

Tennessee Division of Strategic Technology Solutions

NASCIO Category: **Enterprise Technology Management**

Project Title: **Transforming Tennessee's Enterprise Infrastructure for
the Hybrid-Cloud Era**

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Executive Summary

The State of Tennessee operates centralized enterprise technology services for executive branch agencies and partner organizations statewide. As cloud and SaaS adoption expanded and legacy infrastructure approached lifecycle replacement, Tennessee faced rising network complexity, duplicated provider connectivity, aging-facility dependency, and increasing resiliency demands.

Rather than pursue another traditional data center refresh, Tennessee established a hybrid-cloud enterprise foundation using geographically diverse Equinix facilities and Equinix Fabric. The initiative centralized cloud interconnection, created a repeatable provider-onboarding model, deployed core compute, storage, and backup infrastructure, and pre-staged approximately 10 petabytes of data to support future shared-services modernization.

The result is a production-ready platform that reduces cloud connectivity readiness from approximately 120 days for dedicated circuits to approximately two business days through Equinix Fabric, supports incremental shared-services transition, strengthens disaster recovery and continuity capabilities, and shifts key infrastructure toward a more sustainable lifecycle model. Tennessee now has a scalable foundation for current operations and future statewide modernization.

Idea

The State of Tennessee operates a centralized enterprise technology environment that supports executive branch agencies and partner organizations statewide. This shared-services model creates important operational efficiencies, but it also means that infrastructure limitations, resiliency gaps, or cost pressures can affect critical government services across multiple agencies at once.

For years, Tennessee relied on two primary enterprise data center facilities located approximately 26 miles apart, including a downtown Nashville facility originally designed to support large-scale mainframe operations. As the state reduced its reliance on legacy platforms and expanded its use of cloud and SaaS services, the underlying enterprise infrastructure approached a major transition point. Power, cooling, storage, backup, and network systems were nearing lifecycle replacement milestones that would require significant capital investment. At the same time, the state's growing use of AWS, Microsoft Azure, Google Cloud Platform, Oracle Cloud Infrastructure, WebEx, and other SaaS platforms created increasing network complexity, duplicated connectivity costs, and new resiliency demands.

At the center of this challenge was an enterprise connectivity model that scaled linearly with each new provider. Every new cloud or SaaS provider required two dedicated connections, each with a lengthy circuit-ordering process before configuration could begin. As each new cloud provider, or SaaS connectivity need emerged, the state faced added cost, complexity, lead time, and operational dependency. Without a new model, Tennessee would have continued absorbing these pressures through architectures not designed for modern hybrid-cloud operations.

Tennessee recognized that simply replacing aging infrastructure with newer versions of the same facility-centric model would not solve the long-term challenge. A traditional data center refresh would have continued the cycle of large capital investments, provider-specific connectivity builds, complex

network paths, and dependency on aging state-owned facilities. What Tennessee needed was not another infrastructure refresh. The state needed a new enterprise foundation for the hybrid-cloud era.

The idea was to transform Tennessee's enterprise infrastructure from a traditional data center-centered model into a resilient, interconnected hybrid-cloud platform. Instead of treating each cloud provider, SaaS platform, shared service, and facility as a separate infrastructure challenge, Tennessee pursued a unified enterprise architecture built around interconnection, resiliency, shared services, financial sustainability, and long-term modernization.

To accomplish this, Tennessee leveraged Equinix as the foundation for its next-generation enterprise infrastructure architecture. Through geographically diverse facilities and centralized interconnection services, the state created a shared platform for major cloud and SaaS providers. This approach reduced the need for separate provider-specific network builds and established a flexible model capable of supporting future cloud, SaaS, backup, recovery, and enterprise technology initiatives without requiring repeated infrastructure redesigns.

The initiative also reimaged how shared enterprise services should operate in a hybrid environment. Key platforms such as database services, NAS storage, and backup infrastructure were strategically positioned to better support both cloud-hosted and on-premises workloads. This allowed Tennessee to modernize shared services without forcing a disruptive large-scale migration and without abandoning existing systems that still support state operations.

Financial sustainability was central to the idea. Rather than continuing a pattern of large cyclical capital purchases for major infrastructure refreshes, Tennessee used the modernization effort to shift key storage and backup platforms toward a more predictable operational expenditure model. This created a more sustainable lifecycle strategy aligned with continuous modernization instead of periodic replacement events.

The idea was also rooted in continuity of government. By leveraging geographically diverse facilities and distributed backup and recovery capabilities, Tennessee strengthened its enterprise resiliency posture and reduced dependency on its traditional data center footprint. The resulting architecture provides additional regional separation for critical infrastructure and creates a stronger foundation for disaster recovery, business continuity, and future facility modernization.

What makes this initiative different is that Tennessee used a major infrastructure lifecycle decision point as an opportunity to redesign how enterprise technology services are delivered across government. The result is a scalable hybrid-cloud foundation that simplifies multi-cloud connectivity, modernizes shared services, improves resiliency, supports long-term cost control, and enables future statewide modernization.

This challenge is universal to states. Many governments are managing aging facilities, expanding cloud adoption, increasing SaaS dependency, budget pressure, disaster recovery expectations, and the need to support modern digital services across agencies. Tennessee's approach demonstrates how a state can move beyond traditional data center refresh cycles and create an enterprise infrastructure model designed for the way government technology now operates: interconnected, hybrid, resilient, scalable, and continuously modernized.

Implementation

Tennessee approached the initiative as an enterprise infrastructure modernization effort rather than a traditional data center migration project. The project's scope was deliberately focused on readiness: establishing a resilient, production-ready foundation where state shared services could be hosted and future cloud-provider connectivity could be onboarded through a repeatable enterprise model. This approach allowed Tennessee to modernize the foundation first, without requiring every shared service, data set, or cloud connection to move during the initial project window.

The phased roadmap moved from contracting and mobilization, to core environment build, to enterprise-scale validation, and then to ongoing expansion. During these phases, centralized IT teams established the contractual framework, built the core networking components, connected two geographically diverse Equinix facilities, deployed compute, storage, and backup infrastructure, pre-staged and migrated approximately 10 petabytes of data, and cut over dedicated AWS connectivity to Equinix Fabric. The ongoing phase uses that foundation to transition additional cloud providers and state shared services incrementally rather than through a large disruptive migration event.

Successful implementation was defined by whether the environment was ready to support the next stage of modernization. That meant Tennessee had established the enterprise foundation needed to host shared services, onboard additional cloud providers, support major data movement, and enable future modernization work through a repeatable operating model. The project was not intended to complete every future migration; it was designed to make those migrations possible, scalable, and less disruptive.

Because Tennessee operates a centralized technology environment, implementation was led primarily by the state's centralized IT support teams rather than by individual agencies. Enterprise infrastructure teams, network engineering, storage and backup administrators, cloud operations teams, vendor partners, and executive technology leadership coordinated the work. Agencies were kept informed of progress and will receive the benefits of the new environment through improved shared services, stronger resiliency, and more scalable cloud connectivity, but most agency teams were not direct implementation participants.

Executive technology leadership provided direction and oversight, while centralized IT teams coordinated technical execution through planning, technical review, and operational readiness checkpoints. These checkpoints helped validate dependencies, sequence major transitions, and confirm that the environment was ready before advancing to the next phase.

This phased approach reduced risk by separating enterprise foundation-building from future service migrations. By first making the environment ready, Tennessee created the conditions for continued shared-services modernization, additional cloud-provider onboarding, disaster recovery improvements, and long-term infrastructure sustainability.

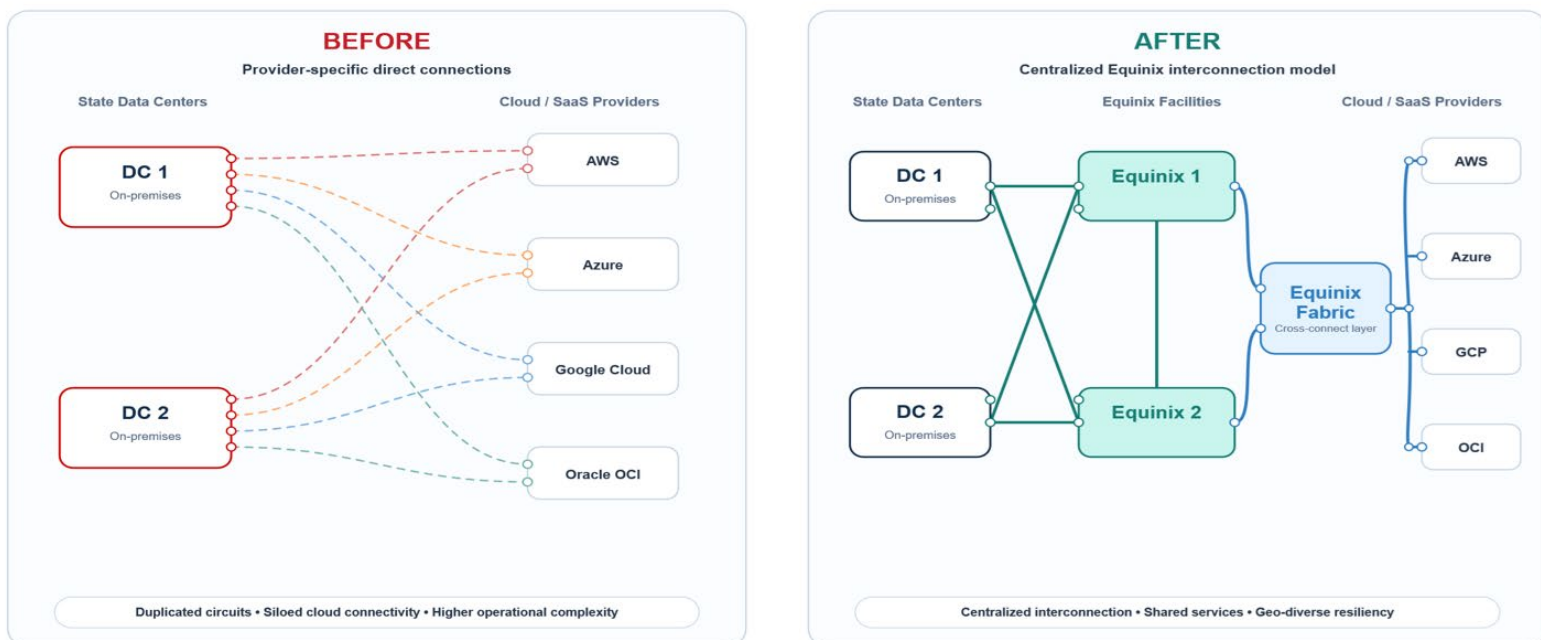
Impact

Tennessee's enterprise infrastructure modernization initiative delivered the outcome it was designed to achieve: a production-ready hybrid-cloud foundation for statewide shared services, cloud-provider onboarding, enterprise data protection, and future facility modernization.

The project was not intended to complete every future migration during the initial implementation window. Its impact was readiness at enterprise scale. Tennessee now has the core environment, connectivity model, compute, storage, backup infrastructure, and operating foundation needed to support continued modernization through a repeatable enterprise platform rather than one-off provider or facility-specific projects.

Before vs. After Enterprise Connectivity

From duplicated provider-specific circuits to centralized Equinix interconnection



Impact Snapshot

- Connectivity scalability: changed provider onboarding from a model requiring two dedicated circuits and approximately 120 days before configuration readiness to an Equinix Fabric model where new provider connectivity can be ready to configure in approximately two business days.
- Enterprise-scale validation: approximately 10 petabytes of data were pre-staged and migrated into the Equinix environment.
- Cloud onboarding: dedicated AWS connectivity was cut over to Equinix Fabric, proving the shared interconnection model for additional providers.
- Shared-services readiness: compute, storage, and backup infrastructure were established in geographically diverse Equinix facilities.
- Lifecycle modernization: key storage and backup platforms were positioned for a more predictable operational lifecycle, reducing dependency on large cyclical refresh events.

Faster Cloud Connectivity and Provider Onboarding

One of the most significant operational improvements was the change in Tennessee's connectivity scaling model. Before this modernization, each new cloud or SaaS provider required two dedicated circuits, and ordering those circuits took approximately 120 days before they were ready to configure. With the Equinix Fabric model in place, Tennessee can request new provider connectivity through the established enterprise interconnection foundation, with connectivity ready to configure in approximately two business days.

This change gives Tennessee a faster, more repeatable model for cloud and SaaS provider onboarding. Instead of scaling outward with more dedicated circuits each time a new provider is onboarded, the state can build from a fixed interconnection foundation that has already been

established and validated. The cutover of AWS connectivity to Equinix Fabric proved the model and created the path for additional providers to transition from dedicated connections to the shared enterprise platform.

Production-Ready Shared Services Foundation

The initiative also created the foundation needed to modernize state shared services in a controlled and incremental way. By establishing compute, storage, and backup infrastructure in geographically diverse Equinix facilities and pre-staging approximately 10 petabytes of data, Tennessee validated that the environment could support enterprise-scale data movement and future shared-services operations.

"This project gives Tennessee a reusable enterprise foundation for cloud connectivity and shared services that helps government deliver more reliable, secure, and efficient digital services to Tennesseans. By reducing complexity and improving resiliency, the state is better positioned to support the critical systems residents rely on every day while enabling future modernization with less risk."

- **Jerry Jones**

STS Chief Technology Officer

This matters because Tennessee operates a centralized technology environment. Agencies benefit from shared services, but they do not need to individually manage the foundational infrastructure required to support them. The new environment allows the centralized IT organization to move shared services over time without forcing agencies into a large, disruptive migration event.

Stronger Resiliency and Continuity

The initiative strengthened Tennessee's continuity-of-government posture by extending critical infrastructure capabilities beyond the traditional state-owned data center footprint. The new

environment provides geographically diverse infrastructure for backup, recovery, and future shared-services operations.

This improved resiliency in two important ways. First, it reduced dependency on aging facility-centric infrastructure. Second, it gave Tennessee a more flexible recovery foundation capable of supporting future enterprise disaster recovery and business continuity needs. As additional shared services and cloud providers move onto the platform, the resiliency value of the foundation will continue to grow.

Reduced Future Facility and Lifecycle Risk

The project also changed Tennessee's long-term infrastructure investment model. Rather than continuing to depend on large facility refresh cycles, Tennessee established a foundation that supports continuous modernization of key infrastructure platforms.

This is especially important for the state's legacy facility originally designed around mainframe-era operations. The initiative does not by itself complete facility decommissioning, but it establishes the architecture and operating foundation necessary to make that future objective achievable. Without the new interconnection, storage, backup, and shared-services foundation, Tennessee would have remained more dependent on the traditional facility model.

Long-Term Value

The lasting value of the initiative is that future modernization work no longer starts from zero. Tennessee now has a platform that can support continued transition of cloud providers to Equinix Fabric, incremental movement of state shared services into the Equinix environment, improved disaster recovery capabilities, and future reduction of legacy facility dependency.

Most importantly, Tennessee created an enterprise infrastructure model designed for how government technology now operates: hybrid, interconnected, data-intensive, resilient, and continuously evolving. The initiative gives the state a scalable foundation for current operational needs and for the next generation of statewide technology modernization.