

Cost-effective & Efficient Disaster Recovery Solution with Apache CloudStack & CEPH Storage

StackBill is a renowned provider of self-service intuitive Cloud Management Portals (CMP) designed to meet the diverse needs of data centers, enterprises, telecom companies, and cloud service providers.

Overview

The need for a Disaster Recovery solution that was both cost-effective and based on open-source technologies was evident. Proprietary DR solutions often proved to be prohibitively expensive for many organizations. A telecom company in Asia approached StackBill with the specific requirement of a DR solution based on open-source technology. The objective was clear: to reduce costs, increase profitability, and ensure business continuity by quickly recovering from catastrophic events.

Solution Selection



Apache CloudStack:
A Foundation for Success

Apache CloudStack was chosen as the cornerstone of the DR solution. This open-source cloud computing platform is highly scalable and offers Infrastructure as a Service (IaaS) capabilities. It provides the flexibility to deploy and manage large networks of virtual machines, making it ideal for delivering public cloud services and on-premises or hybrid cloud solutions.

CEPH Storage:
Ensuring Data Resilience

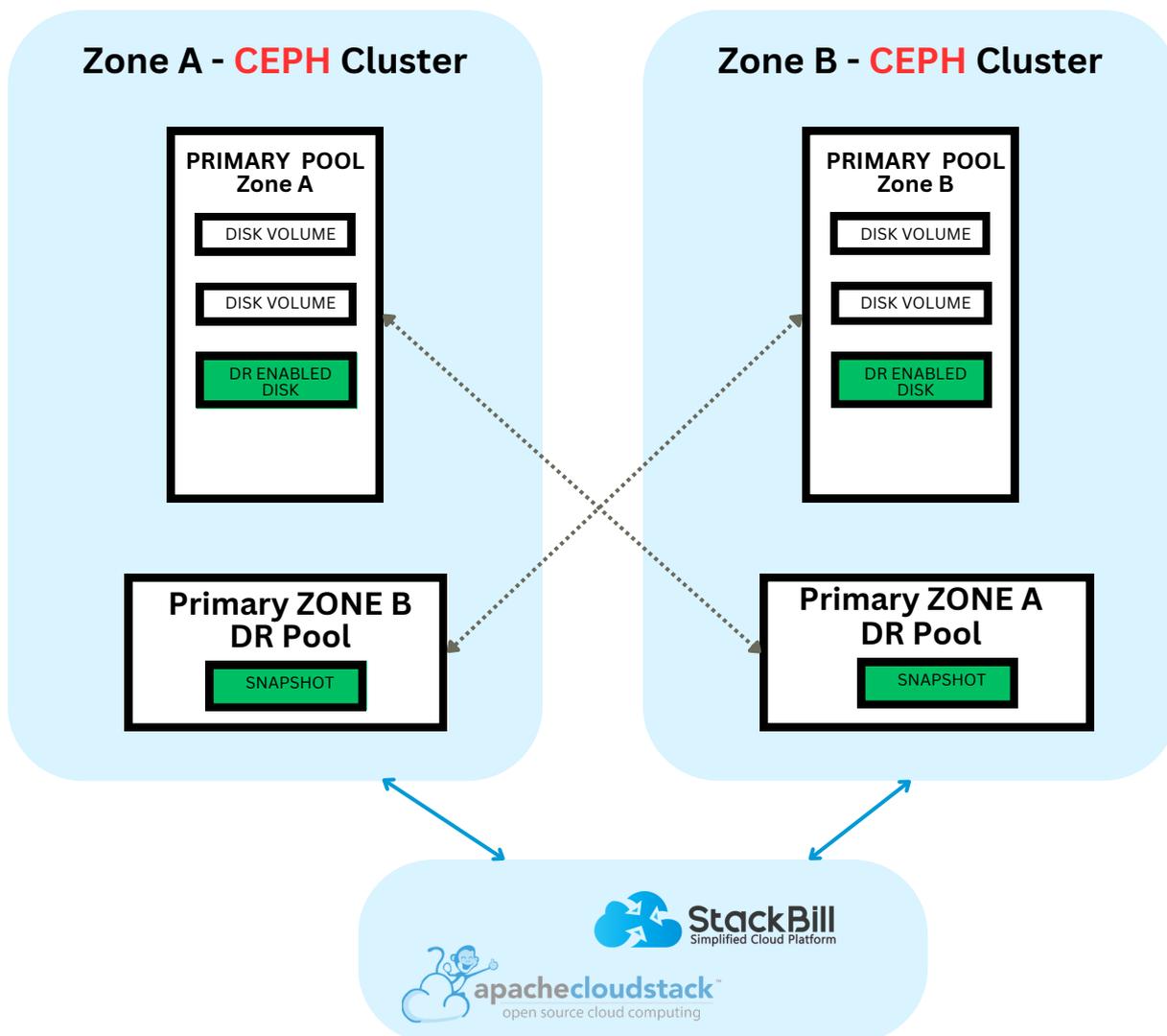
Ceph, an open-source storage platform, was selected for its ability to offer object, block, and file storage from a single system. Its self-healing and self-managed features reduce administrative overhead, allowing it to handle outages autonomously.

The decision to opt for open-source solutions was driven by the prohibitive costs and limitations of proprietary alternatives.

Implementation

The DR solution was implemented between Active, Active zones for selective VMs. Leveraging Ceph's RBD Mirror Snapshot feature, the system could schedule and move data to the DR location and vice versa. StackBill's DR Control tool played a crucial role in managing the failover process. Importantly, this DR solution was achieved without any modifications to CloudStack. A Complete DR Solution involves compatible network and storage solutions. We have collaborated with client's network team and offered solutions with storage and StackBill.

The Architecture



Testing & Validation

Before deployment, a Proof of Concept (POC) was rigorously tested in a lab environment over several months with various scenarios. The open-source DR solution with StackBill was proven to be highly successful during this phase, ensuring reliability and effectiveness.

RESULTS AND BENEFITS

Low RPO and RTO:

1 The solution achieved a Recovery Point Objective (RPO) of 60 Mins and a Recovery Time Objective (RTO) of 120 mins. (Both RTO & RPO is Dependent on network Architecture)

Cost Savings:

2 StackBill's DR solution successfully replaced costly proprietary alternatives, offering significant cost savings to the client.

High Reliability:

3 The DR solution enhanced system reliability, ensuring data integrity and minimal downtime during failovers.

No Vendor Lock-in:

4 Open-source technologies ensured freedom from vendor lock-in, providing flexibility and control.

FEATURES

- DR Between Active, Active Zones
- Manual Activated Failover
- Data Recovery Automation with StackBill
- RPO - 60 Mins
- RTO - 120
(Both RTO & RPO Dependent the Network Architecture)
- No Modifications to CloudStack
- DR at VM Level (For Selected VMs)

Future Plans

StackBill has ambitious future plans, including enhancing the DR tool within StackBill and increasing awareness of open-source cloud computing with Apache CloudStack and Ceph Storage. These initiatives aim to provide enterprise-grade solutions at even greater value to clients while promoting cost-effective alternatives with open-source solutions.

Conclusion

In the realm of cloud computing, Disaster Recovery (DR) has historically posed significant challenges. However, StackBill's pioneering journey showcases the attainability of cost-effective and efficient solutions. By harnessing open-source technologies, notably Apache CloudStack and Ceph Storage, StackBill not only achieved substantial cost reductions but also fortified business continuity for its clients. As organizations navigate the ever-evolving cloud landscape, StackBill's success serves as a testament to the potential of open-source alternatives, offering assurance that the formidable DR challenge can be addressed with innovation and expertise. With a vision encompassing DR tool enhancements and advocacy for cost-effective open-source solutions, StackBill continues to lead the charge toward a more accessible and resilient cloud environment.

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