CASE STUDY

ARTSTOR

CHALLENGE
Quickly develop a private instance of the ARTstor image application library for a select group of institutional customers

SOLUTION
Use the continuous integration with the CloudBees Jenkins Platform™ to increase automation, improve consistency, lower administrative overhead, and facilitate the adoption of continuous delivery practices and a DevOps culture

RESULTS
- Administration time and overhead reduced 80%
- Time to resolve typical support issues reduced by 70%
- Release cycles shortened

PRODUCTS
- CloudBees® DEV@cloud™

ARTstor Fast Tracks New Image Repository

ARTstor, a non-profit organization, offers an online image library used by educational institutions and museums for scholarly research in the arts and related fields. Researchers around the globe access ARTstor's repository of over 1 million digital images to enhance scholarship, teaching and learning. Along with a large image database, metadata accompanies the image records. The metadata enables researchers to utilize search engines to find the images they need.

"We looked into several solutions. The others either used technologies we weren't familiar with and didn't want to take on—or required us to perform all of the platform and system maintenance ourselves. We didn't want that—we needed simplicity and familiarity."

Eugene Dvorkin
ARTstor

CHALLENGE

ARTstor had a challenging problem to solve. Its repository needed to be replicated in a separate, private instance. The private instance would be used by a group of major institutional users who wanted to upload and add their own digital images of artwork and historical artifacts. Additionally, the content had to be available via the web and searchable by several key search engines. The content would be made available on a subscription basis and shared between the institutions involved. "ARTstor needed to make this happen quickly - and we didn't have the IT resources to devote to it," explains Eugene Dvorkin, senior developer, ARTstor.

The main image application was developed in 2003-2004, utilizing a Spring framework and Oracle database. It was running on-premise, in ARTstor's data center. The Oracle app server uses Java 1.5, Glassfish and Tomcat.

ARTstor had previously developed a search application for the main image database using MongoDB, a NoSQL database, to manage the data layer. MongoDB was a good fit, as there is extensive metadata associated with the vast amount of images stored in ARTstor's repository. Being a document-oriented database, MongoDB is readily scalable. The original search application was written in Java, using AJAX technology for web application optimization. Users can search

by image ID or keywords. Google and Bing are able to extract the data so ARTstor images show up in search results.

For the new project, ARTstor programmers wanted to use Java 1.7, a more current version. But with the existing production infrastructure running on Java 1.5, it would need to be upgraded before development could start. Dvorkin estimated the upgrade might take as long as three months...and if something didn't work after the upgrade, it could be even longer before the system was again stable and fully operational. The development team could not afford to spend this amount of time on an infrastructure upgrade.

The ARTstor team's other challenges were mainly infrastructure-related ones: specifically, provisioning and operations, "We are not sysadmins - and system setup, ongoing maintenance and monitoring takes a lot of time away from development," says Dvorkin. Additionally, the team did not know how much traffic the new instance would get, thus didn't know how many servers they would need to provision. According to Dvorkin, "We didn't know how to estimate usage volume - therefore, we could over-provision or under-provision. Neither situation is optimal. Additionally, if volumes spiked, would our on-premise infrastructure be able to adequately scale? We didn't have the answers to these important questions."

As a part of their development process, Dvorkin and his colleagues already used Jenkins for continuous integration and were very familiar with it. Leveraging the existing Jenkins skills would be a plus for the team. They also wanted to work in an environment that was easy to maintain, as well as one that was low cost for ARTstor. As a non-profit organization, cost was an important consideration.

SOLUTION

The project team decided to seek a cloud-based solution and compared the CloudBees® Continuous Delivery Platform with other offerings. "We looked into several solutions. The others either used technologies we weren't familiar with - and didn't want to take on - or required us to perform all of the platform and system maintenance ourselves. We didn't want that - we needed simplicity and familiarity."

The team made the decision to use the CloudBees Platform because, "It allowed us to tap into the advantages provided by the cloud - such as scalability - and was much lower maintenance than other alternatives. We were also very familiar with Jenkins, so the transition to Jenkins-based DEV@cloud™ was easy."

After subscribing to the CloudBees Platform, Dvorkin instantly extended the environment to include Papertrail for log file monitoring and New Relic for application performance monitoring. With the central visibility provided by the CloudBees Platform, he didn't have to log into individual machines to see status reports. "Everything we need to do is integrated. Development, logging, monitoring - it's all managed from one central point. This saves a lot of time and effort." It was also very easy to use MongoDB with the CloudBees Platform. This was another big advantage for ARTstor, given their prior success with Mongo and familiarity with it.

All in all, the project team's leverage of the CloudBees Platform allowed ARTstor to meet the contractual commitments to their customers and enabled them to tap into the advantages provided by the cloud - from instant provisioning, to scalability and elasticity, to freeing up resources to focus solely on development - and, most importantly, freeing the team from ongoing infrastructure maintenance.

RESULTS

Application server provisioning takes minutes, versus days.

"Now when we need to provision a new application server, it takes 15 minutes," says Dvorkin. "Previously, that same task took days."

Continuous deployment supports instant push to production.

To deploy updates to the production application, "ARTstor developers write the code, test it, make a click or two to push the code to production and the updates are live immediately," explains Dvorkin.

Infrastructure monitoring now simplified.

"We have visibility into system activity, overall. We can connect to the CloudBees environment, open a log file and immediately see the amount of memory utilized," says Dvorkin. "Prior to our CloudBees implementation, we would have to check each server individually, to get the same level of visibility."

Learn More About ARTstor

www.artstor.com

CloudBees, Inc.
2001 Gateway Place, Suite 670W | San Jose, CA 95110 | United States
www.cloudbees.com | info@cloudbees.com

The CloudBees Jenkins Platform™ is built on top of open source Jenkins, an independent community project. Read more at: www.cloudbees.com/jenkins/about

0823v02