



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



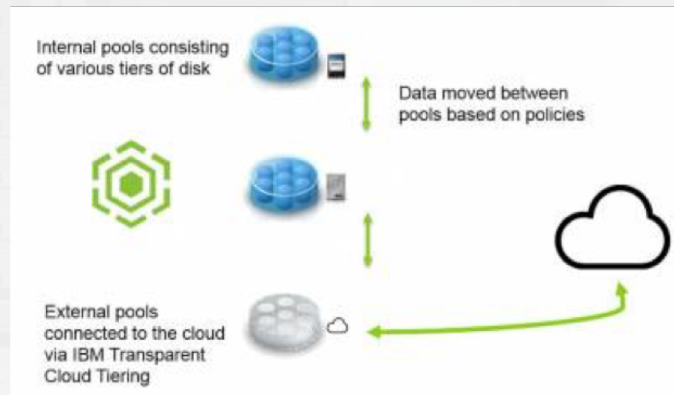
Quick Thanks

- 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



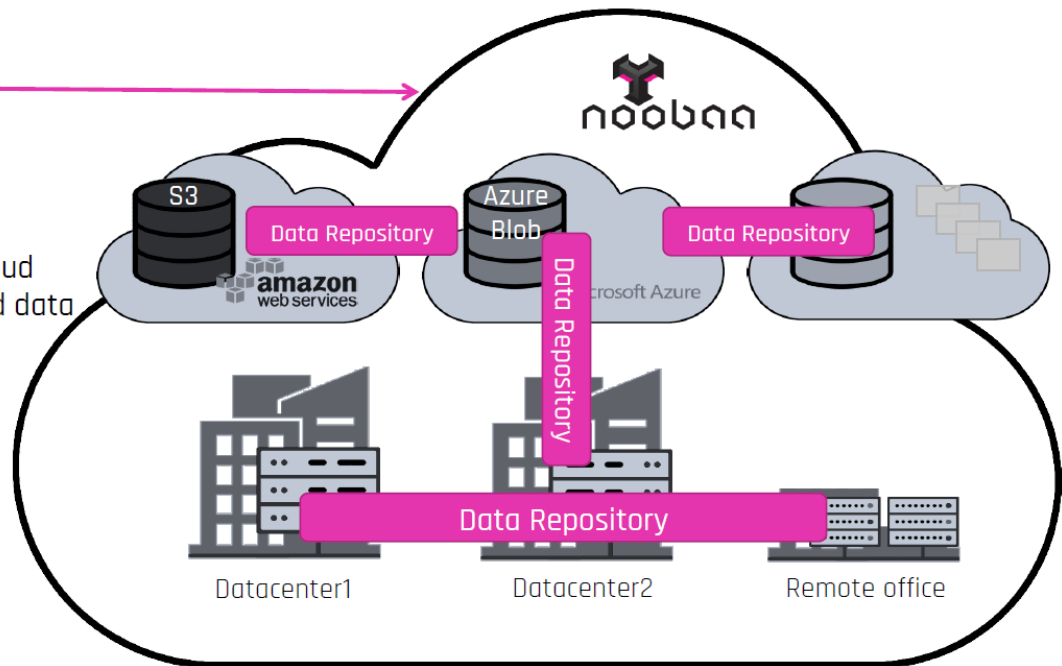
Applications

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

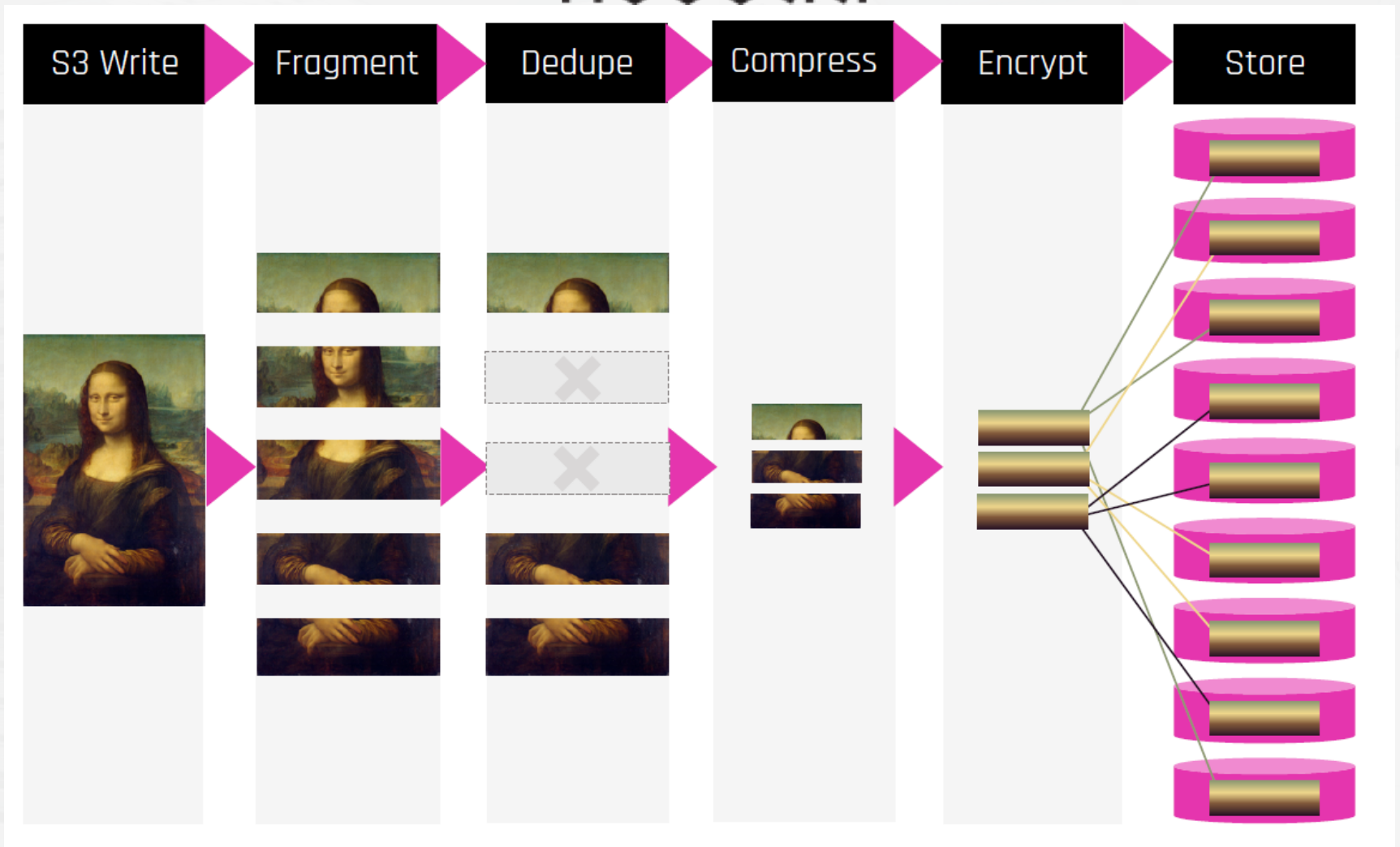
Low Stack – Storage

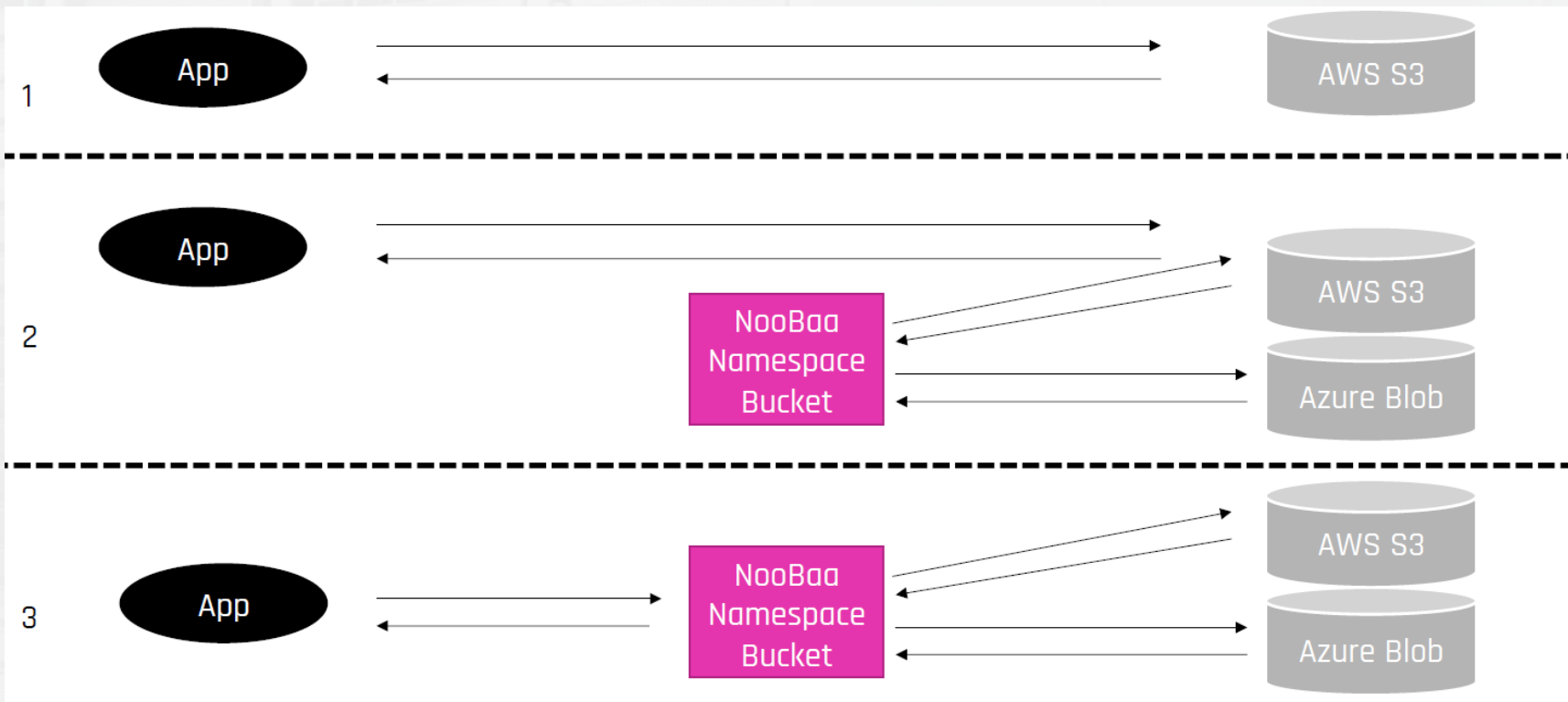
- Flexible Erasure Coding - achieve your desired efficiency
- Compression
- Deduplication





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

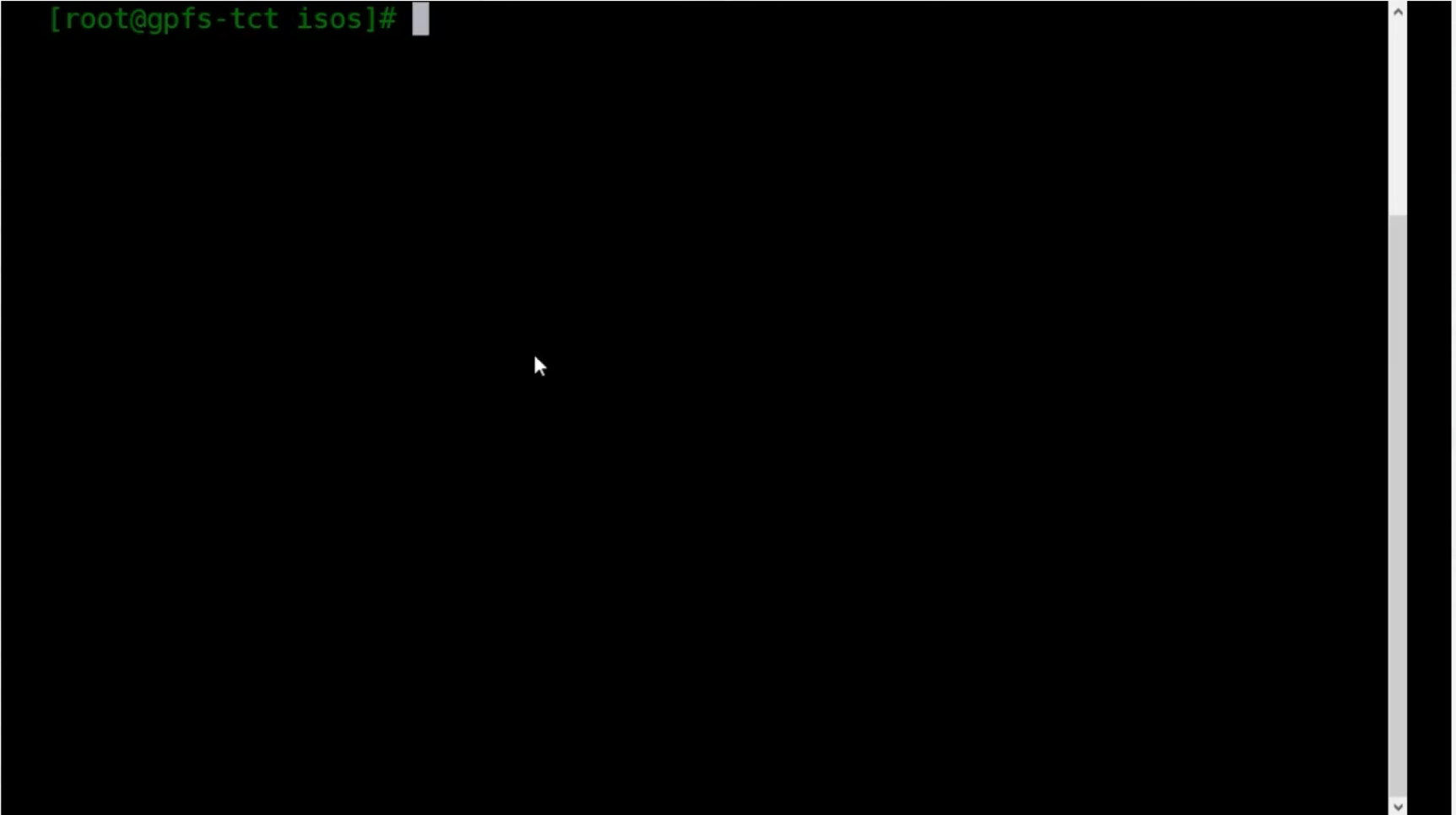

```
[root@gpfs-tct ~]#
```

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]#
```



Questions

