



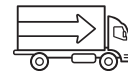
# UPS STREAMLINES PACKAGE TRACKING AND DELIVERY WITH DEVOPS AND RED HAT



UPS is a global leader in logistics, delivering more than 20 million packages per day. To enhance its services with better data insight and scheduling, the company decided to create a new application platform to give package facility operators mobile, real-time data access. With help from Red Hat, UPS created a flexible, agile, container-based cloud computing environment using Red Hat OpenShift Container Platform, Red Hat Enterprise Linux, and Red Hat JBoss Fuse. In addition, the company shifted to a more collaborative, iterative DevOps approach. Its developers can now work more efficiently to create new features for operations logistics and staffing, in turn improving the end customer tracking and delivery experience.

## SOFTWARE AND SERVICES

- Red Hat® OpenShift® Container Platform
- Red Hat Enterprise Linux®
- Red Hat JBoss® Fuse
- Red Hat Consulting
- Red Hat Training
- Red Hat Technical Account Management



## LOGISTICS, SUPPLY CHAIN MANAGEMENT

**5,000** I.T. STAFF  
**220** COUNTRIES AND TERRITORIES

*“As opposed to providing a solution in 18 months, we can start giving value back to the business within weeks or months.”*

CARLA MAIER  
SENIOR MANAGER, CLOUD PLATFORMS AND TECHNOLOGY, UPS

## BENEFITS

- Cut development cycle time from over a year to months or weeks with automated, agile container and cloud technology
- Gained high scalability and availability to support peak holiday demand
- Improved collaboration between internal teams and external partners with DevOps approach and Red Hat services



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*“Insights and innovations are happening at a rate that we’ve never seen before. It’s an exciting time at UPS, and Red Hat is a significant partner in that transformation.”*

NICK COSTIDES  
PRESIDENT, INFORMATION  
TECHNOLOGY, UPS

## **SPEEDING PACKAGE DELIVERY WITH DATA INSIGHT**

United Parcel Service (UPS) is a global leader in logistics and a leading provider of global supply management solutions. It delivers more than 20 million packages per day, via ground and air, to 9 million customers across 220 countries and territories. UPS has a long history of using data and innovation to improve its services—for example, offering tracking and delivery management through its mobile application. The Smart Logistics Network digitally bridges data and operations as the foundation of its corporate strategy.

“Historically, we were reactive. We would collect information, then do analysis,” said Stacie Morgan, senior application development manager at UPS. “Now, we can see how packages flow through our network to help center supervisors predict volume and staffing needs, based on weather or other factors. Data helps us optimize our operations to increase customer satisfaction and profitability.”

UPS began evaluating new ways to continue improving its time to market and service quality. “We needed to move from our old technologies to the cloud, to make better decisions using real-time, big data analytics,” said Rich West, senior application development manager at UPS.

To optimize package operations and delivery, UPS decided to build a new application platform, Center Inside Planning and Execution System (CIPE). The company also sought to adopt a more agile, collaborative DevOps approach—and technology that would support both CIPE and DevOps.

“We’re focusing on uniting our development and operations teams through cloud enablement,” said Morgan. “We could have used familiar technology, but we decided that doing so wouldn’t enable us for the future. We wanted continuous integration and delivery to help us meet business expectations.”

## **BUILDING AN AGILE, INTEGRATED CLOUD ENVIRONMENT**

After deciding that container technology would best support its agile, cloud-based workflows and evaluating many solutions, UPS created its new application environment with enterprise open source technology from a trusted vendor, Red Hat. UPS has standardized on Red Hat Enterprise Linux and Red Hat JBoss Fuse for more than six years.

“Red Hat Enterprise Linux runs most, if not all, of our public workloads, such as UPS.com,” said Todd Butchko, senior application development manager at UPS. “It was the foundation that led us to JBoss Fuse, and the reason we continue to work with Red Hat.”

After a proof of concept, the company deployed Red Hat OpenShift Container Platform as the standard for the private cloud environment supporting CIPE. OpenShift provides flexible, cloud-based development—including creation of .NET Core, Node.js, and Java™ applications—as well as logging analytics and continuous integration and delivery (CI/CD). “OpenShift is a Kubernetes container-based platform that helps our application teams build cloud-native, microservices-based applications and run them on our private cloud,” said Butchko.

UPS also expanded its use of Red Hat JBoss Fuse. JBoss Fuse supports real-time communication within CIPE and integrates CIPE and the company’s other applications, unifying visibility into package status for staff and customers.

The company worked closely with Red Hat Consulting to plan and deploy CIPE. “Red Hat consultants were on site to work with the infrastructure, networking, security, and capacity and performance planning groups,” said Morgan. “They also quickly trained our developers on container platform technology. We were able to launch the first iteration of the site application in three months. We’ve never brought up a platform that quickly.”

Operations employees use the CIPE mobile application to view data on package car arrivals and their destinations within the facility. UPS plans to expand availability to all operations employees at multiple sites. The company is currently planning the transfer of the entire UPS.com infrastructure—more than 150 applications—to its expanded Red Hat infrastructure.

## **ADAPTING SERVICES TO INTERNAL AND CUSTOMER DEMAND**

### **AGILE, EFFICIENT DEVELOPMENT AND DEPLOYMENT**

With cloud- and container-based infrastructure from Red Hat, UPS has improved developer productivity for faster application and feature creation—and business value—with an agile alternative to traditional waterfall development. OpenShift Container Platform lets teams use modular, containerized components to rapidly create and adapt features with flexible application runtimes, configurations, and resources.

“With OpenShift, we’re incrementally delivering services using microservices and containers,” said Carla Maier, senior manager of cloud platforms and technology at UPS. “As opposed to providing a solution in 18 months, we can start giving value back to the business within weeks or months.”

JBoss Fuse provides broad integration to ensure data is quickly updated for application teams and end users. Operators can now use CIPE to access real-time data from scans performed each time a package is moved and quickly make decisions, including staffing allocation. “Before CIPE, operators were manually pulling data from various locations,” said Jignesh Shah, senior application development manager at UPS. “Now, they can look at real-time, automatically collected data and move people around. That shift has ended up saving a lot of time and eventually helps with our customer package experience.”

### **AVAILABILITY AT SCALE**

With cross-datacenter high availability, UPS can run, update, and move applications to eliminate downtime and customer impact. “The biggest benefit of Red Hat OpenShift is the container- and microservices-based isolation that prevents a misbehaving application from affecting other applications,” said Shah. “Fuse provides the high throughput we need, and deploying Fuse-based integration components on OpenShift supports scaling microservices integration.”

The company can also scale automatically as needed during peak demand times—the largest during the holiday season. “Our business grows dramatically between Thanksgiving and the end of December. There’s more online shopping happening, but we’re also seeing returns expand our busiest time,” said Maier. “Using OpenShift, we can scale flexibly during those particular peak times. We even have the potential, if needed, to scale to public cloud.”

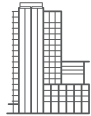
As a result, UPS can stay competitive by providing consistent, reliable package tracking and delivery services to customers—no matter the time of year.

### **COLLABORATION FOR BETTER INNOVATION**

UPS adopted a collaborative DevOps work approach to help its business and technology teams full advantage of its new technology. “Historically, we would say ‘business drives technology’. We’ve flipped that equation, with IT demonstrating the transformative power of technology to line-of-business partners,” said Nick Costides, president of Information Technology at UPS. “We built an innovation center that’s an open environment for our IT and line-of-business groups to work together to design and develop solutions.”



CUSTOMER CASE STUDY UPS streamlines package tracking and delivery with DevOps and Red Hat



### ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

The company worked closely with Red Hat Consulting for deployment guidance and Red Hat Training for on-site training on OpenShift, CI/CD, and container technology. "The services we received from Red Hat directly impacted our success," said Maier. "Red Hat created a custom on-site training agenda for our teams to help us develop and deliver with container technology and agile methods."

The company's Red Hat Technical Account Manager provided ongoing assistance to resolve issues quickly. "When you implement a new platform, it's harder to see when and where you have a problem," said Maier. "We had one problem that we needed to resolve quickly, and we worked with our Technical Account Manager and Red Hat support up to several times a day to identify exactly what was wrong and get it fixed."

These connections have also helped UPS become more involved with community-based development. "With open source, it's not just a single vendor, person, or group that's developing technology. We can go to Red Hat and the community and say, 'This is what we need. How can you help make this successful?'" said Maier. "Disparate ideas from disparate places come together to find solutions that work for us and our customers."

### EXPANDING INNOVATION TO NEW USE CASES

The success of CIPE and its Red Hat infrastructure is inspiring other teams at UPS—as well as the industry. "Because of the feedback that we're getting on the benefit not only internally, but also to our customers, I think we're going to see a lot more projects like this," said Lee Jennings, IT director of application development at UPS.

UPS plans to expand CIPE to more operation teams and sites, with full deployment to more than 1,500 sites worldwide. The company is also evaluating public cloud options to run OpenShift and accelerate its expansion of public cloud workloads.

"CIPE is the first of many solutions that will be using Red Hat technologies for containerization and moving workloads to the cloud at UPS," said Costides. "Insights and innovations are happening at a rate that we've never seen before. It's an exciting time at UPS, and Red Hat is a significant partner in that transformation."

### ABOUT UPS

Founded in 1907 as a messenger company in the United States, UPS has grown into a multi-billion-dollar corporation by clearly focusing on the goal of enabling commerce around the globe. Today, UPS is a global company with one of the most recognized and admired brands in the world. It has become a global leader in logistics and a leading global provider of specialized transportation and logistics services. Every day, UPS manages the flow of goods, funds, and information in 220 countries and territories worldwide.

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