



# Enterprise Backup

State of Florida

Agency for State Technology

**Category: ICT Innovations**

**Project Initiation Date: 2014**

**Project Completion Date: 2016**

**Contact:**

**Eric Larson, Interim Executive Director/State CIO**  
**Eric.Larson@ast.myflorida.com**  
**850.412.6045**

## **Executive Summary**

Prior to the establishment of the Agency for State Technology (AST), Florida had completed initial efforts toward data center consolidation. The undertaking had resulted in physical consolidation of agency data center equipment into two existing primary data centers in Tallahassee, Florida.

The effort was successful in combining agency equipment into shared facilities; however, the systems and services were not truly consolidated.

With the establishment of AST in 2014, the agency faced a daunting task: how to effectively and efficiently support the wide array of hardware, software, and database platforms that had been combined in the Southwood Shared Resource Center (Southwood or SSRC) and the Northwood Shared Resource Center (Northwood or NSRC).

At both State Data Center facilities, data center consolidation resulted in an abundance of backup systems, technologies, and practices. In the case of the Northwood facility, eleven different agency backup practices were maintained, using eight different inherited backup products with thirteen different versions, and 51 unique media servers. Due to the age of some of the systems, service was unreliable. The disparity of products and processes was extremely demanding, labor intensive, and costly to operate. Moreover, it unnecessarily complicated data protection, routine reporting and customer billing.

These challenges led to the vision of a single, uniform backup environment with a plan to eliminate tape operations entirely and replicate data "over the wire" to an offsite facility. After a lengthy product selection and approval process, the Northwood facility implemented a project to consolidate all primary data center customers to a single enterprise data protection solution, known as the Enterprise Backup Project. This effort required the work of multiple internal and external teams over many months to design and implement a secure and highly reliable, multi-tenant backup system to protect customer data. When the two data centers were physically and organizationally merged in 2016, the project continued to include other siloed systems and maintain an overall backup success rate routinely exceeding 98%.

In summary, AST successfully consolidated over a dozen different backup products and multiple versions of those backup products into a single enterprise-wide software and backup disk-based solution including offsite replication, which dramatically improved backup success rates and the overall protection of customer data.

## Concept

The mission of the AST Backup & Recovery team is to reliably protect customer data. This data is the heart of customer operations that support each customer's core business function and the services they provide to the public. The AST Backup & Recovery team went above and beyond when designing, testing, validating, and transitioning each customer server to the new environment, and configuring each with standard job and retention policies.

In January of 2014, after a lengthy product selection and approval process, the Northwood facility kicked off an implementation project to consolidate all data center customers to a single enterprise data protection solution. Known as the Enterprise Backup Project, this effort required the work of multiple internal and external teams over many months to design and implement a secure and highly reliable multi-tenant backup system to protect customer data.

The team spent significant person-hours testing, validating, and transitioning each customer server to the new environment and configuring each with standard job and retention policies. The result of the team's effort was a dramatic increase in backup job success rates - averaging 96.68% at the time for all transitioned clients. In addition, customer visibility to backup reporting increased through email-based reports and automated data posting to each customer's individual service portal.

The uniform backup environment increased staff productivity through standard backup and restore handling, simplified media management, and the ease with which utilization-based billing can be produced. AST customers are in a much stronger stance from a data protection standpoint and less likely to see situations where critical data can't be restored after major security events or accidents. Application performance for large systems has also improved, as backup jobs that used to take days to complete (and would monopolize system resources when doing so), now take hours thanks to the system requirement for backup jobs to finish in 12 hours or less. These benefits could not have been realized with the legacy-siloed systems, or without the tireless effort of the Enterprise Backup Implementation Team.

The former Southwood Backup and Recovery Team also standardized on a nearly identical solution prior to AST being established. The new AST team has collapsed the reporting systems of the two environments for a holistic view of the AST backup environment. The original vision of off-site replication of all backup data within 24 hours and the near elimination of tape-based media has also been realized.

AST leveraged existing FTEs and staff augmentation, as well as the support of a value-added reseller (VAR) to assist in the transition.

## **Significance**

The project was transformational for a number of reasons. First, as the custodian for agency data, AST recognizes that data is THE most important asset to our customers' business and the State of Florida. As a result of this project and an associated disaster recovery initiative, all customers have inherited a base level of disaster recovery readiness, simply by virtue of the fact that all data is replicated off-site within 24 hours as a part of AST's Data Protection Service.

With the virtual elimination of tape, data restores are no longer burdened by the slow and often unreliable nature of tape, which has improved ticket response times and customer satisfaction. Equally important, the solution has enabled AST to "measure what matters" and significantly increase the transparency around service level metrics. Instead of a dozen different products presenting backup data in different forms to different customers, AST now has a singular method with which to view and report on backup status. All customers now receive five email reports showing success rates and job detail on a daily basis to keep them informed about the protection of their data. The effort has also enabled AST to measure and report on a more important metric - restore success rates, ensuring that AST delivers on its commitment.

## **Impact**

Since the initiation of the Enterprise Backup Project, the team has saved the state approximately \$784,303, primarily through retired legacy software and hardware. Additional value is generated from improved customer service and the man hours saved from the previous backup and restore process. While the initial procurement of software and hardware required a sizeable investment, the cost of not ensuring reliable data protection is immeasurable, as data loss from malware, viruses, system failures, and human error can prove to be catastrophic.

Roles and responsibilities for staff have changed and will continue to do so. For instance, two tape librarians were re-assigned to support other data management platforms as the volume of tape handling was reduced.

The standard, unified, and consolidated approach to data protection is certainly a best practice and a model for other states in the effective use of technology to support agency missions.