Red Hat

Case study

Scholastic develops applications faster with Red Hat OpenShift and AWS

SCHOLASTIC

Software

Red Hat® OpenShift® Container Platform

Red Hat Enterprise Linux®

Partner

Amazon Web Services (AWS)

To succeed in an increasingly competitive market, educational publishing company Scholastic decided to adopt a more flexible microservices-based development approach to offer new products and services faster. To take advantage of a supported Kubernetes container platform, the company chose to deploy Red Hat OpenShift Container Platform on Amazon Web Services (AWS). This new environment lets developers reuse microservices to more efficiently build new services, with less focus on management and provisioning. Scholastic has not only cut its time to market in half, from months to weeks, but also improved its scalability and availability in response to shifting demand.

Headquarters

"We want to take advantage of Kubernetes to fully optimize our pipeline with containers, and we can do that with Red Hat."

Yuriy Denysov
DevOps Engineer, Scholastic

Education

9,000 employees

Benefits

- Reduced time to market from months to weeks with reusable microservices and simplified management
- Achieved high scalability and availability to support shifting demand without service interruptions
- Accelerated microservices adoption with help from comprehensive support

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"It was a big step for the organization to encourage everybody to move to microservices, but we knew Red Hat would be there for us."

Prasad Gunasekera
Infrastructure Manager, Scholastic

Facing growing competition in educational media market

Scholastic Corporation is the world's largest publisher and distributor of children's books and a leader in educational technology and children's media. Scholastic has delivered children's literacy resources to schools, teachers, and families for more than 90 years. It distributes its stories and nonfiction worldwide through a variety of channels, including school-based book clubs and fairs, retail and e-commerce sales, and direct supply to schools and libraries.

While the variety of technology in classrooms makes standardizing on any single digital learning tool challenging for Scholastic's competition, the company's hardware- and software-agnostic approach lets it deliver its Core Clicks nonfiction reading program digitally to any internet-connected device.

To successfully deliver a consistent learning experience for Core Clicks users, Scholastic needs a scalable IT development infrastructure. In 2013, the company began transitioning from datacenter-based infrastructure to cloud computing to reduce time to market and infrastructure costs.

"But we wanted to do even more," said Prasad Gunasekera, Infrastructure Manager at Scholastic. "We saw organizations moving to microservices in a container framework because the architecture is so nimble, and we wanted to give it a try."

Scholastic began its digital transformation journey to adopt containers and microservices with OKD (formerly OpenShift Origin), the community distribution of the Kubernetes-based container technology. But after struggling to configure it, the company sought a supported Kubernetes-based container solution.

Deploying containers and microservices with trusted partners

As an existing customer of Red Hat Enterprise Linux and Amazon Web Services (AWS), Scholastic decided to become an early adopter of Red Hat OpenShift Container Platform and add it to its AWS environment. In addition to being supported by Red Hat's technology experts, the container platform offered several robust features of particular interest to Scholastic.

"Red Hat OpenShift's source-to-image [S2I] capabilities would let us produce standardized, reusable images, improving both consistency and development speed. And being platform-agnostic, our applications will run the same wherever we spin up Red Hat OpenShift. It would also make managing our routing and DNS [domain name system] easier," said Yuriy Denysov, DevOps Engineer at Scholastic.

After a central engineering team completed deployment, Scholastic's first microservices went live in mid-2017, beginning with the migration of its legacy JavaTM and Spring Boot applications to Red Hat OpenShift. The company has expanded from its initial 20 microservices to 200 microservices now available on the platform. While most of these microservices are application programming interface (API)-based components, close to 10 customer-facing applications are also hosted on the platform, including the Ooka Island gaming app and several marketing campaigns.

The increase in adoption during 2018 was largely due to onsite training for administrators to provide best practices and validate the change. Now, any new applications are developed as microservices and deployed on Red Hat OpenShift.

"Microservices built their own reputation over time, then our developers jumped to Red Hat OpenShift," said Gunasekera. "If there's a new application, it goes into Red Hat OpenShift. It's a vision that's fully supported throughout the organization."

Meeting customer and developer demand

Reduced time to market from months to weeks

With its microservices-based development approach supported by Red Hat OpenShift Container Platform, Scholastic has reduced time to market for new applications by half, from more than two months to less than one month.

Previously, developers had to wait for engineers to create infrastructure for their work. With OpenShift Container Platform running on AWS, cost-effective infrastructure is already created and ready to use.

Scholastic now has around 100 microservices developers, some within divisions across the United States and the United Kingdom. These teams adapt reusable components created by a central team of engineering experts to develop their own microservices for the needs of their specific line of business.

Additionally, microservices-based applications are easier to maintain than the company's larger legacy applications, and container-based infrastructure from Red Hat further simplifies management to save development time. As a result, smaller development teams can now focus on delivering valuable solutions to business demand—even working multiple projects simultaneously.

"There's less dependence now," said Denysov. "Developers don't have to wait anymore. Their environments are already set up to onboard their applications, test them on Red Hat OpenShift, and be ready to deploy to production all on their own. It's much more efficient now."

Improved service scalability and reliability

Scholastic's business is seasonal, with the back-to-school period during September resulting in dramatic increases in traffic to its digital offerings and web properties. Even during non-peak periods, the engineering team receives multiple requests per month to launch new applications, making rapid scalability critical to offering innovative educational services.

To support these shifts in demand for customer-facing applications, Scholastic uses Red Hat OpenShift to scale while ensuring services stay highly available. Uptime has improved more than 80%, because applications can now run as containers on multiple instances.

"If something goes down in one of our three AWS availability zones, the other two are still available. If needed, we can then run on another cluster seamlessly," said Denysov. "If there's an application acting incorrectly or erratically, we can isolate it with Red Hat OpenShift to keep it from affecting other applications and services."

The shift to an enterprise OpenShift platform has also improved reliability for Scholastic's development teams. Scholastic's developers no longer need to worry about resiliency, redundancy, or creating backups. "With Red Hat OpenShift on AWS, we can manage resiliency at the platform level with as-a-Service disaster recovery," said Gunasekera.

Streamlined microservices adoption with expert support

After struggling to configure OKD, switching to Red Hat's supported container solution has given Scholastic confidence to accelerate its adoption of microservices.

"It was a big step to encourage everybody to move to microservices, but we knew Red Hat would be there for us," said Gunasekera. "If ever we have any issues or questions, we know we can go to Red Hat's support teams for help."

Creating opportunities for new customers and features

After its initial success using OpenShift Container Platform on AWS, Scholastic is now looking forward to the latest release to find new opportunities to enhance its services and competitiveness, such as attracting customers in new markets.

The company is considering adding a second production OpenShift cluster to take greater advantage of the flexibility of its microservices- and container-based approach. "A secondary cluster would make our environment even more scalable," said Gunasekera.

"With Red Hat OpenShift we'll get all the new Kubernetes features, such as self-healing," said Denysov. "We want to take advantage of Kubernetes to fully optimize our pipeline with containers, and we can do that with Red Hat."

About Scholastic Corporation

Scholastic was founded in 1920 as a single classroom magazine. Today, Scholastic books and educational materials are in tens of thousands of schools and tens of millions of homes worldwide, helping to Open a World of Possible for children across the globe.

North America
1 888 REDHAT1
www.redhat.com

Europe, Middle East, and Africa
00800 7334 2835
europe@redhat.com

Asia Pacific
+65 6490 4200
apac@redhat.com

Latin America
+54 11 4329 7300
info-latam@redhat.com

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@RedHat
linkedin.com/company/red-hat

redhat.com
#F18633_1019