Cloud computing and GIS

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Outline

- INTRODUCTION
  - Motivation
- LITERATURE REVIEW
  - Cloud layers
  - Cloud Deployment Models:
- Why GIS cloud
- Examples
- Conclusion

INTRODUCTION

- Geographic information systems (GIS) is a collection of tools that:
  - captures,
  - stores,
  - analyzes,
  - manages,
  - and represent the data that connected to certain geographical location.

INTRODUCTION

- GIS is the integration of mapping and statistical analysis, hardware, software and data.

- GIS used as a support for decision- making

- GIS is a useful and works well when made available to as many people as possible in every place and time at the expense of resources are very less in terms of technology and expense

INTRODUCTION

- So, "Cloud Computing", has taken the world of geographical information systems by storm.

- Often seen as a utopia of computing utility.

- Financial benefits and flexibility is second to none.

Motivation

- what are these possibilities ?

- why might be better than what you are doing now ?

- why should you care about cloud computing at all ?

✓ Goal : is to answer these questions & provide concrete example of bringing GIS to the cloud

LITERATURE REVIEW

- Cloud Computing described as a highly scalable computing resources provided as an external service via the internet on a pay-as-you-go basis.

- The definition of the cloud computing is recently Disputed .

LITERATURE REVIEW

- The one that all will accept of any model of computing to identify as a cloud computing is contain the following aspects.

  - Elasticity
  - Multi-tenancy
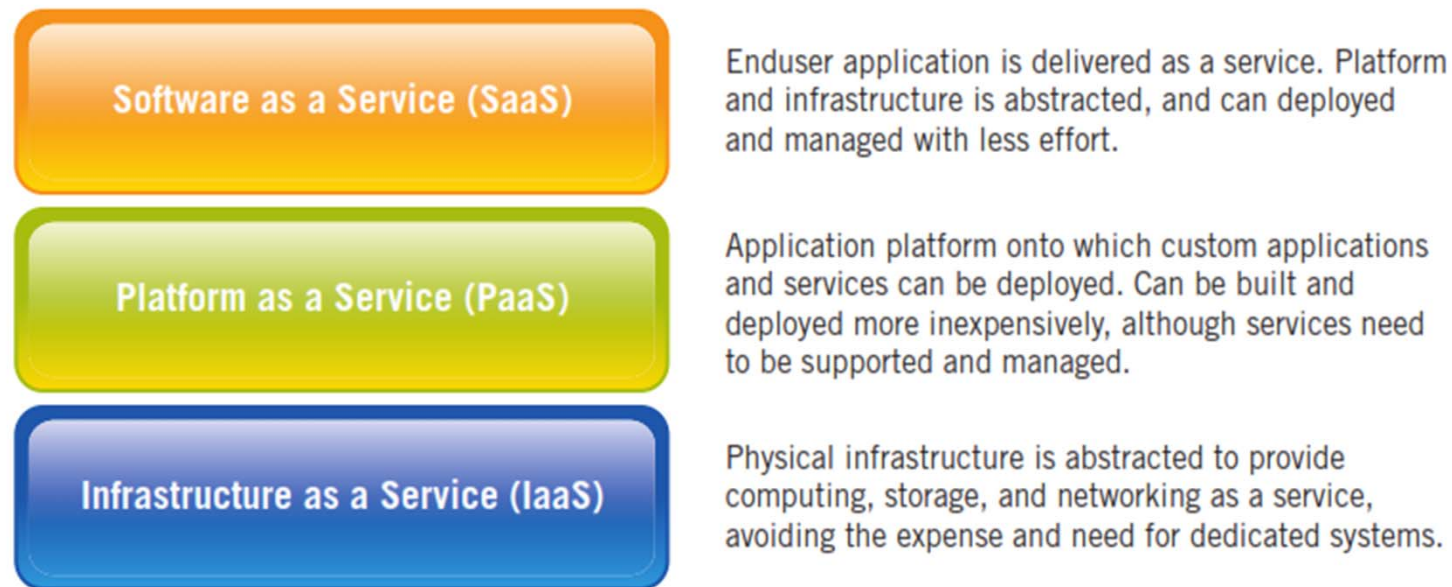 - Economics
  - Abstraction

Cloud Advantages

- Lower Total cost of ownership

- Increased availability

- Faster application delivery

- Flexible model

- Enables collaboration and community computing

- Improved business continuity
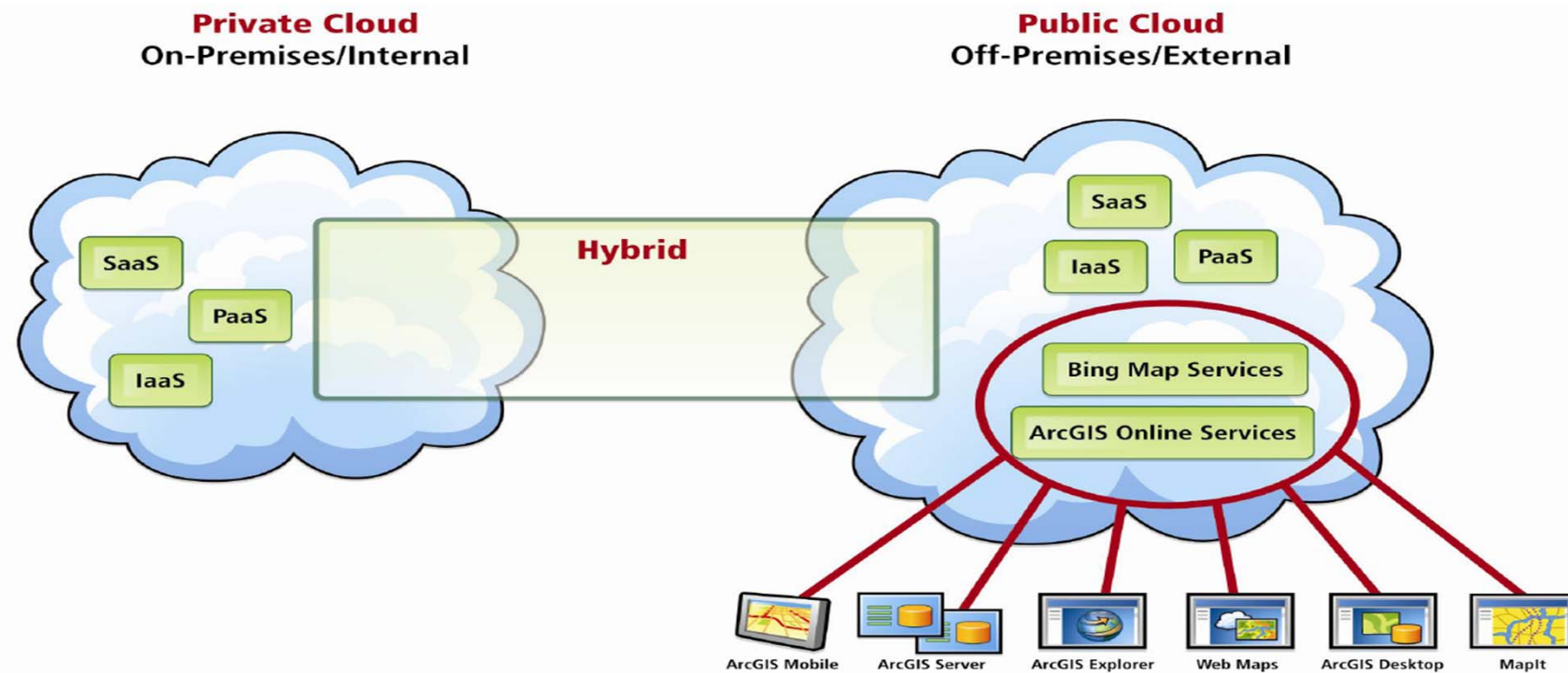
- Rental pricing model

Cloud Computing Service Layers:

Software as a Service (SaaS)

Enduser application is delivered as a service. Platform and infrastructure is abstracted, and can deployed and managed with less effort.

Platform as a Service (PaaS)

Application platform onto which custom applications and services can be deployed. Can be built and deployed more inexpensively, although services need to be supported and managed.

Infrastructure as a Service (IaaS)

Physical infrastructure is abstracted to provide computing, storage, and networking as a service, avoiding the expense and need for dedicated systems.

- Figure 1 illustrate the Cloud computing service Layers .

Cloud Deployment Models:

- Figure 2 illustrates the Cloud deployment models

Why GIS cloud

- GIS Cloud provides authoritative tools which can help many businesses, especially when :

  - Optimization.

  - Cost reduction are critical.

Examples : ArcGIS on the cloud

- Now, Esri uses the cloud in in several ways

  - The ability to deploy ArcGIS server on Amazon shared cloud.

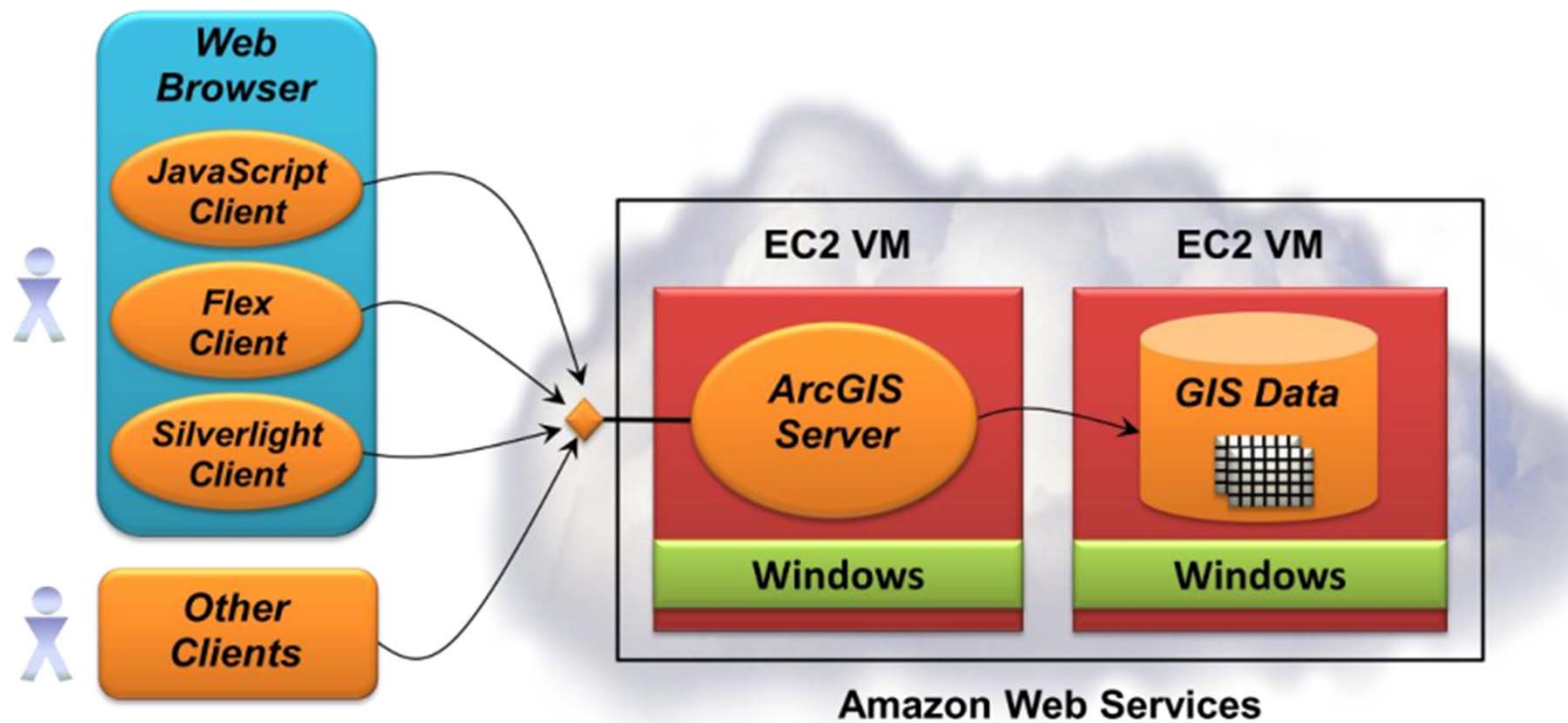 - ArcGIS.com ,a web site offering tools and data for GIS application.

Example : ArcGIS ON EC2

Figure 3: ArcGIS Server can be deployed in an EC2 VM on Amazon Web Services.

Example : ArcGIS.com

Example : ArcGIS

ArcGIS.com:

- http://www.arcgis.com/home/

Conclusion

- In this presentation I explained the following :
  - Cloud Computing
  - computing service layers
  - cloud deployment models
  - benefits and challenges
  - The need of GIS cloud
  - Example of GIS cloud

Q&A

Thank You