Disaster Recovery as a Service (DRaaS)

How innovation in the Cloud enables disaster recovery at minimal costs

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When examining a Disaster Recovery environment, CIOs often ask - A Disaster Recovery environment is rarely used, then why do I need to replicate production and pay huge Capex for it? Is there a way to do this elastically?

While there is no debate around the enterprise's need to maintain business continuity in the event of disasters, the present technology solutions offer more innovative ways to achieve the same. Traditionally, an enterprise replicates data and applications on dedicated infrastructure and spends resources to create, test, and maintain this infrastructure for DR purpose. However, this is an expensive proposition for many companies when they can simply leverage cloud computing to make better business sense.

Disaster Recovery as a Service (DRaaS) on Oracle Public Cloud offers an attractive alternative to traditional models, avoiding the outright purchase of servers, storage and licenses, eliminating maintenance costs of these resources. In this model, businesses pay for what they use, thereby significantly reducing cost and bringing it within reach for many companies. Additionally, in the event of a disaster, it serves as secondary infrastructure, enabling replication of cloud data and applications. It comes with the ability to scale up rapidly and securely to meet business needs. In this article, we talk about this innovative way of approaching DR, and how it offers an effective option for companies to embrace cloud computing as an emerging discipline.

The ladder to the cloud

For some organizations the path towards cloud adoption is not as easy a journey as it is for others. From having all servers and software on-premise to all of it being offered as a service takes leaps of faith. For such organizations, the concept of an **'Interim Cloud'** is a more bite-sized approach to getting on the cloud. Let's consider Software-as-a-Service (SaaS) at the top of the cloud-maturity pyramid, with entire software application stack and hardware being cloud-enabled. There are two other models that offer a way for companies to on-board their systems and software onto the cloud. **Platform as a Service** (PaaS) is a way for the infrastructure and business logic to be on the cloud, while **Infrastructure as a Service** (IaaS) is just the infrastructure being cloud-enabled. In both, the end user experience remains the same, with software offered on the cloud in a way that does not put the pressure of migrating to new SaaS-enabled software on the enterprise. Disaster Recovery is a function that is easily taken to the cloud, where the same applications run, but with IaaS & PaaS, it is possible to migrate application technology and middleware into the cloud. In effect, it becomes a palatable way for many enterprises to begin their cloud journey.

Service level requirements on the Interim Cloud

Interim Cloud deployments are, by definition, a hybrid setup where the administrator must determine service level expectations for availability, data protection, and performance. Irrespective of the workload, service levels must be established for each of the below dimensions relevant to disaster recovery:

Availability: Recovery Time Objective (RTO) describes the maximum acceptable downtime should an outage occur.

Data Protection: Recovery Point Objective (RPO) describes the maximum amount of data loss that can be tolerated. This is a sensitive parameter. While planning for this, one needs to check the configuration at source, network latency and configuration at destination.

Many public Cloud vendors do not directly commit on RTO & RPO as they may or may not control the network latency and source-side technology. A thorough analysis is recommended when planning for this. With the rapid provisioning and scale out features available in Cloud, customers can choose to deploy least resources at the DR site. In the event of DR situations/natural calamities, customer can switch to the DR site and then scale out to make it the new primary site.

The changing models of DRaaS

The basic premise of the traditional models of DR was that even in the event of a disaster, it must be business as usual. However, this notion has given way to more realistic expectations that call for only critical functions of the enterprise to remain operational in a disaster scenario. Companies are now willing to wait for a period of up to 48 hours for non-essential services to come back online. This means that while in the past, companies would need to invest in DR of 50% to 100% of primary site, this could well operate at below 5% on the Oracle cloud. This makes sense only because in the event of a disaster, it is possible to deploy additional infrastructure within 24-48 hours, something hitherto unthinkable in the traditional DR models. The question doing the rounds with CIOs globally is, **"Do we really need to spend massive amounts on hardware, software licenses, datacenter management and cooling in the name of DR when innovation in the cloud makes rapid recovery a flexible and feasible alternative?"** Wipro's solution frameworks and deep expertise in this area allows for the Oracle Cloud to be harnessed, delivering big business benefits.

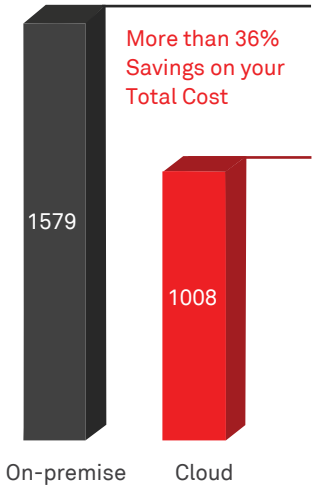
Advantages of DRaaS with Oracle

Oracle's solution ensures high application availability in the event of a disaster, providing superior scalability, centralized management, and end-to-end data protection for heterogeneous technologies. Oracle also provides a choice of deployment from a single server or a clustered environment to a high-end Exadata platform in public Cloud.

- **Extreme Performance Architecture:** Its extreme performance architecture allows you to migrate under-utilized DR-readiness to Oracle Cloud with the agility to not just scale-up as needs increase but also to tear down when not needed. If the customer requires a full-scale DR solution, that is possible in the cloud as well
- **Cost savings and lower TCO:** With limited hardware acquisition and datacenter maintenance and cooling costs, you can minimize up-front license costs for a DR site.
- **Cloud ready:** Use the DR environment on Oracle Cloud as a ladder to migrate to cloud
- **Repurposing** existing DR environment for on-going project requirements and reporting is a possibility
- **Seed** additional project instances in Cloud by replicating/cloning from the DR Environment

On-Premise	
Database	47.5 K
RAC	23.0 K
Partition	11.5 K
Diagnostic & Tuning Pack	12.5 K
Total	94.5 K One time cost
For 10 Processors	12.5 K
Oracle Support @ 22% for 3 years	12.5 K
Hardware (Dell Server)	10k
For 10 Processors	1579 K
Hardware (Servers/Storage) Cost	Included
Running Cost of Hardware (OS Support)	Not included

Cloud*	
Database Enterprise edition – Extreme performance	2.8 K Per month
RAC, Database enterprise management packs, Data Guard, Active Data Guard, Partition, Diagnostic & Tuning Pack	Included
Total	2.8 K Per month
For 10 Processors	28K
Oracle Support	Included
Price per year	336 K
Price for 3 years	1008 K
Hardware (Servers/Storage) Cost	Included
Running Cost of Hardware (OS Support)	Not included



*Source at the time of release: https://cloud.oracle.com/en_US/opc/database/pricing

Figuar 1. Lower your TCO with Oracle Cloud - Example

Figure 1, based on data from Wipro's internal research, compares TCO over a 3 year period for Oracle Database 12c implemented on-premise versus using Oracle Database-as-a-Service (DBaaS). The comparison assumes a 10-processor license with additional components implemented in conjunction to the on-premise licenses. In DR-as-a-Service, the allocation of resources further shrink to just the one processor to bring the database up, thus reducing the burden of license. In this case, it will **bring down the overall commitment by 80% to 90%.**

Conclusion

Disaster Recovery in an Interim cloud configuration consists of an on-premise production with a stack of Oracle/Non-Oracle workloads and a synchronized DR copy on Oracle Public Cloud. It eliminates the costs and complexity of owning and managing an entire facility for DR specifically and facilitates a more customer-friendly OPEX model for standby systems and software. Indeed, DR-as-a-Service is a one-stop-shop for a hassle free setup in Cloud with minimum initial expense and flexibility to scale to the production environment in a short span of time. As the momentum shifts towards better ROI on Disaster Recovery, the acceptance of DRaaS will increase, not just as a more efficient way of being prepared for a disaster but also to begin the journey to becoming a more cloud-native enterprise.

About the author

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With more than 20 years of experience, he is responsible for running the Oracle Cloud PaaS & IaaS Practice, building future-ready solutions, rolling out Oracle on Oracle solutions. He has helped many clients successfully implement these solutions. Mahesh has produced several blogs & white papers; the recent one being 'Don't be Yesterday's man - harness the power of cloud' **http://www.wipro.com/blogs/dont-be-yesterdays-man-harness-the-power-of-oracle-cloud/.** Mahesh has also pioneered the Wipro's EasyU Solution on Oracle Apps Upgrades.

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