

# Utility Computing

## SOLUTION BRIEF

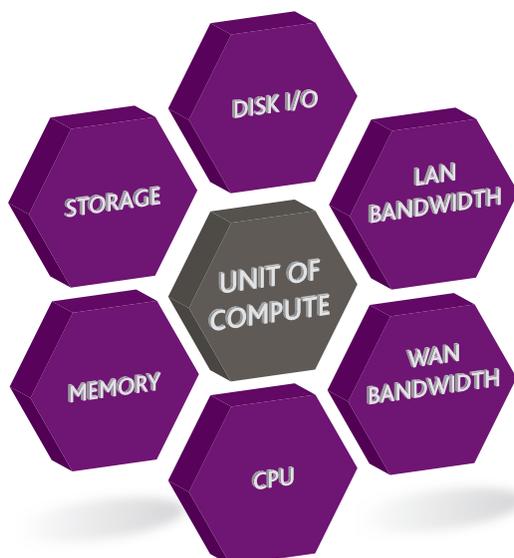
Enterprise architecture is currently undergoing the most significant period of development in recent memory. This is being driven through the widespread adoption of “Cloud” based service offerings and the converging maturity of key enabling technologies. Cloud architectures (whether Public, Private, or Hybrid) are delivering efficiencies that are difficult to deny from a business perspective.

**Q.** So why is it that organisations can sometimes struggle to understand what this “brave new world” means to them in practical terms?

**A.** Solutions continue to be defined from a technical frame of reference and the overriding business benefits are often lost in translation due to the perceived complexities in deployment.

Gyrocom work with strategic partners in order to define an organisation’s compute requirements in terms of a single “supply” and “demand” equation. This is achieved through the adoption of a “Utility Computing” model that defines a single and consistent “unit of compute” – the real measure of a true utility.

The “unit of compute” is equivalent to the kilowatt hour (kWh) in electricity parlance and is generated through a patent pending algorithm that combines all of the things necessary for an organisations computing workloads:



Applying a cost to the “unit of compute” is then a simple calculation derived from the effective maximum capacity of the infrastructure against the underlying infrastructure cost (both CAPEX and OPEX). This cost will therefore be different based on the underlying conditions of supply and it is easier to understand how requirements can be defined in terms of “supply” and “demand”. An organisation can therefore make informed decisions regarding the most effective medium of supply (e.g. Public vs Private cloud). The benefits to an organisation are as follows:

- Dramatically reduce costs and increase efficiency
- Right-size deployments to a degree previously not possible
- Understand exactly what resources are used
- Understand exactly what capacity is available
- Meter and charge individual business units for what they actually use (where appropriate)
- Leverage Public, Private and Hybrid architectures as an extension of the enterprise
- Automate technology delivery
- Simplify and standardise enterprise architecture
- Understand individual workload efficiency and the optimal location for it
- A granular understanding of “supply” and “demand”

The enabling technologies that have converged to better support the economies of scale for the Utility Computing model are as follows:

- Server Virtualisation
- High Density Computing
- Network Virtualisation
- Security Virtualisation
- Data Centre Fabric Networks
- Storage Area Networking

## HOW DOES THIS WORK IN PRACTICAL TERMS?

The Utility Computing Platform (UCP) enables the automated provisioning of computing workloads within Public, Private and Hybrid cloud environments. It also provides access to a global network of federated Public Cloud data centres. A UCP engine is locally hosted at each data centre location and any deployed workloads are “metered” to understand exactly what resources are being utilised. This metering is defined in terms of the “unit of compute” and workloads deployed to the Public Cloud are billed only against the precise resources that are utilised. System administrators can define and amend the characteristics of a deployed workload to a granular level and once the workload is no longer required this can be shut down or deleted. Only the resources that are utilised are billed and the inefficiency of the small, medium and large computing models provided by other cloud service providers is no longer the problem of the end user.

The same automated provisioning and metering can be deployed within a private cloud environment or corporate data centre. This enterprise deployment model allows organisations to gain a very granular view of their computing capacity as well as a precise understanding of the resources being utilised at any one moment. The metering function of the UCP allows organisations to easily build an internal cross charging model for internal departments that is based on exactly what each department consumes. The Utility Computing architecture effectively removes the link between physical infrastructure investment and new system provisioning. The paradigm moves away from project deployment and more towards capacity infrastructure deployment.

For organisations that are currently considering moving systems to the Public Cloud the UCP also enables the deployment of a profiling agent that monitors what resources would be used should the transition take place. The profiling agent connects back to the UCP and workloads of this nature can be metered as though they were already in the Public Cloud. This functionality allows organisations to understand precisely the economies of the Public Cloud prior to deployment.

The UCP retains the concept of data residency giving the end-user complete choice of where data resides within the Public Cloud. In addition, complex network architectures can be configured within the cloud through the utilisation of network virtualisation technologies. This includes multiple private VLANs, Firewalling, Routing, Load Balancing and Network Optimisation technologies. The UCP also allows organisations to deploy their internally defined VM's and does not limit deployments to a small number of pre-configured OS models. Concerns such as data privacy, security, compliance and application performance can therefore be effectively addressed in the Utility Computing model.

A key part of the Gyrocom engagement is to work with organisations in order to define the underlying cost and current capacity of internal infrastructure delivery. Gyrocom also engage consultatively in order to define strategies that allow organisations to leverage the economies of the Public Cloud within their own Private infrastructures.

## FIND OUT HOW GYROCOM CAN HELP YOUR BUSINESS.

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