Delivering Modern, Efficient, Enterprise Storage to the U.S. Department of Transportation

TVAR Solutions & Dell Technologies: A Case Study

The U.S. Transportation Department chose TVAR Solutions and Dell Technologies to help it standardize, consolidate, and modernize the legacy storage infrastructures across eight operating administrations.

The Challenge

The U.S. Department of Transportation (DoT) is comprised of 10 different operating administrations (OAs) that historically have operated independently with their own CIOs and IT infrastructures. These OAs include agencies such as the Federal Highway Administration, the Federal Railroad Administration, and the National Highway Traffic Safety Administration.

For many years, the senior agency leadership had wanted to consolidate the IT operations and infrastructures of OAs to save costs and deliver efficiencies. In 2017, the Office of the Secretary of Transportation (OST) launched the effort, which exempted the department's largest OA, the Federal Aviation Administration, and the Office of the Inspector General, which operates independently. Dubbed Destinations Digital (D2), the project aimed to consolidate, streamline, and standardize many disparate technology infrastructures, processes, and functions across the OAs that supported human resources, finance, acquisition, information technology and other support operations. D2 was overseen by the Agency CIO and other IT leaders.

By consolidating, streamlining, and standardizing these IT operations, the department was looking to reduce costs, reduce complexity and sprawl, gain efficiencies, create a true shared services environment and, finally, lay the foundation for future digital transformation.

The Solution

One of the first phases of the D2 effort was focused on consolidating the enterprise storage across the agency. OST assumed management of all of the OAs' storage infrastructure and brought in TVAR Solutions to provide technical expertise and work with the existing infrastructure vendors and OA staffs to reach the intended goal of standardization and consolidation. TVAR Solutions' initial approach was to hold biweekly discussions with the client to understand their current state, their goals for the future, their timeline and constraints, and then to build a path to get the client to their destination.

Soon after beginning, it became apparent that the existing equipment across the OAs required a technical refresh. So the project became both a modernization and a consolidation. TVAR Solutions coordinated with OST and the OA staff to create standards to guide the consolidation effort. Ultimately, OST and TVAR Solutions decided upon Dell Technologies as the standard infrastructure because Dell products were already prevalent across the department and this allowed the department to optimally leverage its previous investments.

The project took more than three years to incorporate all of the OAs' storage infrastructures into the OST enterprise storage infrastructure. In that time, TVAR Solutions standardized the storage infrastructures that supported

most OAs on Dell storage platforms. Specifically, the solution delivered by TVAR Solutions consisted of:

- Multiple Dell EMC Unity unified storage platforms for production storage (one at DoT headquarters and one at the department's disaster recovery center at the National Center for Critical Information Processing and Storage (NCCIPS) at the Stennis Space Center, Mississippi)

- Dell EMC RecoverPoint appliances for high availability and disaster recovery

- Dell EMC PowerMax 2000 NVMe storage systems for production storage (replicating between DoT headquarters and Stennis)

- Dell EMC Integrated Data Protection Appliance (IDPA) DP8300 for backup and disaster recovery (at DoT headquarters with handoff to the cloud for long-term archiving)

- Dell EMC IDPA DP4400 for local backup and disaster recovery (at Stennis)

That infrastructure was consolidated and absorbed under OST's authority and then consumed by the departmental OAs as a shared service.

The Results

In consolidating and standardizing the Transportation Department's storage infrastructure, TVAR Solutions enabled the department to achieve its goals of reducing costs, increasing efficiencies, setting up a true shared services center, and laying the foundation for digital transformation.

Within two years, the project saved roughly $1.5 million in infrastructure maintenance and support costs, plus power and cooling savings, due to the modernization of legacy storage arrays. The modernization — which transitioned critical data storage from older Dell EMC VMAX storage arrays to the PowerMax 2000 storage system—also reduced the storage footprint and boosted performance by almost three times due to its deduplication and

compression features. The project also enabled the Transportation Department to build a robust, high-availability disaster recovery environment at the Stennis facility.

In addition, modernizing and consolidating the department'snumerous backup and disaster recovery solutions—which included both hardware and software—to the Dell EMC IDPA platform created savings as well. Costs are now linked to a single integrated appliance, which means there are no longer multiple software vendors. Moreover, those costs are based on a predictablecost-per-gigabyte model that DoT's shared services center can charge back to its end-users. This solution also accelerated data deduplication and compression capabilities and significantly improved backup success rates (from roughly 70 percent backup success to almost a 99 percent success rate). The Dell EMC IDPA appliance also delivers a 150-to-1 deduplication and compression ratio, which means that 150 terabytes of data can be stored on only one terabyte of disc space, creating even more cost efficiencies.

Most importantly, this project yielded an easier-to-manage, standardized, consolidated technology environment for the department and created a foundation for DoT to stand up an automated, multi-tenant, shared services environment that is fully responsive to its clients.

Why TVAR Solutions & Dell Technologies

TVAR Solutions has a close partnership with Dell, in part, because many on the TVAR Solutions team have previously worked for Dell, EMC, or other companies now affiliated with Dell Technologies. TVAR Solutions' expert knowledge of Dell Technologies solutions and great working relationships with personnel in sales, engineering, implementation, product development, product support, and other functions across the Dell organization have led TVAR Solutions to become a proud Dell Technologies Federal Partner.

TVAR Solutions

(703) 635-3840 | information@tvarsolutions.com | www.tvarsolutions.com
1320 Old Chain Bridge Road, Suite 240, McLean, VA 22101

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