

## UP IN THE CLOUDS

### Five characteristics of “cloud computing” services

**On-demand self-service:** A consumer of cloud computing services can “unilaterally provision server time and network storage as needed automatically without requiring human interaction with each service’s provider.”

**Ubiquitous network access:** Services are available over the network and accessed by end-users through various platforms, such as PDAs, mobile phones, laptop and desktop computers.

**Location-independent resource pooling:** The provider’s computing resources are pooled to serve all consumers using a multitenant model (multiple consumers can use the same computer at the same time). Computer resources are allocated on the fly based on demand. The customer “generally

has no control or knowledge over the exact location of the provided resources but may be able to specify location at a higher level of abstraction (e.g., country, state or data center).”

**Rapid elasticity:** Storage, network utilization and computing power can be “rapidly and elastically provisioned” up or down. “To the consumer, the capabilities available for provisioning often appear to be infinite and can be purchased in any quantity at any time.”

**Measured service:** “Cloud systems automatically control and optimize resource use by leveraging a metering capability.” Usage “can be monitored, controlled and reported providing transparency for both the provider and consumer.”

*Source: Peter Mell and Tim Grance, National Institute of Standards and Technology*