Enterprise Email in the Cloud

Consolidating 21 email systems into an enterprise system using Cloud Services

March 8, 2011

U.S. Department of Agriculture, Office of the Chief Information Officer

Executive Summary

USDA OCIO (Office of the Chief Information Officer) has an ongoing vision and mission to evolve IT support services while providing supervisory oversight regarding the design, acquisition, maintenance, use and disposition of information and information technology (IT) by USDA agencies.

Interoperable communications across diverse stakeholders is an essential function to maintain a mission-driven organization such as USDA. Though federated, the Department of Agriculture must provide leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management.

In 2008, USDA was operating numerous separate email systems, most with unique functionality and settings. The decision to consolidate these systems was driven by sound business practices based in cost, operational efficiency, and developing a more productive workforce. Though the Department had begun to move in the direction of an on-premise solution, the option that made the clearest business sense in the end was moving the USDA email system to the cloud.

Challenge

In 2008, most of the 29 components of the U.S. Department of Agriculture (USDA) operated their own email systems and networks. The fragmented email system not only impacted the Department's bottom line due to the high cost of maintaining individual systems, but also impacted information exchange across the Department. For example, it was difficult to send broadcast emails across the entire Department such that recipients received the emails in a timely fashion. It was also difficult to look up accurate and complete contact information for all employees in one global address list, or to have meeting invitations automatically populate the recipient's calendar.

Across the Department the average cost of email was approximately $13 a month per user. The average cost also reflected email environments with varying functional capabilities. In some cases email archiving was done with tape and in other instances disk storage was used. Software types and versions were not standardized, and refreshes were staggered across the components, making enterprise-wide upgrades impossible.

The Department then began the process of consolidating these email systems into a single enterprise system using a traditional, on-premise solution. It was challenging to get buy-in from federated components who were accustomed to managing their own systems, and the consolidation process encountered a number of implementation challenges:

- Promotion of a 200 MB basic mailbox in the enterprise solution that was smaller than what many agencies already had
- Migrating no more than 2 weeks of email from the agency system to the enterprise system
- Timely expansion of the enterprise infrstructure from servers to storage to accommodate the various phases of migration

In choosing to move its email system to the cloud, USDA encountered additional challenges unique to this type of migration. Though most organizations have anticipated security-based and technological obstacles to moving systems to a cloud-based architecture, USDA found that the most significant obstacle in its migration was organizational.

Solution

The USDA Office of the Chief Information Officer (OCIO) had been monitoring the cloud computing market for maturation around cost and service levels. When the email consolidation effort began, several large companies and state, city, and local governments had recently

decided to move services to the cloud. The cloud-based services offered more functionality than the alternatives for the same or slightly lower cost, and could leverage existing license and infrastructure investments to offset costs and reduce business continuity concerns.

In the course of the migration, USDA learned it is critically important that the full cost of doing business, from services to infrastructure and the system itself, is fully understood. There is a lot of variation in the range of costs for purchasing cloud messaging services and in many cases the total cost of ownership is not accurately reflected. In general, email services, whether cloud-based or an in-house, on premise solution, range from $2 a month per user to over $15 a month per user. Any organization interested in purchasing software-as-a-service needs to take into account a number of factors and variables. In this particular case, USDA took into account network costs, archiving costs, and helpdesk operations in determining the per seat cost for email.

The additional functionality offered by the cloud-based service made migration to an enterprise-wide solution desirable to USDA components. The cloud-based service offered end users an upgrade from 200MB capacity mailboxes to 5GB capacity mailboxes with additional scalability possible. End users would also be able to take advantage of cross-Department collaborative tools such as chat, web collaboration, and integrated VTC services that had been specialty applications in the past and siloed by component.

In spring 2010, USDA conducted an acquisition for collaboration and communications software-as-a-service (SaaS) to support its internally hosted Enterprise Messaging Service (EMS) solution. The resulting services would augment and eventually replace USDA's internal EMS solution, the target environment for consolidating 21 email systems supporting approximately 120,000 USDA staff and support contractors. The EMS-Cloud Services solicitation was issued to three GSA Schedule vendors and was awarded in late April 2010.

The first challenge that confronted the Department post-award was the coordination and synchronization of firewall and other settings across the 21 legacy email systems. The vendor brought in a toolset to assist in this effort, which took more time and effort than originally anticipated. The OCIO stood up an integrated project team across all components to assist in coordinating cross-Department efforts and launched an outreach campaign to help educate component CIOs, technical stakeholders, and staff on FAQ topics and to train end users on new applications.

Results

This new cloud-based, enterprise-wide service at USDA will reduce the cost of mail messaging to less than $8 a month per user including all operating costs. Once the new system is fully operational, the Department expects to see cost savings of approximately $6 million per year compared to the legacy system costs, with improved capabilities across the enterprise.

In addition to these lower costs, the new solution gives USDA more control over managing email settings across the enterprise, leading to a heightened security posture and better records management. The OCIO has also gained increased insight into the operations of the enterprise and is better enabled to identify best solutions and cost out services. Additionally, all end users now receive software upgrades at the same time. Overall, the new solution is in line with USDA's streamlining and consolidation activities as well as the Department's unified communications strategy.

Lessons Learned

- Cloud solutions offer attractive benefits to enterprise-wide consolidation efforts.
- Organizational change management is a critical component of migrating successfully to the cloud.
- New functionality must be conveyed to business and end users through a coordinated communications/outreach strategy.
- Make sure everyone understands the full cost of doing business and that it is not just the cost of the email service, but the end to end services, systems and infrastructure.
- In order to maximize mailbox migration velocity there should be soft limits on the amount of email that is migrated per user. In this instance, USDA set the general standard to 200 MB to migrate approximately 5,000 to 7,000 mailboxes per week.
- Two migration techniques can be leveraged. One technique for large organizations supports incremental migration over a period of a week or more with a bridge between legacy and target email systems to support functions like calendar free-busy visibility. The other technique for small organizations is a "forklift" migration to convert an agency overnight or over a weekend.
- Legacy email systems can be ramped down once migration is complete but legacy archive systems may need to be supported for eDiscovery purposes.

Disclaimer

- References to the product and/or service names of the hardware and/or software products used in this case study do not constitute an endorsement of such hardware and/or software products.