Case study

New end-to-end development process delivers cloud based platform

DevOps methodology delivers end-to-end development process for HP SAW

Industry
Information technology

Objective
Introduce DevOps to build a new SaaS platform for the HP SAW cloud based ITSM offering

Approach
Move away from siloed IT teams while implementing continually improving end-to-end processes and technologies

IT matters
- Generates a highly efficient end-to-end development process, speeding up time-to-delivery
- Provides improved functionality within a multi-tenanted architecture, satisfying clients' needs
- Produces high-quality fixes without affecting functionality, eliminating new problems
- Supports a high level of automation, motivating developers
- Aligns all code and process fully, offering consistent product delivery
- Features a centralised dashboard, ensuring zero code violations and coverage of at least 75 per cent

Business matters
- Offers regular updates and releases of the cloud-based ITSM solution, satisfying customers' requirements
- Provides greater agility via continuous delivery, accelerating time-to-value and adding business value
- Supports the company's SaaS delivery strategy, lowering costs
- Ensures releases operate correctly within different client environments, minimising downtime
- Creates a highly collaborative working environment, increasing productivity

"It's important to realise that we didn't create a DevOps team as this would have simply produced another siloed IT group. The DevOps approach requires collaboration across all parties. A high degree of automation was also imperative to keep the developers motivated, which leads to a highly productive working environment."

– Adam Spektor, DevOps manager, Hewlett Packard Enterprise

DevOps transforms delivery process for HP SAW
HP introduces DevOps to the development of HP Service Anywhere (SAW) software to increase developers' productivity, provide great agility via continuous delivers and offer improved functionality. The methodology generates regular updates through a highly efficient end-to-end development process, speeding time-to-delivery.

Code violations are set at zero

Challenge

Embracing SaaS and DevOps

HP proactively adopted a strategy to deliver services from the cloud several years ago. Employing a SaaS delivery approach has several distinct advantages over the traditional delivery model; lower Total Cost of Ownership, improved functionality within a multi-tenanted architecture and greater agility due to continuous delivery, accelerating time-to-value. Embracing a DevOps methodology to develop HP SAW was especially challenging.

Regular quality releases

"Transitioning the development of a legacy product from a traditional 'waterfall' software design process to an Agile DevOps methodology is quite different from developing a new product," explains Adam Spektor, DevOps manager, Hewlett Packard Enterprise. "With HP SAW, we started with a clean slate."

HP wanted customers to receive HP SAW updates in high-quality packets with new functionality every two weeks. The company also sought to assess three or four main releases every year within their customers' production environments to ensure zero downtime before releasing the upgrades.

"We couldn't have the long stabilisation period associated with legacy product upgrades. Customers expect to see change immediately with high availability," continues Spektor. "We aimed to produce the best patch without affecting the existing functionality, satisfying clients' requirements without generating new problems."

Solution

High degree of automation

Employing the DevOps approach to deliver HP SAW involved changing the relationship between different IT teams, establishing the right development process and adopting suitable technologies.

"It's important to realise that we didn't create a DevOps team as this would have simply produced another siloed IT group. The DevOps approach requires collaboration across all parties," comments Spektor. "A high degree of automation was also imperative to keep the developers motivated, which leads to a highly productive working environment."

During the end-to-end development process, HP employed a mixture of HP and open-source technologies to develop a fully automated environment comprising 25 to 30 different components. "To build a robust and stable SAW platform, we had to employ the best HP software and the finest open-source tools," adds Spektor.

Continuous integration, delivery and deployment

When developers finish a code update, they check the code into source control and then the automated build, integration and testing tools evaluate the code and give the developers fast feedback. This allowed developers to validate any product changes on-demand before entering production. The SAW team effectively generated a single, consistent process for whoever employed the application, regardless of location.

Customer solution at a glance

Software
• HP Service Anywhere

What is DevOps
The DevOps software development approach emphasises communication, collaboration and integration between software developers and other siloed groups within an IT organisation. This increasingly popular approach helps businesses build and deploy high-quality software rapidly and more frequently.

"For multi-farm and multi-component systems such as HP SAW, it is important to align all code and processes fully to ensure delivery consistency. Other development processes don't align code and important changes in their delivery model," says Spektor.

Quality assurance then started weekly sanity tests, primarily with automated tools, to complete the continuous delivery process before entering the continuous deployment phase.

Benefits

Zero code violations
After establishing the SAW development team and producing the first code, HP took less than a year to build a beta-version and produce the first release using a DevOps approach. Deployment of HP SAW is fully automated and reproducible at three data centres.

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"We constantly employ a centralised dashboard to visualise quality and set the bar high. Code violations should be zero and developers cannot push code forward if coverage is less than 75 per cent," adds Spektor.

HP is pragmatic about the on-going development of the SAW platform. The company realises that attempting to rectify all issues is not a practical option and a phased approach to upgrades is the best strategy. Consequently, HP currently provides all customers with seamless upgrades every fortnight and a major release every four months.

Looking to the future
The development of HP SAW is not standing still. An on-going improvement programme operates, continuous integration remains in place and HP plans increased levels of automation and monitoring.

"The DevOps culture brought developers together and helped deliver services to customers, eliminating siloed groups. One common process with no inconsistencies exists from development to production, creating a highly customer-orientated product," concludes Spektor.

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