



# HOW NETAPP, AWS AND EQUINIX ENABLE FLEXIBLE IT

*Case Study: Public Cloud Efficiency with Private Data Storage*

Traditional IT infrastructures are anything but flexible. Under the old IT model, organizations must add hardware when they want to deploy new applications or services, which can be time-consuming and costly.

A flexible IT infrastructure, on the other hand, allows organizations to distribute IT services globally, while ensuring a high-quality and productive user experience. This model supports business growth by letting organizations address challenges and opportunities on demand. It can also help ensure data security and application reliability, and is an effective way to increase efficiencies while controlling IT costs—which can make the difference between growth and stagnation.



EQUINIX



NetApp™



## The Importance of Data Location and Application Performance

---

In an effort to achieve greater flexibility, many organizations are moving select applications and data to the cloud, including public cloud services such as those offered by Amazon Web Services. While cloud computing promises pay-as-you-go consumption and capacity elasticity, most organizations have made limited use of cloud technology due to a number of concerns: many do not want to give up control over key data and intellectual property and are likewise concerned about its location and security. They are also cautious regarding performance of cloud-based applications because of concerns about user productivity and customer loyalty.

A flexible IT infrastructure located within Equinix can address such issues by placing data and application services near high-speed networks, which reduces latency while increasing application performance. Equinix's highly secure, carrier-neutral data centers provide the ideal environment for flexible IT and optimal application performance, letting customers directly connect with many different types of providers to satisfy demanding application and service requirements.

One of those providers, Amazon Web Services, offers a service called AWS Direct Connect, which provides a secure, high-speed fiber link from customer infrastructure in select Equinix data centers directly to the AWS cloud. Bypassing the Internet, this direct link enables incredibly low latency and allows the application to perform as if storage, networking and compute were all in the same rack.

### **CASE STUDY:** How Traditional IT Limited Oakland County

---

This case study shows how Equinix data centers helped one organization achieve a highly scalable and flexible IT environment by deploying NetApp Private Storage for Amazon Web Services (AWS).

The local government of Oakland County (OC), Michigan, supports government services for more than 1 million residents and is a recognized leader in technology innovations. Oakland County offers its IT services to other government organizations within Michigan using a shared deployment model known as G2G (Government to Government) Cloud Solutions. Due to its success, OC sought to expand G2G Cloud Solutions but faced growth and cost challenges with the existing infrastructure. The county decided to move to a cloud-based Infrastructure as a Service offering to host the applications it shared with the G2G Cloud Solutions community.

OC moved the G2G Cloud Solutions data and computing resources to AWS, where the county's IT staff members were able to add compute and storage resources as needed. They determined, however, that they needed more advanced data management capabilities, including more granular data management control and additional security and protection while maintaining audit compliance.

OC addressed these challenges by returning data to a local array that connected to AWS computing instances. This seemed promising, but the Internet-based connection between the local storage and computing resources at AWS was too slow to support acceptable application performance.

### Why Equinix Data Centers?

Equinix data centers support a shift to flexible IT by offering more freedom and choice:

- More than 450 cloud and SaaS providers
- More than 950 networks
- More than 4,500 businesses
- 100+ locations in 32 global markets
- 90% of the world's Internet routes pass through Equinix data centers
- Security and Compliance
- 99.999% global uptime SLA

**"Our relationship with Blue River Information Technology has changed the way we look at our future. Our ability to move toward the cloud has been enhanced by Blue River's expertise and their partners, like Equinix, NetApp and AWS, that are reshaping the world of technology."**

— **Phil Bertolini**,  
Deputy County Executive/CIO,  
Oakland County, Mich.

## How Flexible IT Solved OC's Issues

---

Blue River IT, OC's cloud solutions provider, proposed an infrastructure based around NetApp Private Storage for AWS. This comprises:

- Dedicated NetApp systems for private data storage;
- Dedicated hosting capacity in an Equinix data center for the NetApp systems;
- A private, high-speed connection using AWS Direct Connect, between the AWS computing resources and the data on the NetApp array.

OC administrators have access to the storage systems, which ensures audit compliance. NetApp's advanced storage management features, including Snap Mirror, FlexClone and SnapManager for Microsoft SQL and SharePoint, address Oakland County's privacy, security and application availability issues. Application-aware snapshots can be scheduled to back up data hourly, weekly and monthly, with no application downtime. Placement of the NetApp filer within an Equinix facility in close proximity to AWS provides incredibly low latency, solving application performance challenges. NetApp also provides increased granularity for restoration of data, with the ability to restore a single document rather than the entire database. This decreases restore time from hours to minutes, and requires no database administrator involvement.

Blue River's proposal also included a robust, seamless and automated disaster recovery solution, in which NetApp systems replicate data to an Equinix facility in another geographic area. In the event of a disaster, AWS compute resources are quickly provisioned with little to no disruption of service. This was implemented as a managed service, in which Blue River owns and hosts NetApp systems at Equinix. This provides on-demand private storage in addition to on-demand computing. Working with Equinix, Blue River gains competitive advantage through direct access to AWS, along with unmatched network provider choice and the ability to quickly and easily expand its physical footprint.

The solution was deployed much faster than building a comparable on-premises infrastructure. Because it is based on a services and utility model, OC is charged only for usage on an Opex basis, thereby saving scarce Capex. It is also highly scalable; as G2G Cloud Solutions grows, IT administrators can deploy new application instances on demand and without affecting the end-user experience. This meets all their requirements for application performance, data integrity and protection mandated in the service-level agreement, as well as delivers audit compliance.

## Flexible IT Is Within Reach

---

Flexible IT has truly revolutionized the delivery of government services for Oakland County. Not only does OC fulfill its mission with greater efficiency, but it also extends that efficiency to other organizations. OC IT staff members now have more time to focus on innovation rather than on tuning IT infrastructure.

By storing data on NetApp systems inside Equinix data centers with a dedicated, high-speed connection to AWS, flexible IT is within reach for all organizations that want to gain efficiencies of public cloud with the performance availability and control of private storage. This approach does not require all data and computing infrastructure to move to the cloud—rather, data remains private but uses the public cloud so that organizations can provide outstanding application performance while controlling data sovereignty.

**To learn more about achieving flexible IT with Equinix, visit [www.equinix.com](http://www.equinix.com).**

**To learn more about Oakland's G2G Cloud Solutions, visit [www.g2gcloud.com](http://www.g2gcloud.com).**

**“The coverage that Equinix has with its colocation sites, the advanced data management functionality from NetApp and the agility that AWS provides enable us to provide a high-performance, secure and flexible solution to our customers worldwide. We can quickly deploy primary and disaster recovery sites and offer a truly robust and flexible cloud-based IT infrastructure.”**

**— David McLaughlin,**  
CEO, Blue River  
Information Technology