Demystifying Cloud Computing

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What is Cloud Computing?

Cloud: A light filmy, fluffy or billowy mass seeming to float in the air.
Computing: The use of an electronic device to process data or perform calculations.

An oxymoron for a start!

Ask 10 people what Cloud Computing is and you will get 10 different answers. However, the most common theme that emerges is that it is the ability to do some form of computing on the Internet!

‘On the Internet’ is a very interesting concept. Because the Internet is so big and complicated, many people do not stop and think that it is made up of real physical components tied together by standard networking and computing protocols. It is not a nebulous fluffy thing. When you access any kind of data, system or web page it is being fed from a specific computer, based in a real location, managed by real people and is being paid for by someone or some organisation.

The key characteristic for Cloud Computing is the ability to rent or access computing power, operating system and application software hosted outside your organisation. This is an alternative to running hardware and installing software in your own environment.

The industry standard definition for Cloud Computing is a stack of three adjacent levels of services, each level of service building on the previous.

- **Infrastructure as a Service (IaaS)** which includes hardware housed in purpose built datacentres, which is made available to be used by remote technical teams to load operating systems, hypervisors and application software. This is quite common for R&D environments and for Business Continuity and Disaster Recovery.

- **Platform as a Service (PaaS)** where in addition to the computing power the operating system and hypervisor are provided secured and managed and there is a ready-made environment for applications software. This is becoming more common as larger businesses want to focus internal IT resources on business systems that will deliver some benefits and rely on a trusted partner to manage the IT infrastructure, which is rapidly becoming a utility.

- **Software as a Service (SaaS)** where a single copy of the software is run on a scalable computer platform and users from multiple companies have access to the shared system. Such applications (e.g. Salesforce) are designed for multi tenancy so each company can configure options to meet individual requirements and each company’s data is securely partitioned.
Benefits of Cloud Computing

The key drivers for moving to Cloud Computing are:

- **Operational expense** rather than capital expense, which is particularly topical due to the lack of funding available for many businesses.
- **Lower Total Cost of Ownership**: Not only is it a pay-as-you-go service, the total cost of ownership will be significantly reduced.
- **Scalable**: Cloud Computing brings a utility basis such that the environments are able to scale for hundreds or even thousands of users meaning you are unlikely to ever outgrow the service. Further, you only pay for what you use and can scale up with demand and scale down in lean times.
- **More reliable**: Cloud Computing platforms are designed and built as Enterprise class platforms to be shared by multiple business customers. Ownership of this kind of resilient, high performance infrastructure is out of reach of the budgets of most organisations.
- **Expertise and focus**: Cloud Computing environments are managed by multi-disciplined teams each with deep and broad technical knowledge. This includes networking, hardware, storage, hypervisor, operating systems, and applications software.
Link-Connect Private Cloud Computing Service

Based on this industry standard architecture, Link-Connect’s enterprise grade Cloud Computing infrastructure is distributed across multiple data centres. This allows us to deliver a range of Cloud Computing infrastructure solutions at these industry standard levels.

However, when moving to Cloud Computing it is not just the ‘Computing’ aspects that need to be carefully considered. It is essential to consider access to the now remote applications: is there the right level of security to protect against internal and external attacks? How do the Cloud-based applications dovetail with internally hosted applications? Who can you talk to resolve problems or discuss future developments and requirements?

Link-Connect Private Cloud Computing Services encompasses ALL aspects to help you transition to a Cloud Computing environment either as a phased approach or a ‘big bang’ move. We offer a one-stop-shop for Hosting, Connectivity, and Security all designed as Enterprise Class infrastructure, which is designed for multi tenancy. A key advantage to users is the ability to harness Enterprise class infrastructure that is often out of reach of an individual company’s budgets.

These high availability services are combined with access to an expert team of technicians who will guide you through the whole process. We can help you to identify the right applications that will benefit from moving to a Cloud environment, design a solution that takes into account your specific requirements, document the business benefits and manage the transition into the new world. Thereafter you are in the hands of our technical teams to manage and support you augmented by regular service reviews.
The Link-Connect Cloud offering combines secure, resilient infrastructure with our carrier integrated core network. This enables us to deliver solutions to businesses that have the optimal design to match the needs of the customer and deliver clear economic advantage. We have a focused approach to Cloud Computing, and whilst a lot of attention is paid to Public Cloud services from the likes of Microsoft and Google, for Link-Connect Cloud Computing is more about the virtualisation of specific internal business applications and delivering them from multiple data centres for resilience.

It has become increasingly clear that the delivery of applications back into the business is highly dependent on the performance and security of the network. When making the transition into using Cloud Services, a business must ensure both the computing and networking components are delivered as an integrated solution.

The Link-Connect Cloud Computing service is fundamentally different from many other Cloud services due to our ability to deliver customised solutions, and keen focus on providing the level of proactive support enterprise customers require.

**Enterprise Grade Cloud Platform**

Link-Connect has built a Cloud Computing Platform that uses Enterprise grade components at the Hypervisor, Compute and Storage Layers. This ensures the resulting service is resilient, efficient, scalable and high performance.
Solution Transparency
For many businesses, moving key IT applications into a Public Cloud is too much of a risk. The Private Cloud approach allows us to be much more transparent about where the applications and databases reside, and how these are secured and delivered resiliently – in terms of both the computing platform and the network. In addition you have direct access to the technical team looking after your critical corporate assets.

Solution Customisation
Our Technical Consultants will work with customers to design solutions that best meet their specific needs. As businesses look to migrate to a virtualised, Cloud environment it is critical that the right solution is deployed and tailored to meet business demands.

Optimal Network Services
Link-Connect’s Cloud offering, combined with their network services, enable the customer to deliver application services out to end users securely and at the required performance levels.

Link-Connect uses a carrier agnostic approach, afforded through heavy integration with Tier1 Carriers, together with Next Generation Firewalls and WAN Optimisers to deliver the optimal network design in terms of reliability, performance and cost.

Backup Services
The backup platform is built specifically for virtual environments to provide fast backup and recovery of virtual machines. The service is administered through a unified management console, and delivers protection for the entire virtual infrastructure, providing industry-leading features such as Instant VM Recovery, Instant File-Level Recovery, 2-in-1: backup and replication with powerful de-duplication capabilities.

Monitoring and Management
The management layer provides management and monitoring at Virtual, Hardware and Datacentre layers of the Cloud platform to allow the solution to be managed holistically and proactively through a single pane of glass.
Customer Environments
Guest servers/appliances within the Cloud platform are securely segregated and contained within a resource pool, with enterprise features such as Distributed Resource Scheduler (DRS), and High Availability (HA) enabled. The resource pool is spread across the hardware platform, which in turn is spread across datacentres. DRS performs the role of load balancing the guest servers/appliances over the hardware layer, while HA ensures failover in the event of a node/enclosure/datacentre failure.

Virtualisation
The foundation computing power is harnessed by an enterprise class hypervisor, providing the management layer with centralised control, monitoring and reporting at the guest, host and component level. It is enabled with advanced disaster recovery features to ensure faults at the hardware level do not affect the availability of the guest machines.

Computer Power Layer
Each participating datacentre is equipped with unified computing Infrastructure, offering the following features:

- Modularised platform designed for scalability, offering multiple points of resilience while minimizing the use of physical space and power.
- Each Enclosure is populated with Half-Height Blades to increase density, mitigate risk and the impact of failed nodes.
- Built on Next Generation Intel Virtualisation Technology enabling best-in-class virtualization performance.

Data Storage
The storage platform is based on a highly scalable multi-site Storage Area Network, providing tiered storage, which is resilient at the disk, shelf, node and datacentre level. Connectivity to the compute platform is then provided securely and resiliently via multiple access paths.

Data Centres
Link-Connect Cloud Computing services are delivered from geographically dispersed Tier3+ data centres, which are heavily integrated into our core network with diverse connectivity in and out of each location.
Summary

Organisations are increasingly looking to implement technologies that help them to improve business performance, reduce costs, simplify processes, improve security, manage their changing workforce and enhance their customers’ and users’ experience.

**Link-Connect Private Cloud Computing Services** deliver real flexibility and functionality to your business. By accessing applications virtually and running online backups your business can make significant savings in both cost and time.

We think that it is important that businesses do not turn away from the benefits of the Cloud because some of the negative publicity that surrounds it has put them off. Link-Connect can demystify the cloud and help your business explore the possibilities.