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CLOUD
NETWORK
SECURITY

Cloud Migration Service Description

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Important Disclaimer

Legal Disclaimer

This document is designed to provide only general guidance on cloud migration and hSo's related services.

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For definitive up-to-date information on these cloud services, see the relevant provider's web site. To keep this guide to an acceptable length, we have had to make some generalisations. This guide should be seen as informative rather than comprehensive. Errors and omissions excluded.

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Introduction

Adoption of cloud services and hybrid IT has accelerated. The need to increase innovation, speed up time to market, and optimise costs is increasing the number of organisations adding cloud services and cloud usage to their IT delivery strategy.In recent time, the need to adapt IT Delivery to provide flexible working environments, is further driving the adoption of cloud services, replacing traditional workload environments in offices or in own data centres.

Whilst hyperscale public clouds provide excellent platforms for innovation and transformation of applications, are they the only or even the most optimal solution for the static IT workloads of an Enterprise IT department?

An alternative to a native public cloud implementation is a virtual private cloud, powered by a traditional hypervisor such as VMware®. Compared to public clouds, it has particular advantages in the migration and cost optimisation of IT workloads. In particular it ticks a number of boxes that are critical to a successful outcome when embarking on a public cloud implementation, namely:

1: Simplicity of Implementation

2: Predictability of Running Costs

3: Familiarity of Technology and Processes

4: Access to Personalised Customer Support

These advantages are specific to the migration of existing servers where the IT department requires a swift migration to enable flexible working in the short and medium term. In the longer term, and with additional resources, skills and time, companies should to consider re-architecting their own applications or migrating to cloud software that is already built on hyperscale cloud platforms (PaaS or SaaS). The way to implement such a roadmap is to create a Hybrid Cloud where IT workloads can exist in virtual private clouds as well hyperscale clouds and end users can access such clouds through their secure access gateways.

Instead of delaying the move to the cloud because of the need to refactor applications and learn new skills, , an organisation can get a start on on migrating to cloud with a familiar operational model such as VMware-based Virtual Private Clouds.

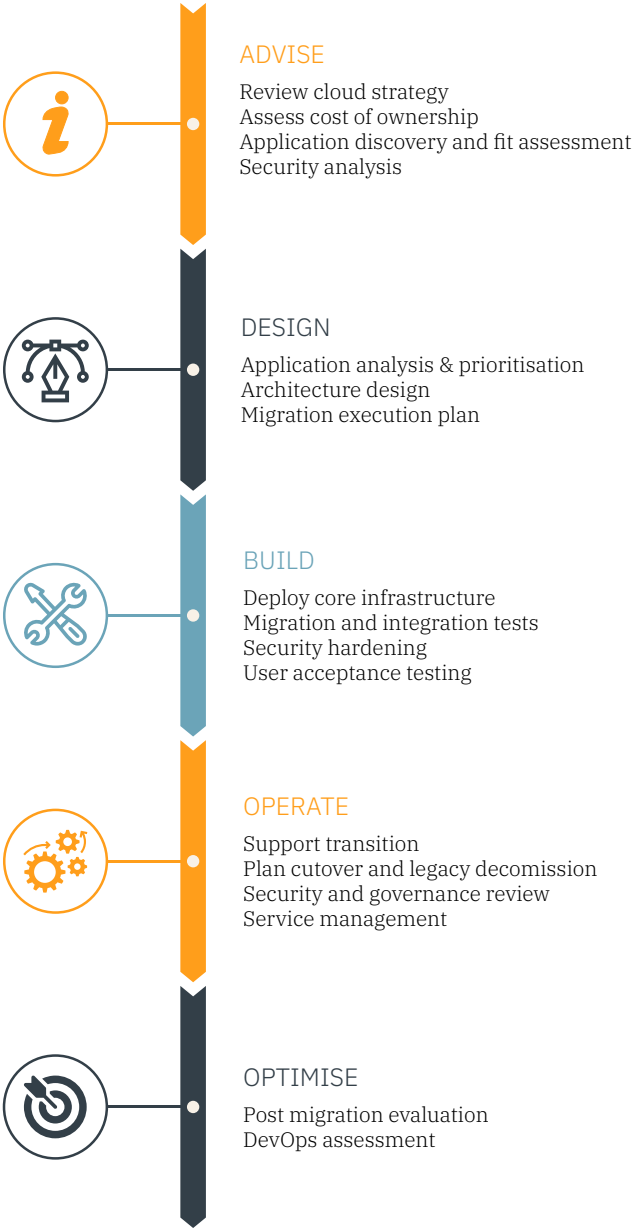
Simplicity of Implementation

Most IT departments today run servers in hypervisor environments such as VMware Hypervisor. Hypervisors are an invaluable tool for running virtual machines without a dependency on underlying server hardware. Cloud environments that run a similar hypervisor technology will therefore allow for a speedy migration of applications to the cloud. Using the same hypervisor removes the need to re-platform and makes a "lift and shift" approach possible.

With hypervisor management tools (e.g., VMware® Cloud Director) or third-party replication tools such as Veeam®, the process of migrating applications across hypervisor clusters is simple, straightforward, and secure.

Using Veeam Replication it is possible to test the migration, without impact on the production platform. This greatly reduces the risk of downtime due to unexpected issues. It also means you can plan an appropriate maintenance window so there is minimal disruption to the organisation.

This approach lends itself to adopting a Hybrid Cloud approach to Cloud Adoption. With Veeam Replication it is easy to migrate applications over time, without needing to take to 'everything at once' approach. This again reduces risk to the business and ensures that the IT Team is able to plan a migration based on resource availability.



Simplicity of Implementation (Cont'd)

In contrast, migrating applications to hyperscale clouds, requires adapting of workloads and virtualisation to the public cloud platform with bespoke elements in order to achieve satisfactory results. Hence, a migration that does not adapt the applications to the cloud platform is almost always sub-optimal and may not provide the intended results.

Organisations should consider the objectives of the migration effort.

The objectives of a cloud migration project can be any of the following (i) achieving ubiquitous access to company applications, no matter where the employee is; (ii), achieving the highest level of availability through managed hardware that is not your responsibility; or (iii) even creating a flexible and scalable server environment. Accomplishing any or all of the above can be done with a simple virtual to virtual implementation.

If the objectives are about re-inventing the organisation's IT and its applications, perhaps introducing a significant level of scalability and flexibility to specific applications, a re-architecting of processes and applications is probably required. It should be defined using the models provided by hyperscale clouds and platform-as-a-service, and then built from the ground up to meet those objectives.

An initial design approach could provide the indication for the right approach. Often a roadmap is required. Timescales and operational necessities may mandate an initial implementation that is simple and risk averse with an agile process that follows and includes phased introduction of re-architected workloads.

Predictability of Running Costs

Cloud solutions have different payment models, and this could ultimately impact the organisation's choice between them.

Hyperscale clouds on the one hand, operate on a pay per use basis. This is an ideal solution if you manage your applications dynamically, for example start a billing service when you want to send an invoice to your clients and shut it down on completion. However, this form of pay per use will typically include data transfer charges, meaning charges that are based on the amount of data transferred out of the cloud, to the end users. In some cases, big files mean bigger bills.

Most IT applications and workloads today are static. This means the server and the applications are always running, so these will not take advantage of pay per use charges unless applications are re-architected. In fact, the applications will be consuming resources (and hence billed for) 24/7.

In many organisations, access to servers is policed but not throttled, meaning once employees gain secure access to a file server, they freely upload and download files. Applications do not police the amount of data an end user requests.

All of this means that the monthly bill can be unpredictable. One does not know how much data will be requested or how many resources an application will need to produce its results.

A flat rate service is more cost effective for applications that were not architected for public clouds. An environment with allocated resources that are fixed in costs but can be modified to adapt to changing requirements provide predictable running costs.

An example model would be a virtual public cloud that is only sized based on RAM. The amount of RAM IT applications use is predictable and typically remains constant so organisations know their costs will remain the same whether the applications are used more heavily, require more CPU resources, or whether end users generate more data traffic from the cloud.

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Challenges with Public Cloud Running Costs

23% - this is by how much public cloud spend goes over budget, on average

Flexera 2020 State of the Cloud Report

39% of organisations struggle to plan and allocate budgets for cloud consumption

2019 European Insight Intelligent Technology Index (IITI)

30% of cloud spending is wasted

Flexera 2020 State of the Cloud Report

30% of cloud expenses are bankrolling services lying dormant

2019 European Insight Intelligent Technology Index (IITI)

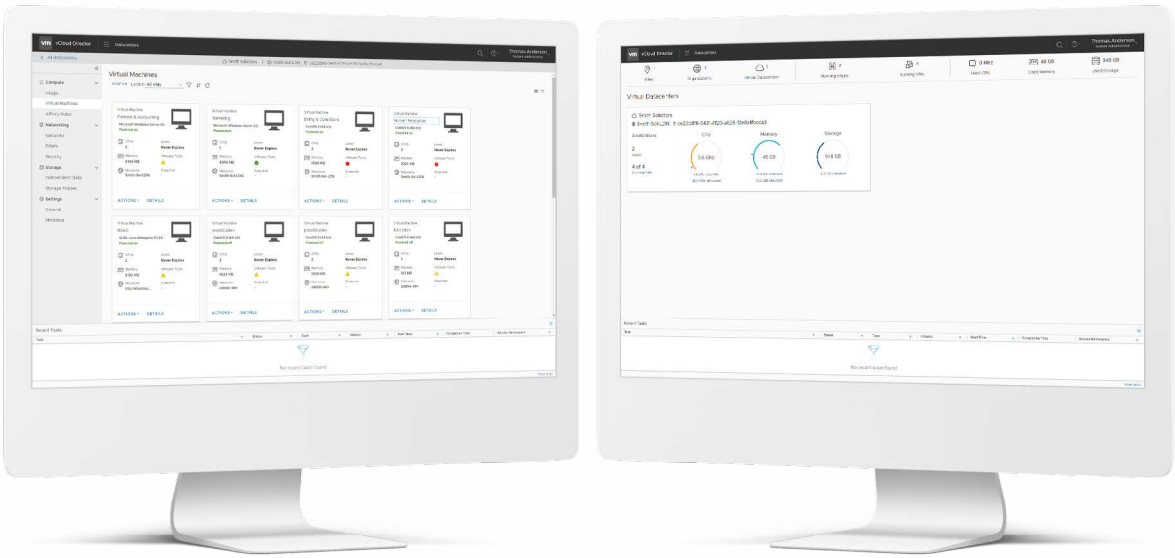
Cloud cost metrics are just as important as core performance and reliability metrics.

Familiarity of Technology and Processes

Migration to hyperscale cloud requires a new skill set which can be expensive to hire or time consuming in self-training. Post migration, the ongoing management of workloads needs to be understood and overseen, to avoid spiralling costs and degradation of service.

By contrast, the ability to lift and shift workloads, servers and backups from on-premise architecture to a similar environment in the cloud means IT staff are familiar with the technology stack and operating processes.

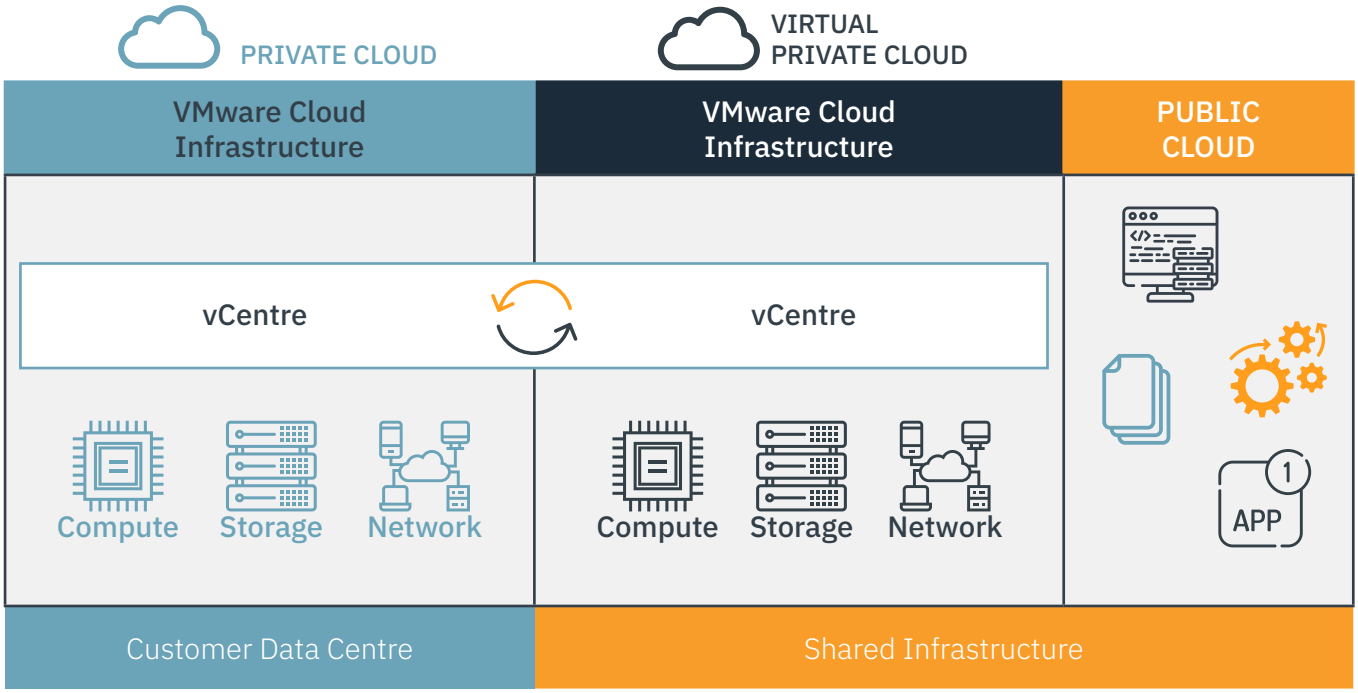
This avoids having to hire new staff to implement your cloud strategy. Staff that already have expertise in managing legacy applications can continue to use existing skills and tools to manage new, flexible environments and move faster to towards a migration goal with minimal operational or staff disruption. Existing employees can seamlessly extend their VMware compute / virtualisation skills to software defined environments.



VMware supports an open and interoperable approach to hybrid cloud, saving IT teams the time and hassle associated with reinventing, re-platforming, and rewriting application code that isn't already designed to run across multiple clouds.

Securing data is also seamless. Backup and recovery are done in the same way, for example a Veeam console can control.

By leveraging current tools, skill sets, and solutions, your team can move faster to achieve digital transformation goals without disrupting your operations or budget.



Access to Personalised Customer Support

Migration to cloud is a transformational project. Your company depends on applications, and you need to make sure it is successful and stays successful.

Hyperscale clouds are typically faceless with some offering personalised support at significant costs. If you don't have cloud skills on your team, this can be frustrating.

Localised Virtual Private Clouds include in-country human support. It means someone who is likely to be knowledgeable about your environment is on hand to support you 24/7.

Whilst most things can be achieved using self-service capabilities, running mission critical IT infrastructure is much easier if you have someone to call on when things are not right.

The customer support you get should come with a Service Level Agreement (SLA) that has your needs in mind. Is it targeting availability of your application and underlying operating system rather than individual platforms as a service?

End to end accountability for delivery of IT applications will mean you are not left stranded when issues arise, and you have someone focused on supporting your environment.

Virtual Private Clouds	Public Clouds
Packaged resources for specific purpose	Variable resources for a variety of purposes
Limited scalability	Infinite scalability
Simple setup	Complex setup
Easy migration (image-based)	Complex migration (template-based)
Fixed costs	Variable costs (eg data transfer)
24/7 support	Mostly faceless

A Roadmap for the Hybrid Cloud Journey

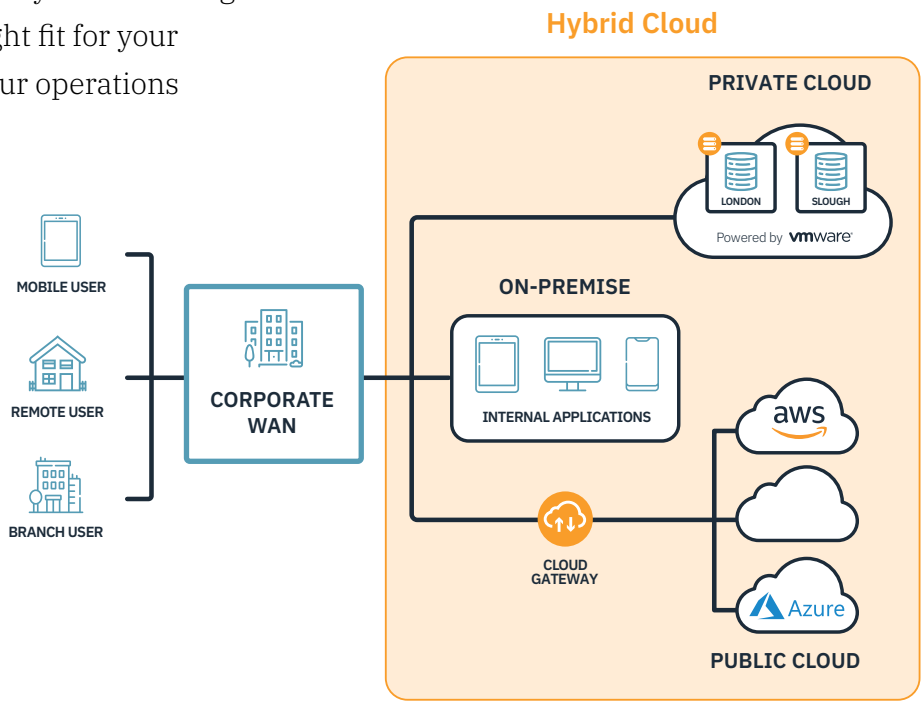
A hybrid cloud environment provides breathing space to an organisation on a digital transformation journey.

A swift implementation with predictable costs and sufficient scalability allows the organisation to set out and build its longer-term computing platform.

The way to implement such a roadmap is to create a Hybrid Cloud where IT workloads can exist in virtual private clouds as well hyperscale clouds. Users can access such clouds through their secure access gateways with security and network orchestration guaranteeing a transparent user experience.

This allows you, in the first instance to leverage the public cloud where it helps whilst keeping VMware for core and critical apps, avoid re-writing apps and leverage internal expertise on VMware and even integrate physical devices into hybrid environments using WAN & Cloud Gateways.

It means you don't need to worry about finding cloud services that are the right fit for your workloads and integrating your operations between clouds.



Your Cloud & IT Infrastructure Service Partner

hSo is your partner in implementing, deploying and managing cloud connectivity, digital transformation and advanced IT infrastructure solutions that adapt to all your needs, whether big or small.

We work with both the private and public sectors, to help deliver, manage and support scalable and cost-effective infrastructure.

Operating on our own low-latency and highly resilient backbone network, we provide the underlying infrastructure to ensure that your employees can access business applications anytime, anywhere.

Our expertise in cloud & IT infrastructure ensures flexibility and security, whether you are in the public or private sector and helps you deliver optimum connectivity and value.

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