Connect

Disaster Recovery

OpenShift Container Platform

Suvendu Mitra

Associate Principal Specialist Solution Architect
Red Hat

Tommi Sohlberg

Associate Principal Solution Architect
Red Hat

Agenda

- Disaster Recovery Process efficiency
- Backup & Restore
- Storage Layer Replication
- Application Layer Replication
- Distributed Stateful Workloads
- OpenShift Virtualization - Backup & Disaster Recovery

Key Takeaways

Don’t try to protect OCP clusters.

Try to ensure the business continuity of the applications running on OCP by failing over to other clusters

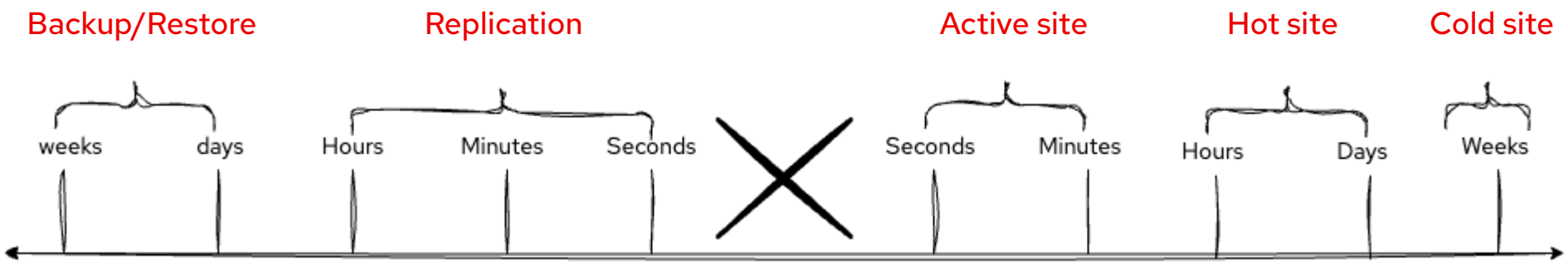
Focus on having capability to be able to **rebuild** and **repopulate** a cluster when the disaster condition has been remediated

Disaster Recovery involves two problems:

1. Traffic routing
2. Data replication

With **stateless** workload you need to solve only the first problem. In this presentation we focus on **stateful** workloads.

How do we measure a DR process efficiency



RPO
Recovery Point Objective

RTO
Recovery Time Objective

Red Hat

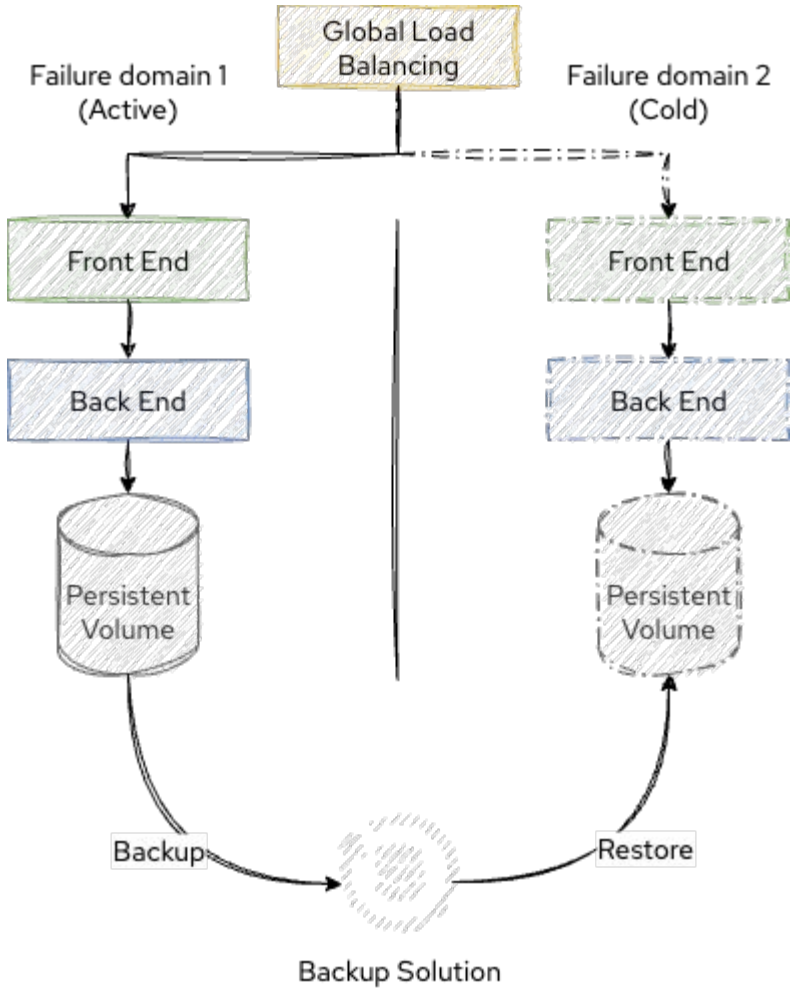
Backup & Restore

Backup primary purpose: Protect against deletion or corruption of application data due to human or software issues. The backup is restored to the original location.

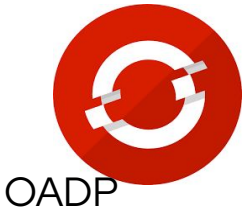
Backups can also be used to protect against infrastructure failures. The backup is restored to a different location.

Backup = Snapshot + Copy

Two options to create a correct (not corrupt) backup :
Crash-consistent snapshot/backup
Shut down the application or freeze write I/O (e.g. fsfreeze) before creating the backup

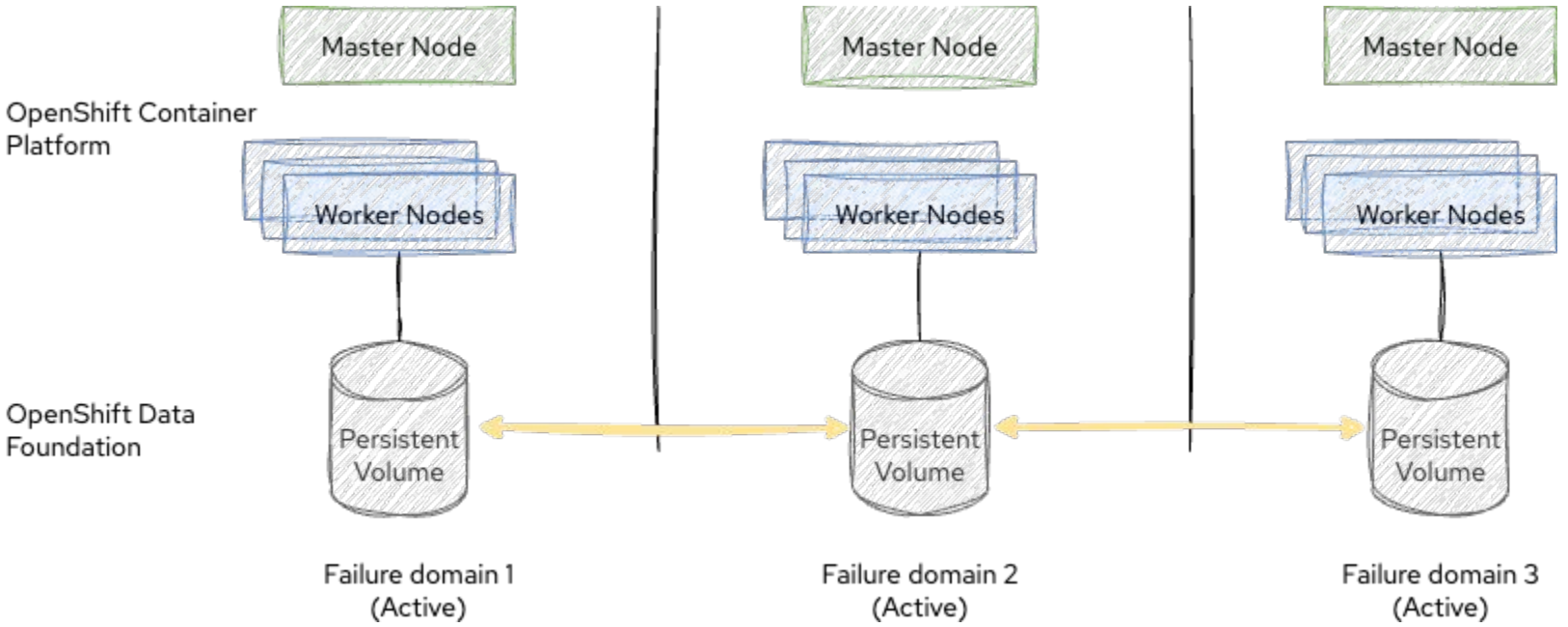


Certified Backup and Restore Vendor



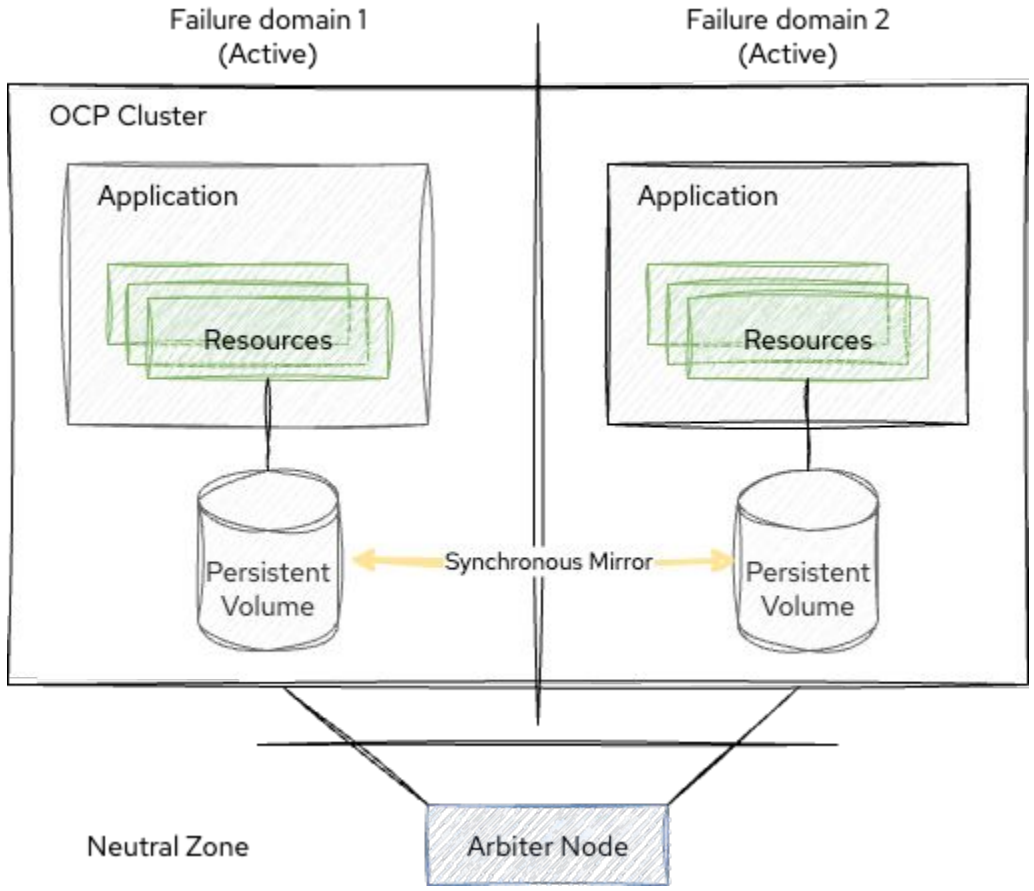
Storage Layer Replication

Single OCP+ODF clusters deployed over multiple AZs in a single region



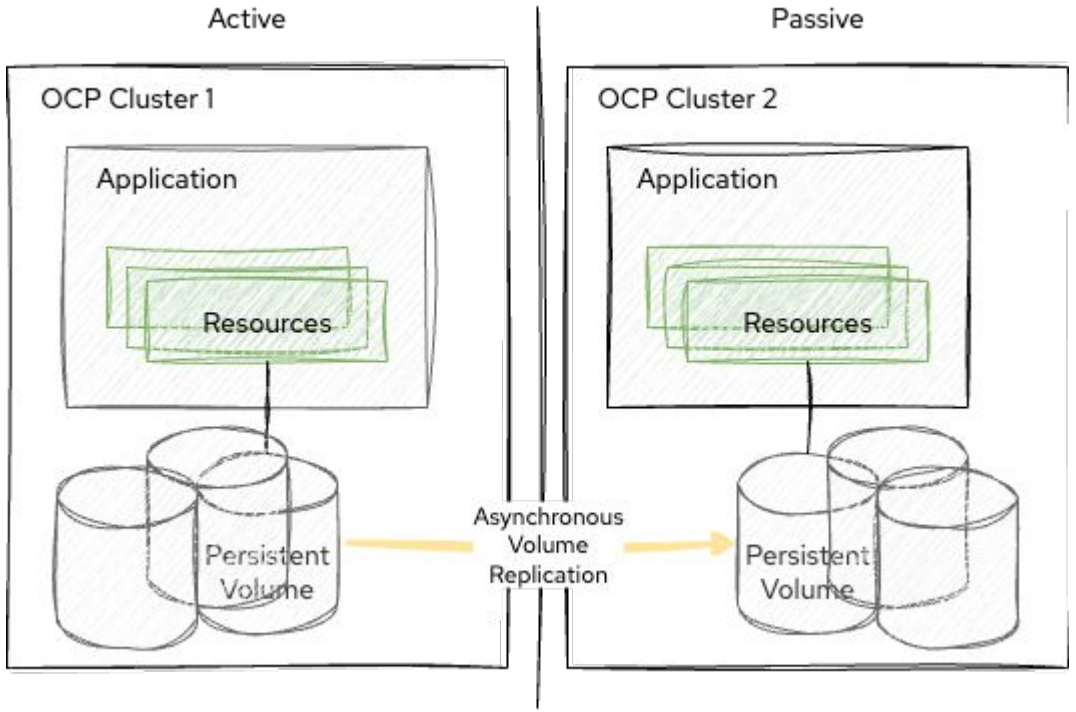
Red Hat

Metro Cluster: Single OCP + ODF cluster spread over multiple regions



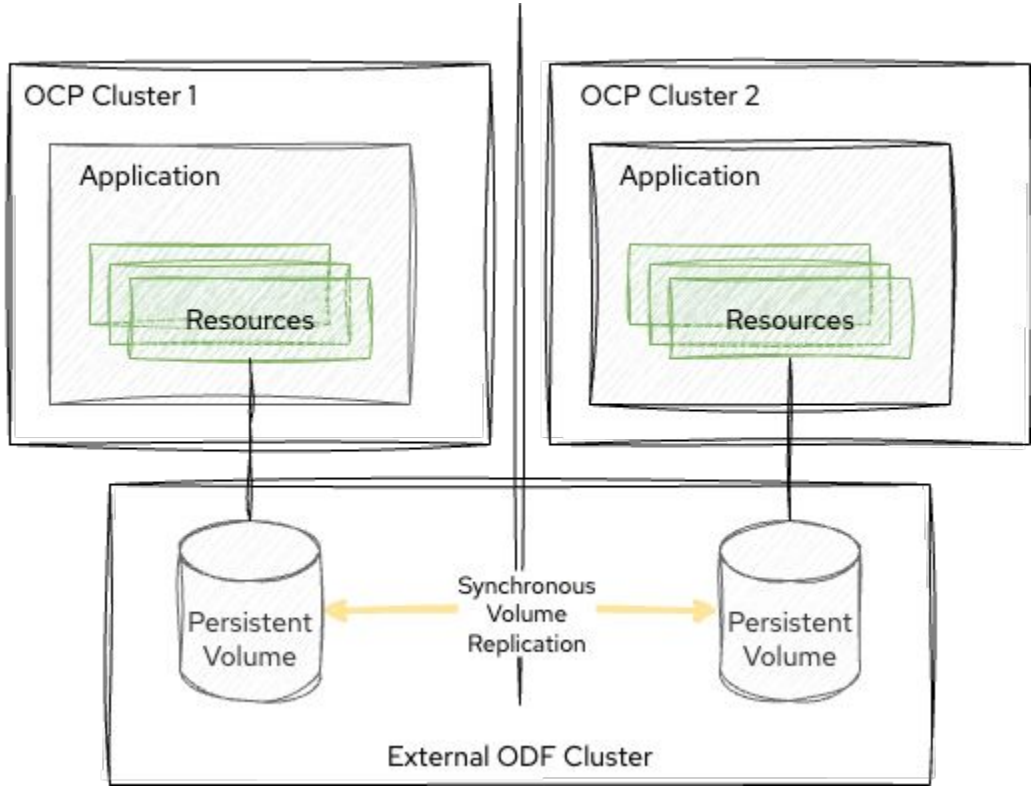
Red Hat

Regional DR: Multi OCP + ODF clusters spread over multiple regions



Red Hat

Metro DR: Multi OCP clusters + single external ODF stretched cluster deployed over low latency networks

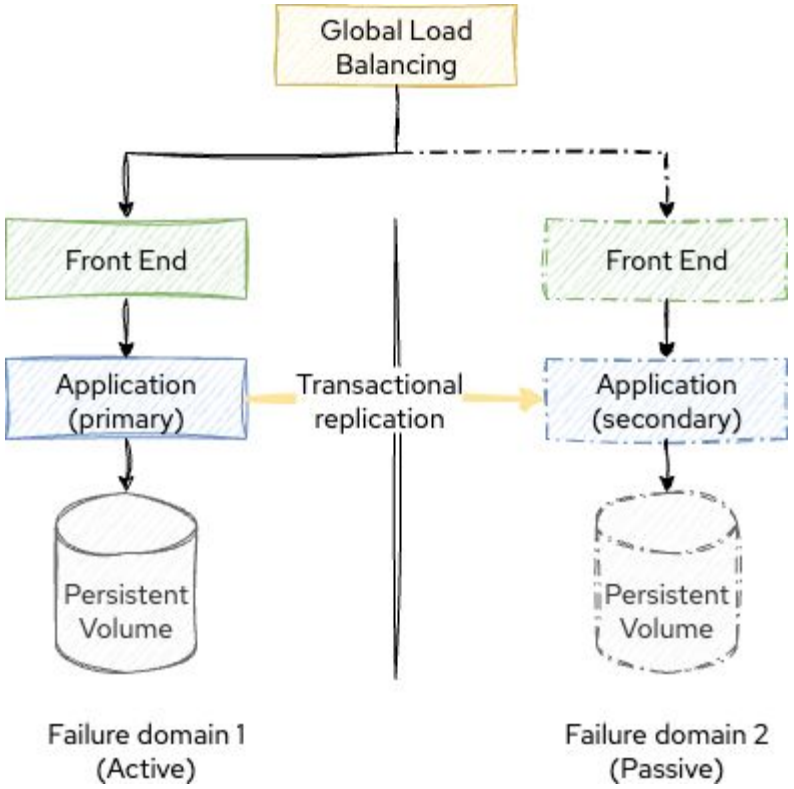


Storage Layer Replication

Vendor Support

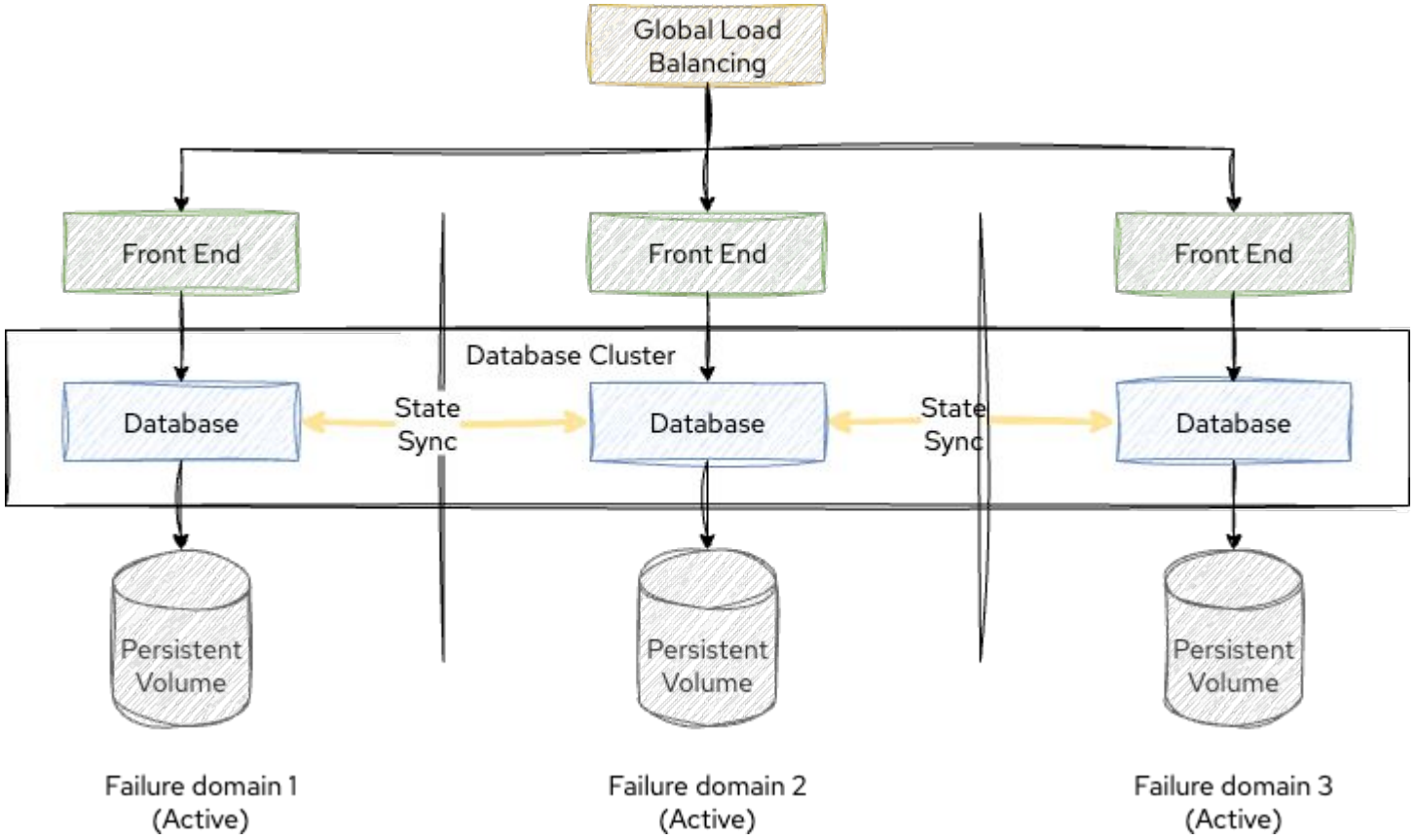
Application Layer Replication

- Database replication
- Message replication
- Change Data Capture



Distributed Stateful Workloads

- One logical database stretched across three geographies
- Submariner for services interconnect



OpenShift Virtualization

Backup & Disaster Recovery

Certified Backup and DR Vendors

https://www.redhat.com/en/technologies/cloud-computing/openshift/virtualization#backup-and-disaster-recovery

Recap

Red Hat Summit

Connect

Thank you


linkedin.com/company/red-hat


facebook.com/redhatinc


youtube.com/user/RedHatVideos


twitter.com/RedHat