Today's modernization conundrum

Government organizations are struggling to keep pace with today's increasing technology demands. While many agencies are becoming more digital, more data-driven, and more virtualized in their operations, others find themselves hampered by outdated infrastructures, resource constraints, and skills shortages. At a time when government missions and operational success rely more than ever on modern technology, these challenges place federal enterprises at high risk of failure.

A particularly difficult challenge for many agencies is freeing up sufficient capital to invest in modernization efforts so they can comply with governmentwide directives and guidance, such as the Data Center Optimization Initiative (DCOI), the Federal Information Technology Acquisition Reform Act (FITARA), and the Federal Cloud Computing Strategy (also known as Cloud Smart), among others. For most agencies, the vast majority of their annual IT budgets is spent on operations and maintenance (O&M), leaving less than a quarter of their budgets available for development, modernization, and enhancement (DME) of technology systems[I].

To succeed, federal organizations need modernization solutions that:

Dramatically improve their current capabilities, performance, and security

Position them for further growth and innovation in the future

Cost little or nothing more than what they currently spend for IT

Are highly automated and easy to manage

Are continuously optimized and refreshed to reduce costs, footprint, and energy

Leverage cost-effective cloud solutions

[I] Source:
https://federalnewsnetwork.com/management/2016/02/cat-mouse-game-federal-modernization/

A new approach to modernization: Data Center Modernization as a Service

CTG Federal and Cisco believe it is possible to address these common constraints and requirements in the federal marketplace by providing public sector and commercial enterprises with a data center modernization solution that achieves all of these objectives. This approach starts with an evaluation of the organization's existing infrastructure and technology needs. Working closely with all stakeholders, we then develop a strategy and deploy a roadmap for modernizing and optimizing the organization's data center and workload management.

A notional data center modernization solution could include the following features and capabilities:

- *Hybrid Cloud*, relying upon integrated management to leverage private and public clouds for improved flexibility, performance, and cost efficiencies
- *Converged Infrastructure* to deliver a private cloud that can independently scale compute, storage, and networking to accommodate dynamic application workloads
- *Hyperconverged Infrastructure (HCI)* that offers cloud-like benefits, such as scalability, consolidation, efficiency and reliability while keeping legacy applications and sensitive workloads on-premises
- *Security* that leverages Zero Trust principles, Artificial Intelligence (AI) and Machine Learning (ML) to protect data center workloads
- *Next-Gen Networking* deliver seamless, secure data center connectivity
- *Professional and managed services* to help your organization with infrastructure assessments, cloud planning, and optimized workload management

Streamlined, automated management and other features

These capabilities should be simple to manage and operate, automated, effective, open, and extensible. To accomplish this, management platforms should enable orchestration across the entire infrastructure, delivering an integrated, end-to-end management platform for cost-effective delivery of services. Depending upon a particular agency's requirements, key features of this notional data center modernization solution would include:

- An application-centric policy model that decouples policy (security, auditing, service-level agreements (SLAs), user experience, etc.) from network topology and supports application mobility
- Real-time visibility across the network, security, and supporting infrastructures to optimize data, application, and workload access
- Centralized and automated lifecycle management of Layer 4 through 7 policies across the entire data center network
- Secure hardware-enforced network and application segmentation and multitenancy with performance and scalability
- An open and extensible policy framework that supports a defense-in-depth security strategy and helps protect investments
- Policy-based compliance with industry security frameworks and regulations such as Payment Card Industry (PCI) regulations and the Health Insurance Portability and Accountability Act (HIPAA)
- Deep visibility and accelerated threat response based on real-time network intelligence

A Zero Trust architecture approach

This proposed modernization approach employs a holistic, systems-based model to address security needs for next-generation data centers and clouds. It is unlike the software-only network overlay approach based on host virtualization, which offers limited visibility, performance, and scale and requires separate management of underlay and overlay network devices and security policies. Instead, we propose using a Zero Trust, application-centric, unified, and automated approach to security policies in the data center and cloud infrastructure that is decoupled from the underlying network topology, supports application mobility, offers real-time compliance lifecycle management, and reduces the risk of security breaches. Most significantly, this approach provides micro segmentation down to individual users, devices, applications and workloads, ensuring optimal mission effectiveness in the face of cyberattacks.

Data center modernization "as a Service" — for little or no additional cost

In many cases, this modernization can be accomplished at little or no net additional cost to federal agencies beyond what they already spend on IT operating and capital expenditures. For example, under one model, an enterprise with an annual IT maintenance spend of $250,000 a year for virtualization, storage, servers, management tools and other infrastructure segments can allow the contracting team to take over those maintenance payments. The contracting team then provides that enterprise with new hardware upfront at a pre-defined five-year term, very much like a car lease.

The client agency can then migrate its workloads to the new infrastructure and, if it chooses, expand its modernized environment with known and predictable pricing. In many cases, this arrangement will result in the same maintenance and upkeep costs that the agency has today, even as it benefits from improvements in capacity, capabilities, and automation.

Ultimately, the client agency's payments over the years will remain constant, even as they continually refresh over time. Payments increase only if the agency decides to increase its capacity, such as by adding more terabytes to its storage capacity.

We think of this model as "Data Center Modernization as a Service" (DCMaaS). However, with this model, there would always be the option to optimize and migrate workloads to the cloud as needed. And the modernization solution is continuously refreshed so the client agency is always operating with the latest capabilities and technologies.

Key benefits

This modernization approach delivers many significant benefits to public sector enterprises. For example, it: Shifts the risk for data center support, maintenance, and refresh to the contractor team

- Enables client agencies with constrained CapEx budgets to leverage their OpEx spend as financing for much-needed modernization
- Automates manual, day-to-day operations across the IT environment, thereby enabling "Day 2" operations to be simpler, smoother, and repeatable

- Allows enterprises to modernize confidently even if they lack needed modern IT skills
- Significantly reduces IT footprints due to efficiencies in storage (all-flash, compression, deduplication technologies) and increases in core/memory density and capacity (for one large public sector client, we were able to reduce rack space by as much as 80 percent)
- Improves mission/business agility and responsiveness with AI/ML-powered analytics and insights at machine speed
- Delivers substantial operational cost savings with new hardware, software and management tools

Conclusion

This unique approach to data center modernization offers public sector enterprises a compelling and affordable option for transitioning to advanced, automated, highly secure, open, and extensible infrastructures that optimize workload performance, access, and customer experience. Let us see where you are in your lifecycle journey today with a free assessment and consultation. For more information, email us at **contact@ctgfederal.com** or go to **www.ctgfederal.com/partners/cisco/**.

ABOUT CTG FEDERAL

CTG Federal serves dozens of federal defense, intelligence, and civilian organizations with IT expertise and solutions. We bring extensive expertise, experience, and professionalism in helping federal clients meet their IT modernization needs. Our experts keep current on the leading edge so we can provide our clients with the best solutions to serve their specific IT goals and objectives most efficiently and effectively. Headquartered in the greater Washington area, CTG Federal has satellite offices throughout the United States.

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