

eBook

Improve CI/CD Pipeline Efficiency

Solve Your Speed and Reliability Problems with CloudBolt

OVERVIEW

The process of CI/CD is one enterprises use to drive innovation and digital transformation, bringing products and services to market faster and more efficiently. But it doesn't always go smoothly, and many organizations are still figuring out the best way to do it. In this eBook, you'll discover best practices around CI/CD and learn more about how enterprise cloud management framework leader CloudBolt Software can help you on your journey.

Why CI/CD is Critical to the Modern Enterprise

If you're a modern enterprise, chances are you've implemented some form of DevOps processes. Before DevOps, developers and ITOps often operated in siloes, reducing productivity while increasing bottlenecks and headaches. DevOps came into being so these functions could work together from a planning standpoint, shorten the delivery timeframe for new software, improve innovation and optimize the recovery process if things go wrong.

But simply establishing DevOps wasn't enough, so Continuous Integration/Continuous Delivery, or CI/CD was introduced. Continuous Integration is the practice of integrating code into a shared repository (e.g. Github) and building and testing each change automatically, as early as possible—ultimately several times a day. Continuous Delivery adds that the software can be manually released to production at any time, often by automatically pushing changes to a staging system. An additional process, Continuous Deployment, goes further and pushes changes to production automatically.

Continuous Integration

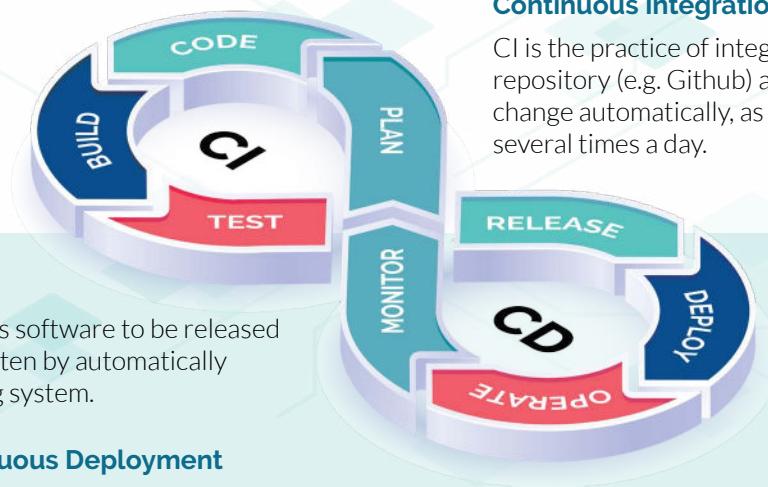
CI is the practice of integrating code into a shared repository (e.g. Github) and building/ testing each change automatically, as early as possible - usually several times a day.

Continuous Delivery

Continuous Delivery enables software to be released to production at any time, often by automatically pushing changes to a staging system.

Continuous Deployment

Continuous Deployment goes further and pushes changes to production automatically.



Key Benefits of CI/CD



Promotes Developers and IT Operations to work together



Breaks down siloes



Identifies coding flaws or bottlenecks proactively to increase productivity



Faster app/software delivery, improved innovation, and recovery process

CI/CD Can Still Fall Short

There is no doubt that while CI/CD has helped shore up many areas around digital innovation and development, it still has many pitfalls that organizations can easily run into without the right tools and infrastructure in place.

Research from 2021 indicates CI/CD hasn't quite reached its full utility. [CloudBolt Industry Insights](#) surveyed over 200 global IT leaders and found that over 3/4ths identified themselves as only "intermediate" CI/CD users. Almost 70% of respondents said they need days or weeks to deploy their CI/CD pipeline.

What's causing these issues? In many respects, the challenges are with the infrastructure around CI/CD. Just 11% find their CI/CD infrastructure reliable, meaning they see failures often, resulting in drawn-out and painful CI/CD processes. Manual processes for CI/CD were cited as the top pain for respondents, while detecting failures proactively was also cited. Missing automated processes and a lack of visibility after deployment is costly in terms of time and money.

Just 11% find their CI/CD infrastructure reliable

The Four Challenges of CI/CD in the Modern Enterprise

We can boil down the issues related to CI/CD challenges in the modern enterprise into four key areas.

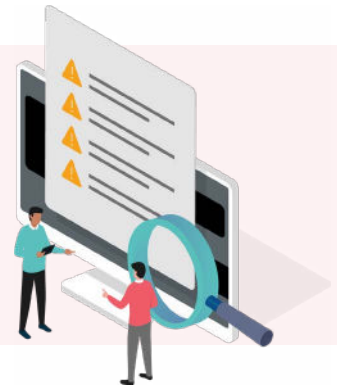


SLOW RESOURCE PROVISIONING

It can sometimes take developers days or weeks to ready the technology stack (storage, network, hypervisor, and disaster recovery solutions among them) required for their testing environment. This causes delays in application development and deployment, leading to wasted time, resources, and much slower time-to-value.

LACK OF RELIABLE TESTING ENVIRONMENTS

When testing environments don't meet the needs of an enterprise, they might fail for a variety of reasons. It could be because of a change of state in storage, network and server configurations, passwords, or VM (Virtual Machine) images. One test failure means the entire test process needs to be restarted; invested effort, time, and money is then wasted.



DIFFICULTY DEPLOYING AND INTEGRATING TECHNOLOGIES

As the number of apps companies use increases, so does the challenge of integrations. If you're required to custom code each integration, your solution to this problem is far from scalable across an entire enterprise. The last thing you want is for simple updates to require maximum effort.

INCOMPLETE POST-PROVISIONING VISIBILITY

If there is no way to gain complete visibility of the various infrastructure pieces, it's likely you'll miss potential cost savings along the way. Blind spots in your CI/CD process could also lead to security and compliance issues as well.



Older, first-generation ways of managing cloud platforms and resources tend to exacerbate each of these challenges. They often require advanced technical administrative expertise to use, lack flexibility around orchestration, and don't provide needed extensibility. The old way can also cause headaches around manual, labor-intensive machine builds, reactive manual isolated tests across the tech stack, and the integration and visibility problems mentioned before.

The CloudBolt Difference for CI/CD Tools and Processes

CloudBolt Software can meet you anywhere on your CI/CD journey to help remove the pain of development and get you on the road to digital transformation. We help with the entire CI/CD pipeline including with deployment, management, and integration.

Our customers love using CloudBolt for their CI/CD processes through:



SIMPLE AND REPEATABLE BLUEPRINTS

Using CloudBolt Cloud Management Platform (CMP), blueprints can help your developers get the same consistent infrastructure based on what they need. Plus, they can orchestrate a lot of things behind the scenes to truly automate the infrastructure deployment. There's no longer a need to wait for resources.



CONTINUOUS INFRASTRUCTURE TESTING (CIT)

Our CIT helps developers and IT achieve proactive testing of infrastructure even before the code is deployed. A developer who has built a code with certain network specs and certain security credentials can test if the infrastructure will support that code. Plus, ITOps and developers can work together to find optimal infrastructure for the code, saving valuable time and money.



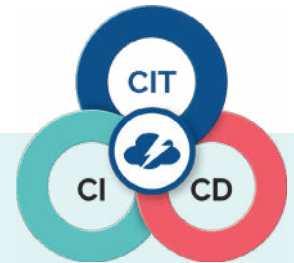
COMPREHENSIVE INTEGRATION CAPABILITIES

With CloudBolt's advanced integration capabilities, enterprises have flexible options for integrating various technologies together that minimize or even eliminate custom coding and take that pain away. Scaling integrations with our capabilities is easy; build once and use often. Plus, apply governance and usage policies to control the behavior of integrations post-build.



COMPREHENSIVE VISIBILITY FOR COST AND SECURITY

With CloudBolt's intelligent Cost and Security Management capabilities, you can get visibility into who is deploying which resources across all public, private, and hybrid infrastructure and how much money are they spending on it. It also helps proactively identify vulnerabilities, with 300+ security and compliance checks built into the platform. With support to utilize NIST, PCI, HIPAA, and AWS WA frameworks, you'll easily map vulnerabilities in your cloud environment.



WHAT IS CIT?

Continuous Infrastructure Testing is an essential piece that can make your CI/CD process work every time by:

- Taking away the need for expertise in CI/CD tools
- Identifying optimal state for environment for all technologies
- Proactively finding what is most likely to fail and fixing it
- Providing logs of infrastructure failure, can also ingest code logs
- Enabling a single pane of glass for ITOps and Developers

With CI/CD, the many moving pieces involved can present risks anywhere along the journey. If one area fails, it can affect every other area and lead to slowdowns, headaches, and a host of other issues for your business.

But with the right strategy and tools meant to meet the needs of the modern enterprise, you can update your CI/CD processes and overcome these challenges more easily than you ever imagined.

Speak to a CloudBolt product expert today to discuss your current CI/CD tools and processes and learn more about how CloudBolt can help take your CI/CD process to the next level of performance – and results.

[TALK TO US TODAY](#)

Or learn more...



Learn the truth about CI/CD and IaC from your peers

[Read our CloudBolt Industry Insights research >>>](#)



Discover a new way forward for CI/CD

[Download this handy infographic >>>](#)



Looking for ways to better manage CI/CD?

[Watch this on-demand webinar >>>](#)



CloudBolt Software is the enterprise cloud management leader. Our comprehensive solutions for IT automation, orchestration, self-service IT, cost optimization, and security help enterprises simplify complexity and achieve rapid time-to-value anywhere on their hybrid cloud, multicloud journey. Our award-winning cloud management platform and infrastructure integration services are deployed and loved by enterprises worldwide. Backed by Insight Partners, CloudBolt Software has been named one of the fastest-growing private companies on the Deloitte Fast 500 and Inc. 5000 lists. In addition, CloudBolt is 2020 CODiE award winner for best cloud management and featured in Gartner's Magic Quadrant for Cloud Management Platforms.

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