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An NTT Communications Company

DAWN OF THE VIRTUAL PRIVATE CLOUD

Taking control of your IT Infrastructure in a Public Cloud

A virtual private cloud (VPC) is a hybrid model of cloud computing in which a private cloud solution is provided within a public cloud provider's infrastructure. VPC is a cloud computing service in which a public cloud provider isolates a specific portion of their public cloud infrastructure to be provisioned for private use. A public cloud vendor manages the VPC infrastructure; however, the resources allocated to a VPC are not shared with any other customer.

A virtual private cloud is an ideal best-of-both world for customers looking for the flexibility, elasticity and scalability of public cloud but with the security and resilience of private cloud. If you are looking to move to an OpEx model for sourcing your compute and storage needs, but wish to retain your own deployment of software delivered securely, then a Virtual Private Cloud is the ideal solution.

If you have a level of seasonality built into your business model and need to be able to flex and burst resources, you will be able to expand and contract your deployment dynamically thanks to the economies of scale and capacity upside offered by a Virtual Private Cloud deployment.

VPCs are sometimes referred to as private clouds, but there is a slight difference as VPCs are private clouds sourced over a third-party vendor infrastructure rather than over an enterprise IT infrastructure. Examples for VPCs include Amazon VPC, launched in August, 2009, and Google App Engine, where the VPC feature is supported through the secure data connector product launched in April, 2009.

So how does a Virtual Private Cloud work

A virtual private cloud (VPC) uses a multi-tenant shared services model similar to public cloud but partitions a single "instance" of resources for an individual customer. The principle governing the operation of a VPC is the same as virtual private network (VPN) connectivity solutions. VPN customers all "share" the core network (or Internet) with a portion being dedicated for their own private use. Likewise, VPC customers "share" the core cloud platform but the virtual machines they use are dedicated for their own private use.

VPCs typically have the following attributes:

- Self-provisioning model via browser portal
- OR managed service – cloud provider handles configuration
- Firewalling and load balancing provided as part of solution
- Pay-as-you-go or contract options
- Highly scalable and elastic
- Instance size varies by individual customer
- Typically Windows or Linux OS options

Some public cloud providers also provide VPCs via existing configuration and payment portals. However, the smaller scale requirements and more predictable nature of VPCs means that smaller cloud providers can enter this market. Moreover, smaller scale cloud providers also deliver managed services and are responsible for customer on-boarding, e.g. they can scale their multi-tenant platform as they grow. Therefore, many providers with a managed hosting or dedicated server background and have taken the managed hosting model into the cloud arena.

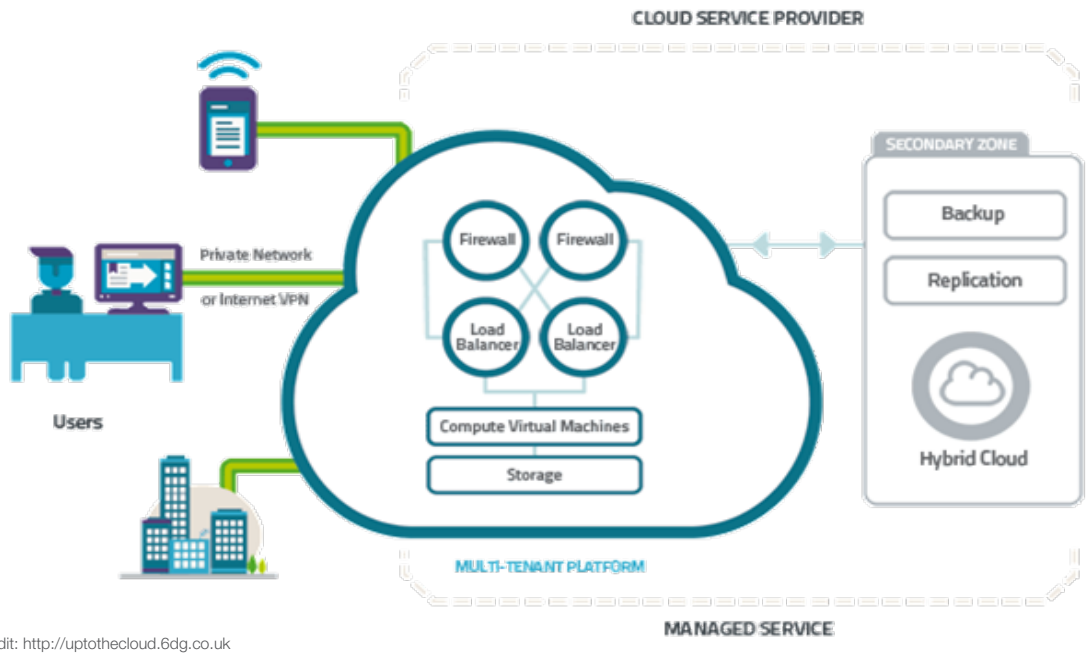


Image Credit: http://uptothecloud.6dg.co.uk

According to IDC, “The emergence of virtual private cloud (VPC) offerings has helped to shift momentum from dedicated private cloud offerings toward public (shared/multi-tenant) cloud offerings. By offering the attributes of public cloud (economics, scale, pace of innovation) with some of the privacy and control features associated with private cloud, VPCs are effectively addressing many of the objections that have held customers back from the cloud model.”

Use cases for Virtual Private Cloud

Virtual private cloud provides an ideal solution for businesses that need the rapid scalability of public cloud with the isolation and complexity of a private cloud solution. VPCs are also good for rapidly deploying small to midsize complex infrastructure. Below are some use cases for VPC deployments.

Suitable for Disaster Recovery (DR)

Secondary hosting environments for backup or disaster recovery where the cloud provider replicates the primary environment (which would typically be on-site server rooms) on a VPC to allow restore and recovery services for the customer in the event of data deletion or site outages.

Development Environments

With a VPC, you can apply a holistic approach to development to provide the infrastructure for your test and code teams. The complex infrastructure that is required to create the most demanding of applications can be deployed rapidly without adding additional cost.

Testing Environments

VPC allows developers the opportunity to test code in a multi-tiered environment. Complex infrastructure can be spun up and advanced applications can be tested across a plethora of variables.

Compliant Infrastructure

Virtual private clouds are 100% isolated and compliant. With a VPC, you can extend your infrastructure, whether on or off-premise, to a fully compliant cloud.

Production Workloads

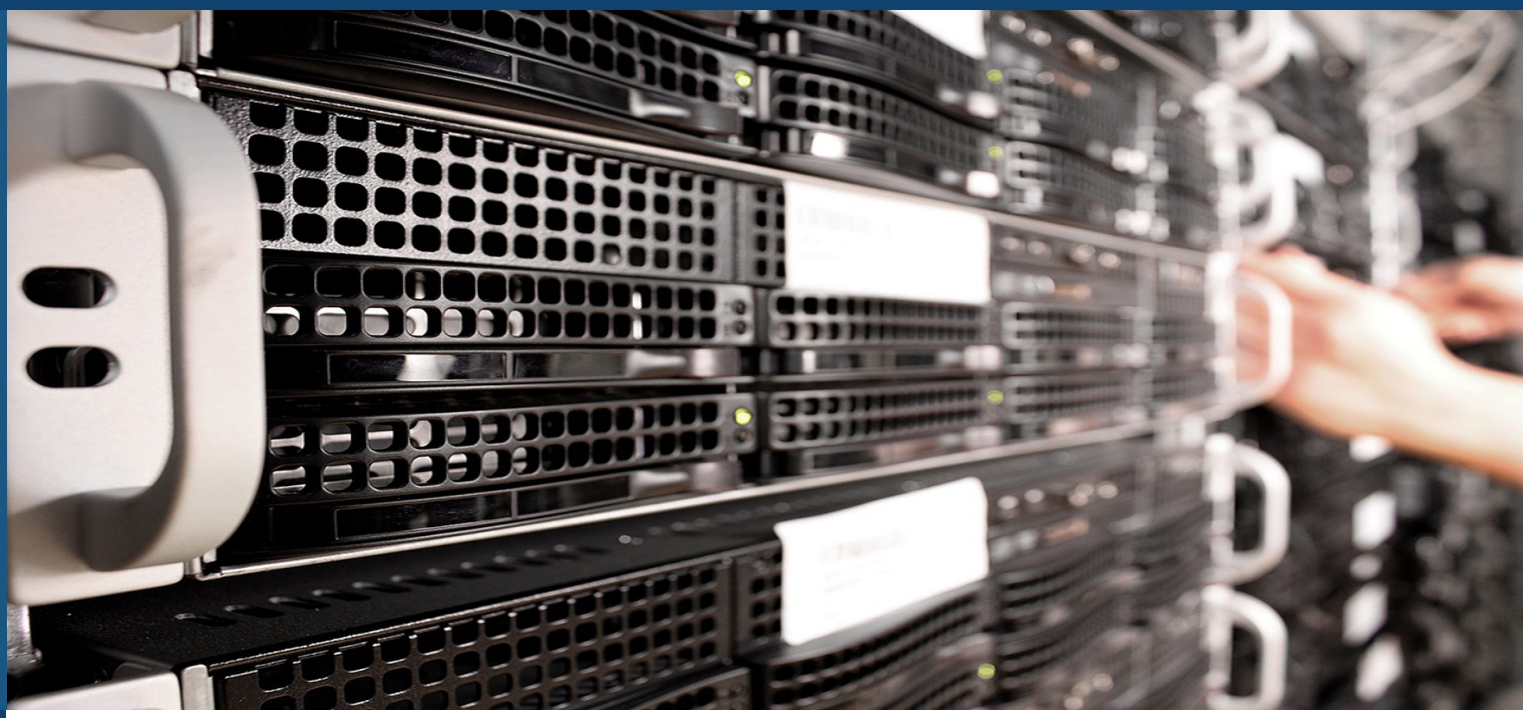
Cloud is not just for developers anymore. Enterprise-class, mission-critical applications can be deployed safely and confidently inside of a VPC. Premium, highly resilient cloud environments empower business applications without giving up organizational security.

Complex web hosting environments

VPCs are used for complex web hosting environments where the customer does not want the unsecured/no-SLA model of public cloud, e.g. for websites that are handling secure transactions or sensitive client data.

Extend data center capacity

Deploying a VPC is ideal alternative in case you are planning to run a time-sensitive marketing campaign or launching a new application. With a VPC, you can meet seasonal fluctuations or peaks in demand with elastic pay-as-you-go compute capacity.
A VPC deployment allows you to purchase resources to your exact specifications in any ratio of CPU, memory, and storage, dynamically resize or decommission as needed, and avoid wasting budget on over-purchasing and underutilization.



How are Virtual Private Clouds (VPC) different from Public Clouds

The basic difference between a VPC and a Public Cloud is that VPCs offer scalable compute resources similar to that of public clouds, but in a more controlled environment.

Virtual Private Clouds and Public Clouds are both designed to offer highly scalable and elastic compute power and data storage. When your company needs more resources, you can provision for these at the click of a button. The tradeoff, however, is that public cloud customers compete for the same pool of resources - this can adversely impact the cloud experience of other customers sharing the same infrastructure. How? Seasonal spikes or unexpected bursts in demand of resources due to promotions for a particular customer could impact others. The case is different for a VPC provider. They are able to introduce a level of segmentation to protect the workload for a predictable user experience, while at the same time providing resiliency and flexibility of cloud services for availability.

Both the public cloud as well as the virtual private cloud relies on virtualized resources to provide scalability and elasticity in operations. Having said that, in a VPC, each customer is given their private pool of resources that can be expanded on-demand but in a more controlled way.

VPCs cannot only provide a high degree of elasticity but also a high degree of stability than the public clouds making them more suitable for production environments where ability to scale and uptime is critical.

An important component to availability is the access to the compute resources in the cloud. Traditionally access to the public cloud is done via the Internet. Virtual private cloud providers can be more accommodating for those customers that want to leverage the private line wide area networks currently deployed. With the potential to leverage the Internet as an alternate path to the environment with a dynamic reroute across a hardware-based VPN solution should any carrier issues arise.

Benefits of Virtual Private Cloud

Virtual private clouds have many of the same advantages as public clouds, e.g. speed of provisioning and time-limited expansion/contraction. In addition, they also have additional advantages in terms of security (through secure networks and firewalls), predictability (through load balancing and managed services) and cost management (through contracts and fixed pricing not opaque pay-as-you-go models). In short, most VPC customers are seeking the advantages of public cloud but in a more controlled manner through a managed hosting model.

Next Generation VPC Services from Netmagic

Netmagic – An NTT Communications company offers a robust Virtual Private Cloud solution - SimpliVPC - designed to suit businesses that want to retain control of their IT infrastructure and adhere to compliance requirements but still want to have the flexibility of scaling up when required. In other words, a managed VPC hosting with Netmagic not only gives control of provisioning virtual resources (on demand), but also manages industry specific compliance issues that may arise.

Bundled with a complete suite of virtualization tools and infrastructure services, SimpliVPC is an architecture-driven Cloud service, delivering a dedicated pool of compute and storage resources along with SDN using a self-service portal.

The 'Netmagic Assurance' of an always available, reliable, secure and robust infrastructure through SimpliVPC comes with the advantage of add-ons that further boost the functioning of an organization's Mission-Critical IT. These include Dedicated Firewall, Bandwidth (Mbps/GB), Guest OS Licenses, Guest OS Infra-manage, Dedicated Load Balancer, Backup Service and Netmagic Tiered Storage Service (NTSS).

A managed VPC will be a preferred cloud deployment model in the coming times, solely because of the flexibility it offers to organizations in managing their IT infrastructures. A Virtual Private Cloud not only secures an organization's cloud resources but also provides the much desired flexibility, scalability, elasticity, agility, availability and high performance – all on a utility computing or pay-as-you-go pricing model. Enterprises looking at the flexibility of a Public Cloud while still wanting to maintain a control over their IT assets should definitely give VPC due consideration.

ABOUT NETMAGIC (AN NTT COMMUNICATIONS COMPANY)

Netmagic - An NTT Communication company – is India's leading Managed Hosting and Cloud Service Provider. With 9 carrier-neutral, state-of-the-art data centers across Mumbai, NCR, Chennai and Bangalore, we support over 2000 enterprises globally. Since its inception in 1998, Netmagic has been a pioneer in the IT Infrastructure services space with an extensive portfolio of services including Disaster Recovery, Managed Security Services, Networking and Co-location. Netmagic also provides Remote Infrastructure Management services to NTT Communications' customers across Americas, Europe and Asia-Pacific region.

Netmagic's award-winning solutions are the first choice of India's CIO community. Our recent accolades include 6 awards at the CIO Choice Awards 2016, Infrastructure as a Service Provider of the Year by Frost & Sullivan, mentioned in Gartner's 2015 Magic Quadrant Report for Cloud-Enabled Managed Hosting, Asia/Pacific, where NTT Communications was named in the Leader quadrant.

RECENT ACCOLADES

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