

## CASE STUDY:

# Federal Research Lab Modernization with TVAR Solutions & Dell Technologies

*How TVAR and Dell helped a federal research lab cut server footprint by 50% while improving performance and efficiency.*

## SUMMARY

A federal research lab partnered with TVAR Solutions and Dell Technologies to modernize its data center, cutting its server footprint in half while improving performance, power efficiency, and reliability. Through hands-on engineering support and a transparent procurement process, the lab replaced aging server infrastructure with a scalable, future-ready environment.

## CUSTOMER OVERVIEW & CHALLENGES

Our customer was preparing to refresh more than 200 servers that had become increasingly problematic and aging. The existing infrastructure was running hot, placing stress on surrounding systems and raising concerns about long-term stability within the data center. Power and cooling demands were rising, and the IT team was spending more time managing infrastructure risk than focusing on innovation. Downtime would've been catastrophic for this location.

Beyond technical issues, the lab was also struggling with inconsistent vendor support, unresponsiveness, and a lack of pricing transparency with their previous supplier, ultimately leading to a lack of trust. The customer felt isolated in the decision-making process and wanted a partner who could provide both technical guidance and honest, timely communication.



## EVALUATION & SOLUTION

To identify the best path forward, the lab engaged TVAR to conduct a proof-of-concept comparing multiple server platforms against the existing environment. TVAR provided a Dell PowerEdge R760 and worked closely with the customer to test real-world workloads and performance metrics across all platforms.

The evaluation demonstrated strong performance gains with Dell, including improvements in processing capability, thermal efficiency, and power consumption. Based on these findings, TVAR and Dell designed a modernized architecture that enabled the lab to replace every two legacy servers with one Dell PowerEdge R760—reducing the overall data center footprint by nearly 50%.

## IMPLEMENTATION & TVAR'S ROLE

Phase one of the project included deployment of 50 Dell PowerEdge R760 servers as part of a multi-year modernization initiative.

TVAR maintained a hands-on engineering role throughout implementation, building server configurations collaboratively with the customer in real time and ensuring each design decision aligned with operational requirements and budget goals.

TVAR also worked closely with Dell Technologies to secure vendor registration and competitive pricing while leveraging established federal contract vehicles to streamline procurement timelines. This proved especially valuable as the customer worked within evolving budget considerations and market conditions.

TVAR's responsive engagement model, technical accessibility, and transparent communication helped keep the project moving efficiently and provided the customer with confidence throughout deployment.

## RESULTS & FUTURE OUTLOOK

The new Dell environment delivered immediate and measurable benefits. The federal lab saw almost a 50% reduction in server footprint, significantly improved power and cooling efficiency, and a major decrease in data center risk. Performance improved across workloads, and the IT team gained peace of mind knowing their infrastructure was stable, scalable, and well-supported. The customer saw a significant cost reduction, which allows for future growth and scalability.



Although phase two of the project is currently paused due to funding cycles, TVAR is actively supporting the lab with budgetary planning and future roadmap development. With their modernized foundation in place, the customer is now positioned to expand capacity, support advanced research initiatives, and explore AI-driven workloads when the next phase begins.

## 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. TVAR's expert knowledge of Dell 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 to become a proud Dell Technologies Federal Partner.