

## 2.1.1

### **Can Cloud Technology Help You to Improve Performance, Scalability, and Cost of Geo-Spatial Applications When Your Budget is shrinking?**

#### **Presenter**

Chris Zajac  
Principal Engineer  
NJDOT

[Chris.Zajac@dot.state.nj.us](mailto:Chris.Zajac@dot.state.nj.us)

#### **Co-Presenter**

Yu Luo  
System Architect  
Michael Baker Corporation

[ylo@mbakercorp.com](mailto:ylo@mbakercorp.com)

Traditionally Information Technology (IT) Departments have been the major stakeholders of corporate (public and private) technological infrastructures. They have been the major providers for hosting, delivering, and providing technical assistance of geospatial databases and solutions. Their infrastructures (hardware and software included) have evolved from mainframe computers to modern day's powerful server farms. Over time, they have tried to continuously upgrade their systems to be up to date and to respond to challenges of customers whose primary demands are performance, reliability, scalability, and low cost services. IT departments have made strategic moves such as renting the hardware instead of owning them, upgrading to mature technology frameworks and software releases, and creating shared environments with local IT governance rules.

Despite these measures there are still reoccurring issues regarding hosting of Geo-Spatial data and applications. These applications are built on different frameworks or software versions and a simple framework upgrade may require older applications to be re-compiled or in some case re-designed and redeployed. Geo-spatial software license maintenance and hardware upgrade is also becoming more expensive with applications requesting more computing power. In light of these issues, IT departments and their customers are constantly trying to find a solution for making the deployment and maintenance of geo-spatial applications cheaper, scalable and highly responsive.

One innovative approach is to create a technology stack and deployment package that can benefit from recent improvement in software/hardware virtualization and cloud computing. The challenge is that most ISP/Cloud service vendors do not offer some key technologies traditionally used in GIS and geo-spatial applications. This presentation will discuss the design of a spatial system architecture that utilized a technology stack capable of economically addressing the issues of deployment cost, scalability and performance in cloud computing environment.