OverOps

Whitepaper

How to Avoid the Hidden Costs of a CI/CD Workflow

The Missing Link in the CI/CD Toolchain

Complex Java applications operate mission critical capabilities at the core of your business. Forward thinking companies, such as TripAdvisor, Fox, Nielsen, Zynga and Intuit, plan ahead and create automated processes to innovate faster, increasing their release frequency and mitigating the associated risks that come with it. The following whitepaper considers the benefits of fast paced release cycles and the requirements for maintaining an automated error resolution process.

Continuous Delivery in Critical Applications

Automated workflows are becoming a golden standard for delivering top quality products in an agile environment. End users expect to receive updates faster, and product teams need to move in a fast pace without compromising on product quality.

To achieve that on the engineering side, any new code change has to be Continuously Integrated into a central repository from multiple sources, followed by an automated Continuous Delivery process that streamlines releases.

The Upside: Fast Paced Innovation and Time-To-Market

Many companies have adopted or are in the process of adopting CI/CD methodologies as part of their workflow to innovate faster. Quick Time-To-Market is more than a nice-to-have ability; it's the cornerstone of a successful enterprise.

Moreover, successful organizations who withstand the growing pains of CI/CD are getting ahead of their competition. In addition, high performing engineering teams have a bigger impact on their company's bottom line, and the satisfaction of their team members increases along with their productivity.

The Downside: 3 Hidden Costs of CI/CD

With constant change, comes constant risk. The silent killer of CI/CD initiatives is also its biggest advantage, a side effect of moving too fast when a major component of the same process that pushes releases forward remains outdated and left behind.

A common misconception is that Continuous Delivery stops when releases are deployed to production. That's where a new kind of trouble begins.

1. Increased Rate of Production Errors

Expect the unexpected. Even the most thorough testing, staging and QA process lets errors slip through the cracks. User reports remain the biggest source of information about errors, and the error resolution process is reactive. CI/CD speeds up disruption and code breaks more often.

Business outcome: bad user experience and lost users. Even a few minutes of failed transactions can cost hundreds of thousands of dollars.

2. Reduced Staff Efficiency

Developers already spend 20-40% of their time debugging. Beyond the impact on the application and service quality, engineers spend an increasing percentage of their time debugging software instead of building new features. Moving faster often results in a reverse outcome.

Business outcome: loss of productivity, employee churn and uncontrolled spending.

3. Bad Releases Stop the Deployment Train

Outdated production monitoring practices that rely solely on logging and performance management tools often stall a CI/CD process for days. An informed production error handling strategy needs to be put in place to enjoy the benefits of fast paced innovation while mitigating the associated risks.

Business outcome: delays in product roadmaps and slow time-to-market. Missed deadlines and managerial overhead.

Bottom Line: There's a Missing Link in the CI/CD Toolchain

Engineering teams at enterprises and startups who overcome CI/CD obstacles are doing so by building a strategy across all stages of the software release cycle. OverOps addresses the 3 hidden costs of CI/CD by showing when, where and why code breaks in production. It provides complete actionable root cause information to reduce the time to identify and fix critical application errors by over 90%. This enables over 200 enterprise customers such as CapitalOne, Kaiser Permanente, Comcast, TripAdvisor and Intuit to increase application reliability, staff efficiency, agility and rate of innovation.

"Before OverOps, we sometimes had to spend two days trying to identify the root cause of an issue. After installing OverOps, it took about 15 minutes, and we found the error and saw what was causing it. OverOps helped turn days of work into minutes, quickly identifying and fixing different errors."

Dmitry Erman, Executive Director

FOX

Avg. Time to Resolve Errors: **2 Days** → **15 Minutes** **99% Reduction**

Before OverOps

Traditional Error Resolution Process

Traditional troubleshooting workflows require days to weeks to resolve errors, creating negative user experiences and causing release cycle and product roadmap delays. When developers spend over 10% of their time solving production errors, the business impact is impossible to ignore.

After OverOps

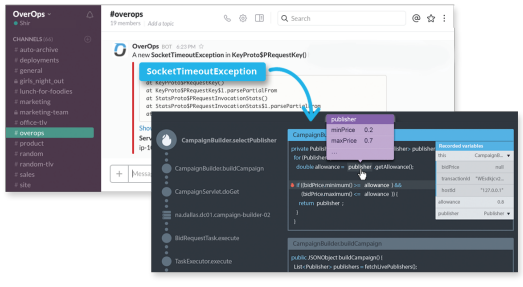
Automated Error Resolution

OverOps is the only solution that provides companies actionable root cause information to reduce the time to identify and fix critical production application errors by over 90%. Unlike logs and APM tools, OverOps immediately detects any new error that's introduced to the application, showing the complete source code and the exact variable state that caused the error. OverOps is built to operate at scale in traditional and microservice architectures, supporting any number of JVMs through SaaS and on-premises deployments, under strict PCI Level 1 and HIPAA compliant security regulations.

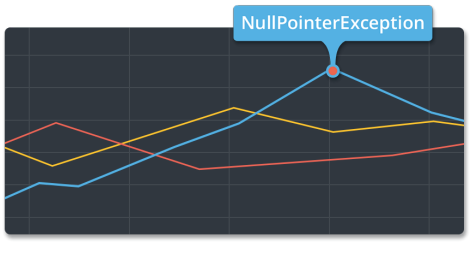
Pre-OverOps Workflow:

1. Roll back the release
2. Search logs for additional information
3. Create a hotfix with extra logging
4. Release the new version
5. Wait for replication
6. Search logs for additional information
7. Fix the issue
8. Release the new version

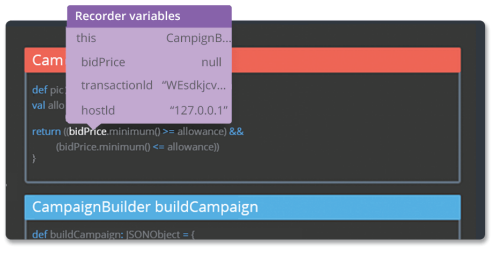
The Modern Error Resolution Workflow



Proactively detect all new errors in each new deployment



Cut through the noise and deduplicate errors



Automatically reproduce the exact conditions that caused each error

Code and Variable State

- **Code View:** See the complete source code and variable state across the entire call stack
- **Log View**: See the last 250 DEBUG level statements leading to the error, even if they weren't logged
- **JVM View**: See the memory state at the moment of error, including active threads and process metrics
- Open a JIRA ticket with the exact state that caused the error
- See multiple snapshots of recurring errors

Real Time Detection

- See all caught and uncaught exceptions, logged warnings, logged errors, and HTTP errors
- Group errors by microservice, server, application, or deployment
- Drill into the root cause of each event through the error analysis view
- Create custom views and alerts to focus on the errors your team cares about the most
- Receive a push notification for critical errors through Slack, HipChat, PagerDuty, JIRA or Email

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Full code and variable state to immediately reproduce any error.

No need to manually reproduce issues by searching for information in logs. Reduce MTTI by 90%+

<1% overhead in production

OverOps operates between the JVM and processor level, enabling it to run in staging and production.

Proactive detection of all new and critical errors.

New issues are detected and routed to the right developer vs. discovered by users. Each error receives a unique code fingerprint across the app.

No change to code or build

Immediately deployed in minutes.
Every new code release or microservice is automatically monitored for new errors.

Noise reduction: deduplication of all log errors and exceptions.

No need to sift through logs to search for errors. OverOps detects all events as distinct entities at the JVM level vs. "reverse-engineering" them from text logs.

PII Redaction. Cloud & On-Premises

Source code and variable state are redacted for PII and privately encrypted with 256-bit AES keys. HIPAA and PCI compliant.

Supported Platforms:

JDK 1.6 and above | HotSpot, OpenJDK, IBM JVM | Java, Scala, Clojure, Groovy | Linux, OS X, Windows | Docker, Chef, Puppet, Ansible | Coming soon: .NET

Integrations:

SLF4J, Log4j, Logback, Apache Commons Logging, Java Logger | Splunk, ELK, SumoLogic, and any other log management tool | AppDynamics, New Relic, Dynatrace | Workflow automation: Slack, HipChat, JIRA, Pagerduty | Webhooks | StatsD

Schedule a demo with an OverOps monitoring engineer or start your **free 14 day trial today**

Tel: 1-800-324-3053 www.overops.com
797 Bryant Street, San Francisco, CA 94107