CloudBees® | Solution Brief

Top Four Strategies of a Successful Software Factory

What is a Software Factory and Why Does the Government Care?

A software factory is an organized collection of software assets, tools, and processes that expedite the production and delivery of software solutions. When it eliminates redundant and unnecessary manual activities and measures performance in the right way, it can maximize the value of its output. The foundational requirement to accomplish these goals is automation. Automation helps connect the processes, tools, and people into high-functioning pipelines to deliver software that is always worthy of deployment. A common term for this approach is DevSecOps.

Having been part of hundreds of implementations for government and private organizations, CloudBees® has observed certain software factory characteristics that are vital to achieving better quality, security, and speed of DevSecOps at scale.

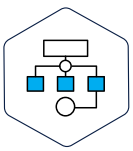
1. GitOps and Configuration as Code (CasC)

GitOps follows the principle that Git is the unified source of truth. With GitOps, the desired state of the system – applications and configurations – is stored as code with a fully transparent audit trail. All changes are traceable code commits associated with committer information, commit IDs, and time stamps. Everything becomes versioned artifacts that can be easily audited against organizational policies and standards.

How does CloudBees help?

CloudBees promotes GitOps by capturing not just the configurations as code but also pipelines, releases, jobs, permissions, etc. This version-controlled code can be updated, modified, shared, and reused directly from the code repository. Security teams more readily embrace change because they can ensure that changes are only initiated by pull requests, not from the UI. Teams can work rapidly and confidently by always having pre-configured, production-ready assets.

2. Trusted Software Supply Chain



The software supply chain is an increasingly complex landscape. Software's path to production can be convoluted, with interconnected dependencies, tools, and environments. Modern development strategies have complicated the ability to gain visibility (and thus trust), but software factories need the insight to identify, analyze and mitigate the risks inherent in a supply chain.

How does CloudBees help?

CloudBees Platform engenders trust and confidence by enforcing security, compliance, and best practices along all paths to production. Trust and confidence are earned only through observability. CloudBees Platform serves as a **Release Orchestrator** that automates, and collects data from, all the tools and steps that contribute to a release candidate. This data becomes a "body of evidence" with the information required to either validate or fail a release.

3. Orchestrating the Release Process

Software factories should have a demonstrable, predictable, and repeatable method for release orchestration that governs the way software is developed and deployed. Without rigor, consistency, and governance, it becomes very painful to manage diverse release processes across teams and time.

How does CloudBees help?

CloudBees' release orchestration is the critical enabler of modern software delivery. It tames the challenge of multiple teams working on independent and interdependent systems and applications with overlapping technology stacks and toolchains, conflicting schedules, and disjointed processes. CloudBees empowers software factories to define and distribute trustworthy pipelines to ensure that their output is always production ready.

4. Metrics and Value Stream Management (VSM)

Software delivery metrics come in many shapes and sizes **(e.g., DORA, FLOW, NIST, ISO),** but what is universally true is that metrics are only valuable if they are used to create **improvement**. Additionally, a best practice is to track value streams and metrics at both the program and individual team levels.

How does CloudBees help?

CloudBees VSM provides end-to-end transparency so software factories can remove bottlenecks and ensure their DevSecOps performance is continuously contributing value to the mission and end users. Data from over 250 real-world CloudBees implementations showed significant hours saved (i.e., less time spent on rework and unplanned work; more time spent writing new code and deploying new features). The assessments revealed an average efficiency gain of 66 hours per developer per year.

CloudBees has been powering CI/CD and DevSecOps at the enterprise scale for over a decade. CloudBees Platform provides the main ingredients for modern software delivery, enabling government agencies and private enterprises to operate high-functioning software factories.

Learn more at www.cloudbees.com/federal

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