Wipro's Software defined MultiCloud Networking

Embarking the cloud journey with a software defined approach for hybrid and multicloud networking

The data centers are no longer the center of gravity. The applications are increasingly distributed across the on-premises data centers, multiple public clouds, and edge locations. Cloud adoption continues to expand as agility, swift deployment and scalability are becoming the new normal for enterprises across industries, sizes and geographies. The traditional network architectures may not meet the performance and reliability expectations of today and tomorrow.

To meet their business objectives enterprises are increasingly consuming cloud services from multiple cloud partners. However, working with multiple cloud partners has its own limitations and challenges. **According to a Gartner survey of public cloud users, 81% of respondents said they are working with two or more providers.** What this means to those enterprises is that they use multiple consoles and different ways for management and orchestration of their on-premises, colocation or public cloud infrastructure.

Hybrid and multicloud journey

From the traditional on-premise datacenter & private cloud infrastructure we have stepped into a new era of hybrid & multicloud and enterprises are rapidly adopting these architectures to overcome the situations such as single points of failure, dependencies and vendor lock in.

Limitations of traditional networking architectures such as limited flexibility, lack of automation capability and technology silos pushes the enterprises to build reliable, flexible, agile, and highly available cloud ready network infrastructure by leveraging network virtualization technologies.

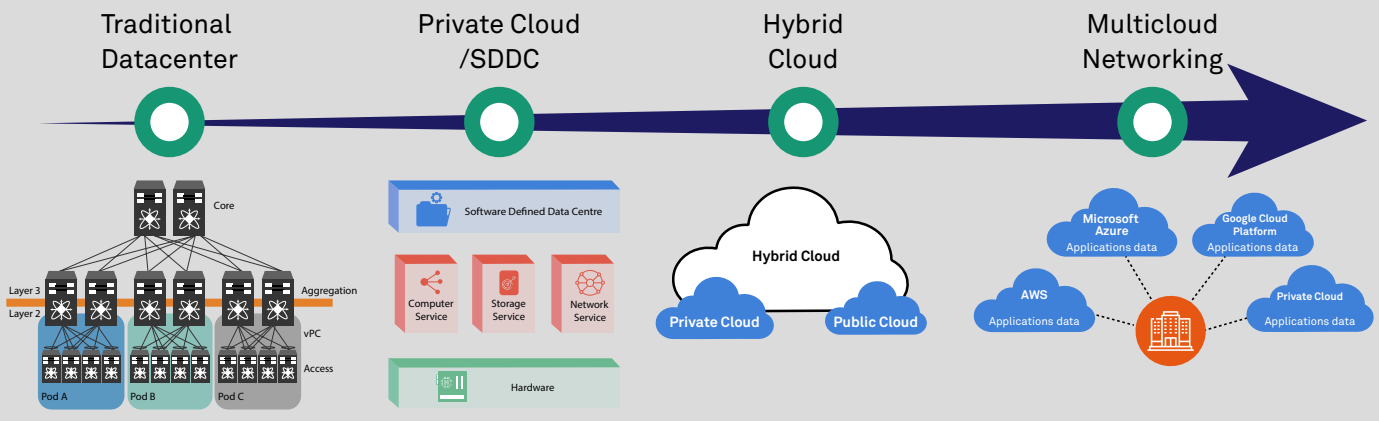

Figure 1: Changing networking landscape with cloud

Why hybrid and multicloud?

Adoption of multicloud architecture empowers the enterprises to choose the best cloud services from multiple cloud service providers for a specific application requirement. The benefit of hybrid and multicloud is the ability to operate across both private and public clouds, on and off premises, as a single entity.

Hybrid and multicloud deployments have become the new normal, however there are new challenges associated with this journey

Hybrid and multicloud journey challenges

Most cloud service providers' do not extend beyond their native cloud environments. Therefore, enterprises require multicloud connectivity to cross the logical layer and enter the edge networks of different cloud providers.

Multiple tools and dashboards are needed to manage, monitor, and configure different cloud instances as well as on-prem.

Real-time traffic monitoring and analysis across different public clouds, private clouds, and on premises datacenters is not available.

Multifaceted operational models due to diverse and disintegrated visibility and functional capabilities, with no relationship between different cloud service providers.

Security compliance and governance gaps and challenges due to Inconsistencies in segmentation capabilities across multiple cloud instances.

The need of multicloud application-aware network architecture

The shift to hybrid and multicloud environments requires enterprises to redesign the existing network architectures as those were not built with the vision of cloud deployment.

The need of today is an application aware architecture that offers consistent network services across all technology silos and specify service details that are fundamentally decoupled from the underlying infrastructure, allowing them to be applied through policy translation administered dynamically by the centralized controller with complete visibility of business applications.

Given that the user experience is pivotal in digital economy, enterprises must ensure that distributing applications to the cloud and possibly the cloud edge will provide an equal or enhanced experience to the end users. Indeed, in a highly distributed environment, the network becomes an essential piece of the puzzle.

The network architects should adopt an application-aware multicloud network framework to build a resilient, scalable and agile network to catch up with the application cloud transformation strategy.

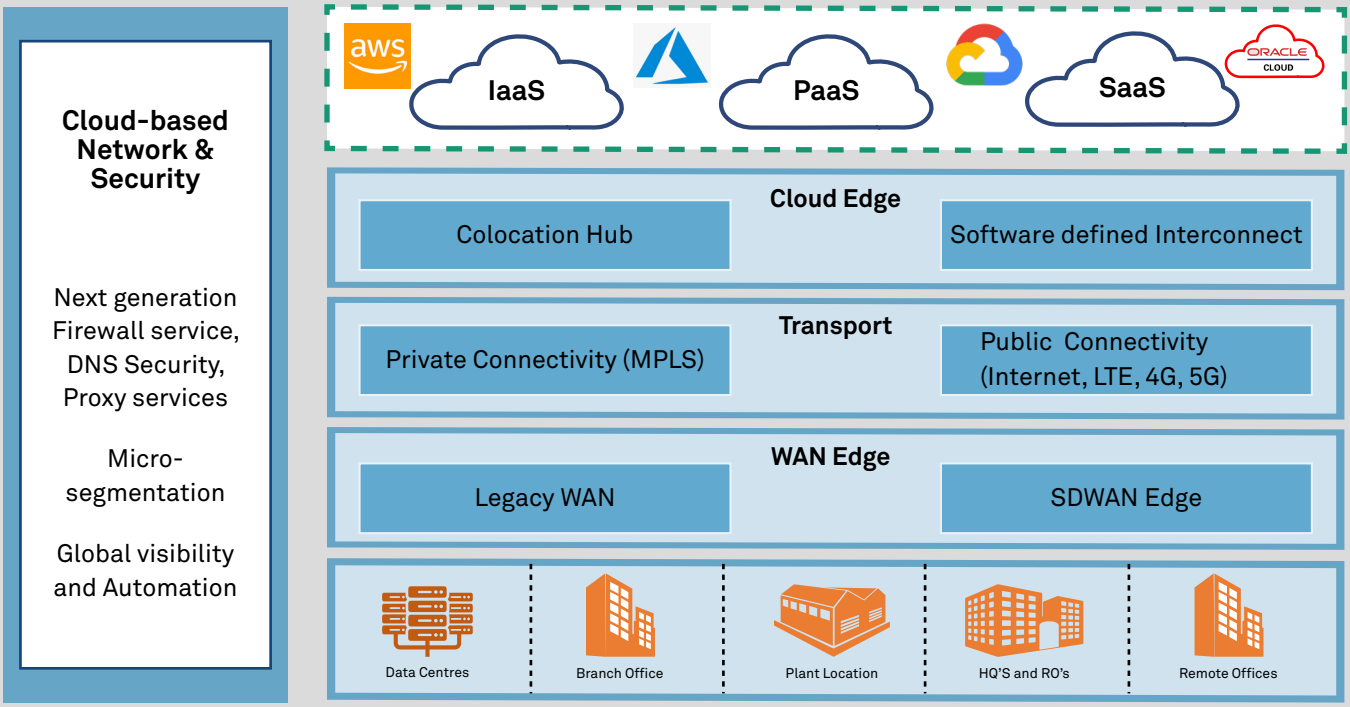

Figure 2: Application-aware multicloud network framework

The key components of an application aware cloud ready network architecture are:

The Cloud edge connects the enterprise WAN to the cloud and ensures proper and seamless interconnection across different regions and between multiple public clouds. This may consist of various transit gateway and native cloud interconnects.

The WAN Edge connects the on-prem workloads and end users to the external networks, through private WAN and/or internet. The WAN edge is architected by the SD-WAN (Software defined WAN) to ensure superior application experience for the end users working from office or remotely. .

The transport links (MPLS, Internet, LTE, 4G, 5G) connecting the WAN edge and Cloud Edge become part of SDWAN fabric enabling better utilization, superior performance and cost effectiveness.

Cloud-based Network services In cloud ready architecture, the Cloud-based Network service**s** such as DNS security, URL filtering, proxy services will be consumed in as-a-service model.

Wipro's software defined multi-cloud networking architecture

Wipro's Software defined multicloud networking helps enterprises to embark their cloud journey with simplified, scalable approach and an abstracted single pane of glass management for hybrid and multicloud networking.

Wipro recommends enterprises to adopt SD-WAN technology to extend their footprint to the public cloud environment for consistent network and security policies across on-prem and cloud deployment.

Wipro's multidomain orchestrator (MDO) provides a single pane of glass management and orchestration layer ensuring consistent network and security policies and service environments across multiple cloud providers.

Wipro's Software defined Multicloud Networking builds a robust and automated cloud networking solution that helps enterprises to onboard their global entities and different cloud providers quickly at scale. It provides intent based network and consistent security policies across different cloud environments, improved application performance, reduced cost and operational complexity, while extending applications to the cloud or consuming cloud-based services

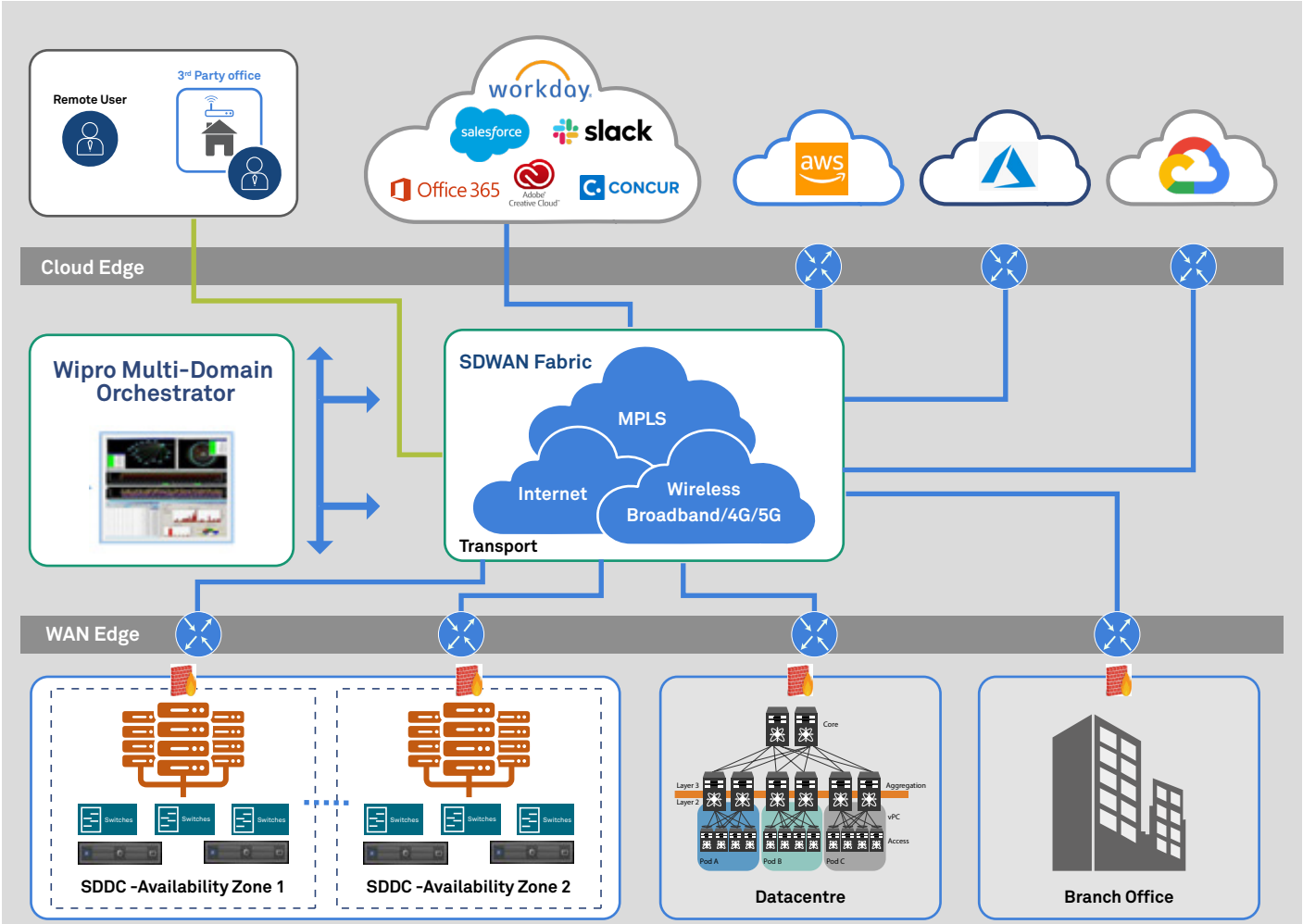

Figure 3: Wipro's Software defined Multicloud Network architecture

Wipro's software defined multi-cloud networking benefits

Simplified enterprise connectivity

Enterprises can modernize their infrastructure securely and simplify branch to cloud and branch to branch connectivity to reduce costs, complexity and significantly improve end user experience.

Intent based traffic flow with end-to-end visibility and control

Eliminates the need for traffic backhauling to the datacenters with deep application visibility.

Simplified reporting and notifications

Wipro's MDO provides reports and dashboard for usage, performance, security and cost, alerting IT operation team of any potential service degradation and effectively address them.

Consistent network and security policies across the domain

Wipro's MDO provides single pane of glass provisioning for multiple public cloud, hybrid cloud, and conventional on premises datacenters.

Wipro's hybrid and multicloud networking lifecycle services

Wipro's highly skilled team of network experts helps customers in their cloud journey with consulting, planning & designing, transformation and management services covering the end-to-end lifecycle.

Consulting

Help customers to accelerate and de-risk their multicloud journey through:

- Gap analysis in current network
- Business case development
- Total cost of ownership (TCO)/Return on investment (RoI) analysis and commercial modelling
- Building technology roadmap

Planning and Designing

Creating a design to Securely extend customers' private networks into public clouds:

- Technology and architecture finalization
- High level designs (HLD)
- Pilot and proof of Concept (PoC)
- use cases validation against business requirements
- Non-production and limited production trials
- Detailed designs (LLD) and deployment plans

Modernization and migration

Migrate the legacy silos to a new secure hybrid multicloud infrastructure, deploy right multicloud orchestration tools and platforms for ensuring all the benefits of a hybrid, multicloud strategy.

- Deploy orchestration and monitoring tools
- Migrate network and security policies
- Deploy Native multicloud network connectivity
- Architect and design Software define Cloud Interconnect (SDCI)
- Deploy SD WAN cloud onramp or colocation-based architecture.
- Integration, testing, and migration

Automation driven managed services (NetOps 2.0)

- Deploy, monitor and optimize applications in multicloud environment
- Automation driven management, monitoring and reporting
- Continuous improvement of operations
- Optimization of network and security policies
- Deliver integrated services
- SLA and service governance
  Wipro's differentiators for evolving multicloud environments
- Simplified network management through comprehensive software defined networking control plane.
- Centralized configuration, monitoring and reporting
- AI enabled automation to minimizing manual efforts.
- Accelerated cloud transition.
- End-to-end hybrid and multicloud life cycle support from consulting to transform and manage.

Summary

With application environments and requirements evolving rapidly, enterprises require new approaches to network design, security and operations. Specifically, a network architecture that facilitates distributing applications across the globe while maintaining consistent security policies, configurations and superior performance. Wipro as a trusted partner can bring multicloud management platforms under a single umbrella to help streamline the platforms and processes.

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For more information,
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