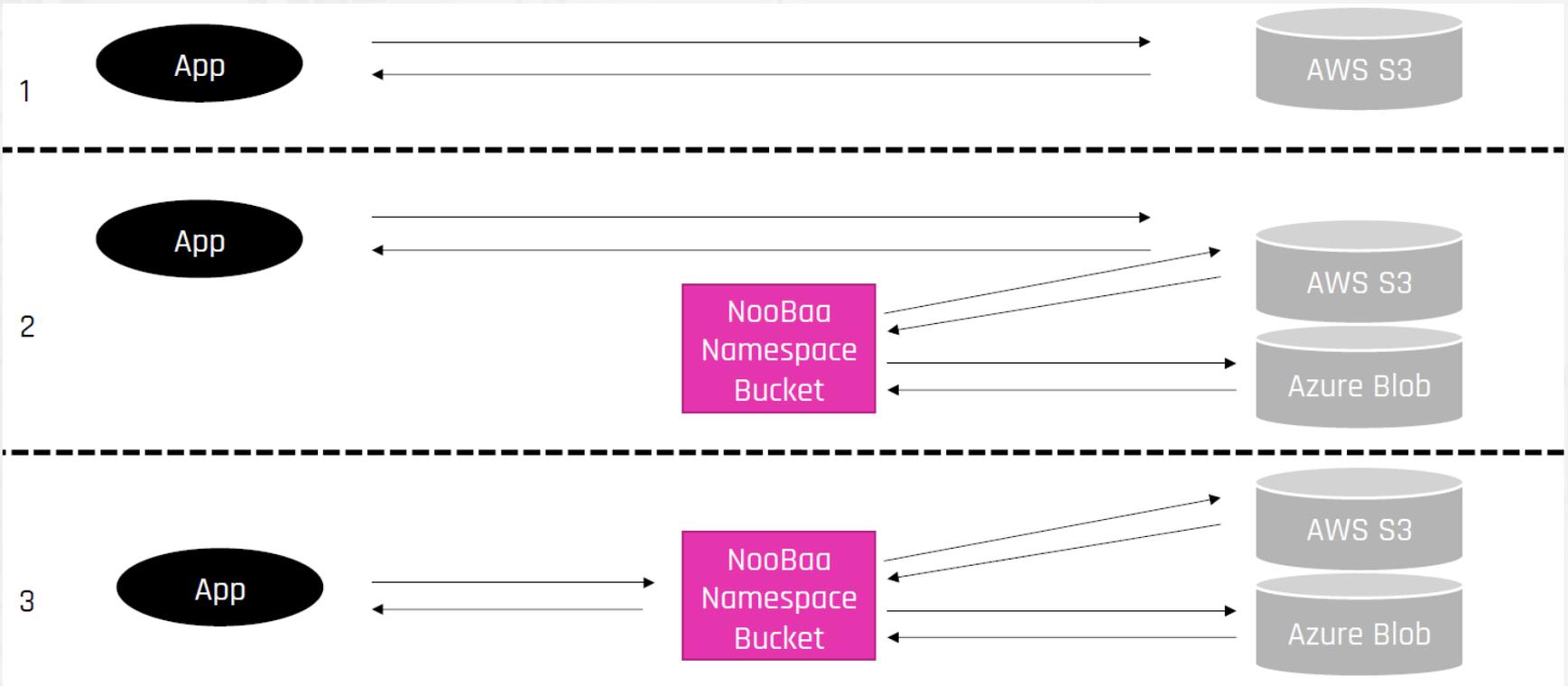
- Flexible Erasure Coding - achieve your desired efficiency
- Compression
- Deduplication





| | |
|------------------------------|---|
| Virtual Namespace | New way to span data in hybrid and multi-cloud environments |
| AWS to Azure/Azure to AWS | Simple migration from AWS S3 API to Azure Blob; Azure Blob API to AWS S3 |
| Multiple Resiliency Policies | Configurable Erasure coding per bucket. |
| Auto Tiering and Archiving | Using lifecycle policies to automate data tiering and archiving |
| Personalized Data Flow | Serverless – AWS Lambda compatible functions, allows to personalize data flow, implement customized data anonymization, extract research oriented data out of huge datasets, etc. |
| Zero-time Installation | Faster on boarding with internal virtual storage |





You said Demo!

- I believe in “Sod’s Law”
 - If a demo is going to go wrong in public, it’ll go wrong for me!
- I can’t type if someone's watching me
 - I can edit out all my mistakes in a video
 - See if you can spot the typo in the video – beer if you can find it
- Lets watch a video together

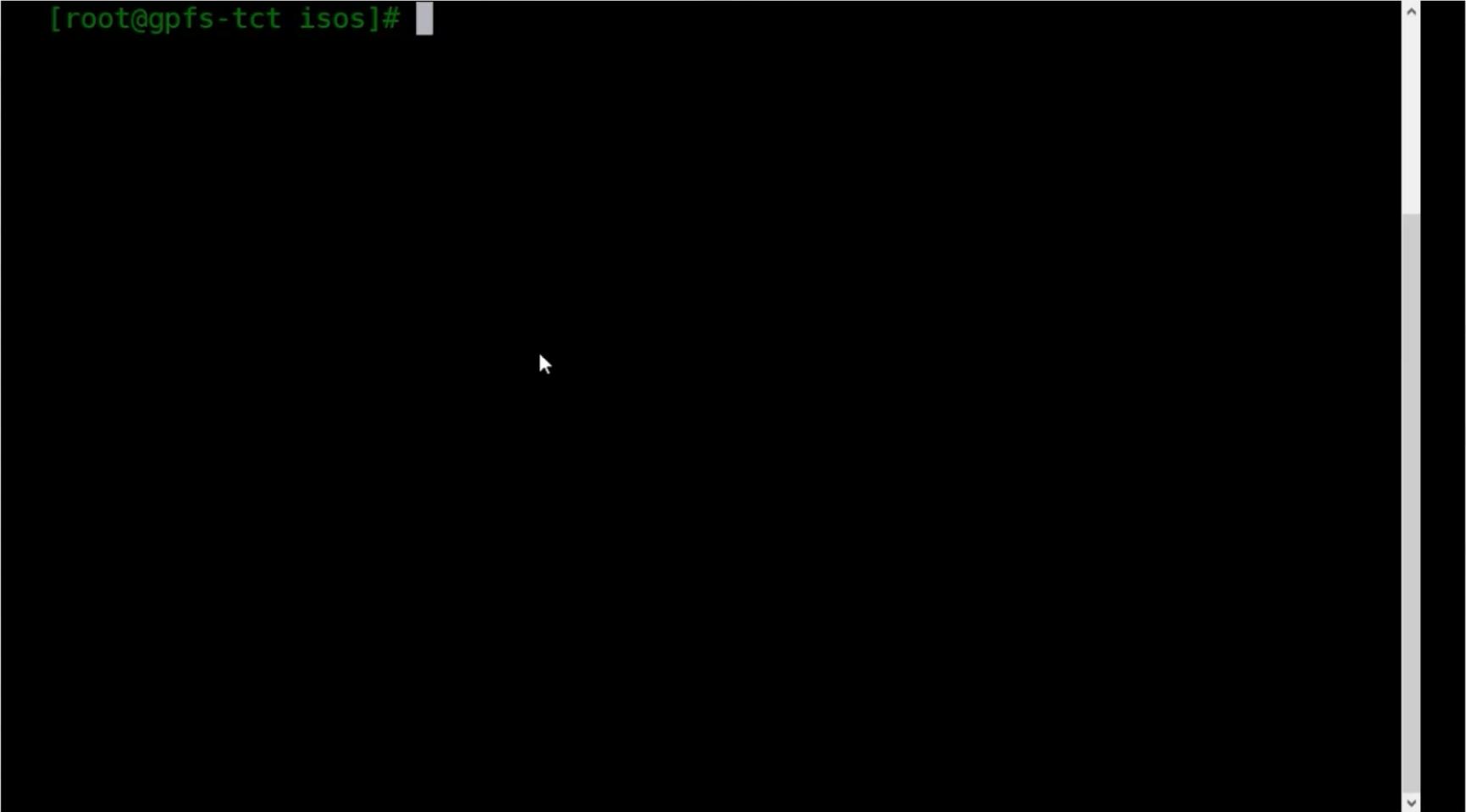
```
[root@gpfs-tct ~]#
```

Other cool uses

- Migrate between cloud providers
 - No lock in!
 - Migrate transparently (TCT doesn't notice)
- Transparently breakout into public cloud
 - Overflow buckets
- Manage additional resiliency
 - Erasure coding
 - For security
 - For resiliency
 - Mirror between providers
 - Migrate data to multiple sites
 - Transparent multi protocol through a virtual bucket

Transparently migrating cloud providers

```
[root@gpfs-tct isos]#
```

A terminal window with a black background and green text. The prompt is [root@gpfs-tct isos]#. A white mouse cursor is visible in the center of the terminal. The terminal is framed by a white border with a vertical scrollbar on the right side.

Questions

