



Red Hat Storage

How the **MULTI CLOUD OBJECT GATEWAY** help you access and protect your data in a Hybrid world

Andreas Bergqvist Storage and HCI BDM Nordics
Eran Tamir, Product Management

Storage is almost always an afterthought

The same no matter what storage we talk about.





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Storage is almost always an afterthought

But yet Storage is one of the main reasons for arguments in a relationship.

Always on top 3 in why couple argue are discussions/quarrels about keeping the home clean and uncluttered - which is directly related to how good storage solution you have for your family's needs.

Same in IT!

What do we consider when we run a project?

Business value
Happiness of the customer
The efficiency of the staff
...

But seldom or never the storage implications.

THE THREE PILLARS OF STORAGE

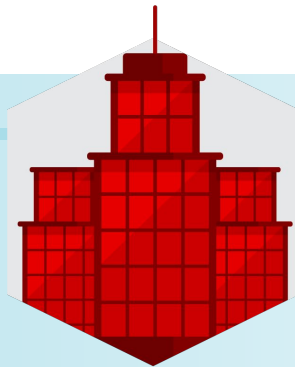


STORAGE FOR OPENSIFT

COMPLETE DATA PORTABILITY

For OpenShift Across the
Hybrid Cloud

Red Hat Ceph within
OpenShift

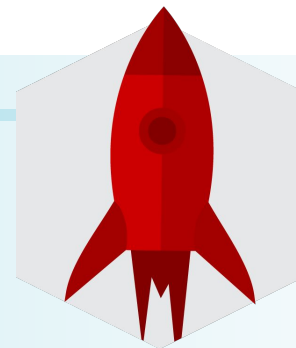


EXASCALE STORAGE

MOST SCALABLE DATA PLATFORM

Data Analytics, AI/ML, IOT,
Backup/Active archives

Running on OpenShift and large
scale Ceph environments



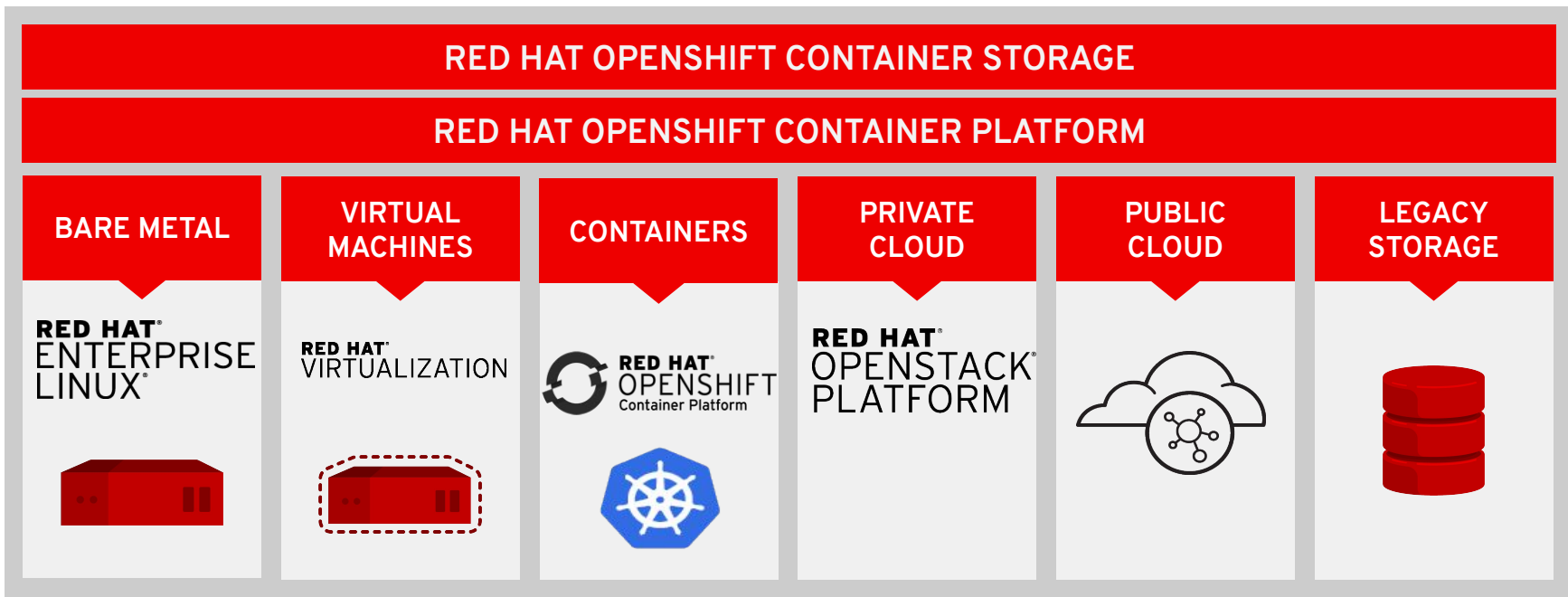
HYPERCONVERGENCE

ELASTIC INFRA ACROSS THE DATA CENTER AND EDGE

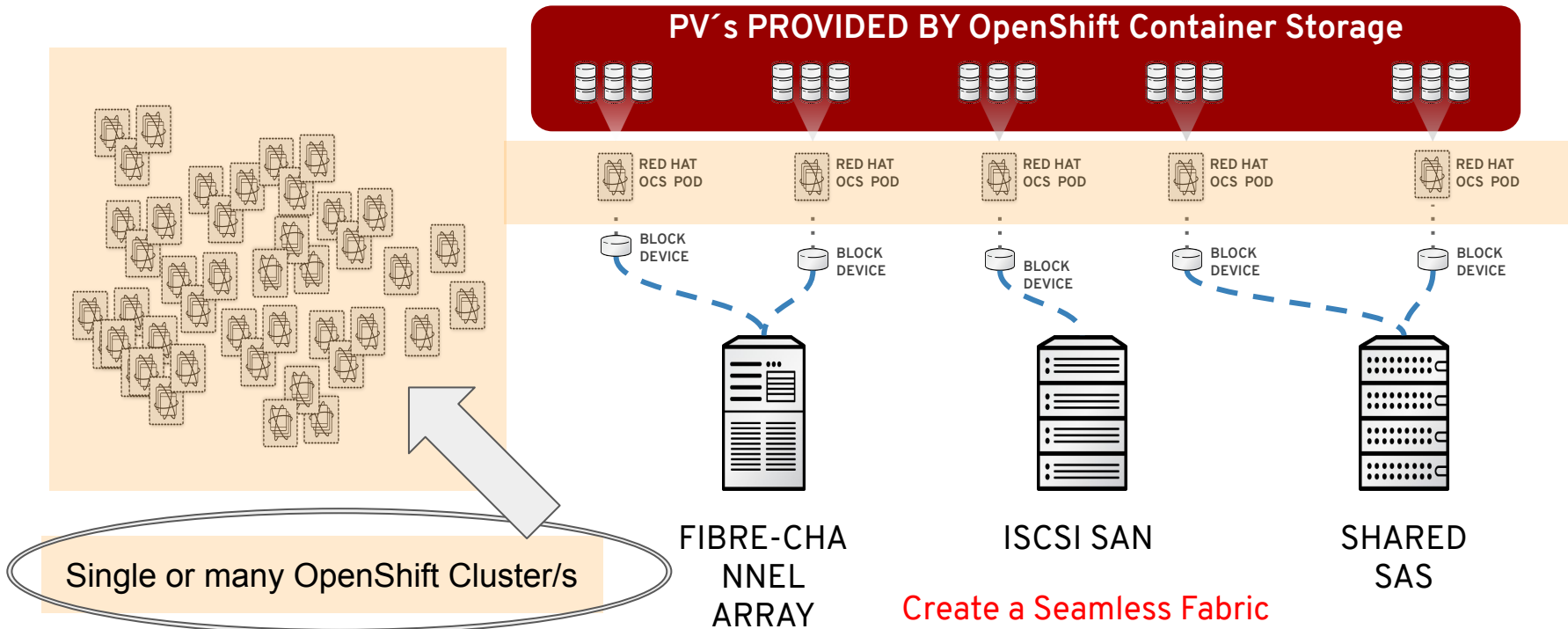
Edge, remote offices, distributed
compute

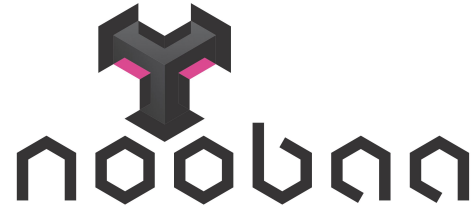
OpenStack/RHV/OpenShift+Ceph

Consistent storage experience across the Hybrid Cloud application portability and lower costs



Peaceful Coexistence & Leverage of Legacy/Traditional Storage





Persistent Volume

Block

- Primary for DB and Transactional workloads
- Low latency
- Messaging

Provided by Rook-Ceph

Shared File System

- POSIX-compliant shared file system
- Interface for legacy workloads
- CI/CD Pipelines
- AI/ML Data Aggregation
- Messaging

Provided by Rook-Ceph

Object Service

- Media, AI/ML training data, Archiving, Backup, Health Records, Shared Data lakes replacing HDFS
- Great Bandwidth performance
- Object API (S3/Blob)

Provided by NooBaa

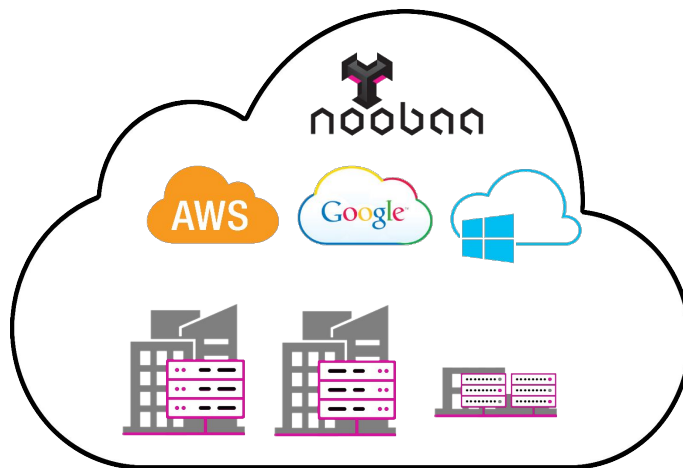
MULTI-CLOUD OBJECT GATEWAY

PRESENTATION AGENDA

- ABOUT MULTI-CLOUD OBJECT GATEWAY (MCG)
- NOOBAA TECHNOLOGY
- MCG CAPABILITIES
- STARTING WITH MCG
- MCG USE CASES
- MCG ARCHITECTURE
- MCG DEMO

FLEXIBLE DATA PLATFORM

DATA FEDERATION ACROSS MULTIPLE PRIVATE AND PUBLIC CLOUDS



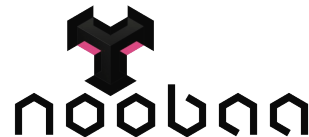
NOOBAA TECHNOLOGY

- **COMMUNITY PROJECT - NOOBAA.IO**

1. Follow the instructions here for [NooBaa](#)
2. Connect your application to NooBaa
3. Start writing and reading data

- **RED HAT ENTERPRISE VERSION**

RED HAT OCS MULTI-CLOUD OBJECT GATEWAY
BUILT ON NOOBAA TECHNOLOGY, PART OF OCS 4



CAPABILITIES

- **TRANSFORM MULTIPLE STORAGE SILOS**

INTO A SINGLE, SCALABLE STORAGE FABRIC

- **VIRTUALIZE ANY KIND OF LOCAL STORAGE:**

SHARED, DEDICATED, PHYSICAL OR VIRTUAL
INCLUDING PRIVATE- AND PUBLIC CLOUD

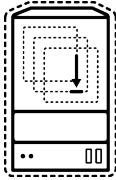
- **FULL CONTROL OVER DATA PLACEMENT**

PLACE DATA BASED ON SECURITY, STRATEGY AND COST CONSIDERATIONS
ALL WITHIN GRANULARITY OF AN APPLICATION

A single lightweight pod for basic development and tests

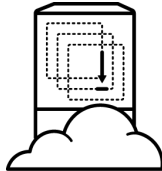


START LEAN



SCALE LOCALLY

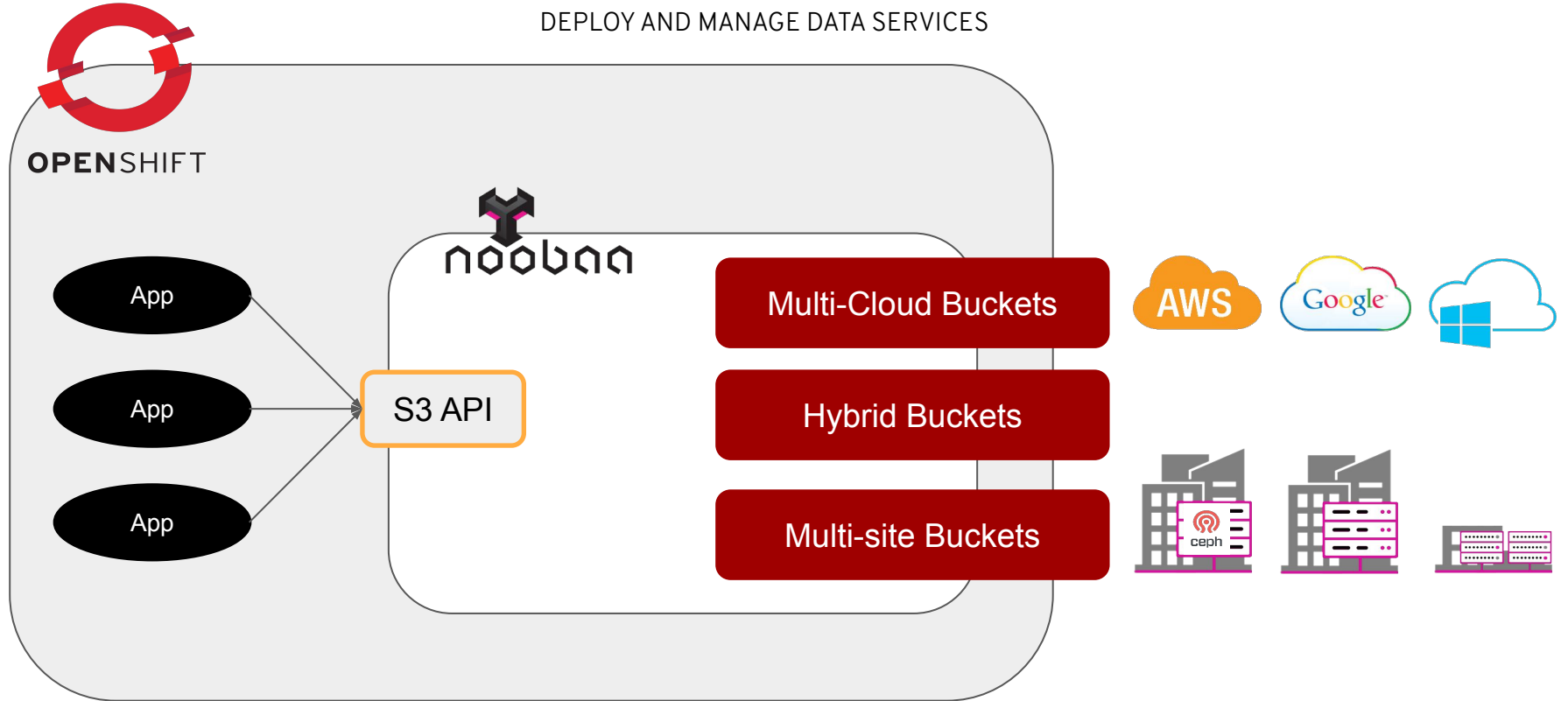
Scale with local storage resources, in example, Red Hat Ceph Storage



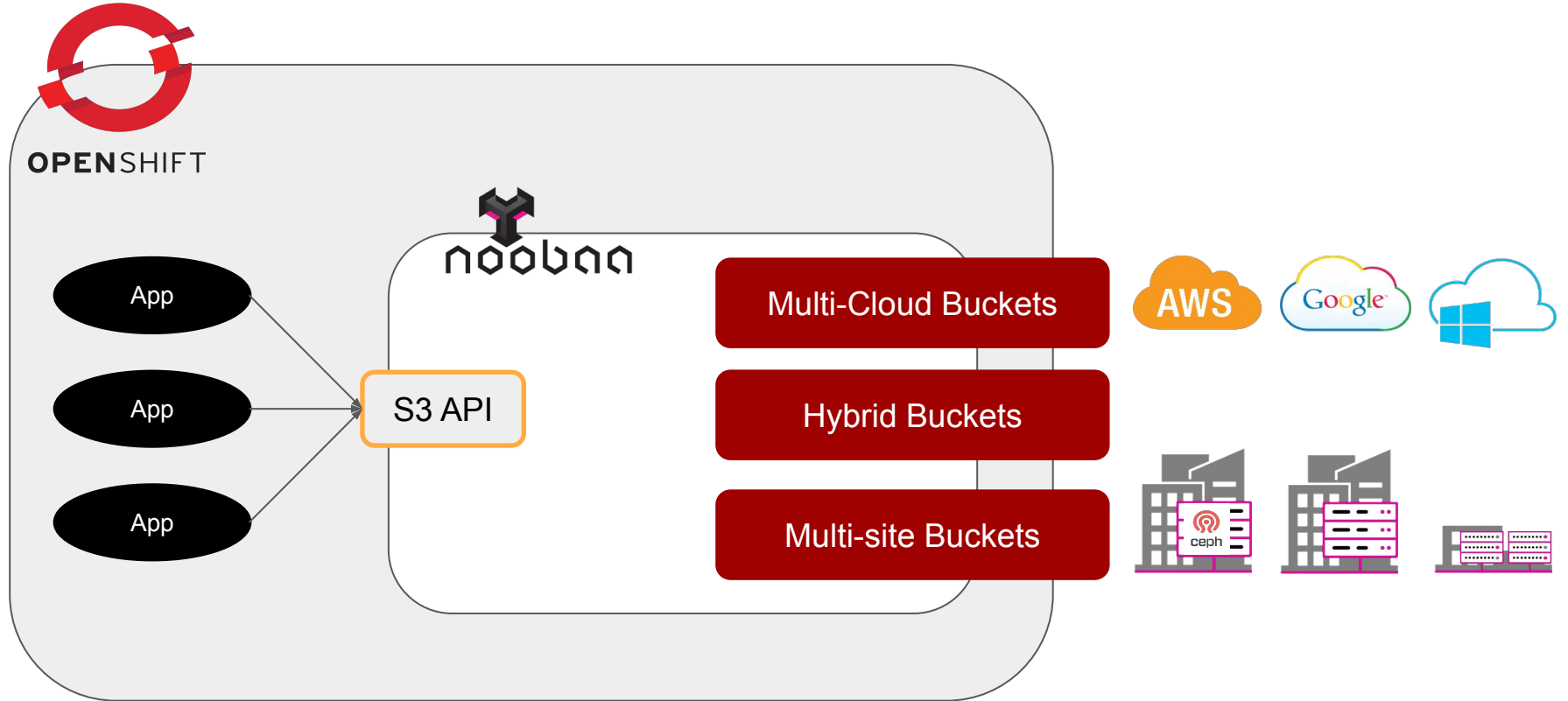
WORKLOAD PORTABILITY

Easily mirror data to other cluster or native cloud storage

DEPLOY AND MANAGE DATA SERVICES

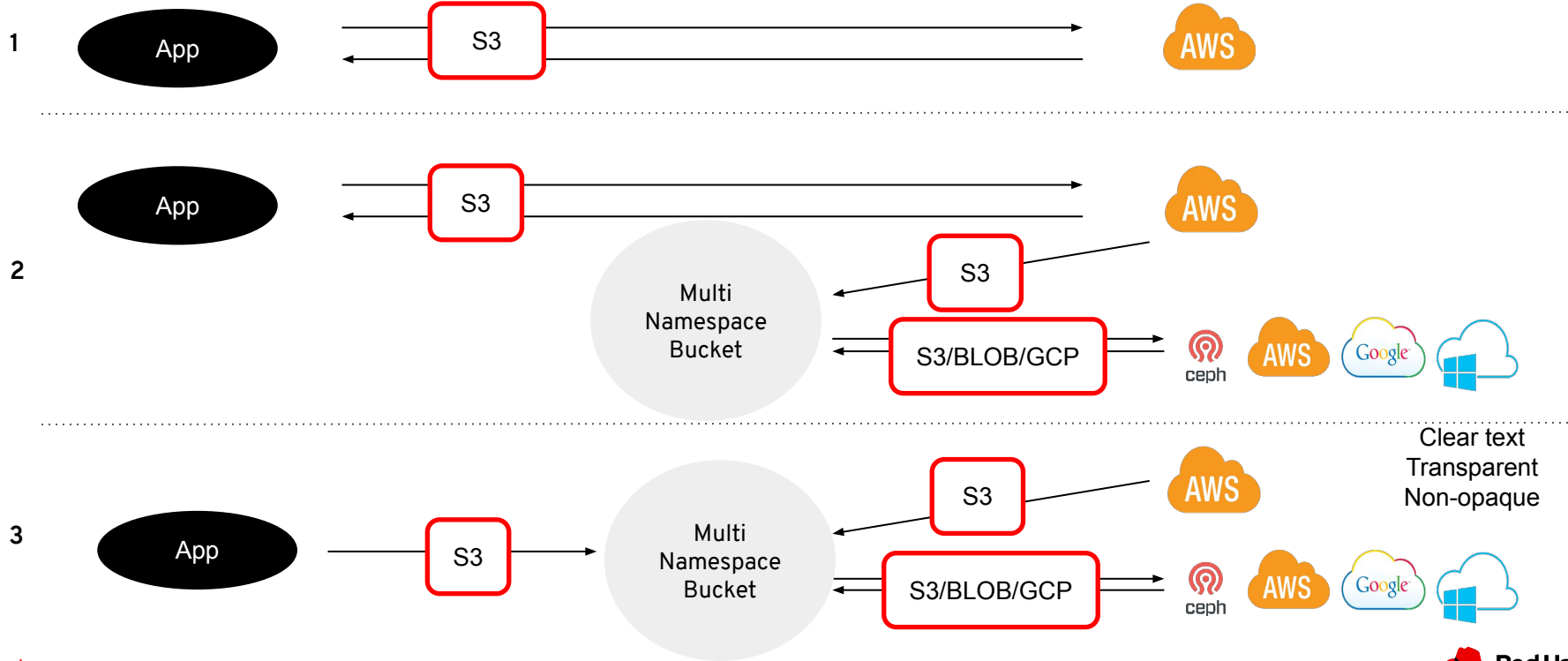


MCG USE CASES



MULTI-NAMESPACE - LAZY MIGRATION

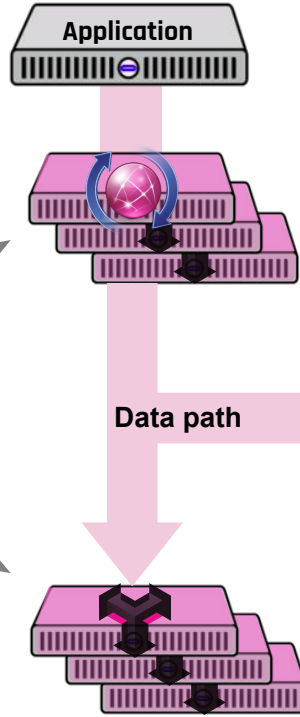
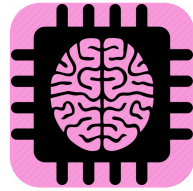
Using the same app across cloud provider without porting, migrating, paying Egress or building the data placement knowledge into the application



MCG WORKFLOW

NOOBAA CORE

Optimized utilization, resilience, performance, locality, economics, etc.



SCALABLE NOOBAA ENDPOINT

S3 / Lambda API
auth,
chunking,
dedupe,
compress,
encrypt

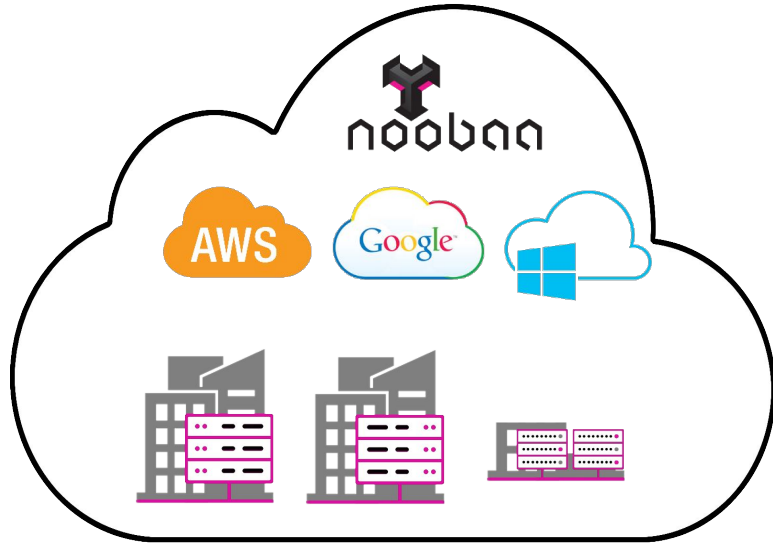


CLOUD RESOURCE

AWS S3
AWS S3-compatible,
Azure Blob,
Google cloud storage

SCALABLE NOOBAA STORAGE NODE

stores chunks,
runs lambda functions,
monitors host,
sends heartbeats



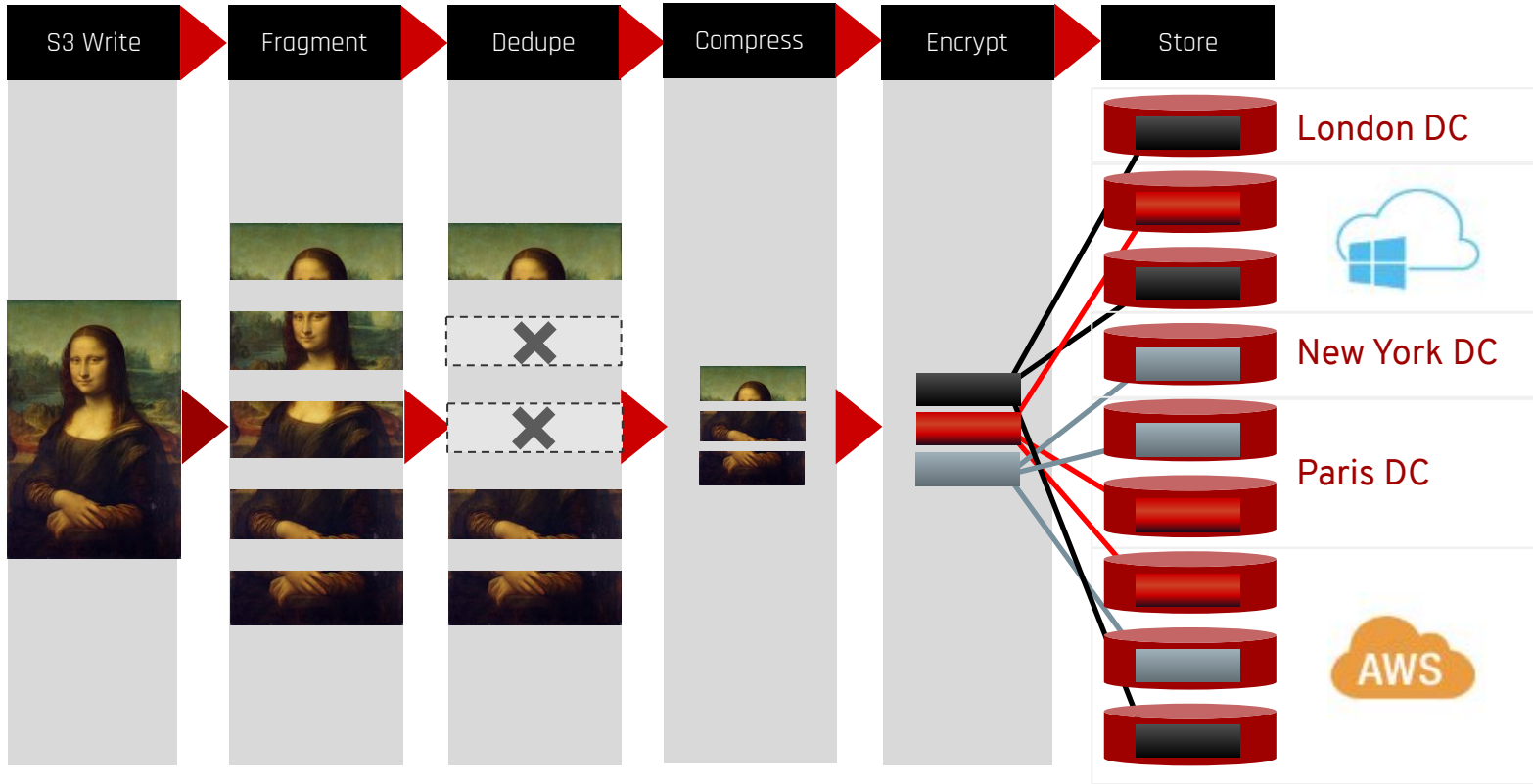
HIGH STACK - DATA MANAGEMENT

- **ACTIVE ACTIVE** - KEEP YOUR DATA AVAILABLE
- **FLEXIBLE** - ANY RESOURCE, ON PREMISES OR CLOUD
- **PERSONALIZED**
EASILY CREATE YOUR PERSONALIZED DATA FLOW USING SERVERLESS FUNCTIONS
- **SECURED** - ALL DATA ENCRYPTED, MANAGED

LOW STACK - DATA EFFICIENCY LAYER

- FLEXIBLE ERASURE CODING - EFFICIENCY IN SCALE
- COMPRESSION
- INLINE DEDUPLICATION

EFFICIENCY AND SECURITY BY DEFAULT



ENABLING THE OPEN HYBRID CLOUD



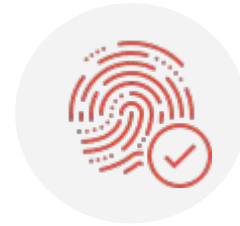
ENCRYPTION IN REST AND IN MOTION

Every chunked data is encrypted with its own key using AES 256. Separation between the key management and the data.



ANONYMIZATION & MASKING

Unique customizable data flow, that can anonymize or mask your own data before storing or collaborating

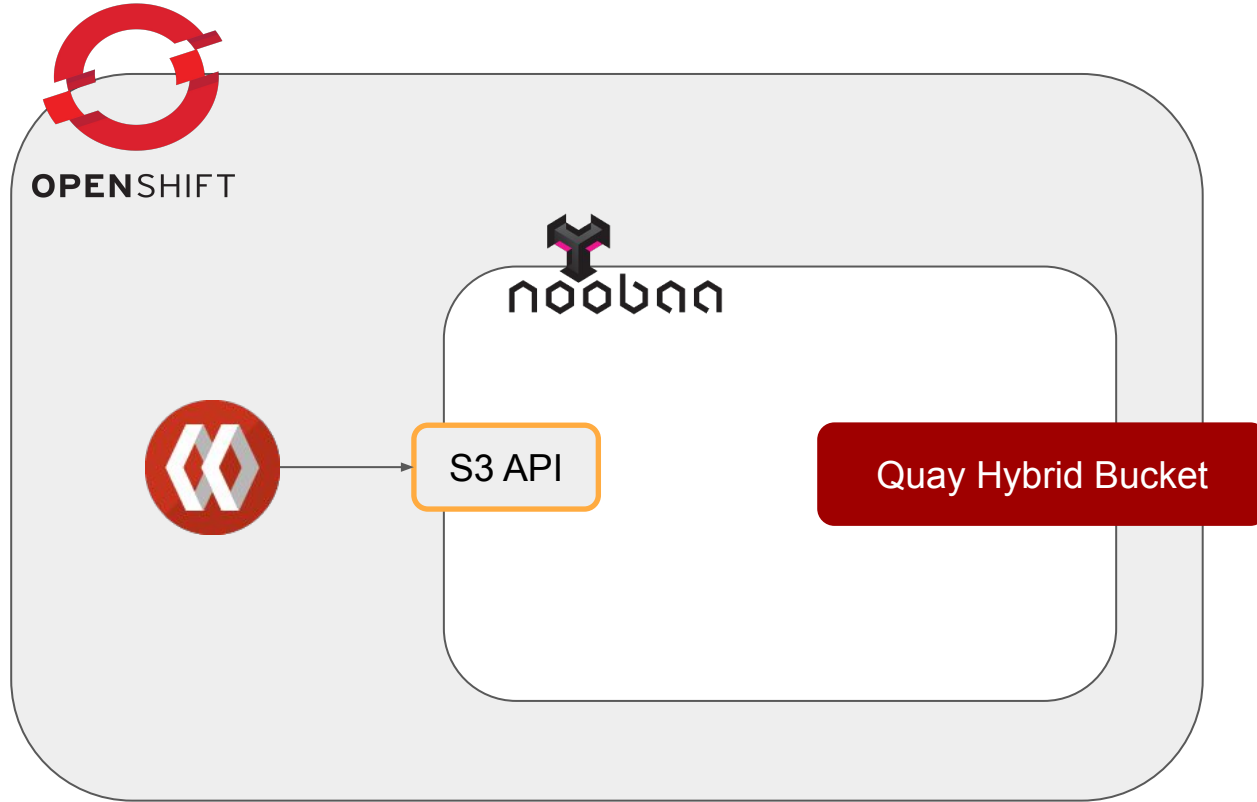


FINGERPRINTING

Automatic data fingerprinting with self-healing and trust management of the storage nodes

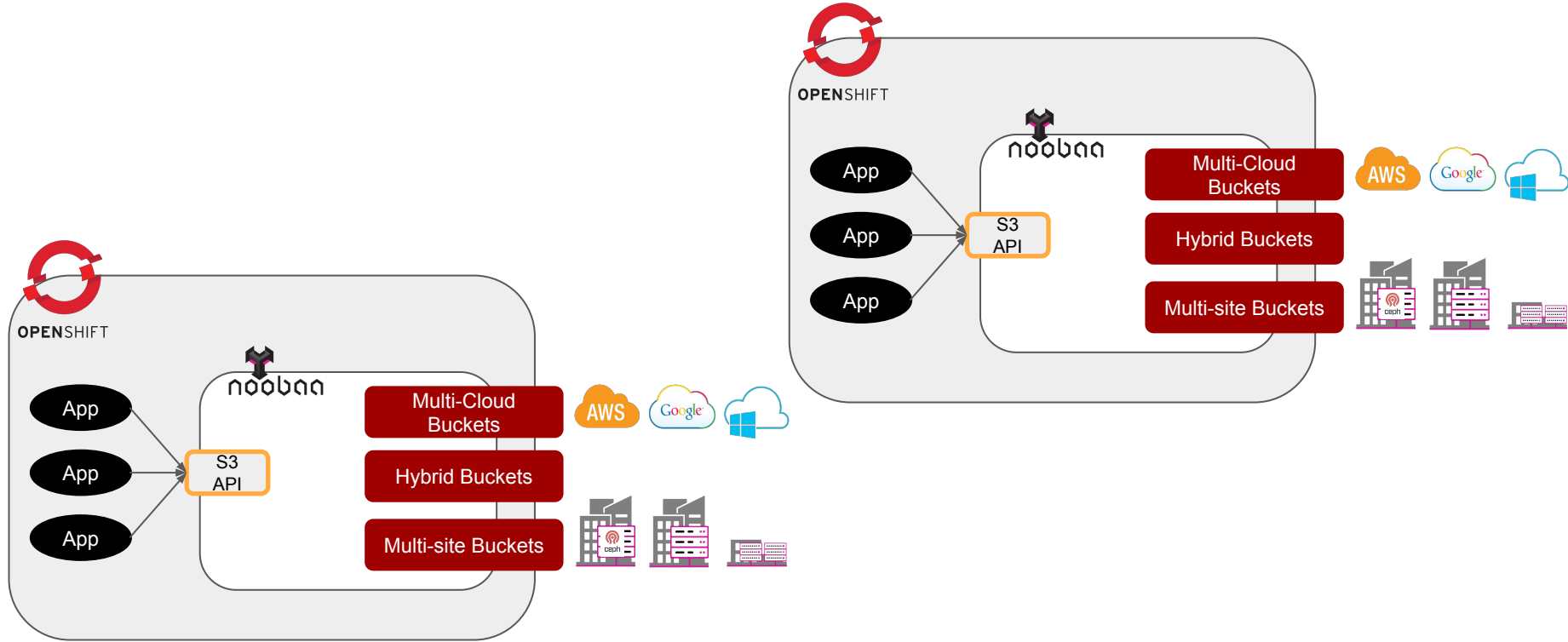
DEMO

QUAY USE CASE - FROM LOCAL TO MULTIPLE LOCATIONS



ROADMAP

MULTI CLOUD OBJECT GATEWAY - FUTURE



Storage is almost always an afterthought

The same no matter what storage we talk about.

But with Software Defined Storage this is possible to handle:

You can use your existing Storage and let OCS fix the gaps in functionality

You can use OCS in all places you run OCP and get a hybrid solution with a common feature set wherever you run.

And now you can use the Multi Cloud Data Gateway to access any Cloud storage with a single, consequent S3 API.

Next steps

Are you using OCP?

Test OCS. Non intrusive - can back out if you do not love it

Are you spanning multiple Clouds?

Test MCG that lets you:

Use data where it is without the need to move it.

Move data from one tier to another

Use one API no matter what cloud storage

Scales indefinitely

Makes Ceph even cooler

Q&A

THANK YOU

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