

# The ultimate guide to DORA metrics

**Everything you need to know about DORA metrics – what they are, why they matter, and how Graphite helps you leverage them to improve DevOps performance.**

How well is your DevOps team *really* performing? Are they pushing code successfully? Bouncing back from failure? Don't rely on your gut feeling – we now have objective, data-driven methods to answer these questions thanks to DORA metrics.

When it comes to health checking your software development projects, DORA metrics are the gold standard. They let you track the speed, quality, and efficiency of your team's work, helping you make smarter decisions and deliver better products to customers.

## What are DORA metrics?

Over the course of six years, the [DevOps Research and Assessments](#) (DORA) group – now a part of Google Cloud – asked thousands of DevOps engineers what they thought was key to great software development performance. Their responses formed the DORA metrics. Four, to be exact.

They are:

1. **Deployment frequency** – how often code is successfully released into production.
2. **Lead time for changes** – the time it takes to push code into production.
3. **Change failure rate** – how often code fails in production.
4. **Time to restore service** – the time it takes to recover from production failures.

These metrics essentially measure two things:

- **Velocity** (deployment frequency and lead time for changes)
- **Stability** (change failure rate and time to restore service)

A DevOps team's performance across these metrics can be classed as **Elite**, **High**, **Medium**, or **Low**, [DORA says](#). Where you end up on this scale matters – Elite teams twice as likely to meet or exceed their performance goals.

The trick here is finding a balance. If your teams are performing better in velocity, for instance, they might be rushing through projects too quickly. But if stability is their strong suit, they could be spending too much time on fixes rather than innovation.

## Why are DORA metrics important?

DevOps teams used to work in silos. Software leaders didn't really know how projects were playing out at a high level and teams couldn't see what others were doing. Without a united set of performance metrics, organizations were relying on their own measures, with, er... often questionable results.

DORA metrics have blasted these silos wide open by standardizing the way we measure software development performance and giving better insights into what's actually going on in projects. Now, teams can think on their feet, flex their creative muscles, and work with others across the organization to solve problems and allocate resources.

By providing clear, actionable insights, DORA metrics can help teams tackle:

- Bottlenecks in production
- Low-quality or unreliable code
- Inefficient processes
- Client-side disruptions

Leaders can also use DORA metrics to build trust with stakeholders and make real promises. These aren't just a bunch of empty numbers, after all. According to DORA's [2023 State of DevOps report](#), high-performing organizations "have more customers, higher profits, and more relative market share for their primary product or service."

## How to measure and improve DORA metrics

Time for a deep dive. Let's look at how each DORA metric works and how you can use them to improve your DevOps performance.

### Deployment frequency

This is measured by how often teams deploy code into production (per hour, day, week, month, or year). Just bear in mind that both “deployment” and “production” can mean something different to everyone. Overall, though, Deployment Frequency helps you track how efficiently your team is working through their pipeline and pushing relevant updates and features to customers.

#### How to improve deployment frequency

Increase your deployments without sacrificing quality by giving teams the tools to confidently manage their workload. Automation is your ally here.

You can automate:

- Testing processes
- The release validation phase and release process
- Code validation to speed up recovery from production errors

And also:

- Integrate CI/CD tools to streamline the development lifecycle
- Break down deployments into smaller, more manageable releases

### Lead time for changes

How long are code changes taking to reach production? This metric tells you. It lets you health check your CI/CD pipelines and reveals how well teams are responding to tough situations (like a surge in requests) and serving customers. This metric is usually measured by mean time, and should decrease as your team starts performing better. It's up to you where this time begins. Some teams clock it from the first code commit; others, from the first merger to the main branch. Just stay consistent with whatever you pick.

## How to improve lead time for changes

- Automate your code review process
- Use value stream analytics to spot bottlenecks early on
- Break down code changes into more manageable chunks

## Change failure rate

Devs know how to fail – often. This metric works out the total number of changes they make to code and the percentage that fail in production, resulting in bugs, rollbacks, or service downtime. It can reveal whether they're spending *too* much on dealing with failures rather than innovating, and helps you find ways to seal the cracks of your production infrastructure.

## How to improve change failure rate

- Automate testing practices across the entire project
- Conduct thorough code reviews to spot potential problems
- Put in place solid monitoring and rollback procedures

## Time to Restore Service

Everything from a bug to a full-blown incident can bring down the system, but the important thing is that teams bounce back as quickly as possible. This metric shows how committed you are to quality control. It's usually measured by the average time it takes to resolve a failure, like remediating a bug, for example, or by the time between the failure being reported and resolved.

## How to improve time to restore service

Focus on incident response. How easily can you analyze root causes? Can you effectively remediate the tech stack and applications when things go wrong?

You can:

- Make the production environment more visible
- Automate incident alerts and recovery processes
- Conduct post-incident reviews that look at the how and why – without blaming anyone

## What to look for in a DORA metric tool

Metrics are just metrics if you don't act on them. Our suggestion? Invest in a quality software delivery management platform that lets you really see the story behind your DORA metrics and helps you automate your workflows in response to improve DevOps performance.

Choose a tool that helps you:

- Help you gather and visualize DORA metrics
- Track your systems and data in one place
- Process and analyze data automatically
- Provide context to each DORA metric

## How Graphite can help

As you might have noticed above, there are three methods of improving your DORA metrics that crop up time and again. These are:

- Adding automation
- Breaking code down
- Making code reviews more efficient

Graphite is a code review platform built on top of GitHub that ticks all three of these boxes. We make it easy to create, manage, and review stacks of pull requests, as well as break up large engineering tasks into bite-sized chunks. Our platform provides real-time DORA insights to help you measure the pace and progress of your software development project and spot bottlenecks before they cause problems down the line.

We're trusted by developers from more than 500 leading organizations including DuckDuckGo, Asana, and Vercel, and we've got the numbers to show for it. The finance automation platform [Ramp](#), for example, slashed its PR merge times by 74% with Graphite, and we helped the machine learning company [Tecton](#) get to grips with Git and boost its code review by three times.

## In a nutshell

Knowledge is power, especially when it comes to software development. DORA metrics offer the ultimate way for DevOps teams to fine-tune and track their performance across projects, end-to-end. From speed and efficiency to stability and resilience, DORA metrics offer a full view of a team's strengths and weaknesses, revealing openings for solid and actionable ways to improve software development performance and get ahead of the competition.

## Get started today

Graphite can help you get started. We offer a suite of dev tools and insights designed for tracking your DORA metrics and supercharging your software delivery performance from day one. Whether you're from a tight-knit team or an enterprise, we can help you ship code faster. Want to find out more? Sign up for a webinar or download one of our whitepapers for more. Try out Graphite today and watch your teams start working faster and making better decisions.