Red Hat

Customer case study

Boehringer Ingelheim delivers digital health solutions faster with Red Hat OpenShift

Boehringer Ingelheim

Software

Red Hat® OpenShift®

Red Hat OpenShift Dedicated

Partner

Amazon Web Services (AWS)

Boehringer Ingelheim, one of the pharmaceutical industry's top 20 companies, sought to bring new digital services to its customers in line with industry changes, such as telehealth, electronic health records (EHRs), and more. To support faster, more responsive development while remaining compliant with industry regulations, the company adopted Red Hat OpenShift, an enterprise container platform. Combining Red Hat OpenShift with continuous delivery (CD), Boehringer Ingelheim has achieved five-times-faster delivery to the market, enhanced scalability and management with automation, and improved its talent acquisition with open source success.

"Our developers can work faster and smarter to build more applications for our customers, instead of spending time on infrastructure . . . . With Red Hat OpenShift's automation capabilities and a continuous delivery approach, we're seeing features and applications getting to market five times faster."

Clemens Utschig-Utschig
Head of IT Technology Strategy & CTO,
Boehringer Ingelheim

Pharmaceuticals

50,000 employees

Benefits

- Achieved five-times-faster delivery time for innovative health services
- Automated generation of compliant, accurate documentation
- Improved response to demand with automatic scaling
- Enhanced talent attraction and retention

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Transforming IT to meet industry shift to digital healthcare

A shift to digital healthcare is creating new challenges for the pharmaceutical industry. Providers are becoming increasingly technology savvy to respond to these transformations.

"We are seeing new demand to provide information directly to doctors, patients, and pet owners through telehealth, electronic health records (EHRs), and other digital solutions," said Clemens Utschig-Utschig, Head of IT Technology Strategy & CTO, Boehringer Ingelheim. "People and providers want to maintain health more holistically—not simply treating a disease but looking to manage health beyond pills."

A family-owned business since 1885, Boehringer Ingelheim is one of the top 20 companies in the pharmaceutical industry. It works to create value through innovation in three business areas: human pharmaceuticals, animal health, and biopharmaceuticals.

To adapt to the industry shift to digital experiences, Boehringer Ingelheim established a technology strategy focused on optimizing data, processes, and governance while establishing product teams with the right skills for this new business approach. As part of this strategy, the company sought to set up a digital lab using container technology.

"We need to support more frequent updates—three or four times per day—while maintaining compliance," said Utschig-Utschig. "As a pharmaceutical company, we need to be able to scale our compute resources and workloads in seconds to respond to external data requests at the speed of business."

"Beyond just scaling quickly, we can allocate extra containers if use goes up, and then reallocate unused resources when demand drops to normal, in real time. That capability is one of the key benefits of using Red Hat OpenShift to take advantage of Kubernetes."

Torsten Heddesheimer
Chief Architect IT Infrastructure

Adopting Kubernetes containers with Red Hat OpenShift

Boehringer Ingelheim sought an enterprise open source container platform and decided to work with long-time partner Red Hat to deploy Red Hat OpenShift. It provides stable, fully automated operations to support developer productivity with continuous integration and delivery (CI/CD) and comprehensive security capabilities.

"With open source, we can fix any bugs on our own within days, and we've been able to build many enhancements to fully automate our processes. But our analysis found that Kubernetes alone did not provide the integration we wanted," said Utschig-Utschig. "Red Hat OpenShift gives us an enterprise Kubernetes framework with the stability, life-cycle management, storage integration, and authorization capabilities we need for critical pharmaceutical operations."

After creating and launching its first Red Hat OpenShift Container Platform cluster in less than two months, Boehringer Ingelheim has deployed 10 clusters, self-hosted and -operated in its datacenters in China, Germany, and the United States, with plans to expand to its Vienna, Austria location. In addition, the company has adopted Red Hat OpenShift Dedicated, a high-availability environment running in its Amazon Web Services (AWS) public cloud and managed by Red Hat.

"A combination of fully managed and self-managed Red Hat OpenShift gave us the flexibility and ease of use to deploy applications quickly, where and how we need, so our developers can spend time creating innovation for our customers, not on operational tasks," said Clemens.

To support its Red Hat OpenShift adoption, Boehringer Ingelheim uses OpenDevStack, an open source platform that provides standardized tools and applications to support rapid adoption of continuous delivery (CD) processes in highly regulated industries.

The company has now released 11 digital products on the platform, with more than 150 currently in development—ranging from solutions for citizen integration and analytics to foundational IT systems. For example, Boehringer Ingelheim uses Red Hat OpenShift to run PetPro, its pet healthcare app that provides telemedicine, loyalty programs, and other features to hundreds of thousands of pet owners.

Balancing development efficiency and compliance

Achieved five-times-faster time to market

With a flexible, self-service container platform, supported by easy-to-use provisioning applications, developers can quickly and independently create new container environments for testing and production, improving productivity and time to market. Automation helps ensure environments meet the company's strict security and compliance requirements, without requiring extra coding work from developers.

"With our iterative processes and modular, self-service approach, our developers can work faster and smarter to build more applications for our customers, instead of spending time on infrastructure," said Utschig-Utschig. "With Red Hat OpenShift's automation capabilities and a continuous delivery approach, we're seeing features and applications getting to the market five times faster."

Streamlined documentation compliance

Documentation is critical to companies working in highly regulated industries. Previously, Boehringer Ingelheim's development teams were issued documentation manually and were required to make updates after any changes. Now, with Red Hat OpenShift, the company's developers can generate accurate, up-to-date documentation directly from its codebase in a single step, saving time and reducing errors.

"We have to keep meticulous records of changes to our applications," said Utschig-Utschig. "We can now generate an entire set of documentation instantly. Source control keeps the core data centralized, so developers can receive a version to update while we maintain compliance with data regulations."

Improved stability with auto-scaling

Demand for Boehringer Ingelheim's applications and services fluctuates throughout the year—for example, due to season-specific marketing campaigns and adding customers in new markets. The company uses Red Hat OpenShift's auto-scaling and rollback capabilities to dynamically adjust its allocation of containers and other application resources, providing stable services to customers at scale.

"Red Hat OpenShift provides an enterprise container environment for hosting digital products and modern applications on premises and in the cloud. Developers can deploy code and applications consistently, without changes or refactoring," said Ziad Ataya, Global Head of Cloud Computing Services, Boehringer Ingelheim. "It has allowed us to move away from monolithic applications to microservices with ease, with the opportunity to rethink deployment using a blue-green approach and take advantage of version rollback with no downtime."

Built-in health checks monitor and adjust the container environment's performance. For example, if a container crashes or experiences an error, Red Hat OpenShift automatically creates a replacement to ensure consistent performance for external users. Rollback capabilities help the company experiment with modernizing applications without risking downtime.

"Beyond just scaling quickly, we can allocate extra containers if use goes up, and then reallocate unused resources when demand drops to normal, in real time," said Torsten Heddesheimer, Chief Architect IT Infrastructure at Boehringer Ingelheim. "This capability is one of the key benefits of using Red Hat OpenShift to take advantage of Kubernetes."

Enhanced talent attraction and retention

Adopting open source technology such as Kubernetes-based Red Hat OpenShift and OpenDevStack has helped Boehringer Ingelheim attract and retain highly innovative, skilled engineering talent that will help it build the IT solutions to support its continued leadership in the pharmaceutical market.

"All modern technology is open source," said Michael Sauter, Distinguished Backend Engineer, Boehringer Ingelheim. "Most engineers would prefer to work with open source, because they can read it, understand it, and contribute to it. We've had applicants mention that they looked into our open source work to see what it had built on top of Red Hat OpenShift. They thought it was cool to see the work we were doing."

Expanding container success to new opportunities

After its initial success with Red Hat OpenShift and Kubernetes, Boehringer Ingelheim is already expanding the technology to support new use cases, such as machine learning (ML), running databases with operators, and increasing statefulness of applications.

"Red Hat OpenShift has evolved to become the de facto enterprise container platform," said Juergen Becker, Global Head of Enterprise Computing Services, Boehringer Ingelheim. "It gives us reliable containerized deployment for digital products and modern applications across cloud and on-premise environments, so we can support our innovative services worldwide."

About Boehringer Ingelheim

Founded in 1885, Boehringer Ingelheim is a top-20 global researching pharmaceutical company, with its headquarters in Ingelheim, Germany. Its portfolio covers respiratory diseases, metabolism, immunology, oncology, and diseases of the central nervous system. With its acquisition of Merial, it became the third largest animal health company in the world.

About Amazon Web Services and Red Hat

Together, Red Hat and AWS give you the tools and technologies to adapt to market demands. Scale infrastructure and expand opportunities in line with your organization's needs and business goals.

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About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

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