With help from Data Strategy, the Pathology Department at the University of Michigan Health System has deployed a cloud computing infrastructure solution comprised of VMware vCloud Director and HP Blade Servers, eliminating multi-million dollar Hardware and IT Management costs and increasing computing power to help meet research and clinical data requirements.

The implementation of VMware vCloud Director and HP product-based solutions has already positively impacted our IT system. And, I have not heard of any implementation or configuration issues whatsoever from my team.” — Ulysses GJ Balis, MD, Director, Division of Pathology Informatics—University of Michigan Hospital.

Company Overview
Excellence in medical education, patient care and research: That’s what defines the University of Michigan Health System, an award-winning health care provider and premier academic medical center. This major university hospital is currently involved in hundreds of clinical research trials – from new cancer medications to preventive health care – in which their patients and our community play a vital role. New ideas from its laboratories and clinics are translated into new companies, new products and new ways of delivering health care every day, significantly impacting the educational and medical fields.

Challenges
In recent years, the Pathology Department at the University of Michigan has seen a dramatic growth in data, both clinical and research. They needed to upgrade their IT system in order to accommodate such expansion, while incorporating the necessary best practice of compartmentalizing their applications and data environments. To do so, the IT department decided to deploy a cloud computing infrastructure that would allow it to maximize resources and reduce hardware and maintenance costs. It was necessary to create an agile and secure infrastructure that met both the university’s own strict user controls and security and HIPPA requirements.

Solution Snapshot

Hardware
- HP ProLiant BL465 Blades Servers
- HP C7000 BladeSystem Enclosure
- HP StorageWorks EVA 4400

Software
- VMware vSphere Enterprise Plus
- VMware vCenter & vCenter Heartbeat
- VMware vCloud Director
- VMware vShield Edge

Data Strategy’s Professional Services
- Analysis and Assessment of current infrastructure
- Capacity Planning and Architecture Design
- Installation and Deployment of architecture

Objectives
- Grow the hospital’s data model by uncoupling physical servers and applications using VMware technology to create 20 virtual machines per single server.
- Compartmentalize processes and applications on efficient and reliable virtual servers while maintaining strict user controls that meet internal policies and external regulations.
- Reduce hardware, management, and power/cooling costs.
- Provide end users with reliable, secure, and highly available systems even in the event of a system malfunction.
- Upgrade overall IT system to one that will accommodate growth, flexibility and security needs.

Approach
- Partnered with Data Strategy to set up a private cloud infrastructure with VMware’s vCloud Director to virtualize servers and create a more flexible, consistent environment
- Employed VMware’s vShield Edge to provide comprehensive network security and adhere to the hospital’s and HIPPA rules and compliance metrics.
- Compartmentalized applications onto virtual servers, ensuring reliability and eliminating risk of data loss due to server crashes.
- Purchased HP products through Data Strategy, which offered consulting services and assistance with any technical issue 24/7. “The overall VMware vCloud model allows us to shift our efforts from provisioning new servers to placing new services or development environments into the hands of our users quickly.” — Ulysses GJ Balis, MD

Impact
IT Improvements:
- By creating a private cloud infrastructure with vCloud Director, and using vShield Edge technology, the IT department is able to easily develop and test general platforms without having to purchase new hardware, while maintaining secure environments.
- Complex systems are now generated very quickly and easily through pre-programmed models that ensure they are compliant with internal and external regulations.
- High availability ensures maximum uptime and productivity allowing the IT department to focus on new services.

Business Improvements:
- Saving over $500,000 per year in hardware, management, and power/cooling costs.
- Providing end users with secure, reliable technology, allows for great flexibility and productivity.