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.

Cloud is moving from the hypothetical to the reality with many agencies already seeing benefits. But do you know your cloud ABCs to help your organization make the most of this technology?

Definition of Cloud

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Cloud Deployment Models

Cloud deployment models include:

- **Private Cloud**: An on- or off-premise cloud that is operated only for an organization, responsibility for everything else, including operating systems and architectures.
- **Public Cloud**: A cloud infrastructure that is offered over a network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, tablets, laptops). Examples of resources include storage, processing, memory, and network bandwidth.
- **Community Cloud**: A cloud infrastructure that is offered for exclusive use by a specific community of consumers from organizations located in the same geographic area or having similar concerns (e.g., state, country, or university). The community may be the business or consumer entity that provides data to be processed, the government, or a specific enterprise.
- **Hybrid Cloud**: A combination of two or more cloud deployment models (private, public, and community) that remain unique entities but share a set of common services, data management, or policies.

Cloud Benefits

Cloud computing offers benefits such as:

- **Cost-Savings**: No need to purchase and maintain physical servers, reducing costs.
- **Agility**: Resources can be rapidly provisioned and released without human intervention.
- **Efficiency**: Resources are available on-demand and can be scaled up or down as needed.
- **Security**: Security measures are managed by the cloud provider, reducing the need for in-house expertise.
- **Scalability**: Resources can be easily adjusted to meet changing needs.

Government Cloud Milestones

Government agencies have been moving towards cloud computing to improve efficiency and reduce costs. Here are some milestones:

- **1997**: Interior Department becomes one of several agencies to use grid computing.
- **2001**: DHS and NASA begin using grid computing to reduce costs and improve efficiency.
- **2009**: EPA announces project to use grid computing for air quality monitoring, a sign that government agencies are moving towards cloud computing.
- **2011**: CIOs of states and local government agencies begin developing cloud computing initiatives.
- **2013**: State of Texas professor Ramnath Chellappa in a talk on cloud computing.
- **2013**: GSA announces it will use cloud computing as a means to host the government’s applications.

Government Cloud Leaders

- OMB
- GSA
- DOD
- DOE
- State of Ohio
- Oakland County, MI

Required Reading

- **ICLOUD**: Where the Cloud Is Re-inventing Government, a sign that government agencies are moving towards cloud computing.
- **CDW**: No worries, GovLoop is here to help you become a cloud expert.
- **MeriTalk**: http://meritalk.com/cloud-without-commitment
- **FedRAMP**: http://cloudtimes.org/glossary/
- **Clearance Weeklive**: How Cloud is Reinventing Government, a sign that government agencies are moving towards cloud computing.

Sources

- Cloud Time: Volume I
- GSA: Cloud Computing Strategy
- EPA: Grid Computing for Air Quality Monitoring
- UC: Cloud Computing for High Performance Applications
- Oak County, MI: Cloud Computing for High Performance
- DHS: Cloud Computing for High Performance
- GSA: Cloud Computing for High Performance
- DOD: Cloud Computing for High Performance
- State of Ohio: Cloud Computing for High Performance

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