



WILLIAM & MARY

CHARTERED 1693

WILLIAM & MARY BY THE NUMBERS

- Public University with 80+ Degree Programs
- 8,740 Graduate and Undergraduate Students
- 2,500 Faculty and Staff
- 100+ Applications
- Founded by royal charter in 1693

COMPANY PROFILE

Location

Williamsburg, Virginia

Industry

Higher Education

Primary Use Case

Modernizing Traditional Applications

Challenges

- Difficult for small staff to manage 100+ VMs supporting the ERP application alone.
- Academic projects can ramp up quickly and put pressure on IT resources.
- Challenging to use public cloud as an extension of the campus infrastructure.

Solution

Legacy application infrastructure consolidation and simplification with Docker Enterprise.

Results

- Avoided creating over 100 VMs for the ERP system and other applications, instead deploying on 5 servers by containerizing existing applications with Docker Enterprise.
- Easy to provision infrastructure for new academic projects on-premise or in the cloud.
- Updates are easy to roll back, and individual offices can deploy their own applications in containers without requisitioning infrastructure.



Simplifying Application Upgrades and Liberating Researchers with Docker Enterprise

Modernizing Campus Infrastructure

Universities operate with lean IT teams and do a lot with limited resources. The Infrastructure team at William & Mary (W&M) maintained infrastructure for hundreds of applications and virtual machines (VMs). They also provisioned infrastructure for research projects, which could mean unpredictable demand for IT resources. On top of that, an upgrade to the university's ERP application was needed.

From Docker Engine - Community to Docker Enterprise

William & Mary had tinkered with the free Docker Engine - Community early in 2014 to containerize a troublesome application. That success later led them look at Docker Enterprise to modernize the school's infrastructure.

The university had a Docker Engine - Community Swarm cluster running production workloads within six months, and by early 2018 W&M moved to Docker Enterprise. Built-in support for Kubernetes was important and helped "push us over the edge," said Phil Fenstermacher, Engineering Lead. Despite the strong orchestration capability in Kubernetes, the W&M staff found it complex. Docker Enterprise gave them a path forward.

Now the university had what it needed to upgrade the ERP application and fully support academic research teams, many of which were building applications on Kubernetes.

Docker Enterprise Lets William & Mary IT Focus on Supporting New Research Projects

Docker Enterprise lifts IT's administrative burden by simplifying infrastructure deployment. IT sets up application infrastructure and establishes policies, which allows other teams or departments to focus on research and building applications, not infrastructure.

Environment

- 5 Docker Enterprise nodes run on bare metal Dell servers with 47 active services and 100+ containers.
- Mix of Ubuntu, Red Hat and Oracle Linux.
- Ellucian Banner 9 ERP and other homegrown departmental applications containerized.

Products and Services

Docker Enterprise container platform, Dell PowerEdge servers, Amazon Web Services

“Reduced overall infrastructure cost is an amazing benefit of Docker Enterprise.”

COURTNEY CARPENTER, CIO

“Docker Enterprise allows us to set best practices and templates, and get out of the way of the users. It’s just what we wanted.”

PHIL FENSTERMACHER, SYSTEMS ENGINEER

“Docker Enterprise eliminates the worry about whether an application is running in the right place, or on the right network. We build some best practices and some rules into the infrastructure and other teams can support themselves,” said Fenstermacher.

Reduced Cost and Complexity, Faster Deployment – Without VMs

Courtney Carpenter, the College’s CIO, noted that “Reduced overall infrastructure cost is an amazing benefit of Docker Enterprise.” The university is eliminating VMs and running containers directly on physical servers. That reduced the number of servers dramatically, which cut costs for VM software licensing, maintenance, and operations. Docker Enterprise’s isolation capability and intuitive UI cut back time needed for updates and rebuilds.

“Docker has done so much to build the community, which has added so much to the value of Docker Enterprise, we really felt it was the right place to put our dollars,” Carpenter said.

On-Demand Scalability for Academic Applications

The university can also scale applications quickly when the occasion demands it. Some academic projects at William & Mary have attracted publicity, Fenstermacher said. For example, when mathematics students designed an application to analyze election data, it got national media attention and traffic to the servers jumped. Docker Enterprise makes it possible to scale resources quickly in those situations, including taking advantage of public cloud as needed.

Docker Enterprise vastly simplifies how W&M creates, deploys, and runs its IT infrastructure.

A Path to the Cloud with Docker Enterprise

Attending DockerCon confirmed for Fenstermacher that Docker is the way forward. With Docker Enterprise as its primary platform, W&M plans to containerize more applications, starting with Python and Java-based ones. From there, the university is exploring public cloud for bursting compute resources and large-scale storage. Fenstermacher sees William & Mary operating about 50 percent to 80 percent in the cloud in a year or two.

“Docker Enterprise really helps us take one of the big steps in making these changes.” Fenstermacher said. “It works so well with everything.”



www.docker.com

©2017 Docker. All Rights Reserved. Docker and the Docker logo are trademarks or registered trademarks of Docker in the United States and other countries. All brand names, product names, or trademarks belong to their respective holders.