Why Financial Tech Companies Need DevOps

CloudBees®

Introduction

Delivering valuable, high-quality applications to market quickly is a top business and technology priority for banks and financial services firms of all sizes.

Consumers want safe, speedy and reliable mobile and multi-channel banking, and financial firms have no choice but to meet that demand. Agile development and DevOps principles can get them there, but to truly achieve modern software development, sweeping organizational, cultural and technical changes must be made. As if that wasn't enough, financial firms also face other hurdles, many of which are unique to the industry. These include:

» The need for compliance with a variety of regulations and preparation for audits.
» Pressure from senior management to simplify and standardize the IT environment, particularly when it comes to legacy investments.
» Cybersecurity vulnerabilities.
» Hiring and retaining development professionals.

As a result of these challenges, many firms are now looking to implement an overarching governance strategy that helps them address these hurdles while increasingly enabling speed and agility. At the same time FinTech firms, which are often seen as ahead of the curve when it comes to tech adoption, face many of the same limitations. And they have a further obstacle – most aren't actually banks, so, like it or not they must work closely with traditional financial companies, something that can be challenging when the technologies are not in sync.

This eBook outlines the complicated landscape for all companies in the financial industry and suggests best practices for addressing them. It also examines Jenkins® as a solution for application delivery and how it can address the challenges identified.

Examining the Challenges

It's not an easy task for financial services firms to meet customer needs yet be agile in a heavily regulated industry. Understanding the hurdles financial organizations face enables them to determine how DevOps can transform the way they deliver new products and software to customers quickly, without compromising on either security or compliance requirements.

Regulations

One of the biggest challenges financial services firms face today is the need to comply with a multitude of government and industry regulations. Some of the regulations relevant to the industry include the Gramm-Leach-Bliley Act (GLBA), Dodd-Frank Wall Street Reform and Consumer Protection Act, Sarbanes-Oxley Act (SOX), SAS 70 and Payment Card Industry Data Security Standard (PCI DSS) — to name a few.

FinTech firms may be facing increased regulations according to a 2019 Regulatory Banking Outlook report from Deloitte. The Treasury Department is considering establishing a FinTech charter, something that would likely increase regulatory oversight in that sector of the industry.

The intent of many of these rules is to reduce risk and vulnerabilities both for financial services firms and their customers — which, of course, is a good thing. But each of the regulations can also have an impact on productivity in the software delivery process.

External Audits

Along with concerns about regulatory compliance is the ongoing fear of failing external audits. Financial firms can potentially face more than a dozen type of audits, some for regulations such as SOX and PCI DSS, some for development processes, others for change management and still others for cybersecurity.

At many organizations, these audits occur on a regular basis. Failure to pass them can dramatically hold back software development initiatives.

Standardization

Another major challenge is the need for greater simplification and standardization within IT infrastructures. Many financial firms over the years have deployed multiple development tools and cloud services within different departments, without any standardization, management or guidance.

This scenario, in many cases, has resulted in rising costs, increased complexity and loss of control. At the same, a lot of firms are saddled with legacy systems that might have worked effectively in the past but are not able to support the business agility needed in today's more dynamic business environments.

Cyber Attacks

A major consideration for finance companies is the growing number and sophistication of cybersecurity attacks. Financial services firms are among the most frequent targets of attack by hackers and other cyber criminals, and data breaches can result in stolen information, lost business, damage to reputation and brand, regulatory fines and legal action. Cyber attacks are also costly — a report from Javelin Strategy & Research showed banks lost $16.8 billion to fraud in 2017.

Personnel

Finally, financial services firms, like many other types of companies, continually struggle to find, hire and retain software development professionals. Development skills are in high demand, so attracting and retaining developers is a big challenge. Developers want to work on cutting edge technology and in fast-moving environments. This puts pressure on the financial industry to utilize cutting edge DevOps and CI/CD practices.

Best Practices: Overcoming the Hurdles

By adhering to a number of best practices, financial services firms can effectively address the challenges that negatively impact software development efforts. This will enable them to deliver their software faster to customers and retain a competitive edge in the industry.

Regulatory Challenges

To stay compliant, financial companies must establish processes that fold mandatory rules seamlessly into modern software development and delivery.

Some banks have managed to integrate security and compliance measures into fully-featured, mature, continuous delivery (CD) pipelines. This should be the mission of every firm. The first step requires an explicit understanding of the goals for security and compliance. When companies align where they are going and how to get there, this opens the door to engage cross-functionally with development, security, audit and operations teams to come up with creative ways to achieve the end goals of meeting the rules and regulations.

External Audits

To address the angst of audits, implement full traceability in the software development and delivery process, ensuring the required audit trials are automatically generated and always available. Additionally, it is important the financial audit teams work closely with development, IT operations and business management teams to coordinate with each other and make sure nothing is falling through the cracks.

Standardization

To achieve standardization, don't grab an unlimited number of tools and deploy countless cloud services. Instead, streamline and simplify development environments.

Identify the tools and platforms your teams are using, working with them to elicit key needs. Prune your tools catalog to the best-of-breed while balancing the need for developer freedom with reduction of redundancy. Then standardize on shared cloud and orchestration solutions to integrate the top tools and connect process across teams.

Senior management support is necessary to mandate this strategy across divisions and departments, but it's an easy case to make as standardization results in significant savings and a better managed environment. Furthermore, financial firms need to replace aging legacy systems with more modern solutions wherever possible — even while focused on standardization.

Cybersecurity

To address cybersecurity concerns in a financial institution, a key priority should be to remove any vulnerabilities within internally developed software and make sure it's secure before being released. This, of course, needs to happen in an environment that is focused on security at every phase of software development and delivery.

Continuous delivery in DevOps provides an improved way to eliminate vulnerabilities and security risks. If banks and other firms properly incorporate security and compliance rules and regulations into a continuous delivery process, its rapid and iterative nature will better position them to quickly find security risks so they can correct them as soon as possible.

Automation of critical security checks, provides confidence that the software in the CD pipeline is being continuously monitored for security issues. Also, by taking a quality-first approach and automating processes, firms can mitigate the risk of human error or malfeasance that can compromise software products.

Hiring and Retaining Personnel

To address the challenge of finding and retaining software development professionals, firms need to make their environment as attractive as possible to prospective hires. That means deploying the latest and most innovative development technologies and best practices. It also means financial firms must create an atmosphere in which each worker is valued and is free to develop meaningful products that will have an impact on the market.

Building a development environment that leverages DevOps, agile processes and effective tools will increase productivity, speed to market and quality — all of which will make workers happier and more likely to recommend the company to other developers. No one wants to work in a development environment that is slow and antiquated.

Indeed, successful financial services and DevOps organizations create a culture of collaboration and experimentation among their developer and IT communities. They also build centers of excellence that include various teams who share best practices in DevOps and continuous delivery across the organization.

Jenkins as a Solution

Best practices can only take a financial company so far. The right technology and development methodologies can make the difference between leading and lagging. Given the complex nature of the financial industry, companies need to look for tools that can automate development and delivery, track security and compliance and continually monitor performance.

A place to start is with the open source automation server Jenkins — it's a very popular choice today in the financial services industry.

Jenkins enables firms to accelerate the software delivery process (not just development) through automation. The platform manages and orchestrates all types of development lifecycle processes including building, documenting, testing, packaging, staging, deployment and static code analysis. The technology helps automate the non-human part of the software development process by leveraging continuous integration and facilitating continuous delivery. Firms can set up Jenkins to watch for any code changes in places such as SVN and Git; automatically build applications with Ant, Maven and other tools; launch software tests; and then take actions including rolling back or rolling forward in production.

Jenkins is by far the most dominant automation server. As of 2018, there were an estimated 15 million Jenkins users. The open source project is now under the umbrella of the Continuous Delivery Foundation, a vendor-neutral organization that houses fast-growth continuous integration and continuous delivery projects.

Getting a handle on modern development

We've established that speed of software development is extremely important in the financial services sector. Speed and agility mean nothing, however, if there's no governance structure in place to ensure high quality and protection against vulnerabilities such as cybersecurity breaches, as well as compliance with regulations. It's also just as important to have a window into the development process at all times in order to ensure performance, track the return on investment (ROI) and achieve continuous improvement.

By following best practices, deploying open source solutions such as Jenkins, and leveraging DevOps, continuous integration, continuous delivery and an agile environment, banks and other finance companies can create world-class software delivery processes that will provide a sharp competitive edge for years to come.

As financial firms move to modern software development, it quickly becomes clear there are a lot of moving parts. Firms need to consider a variety of issues including continuous delivery with containers, built-in compliance, continuous testing, autonomous developers who still need governance, the ability to increase productivity and product quality, scalability to enable right-size infrastructure, visibility and analytics and extended support and expertise from the provider.

CloudBees and Jenkins: Bringing it All Together

CloudBees® provides a vetted version of Jenkins with validated plugins to ensure centralized management, security and regulatory on-premise and cloud implementations to support financial institutions with varied platform requirements. Solutions such as CloudBees CI™ can help firms meet today's development challenges and improve processes.

In fact, the platform provides a cloud native CI/CD distributed pipeline architecture that leverages Kubernetes and offers limitless scale and expansion, while being easy to manage. The solution enables financial services firm to support modern cloud application development in a secure manner.

CloudBees CI on Modern Cloud Platforms
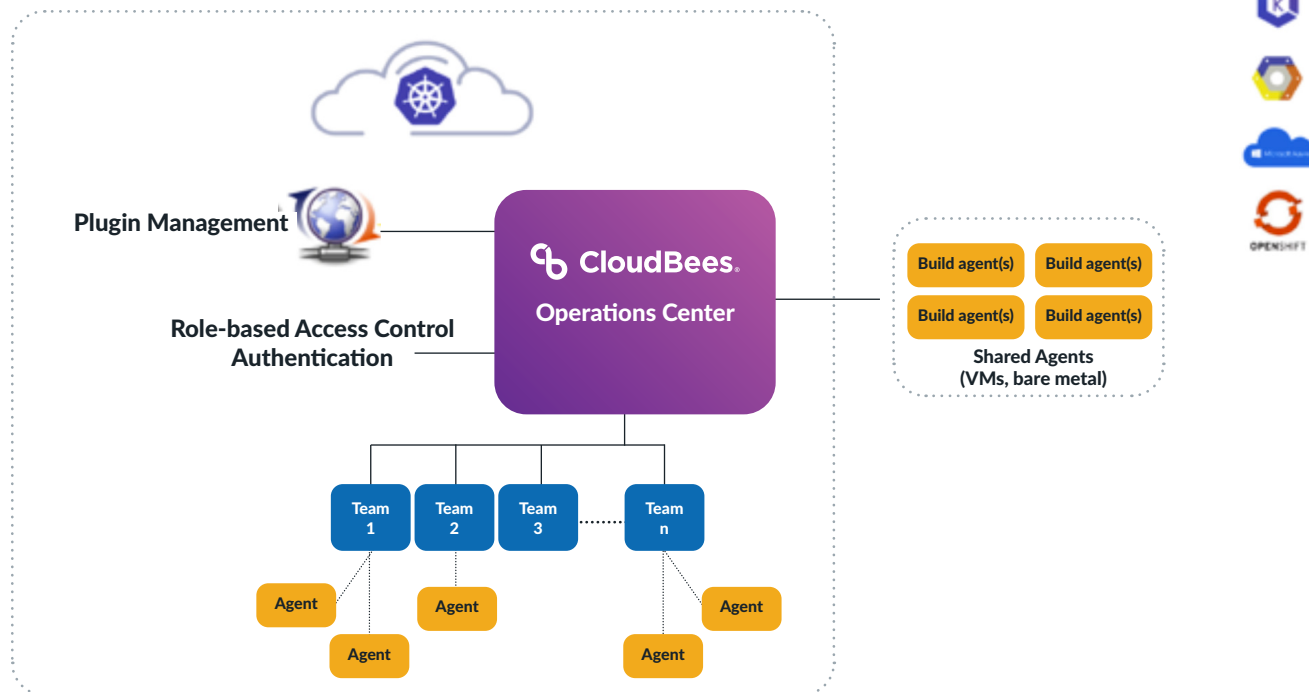
On-demand provisioning enables teams to start new projects in minutes and features enable teams to securely share best practices. The platform also ensures availability with a self-healing Jenkins infrastructure.

CloudBees CI offers a safe and organized way to manage the complex development process. Financial firms can create a governance strategy that works specifically in their regulated environment and then stand back and let agile and DevOps happen knowing resources won't be misused.

The CI/CD automation platform also offers the flexibility financial firms require — any type of application from .NET to Java and mainframe is supported. It's simple to create per-project access control so only authorized teams have access. The ability to easily define and change permissions helps keep sensitive financial industry data secure.

CloudBees CI and Jenkins also have widespread vendor support. Almost any tool on the market today can be seamlessly integrated, which is critical for best-of-breed development shops and can be another benefit when hiring software developers.

With the core technologies in place and a CI/CD process humming along, financial institutions still need to take it one step further. The enormous corporate investment in DevOps needs to prove itself, and for that, management needs a clear view in to how it's all working. CloudBees Value Stream Management™ offers that look under the hood for up to the moment DevOps performance metrics, CD platform monitoring and portfolio-wide insights by visualizing their software value stream management. CloudBees Value Stream Management answers the "How are we doing?" question instantly, without subjectivity or errors, something busy financial firms can't afford to waste time on.

Ultimately, enhancing software development processes is not just about making internal improvements for the sake of greater efficiency. It's also about delivering products that will benefit customers. Financial services customers can be a tough crowd — they want what they want instantly, safely and with no downtime or errors. After all, it's their money and their investments. These demanding customers want modern software development and delivery. It's that simple.

Learn More

Read the whitepaper

DevSecOps: Speed and Security, Together at Last

Download the eBook

Continuous Governance: The Guardrails for Continuous Everything

Download the infographic

Measuring, Managing and Mastering DevOps Performance in Financial Services

Learn More About CloudBees CI

Visit our website

About

CloudBees is the industry's leading DevOps technology platform delivering the world's first end-to-end continuous software delivery management system. CloudBees enables developers to focus on what they do best: Build stuff that matters—while providing peace of mind to management with powerful risk mitigation, compliance and governance tools.

Used by 50% of the Fortune 500, CloudBees is helping thousands of companies harness the power of continuous everything and gets them on the fastest path from great idea, to great software, to amazing customer experiences, to being a business that changes lives.

Visit CloudBees at www.cloudbees.com.

0820v02