

Sify

Enabling Oracle Hybrid Cloud Solutions



March 2020

Hybrid Cloud strategy

The hybrid cloud has become a compelling option for organizations pursuing digital business transformation initiatives to address specific security, compliance, privacy, location and operational requirements even while continuing to benefit from the agile capabilities of hyperscale clouds such as rapid provisioning, self-service orchestration and spend management for a consistent experience. Some of the common use cases for hybrid cloud include legacy applications that continue to run on-premises data centers or hosted private clouds along with new cloud-based applications that would run on the hyperscale cloud environments and sometimes even at the edge locations.

In parallel, the last generation WAN architectures that were optimized for datacenter connectivity are being passed over by cloud interconnect solutions. There are different types of interconnect options such as carrier-based interconnect, interconnect from a cloud adjacent datacenter or software defined interconnect solutions. A cloud adjacent datacenter offers low-cost, high-bandwidth and low-latency network to connect and route traffic to cloud providers. In addition, the SD-WAN solutions are optimizing the management cost of delivering the increasingly dynamic demands imposed by hybrid cloud computing.

While hybrid cloud as a strategy has been pursued for as long as cloud has been around, it is only now that it has become a viable and compelling option with the advances both in the cloud and network technologies. **Oracle Cloud at customer** is one of the original initiatives for the hybrid cloud architecture.

Sify, with its “Cloud@Core” offerings broadly consisting of Data Center, Cloud, Network and Professional Services, address all the challenges of architecting, deploying, workload migration and management of hybrid cloud workloads.

Sify’s Metro-X-Connect Interconnect between Oracle Mumbai Data Center Region Public Cloud and Sify Airoli Private Cloud Data Center enables customers to establish direct connectivity between their private infrastructure and Oracle Cloud environments and fully realize the benefits of hybrid cloud.

Hybrid Cloud architecture

A hybrid cloud integrates private and public cloud services to support parallel, integrated or complementary tasks.

Hybrid clouds are typically deployed in one of the two configurations.

- A redundant hybrid cloud architecture deploys a workload in its entirety on both the public and private clouds.

The redundant hybrid cloud architecture can further deploy the applications in active-active or active-passive modes to accomplish various objectives such as disaster recovery or global load balancing.

- A composite hybrid cloud architecture splits the workload across private and public clouds with different components coming from private or public clouds for functional distribution, lifecycle distribution or workload distribution.

In this model, the use cases will be running enterprise class services from best of breed providers and **running federating** with simpler services from a performance and cost wise optimal option.

For complex and connected applications, it is important that data and processing can execute close together to minimize latency, maximize performance and minimize network (egress) cost. Customers can consider the use of a carrier and cloud-neutral colocation provider as a central point to connect to multiple cloud providers with minimal latency and cost.

Benefits of Hybrid Cloud

- Provides flexibility and choice by enabling enterprises to choose the best platform for workloads and even the ability to split workloads where a part runs on-premise and another part runs in the cloud
 - Many businesses use on-premise infrastructure to run core business applications and then leverage the cloud for dev and test, backup and DR, SaaS and the deployment of new applications
- Offers businesses the ability to leverage and modernize existing infrastructure, reduce CAPEX costs for new projects, improve application scalability with virtually unlimited cloud resources
- Compliance requirements that limit where one can deploy certain applications/data

- Data Center Consolidation
- Bridge cloud-native, SaaS and/or packaged apps which run on different platforms
- Improve performance of latency-sensitive applications
- Address different users' requirements for different cloud services
- Increase the velocity of feature releases
- Leverage scalable cloud storage services for backup/recovery of data
- Some applications are only available/supported in a particular cloud environment
- Leverage the power of flexibility to match the best cloud offering to the available and planned storage, compute, applications and database

Challenges of Deploying Hybrid Clouds

- Meeting network performance SLA: Mission critical solutions would mandate < 1ms latency end-to-end for Cloud interconnect
- Complying with regulatory requirements: Data privacy and security are two of the biggest issues with regulations like HIPAA, GDPR or PCI. This would mandate Cloud Adjacent Data Center Services with very low latency storage connections and any data transferred from a complaint local database to the cloud is encrypted and secured.
- Security: Need to maintain a common identity using single sign-on functionality across both Enterprises on-premise systems and cloud resources. Data encryption is required for many types of regulatory compliance.
- Multi-cloud implementations: Need to deal with different services, pricing models, skill sets, management tools, data security and protection strategies to accommodate each different cloud implementations

Role of Managed Services Provider for Hybrid Cloud

Organizations adopting hybrid cloud architectures must decide on how to define service lifecycle management, governance and operations. A managed services provider offers cloud expense management, cloud management platform for cloud resource lifecycle management and IT service management. The MSP optionally offers workload assessment and migration services, professional services for initial implementation to provision, configure and secure the cloud resources. Subsequently, the service provider will provide the key aspects of availability, scalability, security, resilience and cost management as part of the managed services offering.

Sify Offerings for Hybrid Cloud Deployment with OCI

Sify Metro-X-Connect Interconnect

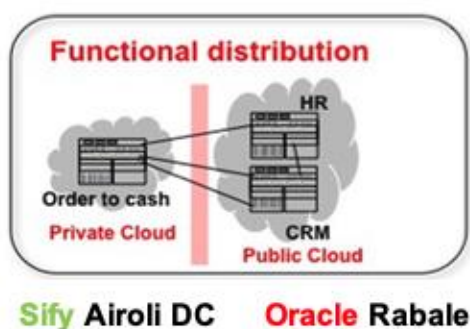
Sify Metro-X-Connect Interconnect between Oracle Mumbai Data Center Region Public Cloud and Sify Airoli Private Cloud Data Center enables customers to establish direct connectivity between their private infrastructure and Oracle Cloud environments and fully realize the benefits of hybrid cloud—moving application, middleware and database workloads seamlessly between private infrastructure and Oracle Cloud—in a reliable, low-latency and secure experience. The result is improved application performance, lower latency, higher throughput, network-level security protection and reduced costs—all in a highly scalable solution. This is also ideal for data privacy, regulatory compliance and data sovereignty scenarios.

Sify Metro-X-Connect integrates Airoli and Rabale Data Centers seamlessly into one virtual campus

<p>Low Latency Guaranteed less than 100 microseconds of one-way latency</p>		<p>Pre-built Metro Cross Connect infrastructure built between the two Sify Data Centers in Navi Mumbai - Airoli and Rabale</p>
<p>Access to Network Resources at both Campuses Cross connect level prices to connect network resources such as Telco's, Internet Exchanges, AWS Direct Connect and Oracle FastConnect across sites</p>		<p>10G ethernet connections provided on a highly reliable network at cross connect prices</p>
<p>High Reliability Designed for mission-critical applications at 99.99% availability. Built using 3 fiber paths, including one high resilience OPGW section. Powered by Ciena WaveServer AI technology</p>		<p>Extend network resources seamlessly across both data centers as access services to AMS-IX, AWS Direct</p>
		<p>Oracle FastConnect guaranteed two weeks turn up time for any service</p>

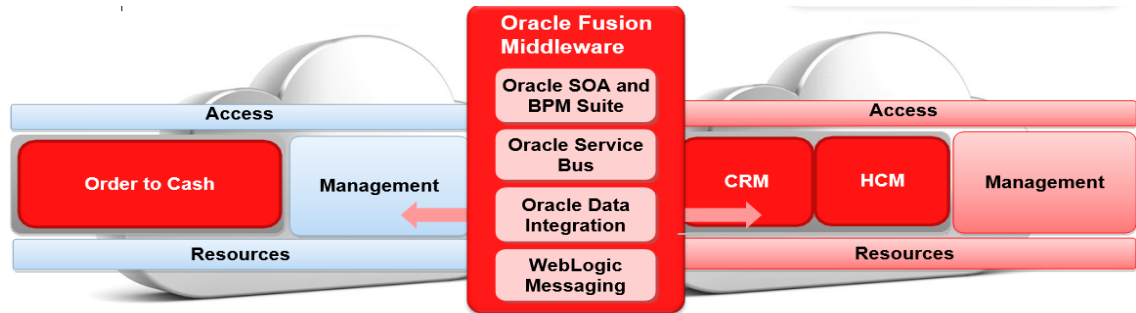
With the Metro-X-Connect the following use cases are supported.

- Functional distribution**
 Different components in separate clouds (e.g., CRM, HR)



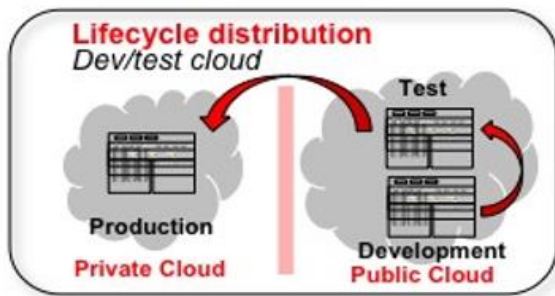
Hybrid Interoperability of Business Processes

- Business process coordinated through multiple applications distributed across multiple clouds.
- Standards are essential



- **Lifecycle distribution**

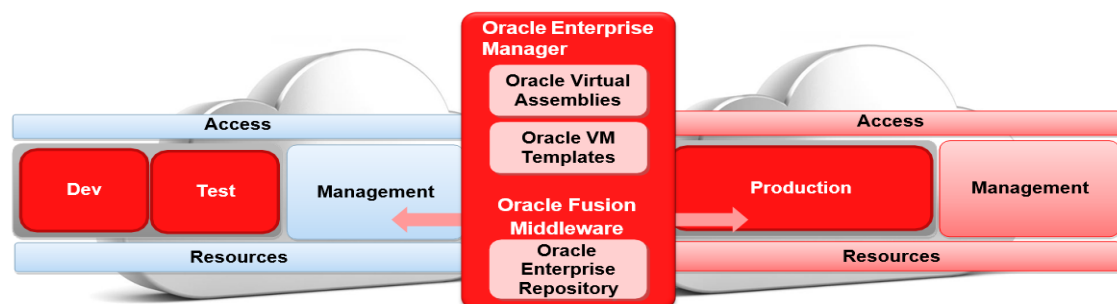
Separate development and test environments



Sify Airoli DC Oracle Rabale

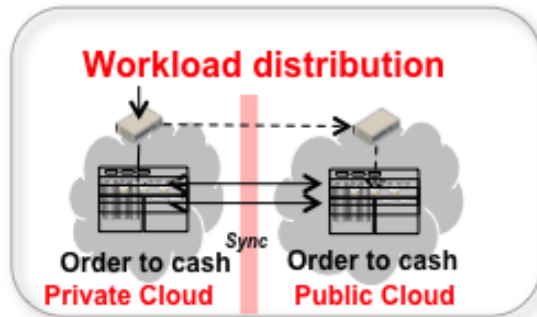
Hybrid Interoperability of Application Lifecycle

- Stages of SDLC are distributed across runtime environments
- Requires packaging

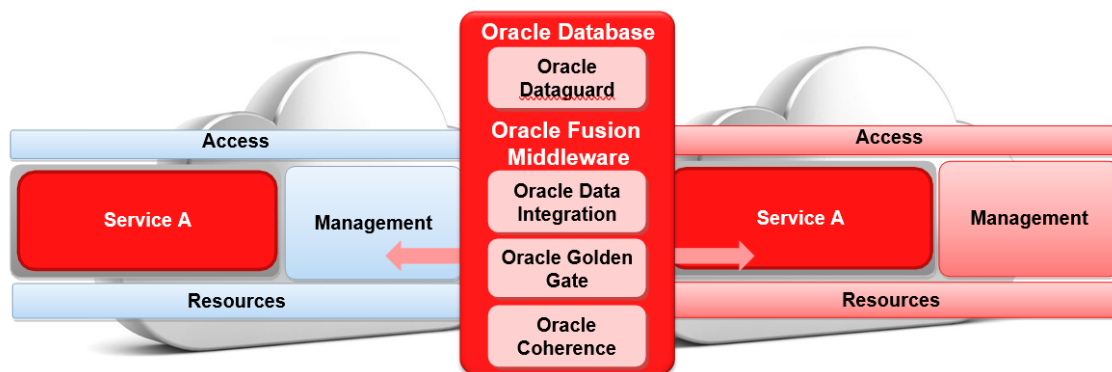


- **Workload distribution**

Cloud bursting for non-mission critical enterprise transactions



Sify Airoli DC Oracle Rabale



- **Workload Decouple**

Hybrid interoperability of decoupled workloads

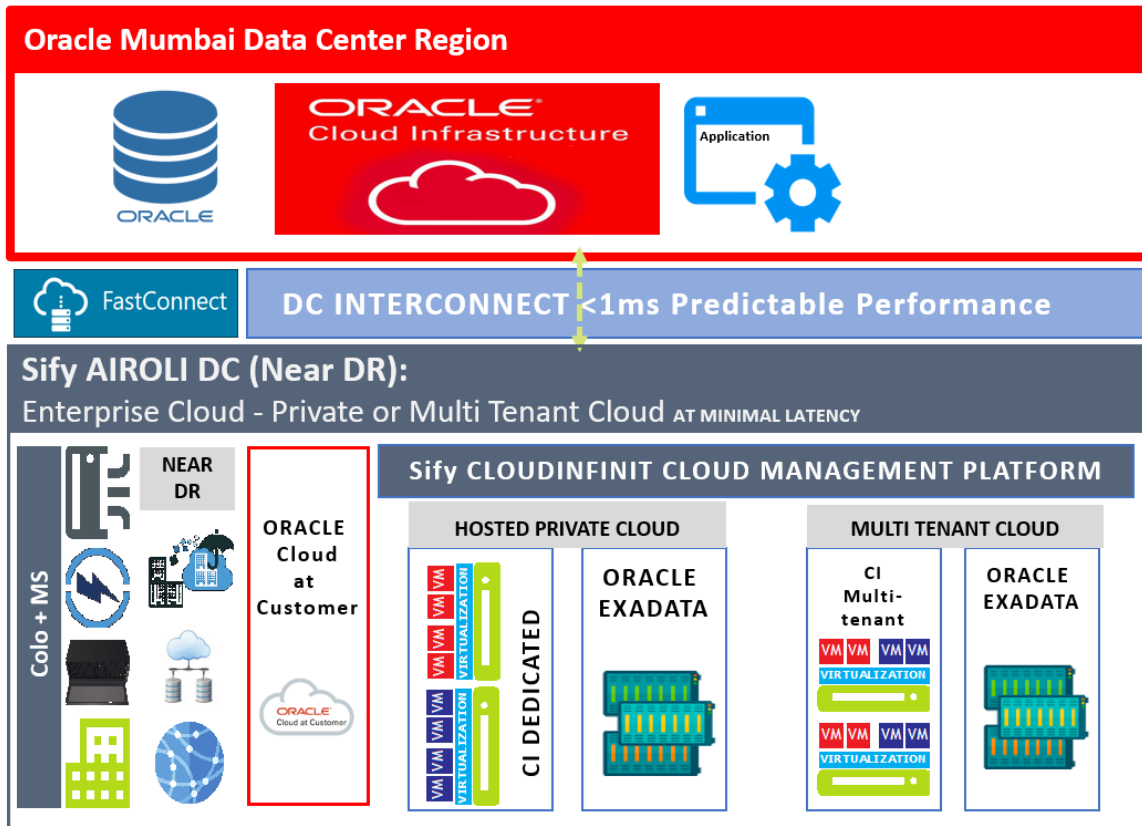
- Flexibility of Applications and Database running between Oracle Public Cloud and Sify Near Cloud/DR Airoli Data Center
- Support “Oracle Cloud at Customer” deployments and interconnect with Oracle Cloud

- **High availability deployments**

Hybrid interoperability to compliment Oracle Mumbai Data Center Region Public Cloud with “Availability Domain” like use cases

- Data protection and fast failover for database across hybrid deployment with active-active or active-passive availability between Oracle Public Cloud and Sify Airoli Near Cloud/DR Private Cloud
- Moving data for backup and archiving between data centers

- Disaster Recovery using Oracle Public Cloud or Sify Airoli Near Cloud/DR Private Cloud as second physical site and standby infrastructure



Benefits of Sify Oracle Hybrid Cloud solutions

Address all the challenges for enabling hybrid cloud by providing Cloud Adjacent Data Center Services, low latency, high bandwidth and secure connections to Oracle Cloud for predictable performance and costs

- **Sify data center services:**
 - Workloads can be decoupled and deployed between Oracle Mumbai Data Center Region Public Cloud and Near Cloud/DR DC at Airoli
 - Customer requirement to have data residency in private cloud or dedicated hosted environment can be deployed Near Cloud DC at Airoli
 - High availability, data protection and fast failover for database across hybrid deployment
 - Any application using Oracle DB running from Oracle Cloud can be deployed at Near Cloud Data Center at Airoli

- **Hosting services**
 - Colocation, Hybrid and Multi-Cloud
- **Cloud adoption strategy as a service**
 - Assessment of current state for infrastructure, application dependencies, cost
 - Target state architecture with hosted private and hybrid multi cloud solutions
- **Resiliency services**
 - Managed Backup and Disaster Recovery Services
- **Sify DC and Cloud Interconnect (Sify Metro-X-Connect):**
 - Predictable, secure, high performance and low latency end-to-end connections < 1ms
 - Data guard synchronous mode possible due to < 1ms data center interconnect
- **Sify Professional Services:**

Implementation, migration, security services and Managed Services end-to-end solution across Multi-Cloud Architecture

 - **Migration and implementation services**
 - Oracle Apps (EBS) green field implementations, migration or upgrade
 - Enterprise applications on hybrid cloud
 - Technology platform upgrade (DB/WebLogic/SOA)
 - Infrastructure migration to hybrid cloud
 - SaaS implementation (like HCM/SCM/EPM/CPQ)
- **Managed Services**
 - Oracle Application Managed Services
 - Functional support
 - Technical support
 - Apps and DBA Support
 - Infrastructure Managed Services
 - OCI, Exadata DB Machine
 - Engineered systems
 - Hybrid Cloud deployments

- **Security transformation for multi cloud architecture**
 - Identity and Access Management
 - (Zero Trust / Privileged Access Management / Cloud Access Security)
 - Managed detection and response services

CLLOUD@CORE

ALIGNED TO OUR CUSTOMERS' CLOUD TRANSFORMATION PURSUIT



CLOUD ENABLING

- Cloud DC
- Hyper reach/Hyper scale transport
Oracle FastConnect | ExpressRoute | DirectConnect | Partner Interconnect
- Software Defined Network services
- Cloud build
Private | Hyperconverged | Enterprise
- Security services for cloud
- Migration and Implementation services



CLOUD INSPIRED

- Sify CloudInfinitt
 - Enterprise Multi-Tenant
 - Dedicated
 - Hosted SAP/S4HANA
 - Azure Stack as a Service
- Edge Connect Services
- SD-WAN
- Collaboration services on Cloud



CLOUD PURE

- AWS
- Azure
- Oracle
- Multi Cloud Management platform & services



CLOUD ENHANCED

- Modern Applications
- Kubernetes-as-a-Service
- AI/ML
- Forum DIGITAL
- HCM Digital(i-Test)
- Learning Management
- Internet-of-Things (IOT)
- Industry Solution-as-a-Service

For more information about Sify Oracle Hybrid Cloud Offerings, contact us at marketing@sifycorp.com

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