Case Study

2nd Gen Intel® Xeon® Scalable Processor
Intel® Optane™ Technology
Federal Government
Cloud

Simplifying Multi-Cloud Deployments

Federal Agencies can pull legacy technology into the cloud with an innovative multi-cloud solution powered by VMware Cloud Foundation on VxRail (Dell Technologies Cloud Platform) and Intel® Optane™ Technology.

A Cloud Smart approach that combines these proven hardware and software technologies:

- Iron Bow Technologies' IronTarget multi-cloud architecture
- VMware Cloud Foundation on VxRail (Dell Technologies Cloud Platform)
- 2nd Gen Intel® Xeon® Scalable processor
- Intel® Optane™ Technology

"Today's modern cloud is more than just a destination. It requires a broader strategy, greater use of hybrid models and on-premise capability. When looking at partnering to create a leading cloud solution, IronTarget's value is in the significant investment of operationalizing cloud capabilities in a straightforward, easy-to-provision and certified solution from our trusted partner, Iron Bow Technologies."

Cameron Chehreh
Federal CTO
Dell Technologies

With a mandate to be Cloud Smart in their data center modernization efforts, federal agencies are tasked with deploying multi-cloud infrastructures to reduce IT costs while increasing data access and security. Using proprietary software, Iron Bow Technologies designed, integrated and tested commercially-available, state-of-the art technology to create a multi-cloud architecture that lets agencies move workloads back and forth between public and private clouds without compromising security.

Simplify the Journey to a Multi-Cloud Environment

Meeting modernization goals has been challenging for the federal government. Many agencies still struggle with their cloud migration strategy. They need to reduce data silos and enhance public sector data sharing, increase interoperability across applications and migrate legacy infrastructure and applications with budget constraints.

The IronTarget multi-cloud architecture addresses these issues with an easy-to-use, easy-to-grow, on-premises cloud that bridges to public clouds. The security-hardened, software-defined architecture:

- Virtualizes workloads so there's no need to retire, rewrite or refactor legacy applications prior to moving them to more efficient cloud platforms
- Enables infrastructure automation and cloud orchestration to consolidate and coordinate secure data sharing, analytics and functionality across multiple clouds
- Provides a single point of management for a multi-cloud environment

Rapidly Realize the Efficiencies of Cloud

Dell EMC VxRail is the only jointly engineered HCI system with deep VMware Cloud Foundation integration, delivering a simple and direct path to the hybrid cloud with one, complete, automated platform. As a result in most cases, IronTarget can be up and running in two weeks. Agencies can quickly and cost-effectively:

- Meet cloud mandates with an on-premises private cloud that securely delivers the full flexibility and capability of a multi-cloud model
- Improve availability with new options for continuity of operations/disaster recovery (COOP/DR) via the cloud or site-to-site replication
- Deploy, host and manage any application, anywhere, whether a traditional VM or cloud-native workload
- Achieve cost/performance optimization with a highly scalable solution that dynamically moves workloads to the platform that best meets their needs
- Shift from a CAPEX to an agile OPEX model with on-demand services, the ability to measure those services, rapid elasticity, resource pooling and broad network access

A Smart Approach to Public Sector Cloud Services

Cloud adoption has been slow for the federal government because of legacy applications and infrastructure as well as budget constraints. For many government leaders, complying with Cloud Smart recommendations to enhance data sharing and move toward greater interoperability is a journey fraught with fear and complexity.

Iron Bow Technologies has a simpler, smarter approach for cloud migration. Rather than modifying applications to work in the cloud, the IronTarget multi-cloud architecture makes the cloud work for the application. IronTarget virtualizes legacy applications to make them cloud-ready and decouple them from the hardware, see Figure 1.

There's no need for rewriting or refactoring legacy applications. Once virtualized, applications can be flexibly moved to the cloud platform that best meets their needs: lowest cost, highest performance, best end user experience or a combination.

IronTarget enables seamless data sharing across multiple clouds using Dell EMC VxRail as a bridge between legacy and cloud environments. The software-defined data center delivers hyper-fast performance, hardware-enhanced security and up-to-four-socket scalability with 2nd Gen Intel® Xeon® Scalable processors. Intel® Optane™ technology speeds data sharing. Dell Technologies and Intel are driving next-generation capabilities for cloud and data management, so organizations can accelerate modernization and innovation.

> "The decision to use (Dell Technologies) and Intel was easy. We wanted the fastest. VxRail HCI, Intel Xeon Gold with Optane SSDs and persistent memory are light years ahead of anything else."
>
> *Troy Massey*
> *Director, Enterprise Engagements*
> *Iron Bow Technologies*

A New Class of Storage Speeds Data Sharing

A four-node cluster in close proximity to the server CPU utilizes Intel® Optane™ SSDs and Intel® Optane™ persistent memory to support the high-performing, multi-cloud environment. These innovative technologies deliver near-DRAM performance and NAND-like persistence for high throughput, low latency and consistent responsiveness.[1] This is the kind of affordable performance federal agencies need to break through data-access bottlenecks and efficiently serve citizens now and in the future.

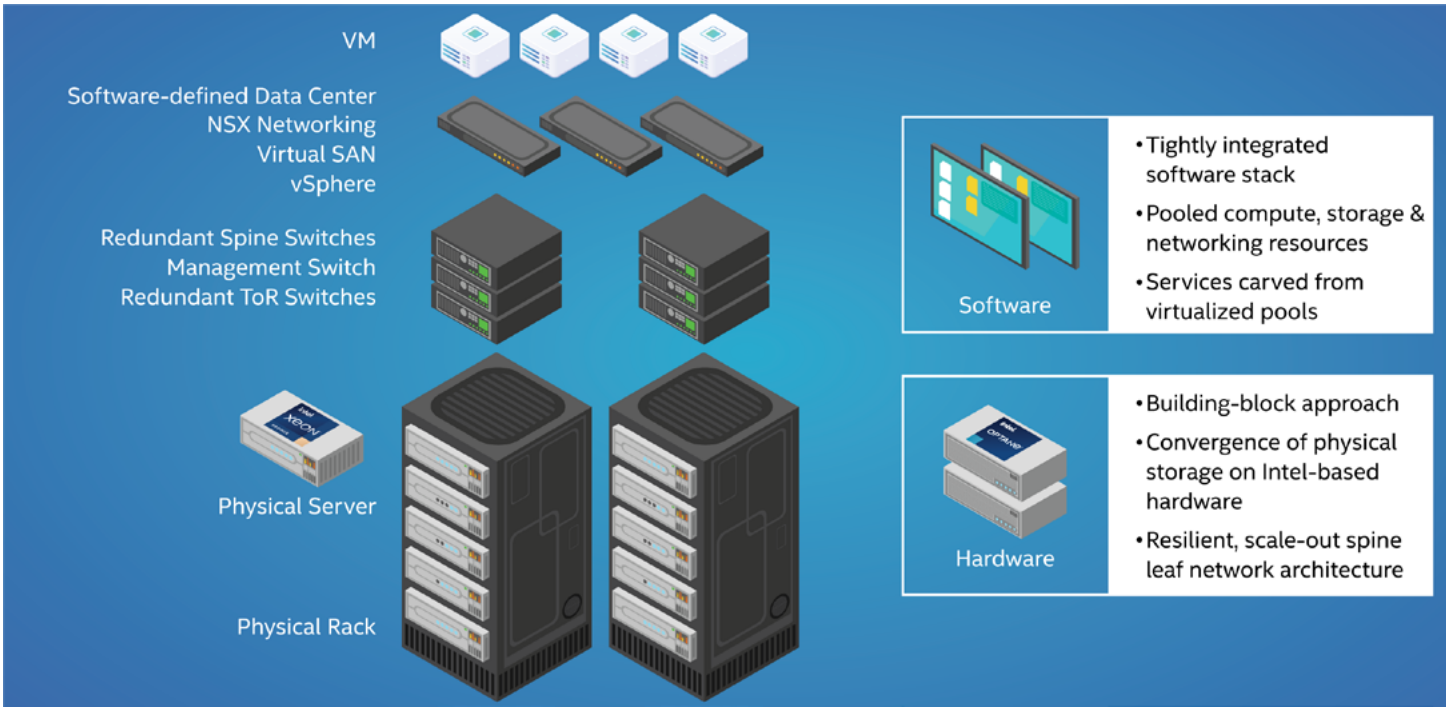

Figure 1. Multi-cloud architecture with virtualized compute, storage and network for automated deployment and streamlined operations.

Achieve Greater Interoperability Across Agencies

By leveraging Department of Defense-proven solutions from industry leaders like Intel, Dell Technologies and VMware, IronTarget is empowering government leaders to improve operations and reduce operating expenses. With its unique multi-cloud architecture, federal agencies can deploy virtual desktops across the organization delivering guaranteed performance levels and enhanced public sector data sharing. The entire multi-cloud infrastructure can be managed from a single point of control. In addition to addressing these short-term needs, IronTarget addresses long-term needs so federal government can:

- Support data integration and hybrid data integration for data analytics
- Leverage software as a service (SaaS) technologies for voice and data collaboration
- Improve government services to the pubic with artificial intelligence (AI) and machine learning

Where to Get More information

Intel® Optane™ Technology for the Data Center

Intel® Xeon® Scalable Processors

Iron Bow Technologies

VMware Cloud Foundation on Dell EMC VxRail

Solution Ingredients

Intel® Xeon® Gold 6230 processors with 27.5M Cache and 2.10 GHz as well as a four node cluster in close proximity to the CPU. The cluster consists of:

Intel® Optane™ persistent memory 128GB module

Intel® Optane™ SSD DC P4800X (375GB, 2.5in PCIe x4, Intel® Optane™ memory media)

Intel® SSD DC P4510 (4TB, 2.5in PCIe 3.1 x4, 3D2, TLC)

Intel® SSD D3-S4510 (480GB, 2.5in SATA 6GB/s, 3D2, TLC)

1.Source: “The Challenge of Keeping Up with Data” https://www.intel.com/content/www/us/en/products/memory-storage/optane-dc-persistent-memory.html; “Breakthrough Performance Expands Datasets, Eliminates Bottlenecks” https://www.intel.com/content/www/us/en/products/docs/memory-storage/solid-state-drives/data-center-ssds/optane-ssd-dc-p4800x-p4801x-brief.html.