Hybrid Cloud Success Stories for Mission-Critical Workloads

Despite the opportunities that cloud-based solutions present, 80 percent of enterprise workloads have yet to be migrated to the cloud.[1] Reasons for this lag in adoption include time, effort and complexity of moving legacy applications to a cloud environment.

"No single solution can satisfy every business need. Lots of government applications that were developed in the 60s, 70s and 80s would require enormous effort to move them to the cloud and modernize them," says Elliott Aten, Director, Hybrid Cloud, IBM Public Sector.

Instead of trying to move all these applications to the cloud, Aten advises keeping those that cannot be moved due to extraordinary resource requirements in on-premises IT environments, and then using a hybrid cloud to bridge legacy applications and cloud services. Using this approach, state and local government agencies can leverage existing IT investments while incorporating new cloud services, artificial intelligence (AI), the Internet of Things (IoT) and other emerging technologies to improve services, cut costs and streamline operations.

Working in a Multicloud Environment

The key to a successful hybrid cloud implementation is secure interoperability across multiple environments, including on-premises IT, dedicated private clouds, public clouds, software as a service (SaaS) or any combination thereof.

"Organizations are typically working with three to five clouds now. We estimate that 94 percent of organizations will have more than seven cloud environments in the near future," says Mike Beddow, Cloud and Analytics Solutions Leader, IBM Public Sector.

Organizations need an integrated, end-to-end platform that enables connectivity between environments and the capability to move data between them. They also need a centralized management console to seamlessly manage all types of workloads, regardless of where they exist.

Tapping into a Treasure Trove of Data: Artificial/Augmented Intelligence

With the right cloud platform, state and local governments can use existing services and data to take advantage of advanced capabilities such as high-performance analytics and artificial/augmented intelligence — all while maintaining ownership and control of critical data.

One U.S. state is using a hybrid cloud platform to support a data asset catalog service (DACS) that helps address multiple use cases where agencies need to quickly find and access data about constituents. As a foundational AI solution, DACS provides a multitenant, shared service environment to capture, maintain, analyze and govern data assets. A repository based on metadata allows users to easily find and access the data, while the data itself remains where it is, under the agency's ownership and control.

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One of DACS' potential use cases is to optimize emergency response during natural or human-caused disasters. Using the solution, authorized staff and emergency management organizations like FEMA will be able to quickly determine where constituents live, which residents have urgent medical requirements, the location of emergency shelters and more. By providing rapid access to vital information, DACS will enable agencies and first responders to help people and communities get back on their feet as quickly as possible. At the same time, DACS and the hybrid cloud platform provide a solid foundation for adding AI services over time.

The AI Ladder

By connecting disparate data together with a hybrid cloud, AI allows organizations to automate mundane tasks, optimize processes, predict outcomes, prescribe alternative courses of action and more; however, certain data-related capabilities are required to achieve these outcomes. To help organizations accelerate the journey to a mature AI solution and a multicloud world, IBM prescribes the following ladder of building blocks:

Collect (bottom rung; the starting point). Make data simple and accessible; be able to connect to different types of data sources.

Organize. Create a trusted analytics foundation, where data is organized into data sets that can be "shopped for" in a centralized catalog; apply governance processes to data.

Analyze. Scale insights with AI everywhere; assemble multi-disciplinary teams (e.g., data scientists, business managers and programmers) to perform modeling exercises that address real-life use cases.

Infuse. Operationalize AI with trust and transparency; put data and insights into the hands of the people who need it by bridging the application world with the data world.

A great example of this is found about 10 miles outside Washington, D.C., and with a population of just 4,700, Seat Pleasant, Md., has incorporated AI building blocks, along with a hybrid cloud approach, to provide smart city services and improve the lives of residents. One example is the town's website. When constituents call or use a mobile application to communicate with the website, they interact with an AI-driven virtual assistant that incorporates many data sets to answer questions, resolve issues and initiate follow-up tasks. For example, if a citizen calls about a pothole, the virtual assistant can record data about the pothole and then kick off a business process to deploy the necessary assets for the repair. The town is also incorporating data from IoT sensors and other sources to get a real-time view of city operations and respond proactively to street light outages and other events. Using the virtual assistant, the town has increased turnaround time by 98 percent.

Predictive Pretrial System Increases Fairness in Bail Processes While Saving More Than $8 Million

When the New Jersey Courts needed to address the fairness of pre-trial incarceration, it turned to IBM to develop an AI-based solution. Through analysis, the state had found 9,000 people were in jail waiting for trial because they could not afford the $2,500 bail. Many of the people being held — often for many months — had been charged with relatively minor offenses. Working with IBM, the state implemented a system that incorporates real-time data from disparate state and federal crime databases, along with a rules-driven architecture, algorithms and other tools to create a predictive score indicating who will likely show up for their hearing if released on their own recognizance. The automated scoring process takes about three seconds — a task that would have taken about three hours per person with a manual system. Using the system, the state has reduced its pretrial jail population from 9,000 to 4,000 people. Although fairness was the original business driver, this pre-trial flight predictive capability has delivered $8 million to $10 million in additional cost savings to the state.

Meeting Real-Life Business Requirements

As IBM's Beddow says, "The cloud is not necessarily a place. It's more a set of capabilities — agility, elasticity, flexibility, portability and so on."

By taking this point of view, state and local government leaders can adopt the hybrid cloud strategy that best meets their business requirements for not only legacy IT but also for new opportunities presented by AI and other advanced services.

This information is part of the IBM Government Cloud Virtual Summit, a free, online event featuring 17 sessions with insightful keynotes, illustrative case studies and deep dives into job-critical topics for government leaders. To view any of these sessions, visit: www.govtech.com/ibmvirtualsummit