Application Migration with Hybrid Cloud

One of the significant use cases for public cloud is migrating enterprise applications from existing on-premises environments to the public cloud. Most enterprises have a broad portfolio of applications, some of which may have characteristics that are better suited to the cost and performance that public cloud offers. They could be running in environments that are reaching their end of life or have low or dynamic utilization levels. In any of these cases, it could be a wise decision to migrate those applications from fixed-cost, on-premises environments to the public cloud to optimize infrastructure costs. Effective hybrid cloud deployments can help enterprises realize this promise.

The benefits of public cloud have been well established, but many enterprises are concerned about the transition – the disruption that blending public cloud with on-premises infrastructure could create. Those concerns should be outweighed by the gains that public cloud can deliver, especially in light of recent developments. Public and external cloud services deliver a resource pool that isn't held back by cost or technology constraints. These services can rapidly offer new compute, storage, networking and security technologies – such as the latest-generation, high-performance processors, GPUs, containers, serverless computing and solid-state storage – at a speed that would challenge enterprise abilities and budgets. That availability can reduce the friction in innovation for development teams as they look to take advantage of the latest and greatest capabilities. Bringing the benefits of external public clouds together with internal resources in a true hybrid deployment can give enterprises the best (and efficient use) of both worlds.

- 23.9% Already expect workload migration to be part of their hybrid cloud strategy (451 Research, Voice of the Enterprise, Cloud 2017)

Enterprises are often concerned about the complexity of migrating applications, but cloud management platforms deal effectively with those concerns. Because they employ a common execution environment, there's no image conversion, refactoring or re-architecting needed. The same workload image can be run on-premises or in the public cloud without change, which delivers a significant reduction in operational risk and allows enterprises to make more sophisticated decisions about workload placement. If an application's data sources need to stay in specific locations for regulatory or compliance reasons, they can remain in place while application execution components move to cloud locations that can give better performance for mobile users. Enterprises have the flexibility to decide the best placement, without concern for the conversion effort required for each environment.

That flexibility works both ways. Many applications start as prototypes in a public cloud and, when requirements expand, they can be shifted to on-premises environments. Once again, the elimination of any conversion effort frees the enterprise to make that shift without concern. As the use of particular applications ramp up or down, they can be migrated easily between public and on-premises environments. This holds true for enterprises that want to leverage public cloud services, such as analytics. Moving data and applications into the environment where the analysis is being done will yield faster results and reduce data movement time and expense. By making application migration simple, enterprises can respond more quickly to any business challenge.

Application performance can be significantly impacted by the character of the paths between users and the application execution environment. For mobile applications, there is often better connectivity to mobile network operators from public clouds than there is from enterprise premises. Therefore, it can be advantageous to migrate mobile application front ends to the public cloud to improve responsiveness.

As with test and development environments, interconnection can be an important part of the complete hybrid architecture. It should be given consideration in the planning of application migration strategies. Paths to data resources and between application components will need predictable performance. Some form of direct interconnection should be part of the scaling architecture. This is particularly true if enterprises are considering dynamic migration of workloads.

Business Impact

FLEXIBLE RESOURCE UTILIZATION – Scalable capacity without the need to buy new hardware.

OPTIMAL UTILIZATION – Resources can be matched to application lifecycle. As deployments scale up or down, they can be moved to infrastructure that aligns with their needs.