

Defining Cloud Computing



- Beginners tend to describe Cloud Computing as ‘IT services which are located “somewhere else”’
- But colo facilities are off premises, and they’re not cloud
- And private cloud deployments are often on premises
- So we need a better definition...

The NIST Definition of Cloud Computing

- The National Institute of Standards and Technology provided the industry standard definition of Cloud Computing in 2011:
- ‘Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.’

On-Demand Self-Service



- 'A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service provider.' *NIST*

Rapid Elasticity



- ‘Capabilities can be elastically provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be appropriated in any quantity at any time.’ *NIST*

Broad Network Access



- ‘Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, tablets, laptops, and workstations).’ *NIST*

Resource Pooling



- ‘The provider’s computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand.’ *NIST*

Measured Service



- ‘Cloud systems automatically control and optimize resource use by leveraging a metering capability at some level of abstraction appropriate to the type of service (e.g., storage, processing, bandwidth, and active user accounts).’ NIST