

NASCIO State IT Recognition Award Submission
Cover Page

State: Florida

Agency: Northwest Regional Data Center (NWRDC) / Florida State University

Award Category: Operational Efficiency

Project Title: Infrastructure Modernization

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Primary Contact Name, Title, Email, Phone: Tim Brown, Ph.D. Assistant Vice President for ITS: NWRDC
and FLVC, tim_brown@nwrdc.fsu.edu, 850-345-9690

Executive Summary

NWRDC executed a comprehensive Enterprise Infrastructure Modernization initiative designed to reduce long-standing, complex technology debt, improve operational efficiency and reliability, and enable a scalable, consumption-based service model. This initiative modernized block storage, file storage services, storage switch infrastructure, and compute environments across three data centers, broadly impacting all customers and enterprise services.

Through a highly coordinated and strategically phased, multi-workstream approach, NWRDC consolidated legacy systems, standardized infrastructure, and transitioned to flexible consumption-based models. These efforts not only improved performance and reduced operational overhead, but also strengthened resiliency, enhanced service consistency, and positioned NWRDC to deliver more agile, scalable, and customer-aligned services that support long-term growth and evolving agency needs.

Project Description – IDEA

NWRDC identified significant technical debt across its infrastructure environment, driven by aging systems, capacity constraints, and fragmented platforms. At the Southwood data center, more than ten disparate block storage arrays were overcommitted, nearing end of life, and increasingly difficult to support at an enterprise scale. File storage platforms lacked sufficient capacity to meet retention requirements and were also approaching end of life, introducing risk to data availability and long-term sustainability.

The virtual environment spanned 97 hosts, some older than 11-years, and supported more than 1,845 virtual machines across 29 customers. This environment created notable inefficiencies in data center floor space, power consumption, cooling requirements, and administrative overhead, while also introducing elevated operational risk and limiting the ability to scale services efficiently in response to customer demand.

To address these challenges, NWRDC launched a unified Infrastructure Modernization initiative to transform its environment into a standardized, scalable, resilient, and future-ready enterprise platform.

Project Description – IMPLEMENTATION

NWRDC executed this initiative as a large-scale, enterprise-wide transformation program consisting of four integrated workstreams designed to modernize infrastructure while maintaining uninterrupted service delivery.

1. Storage Transformation

Legacy block storage systems were consolidated into a unified enterprise storage platform, reducing more than ten disparate arrays into a standardized solution housing approximately 4.5 PB of data. NWRDC implemented a Capacity on Demand model, allowing storage to scale dynamically based on customer needs while improving manageability and reducing risk associated with aging infrastructure.

2. File Services Modernization

File storage services were modernized through migration to a centralized cloud-based platform designed with built-in high availability, ransomware protection, and advanced auditing capabilities. This transition improved reliability, enhanced security, and provided customers with improved data protection and recovery capabilities.

3. Storage Area Network (SAN) Infrastructure Enhancements

To support the new storage architecture, NWRDC upgraded its Storage Area Network infrastructure from 16 Gbps to 32 Gbps, effectively doubling throughput capacity. This upgrade improved system performance, increased reliability, and reduced latency across enterprise storage services.

4. Compute and Resource Optimization

Compute infrastructure was modernized through a transition to a consumption-based model, allowing for flexible scaling of physical and virtual resources. The environment was optimized from 97 to 27 hosts, significantly reducing the footprint of systems, lowering data center space, power, and cooling requirements. This new infrastructure allowed us to provide much larger virtual machines meeting the demand for the increased system requirements of our customers. Dedicated customer datastores and resource pools were implemented to ensure isolation, predictable performance, and efficient resource allocation.

Across all workstreams, NWRDC leveraged strategic vendor partnerships and strong internal collaboration to execute large-scale migrations with careful planning, phased execution, and a strong emphasis on risk mitigation. Many upgrades were completed with zero customer downtime, reflecting a high level of operational discipline, coordination, and execution maturity, and ensuring continuity of operations throughout the transformation.

Project Description – IMPACT

The Infrastructure Modernization initiative delivered significant, measurable, and enterprise-wide improvements in operational efficiency, performance, and customer experience, while also positioning NWRDC for long-term sustainability and growth.

- Consolidation of more than ten storage arrays reduced system complexity and administrative overhead
- SAN upgrades doubled throughput capacity, resulting in improved system performance, reduced latency, and enhanced overall responsiveness of enterprise services
- Optimization of compute infrastructure significantly reduced the physical host footprint from 97 to 27, running modern server architecture allowing for more flexibility for our customer base
- Retirement of end-of-life systems eliminated operational risk associated with unsupported infrastructure and reduced exposure to service disruption
- Standardization across three data centers improved staff efficiency, operational consistency, and cross-team collaboration, enabling more effective support and knowledge sharing
- Reduction in physical infrastructure lowered power consumption, cooling requirements, and overall data center footprint, contributing to more efficient and sustainable operations

In addition, the transition to consumption-based service models improved financial transparency and flexibility for customers, enabling them to scale resources based on demand without unnecessary overhead.

Collectively, these outcomes resulted in substantial improvements in service reliability, reduced operational burden, enhanced security and resiliency, and a significantly strengthened ability for NWRDC to support mission-critical workloads across its customer base.

Future Planning

Building on the success of the Infrastructure Modernization initiative, NWRDC will continue advancing its enterprise strategy through the development of a multi-site availability zone architecture spanning all three data centers. This next phase will further enhance resiliency, strengthen disaster recovery capabilities, and enable seamless workload mobility across geographically distributed environments.

As part of this forward-looking approach, NWRDC is planning greenfield infrastructure upgrades at both the Innovation Park and Lithia Springs data centers. These efforts will focus on designing and implementing next generation environments built from the ground up using modern architecture, rather than modifying legacy systems. This approach allows NWRDC to incorporate the latest technologies, optimize performance, and establish consistent standards across all locations.

These greenfield deployments will provide increased flexibility, improved scalability, and enhanced operational efficiency, while also reducing long-term maintenance complexity. By proactively investing in modern, purpose-built environments, NWRDC is positioning its infrastructure to better support evolving customer needs and emerging technologies.

This continued evolution ensures that NWRDC remains aligned with industry best practices while maintaining a resilient, efficient, and future-ready foundation for enterprise services across the State of Florida.

Supplemental Information (Optional)

Include links or references only. No attachments. Scores are based on written content.

Partner References

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Agency for Persons with Disabilities
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Department of Commerce
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Department of Juvenile Justice
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Peraton – Capacity on Demand Block Storage
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