

New Jersey Department of Transportation
Bureau of Research

Technical Brief



State DOT Use of Web-based Data Storage

This study explores the experiences of state departments and transportation in the use of the web-based (cloud) data storage. The study identifies best practices in cloud-based data storage and other uses of the cloud by public sector agencies in the United States and offers insight into potential opportunities available to improve data storage techniques and provide cost savings through reductions in capital expenditures of information technology equipment in the State of New Jersey.

Background

Data stored remotely over the internet, also known as the cloud, is rapidly gaining users in business and government and in some cases is poised to supplant traditional in-house server-based storage of data. The Federal government has put in place a “cloud first” policy, with an aim toward consolidating server farms and saving costs, and at the same time improving the responsiveness of data providers to changes in agency demands. While the Federal government has mandated that its agencies move elements of their information technology (IT) infrastructure to the cloud, most states face no such requirement and the level of adoption of the cloud varies. States and other agencies and firms commonly cite security, cost and other considerations that lead to some IT elements being well-suited to the cloud and others that are more appropriately maintained through locally sited and state-owned assets.

Research Objectives and Approach

This study examined the state of practice of state departments of transportation with regard to their use of cloud-based data storage, in order to assist the agency with future decision-making on the need for investment in locally based data storage equipment and to investigate other benefits of using the cloud that may prove to be good business practice for NJDOT. The study included a review of relevant literature review about the use of the cloud for data storage and a survey of state departments of transportation (DOT). The study provides in depth descriptions of several leading states that are implementing cloud-based services and applications.

Findings

The key findings from the research include

- Use of the cloud by state departments of transportation – Of 13 respondents to the survey, 3 currently store data in the cloud and another 4 have plans to store data in the cloud. Current uses of the cloud include for business applications (e.g., email, word processing), tracking fleet location and geographic information system (GIS) data, data dissemination, and similar uses.
- Several states have actively begun using the cloud to store data and information, including Michigan, Utah, Delaware, and a group of western states under the Western State Contract Alliance. All of these states have formal policies in place to guide use of the cloud, including specific restrictions on types of data and information that may be stored in the cloud.
- Leading cloud users have experienced significant cost savings. The Western States Contracting Alliance expects to save between 62 and 88 percent in annual storage costs by utilizing cloud-based GIS data storage through private vendors. Michigan is able to offer private cloud storage services at a cost 80 percent less than using a private vendor, while Utah is saving over \$4 million annually by consolidating its network of servers into a hybrid cloud.

The most successful cloud deployments have included a combination of policy and standards development alongside a procurement strategy that takes into account agency needs. NJDOT should continue to track developments of statewide initiatives regarding the cloud and continue to advocate for procurement and deployment of a private or hybrid cloud for its data storage requirements.

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A final report is available online at: <http://www.state.nj.us/transportation/refdata/research/>. If you would like a copy of the full report, send an e-mail to: Research.Bureau@dot.state.nj.us.

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