Customer Reliability Engineering

How our new service can help you get the most value from your Cloud Native platform? Read our free e-book by Michael Mueller **SRE: The Cloud Native Approach to Operations** here

Once your new platform is built and running in production, how do you keep it maintained so it runs reliably 24/7, while also continuing to innovate and respond to ever-changing customer demands?

That's where our new service, Customer Reliability Engineering (CRE) can help.

CRE is inspired by Google's Site Reliability Engineering. In our service, we take the principles and lessons of SRE and apply them towards your needs. This is not the typical third-level, 24/7 outsourcing; it requires effort on your part. Your team will collaborate with ours, giving you the advantage of our experience and best practices, while building your engineers' skills.

In SRE, responsibility is split between two teams:

- A product team (DevOps), which focuses on delivery of the business value, application, or service.
- A reliability team (SRE), which focuses on both maintaining and improving the platform the service is running itself.

Our CRE service works on the same principles, but our engineers form the SRE team, and your engineers the DevOps team. We will bring years of hands-on experience with a variety of customers to your organisation, giving you the benefit of continued and up-to-date knowledge and best practices. This system leads to both teams being able to provide more value to your business.

Rather than delve into the nitty-gritty details of each of your system's components, our CRE service provides a higher-level overview. We use industry-standard Cloud Native abstractions, leveraging principles such as self-healing and self-scaling systems, along with DevOps and SRE, to help your organisation reach its full potential in terms of delivering value.

Container Solutions

DevOps

Classic, siloed organisations are optimised for efficient use of resources and technology specialisation. This requires formalised, and time-consuming, handover between silos.

By taking over operational responsibilities, cross-functional DevOps teams optimise for zero handovers and therefore shorter lead time. As teams are typically small—following the famous Amazon '2-Pizza-Teams' rule—a highly automated software-delivery process is critical to prevent manual work.

Cross-functional teams with T-shaped people

End-customer projects

You build it, you run it!

Automation focus on delivery

KPI: business metrics

Optimises: Lead time, value delivered

More than 80% Dev work (tend to do scrum)

Site Reliability Engineering (SRE)

As modern infrastructures and service-oriented application landscapes grow more complex, proven principles from software engineering are applied to handle the operational complexity. This includes building foundational platforms as layers of abstraction, but also incentivising standardised and well-architected applications by offering operational support for them.

Engineering teams with infrastructure focus

(Platform) engineering projects

Runs infrastructure and your apps

Automation focus on operability

KPI: Service Level Objectives, Error Budgets

Optimises: Number of pages, operational load, mean time to repair

50% Operational Work | 50% Engineering (tend to do Kanban)

How does CRE work?

The Container Solutions team will deeply inspect the key elements of a customer's production platform and application—code, design, implementation, and operational procedures. We take what we find and put the application (and associated teams) through our Production Readiness Review (PRR). At the end of that process, we'll tell you where the reliability gaps lie in your system.

We would help your development teams to both create the technical and organisational requirements and to meet them. To help your teams meet such requirements, we can offer training, architectural consulting, SLO/SLI workshops, and engineering in the form of co-implementation with CS Engineers. Container Solutions will build common system monitoring, so that we have a mutual agreement upon metrics for paging and tickets.

You may find it's a lot of hard work for your teams to close the gaps our PRR finds. But in exchange for the effort, you can expect:

- Auto-creation and faster attention to Priority 1 tickets.
- CS participation in customer war rooms.
- A CS-reviewed design and production system.
- Most importantly, a full system of digital innovation, allowing you to serve customers as fast as Netflix, Starling Bank, and other Cloud Native businesses do.

What You Will Need to Take Advantage of CRE

Organisation

- Your teams understand Cloud Native and Agile principles.
- Software is only deployed through a CI/CD pipeline, without manual intervention.
- The team uses retrospectives to continuously improve its processes, with the goal of full automation.
- SLA/SLO and Error Budgets are defined.
- Clear fallback processes defined, in case DevOps team support is needed.

Architecture

- No Single Points of Failure.
- Patterns to avoid cascading failures, like circuit breaker between services to allow for a small number of services to go down.
- Resource availability provided (our CRE engineers need to be able to scale up without talking to the teams).
- CRE has access to the source code, image registry, and pipelines to be able to redeploy parts or full applications or infrastructure.

Side benefits of CRE

By applying SRE principles, your architecture will gravitate towards common standards and conventions, even if not centrally dictated. And because SLOs are in place and being realistically challenged via Error Budgets, you will get an effective risk-management system. Your platform will be more robust and you will be able to change all the things you ought to change, safely, and can do so all the time.

Is CRE right for my organisation?

CRE can prevent you from stretching and burning out your DevOps team by providing 24/7 reliability engineering. If you have five engineers capable and willing to handle on-call duty, here's what will be required of your team:

Days per Year: 365
Number of Engineers: 5
People on schedule: 2 (primary/backup)
On Duty = (Days per Year x People on Schedule)/Number of Engineers

Everyone on your team is on duty 146 days a year (almost every 2nd week)!

Your DevOps Team alone can't reasonably operate reliably critical systems 24/7 and deliver features of high quality, which would set you apart from your competitors.

Have a project that you think we could help with?

Book a meeting here.

Or just drop us as line:

info@container-solutions.com
container-solutions.com

SRE: The Cloud Native Approach to Operations

Change is inevitable. It requires that your organisation's codebase is sustainable and you are able to change all the things you ought to change, safely, and can do so for the lifespan of your product. That's where SRE can help.

Learn more about SRE—the roots of our CRE service—by downloading our free e-book here.

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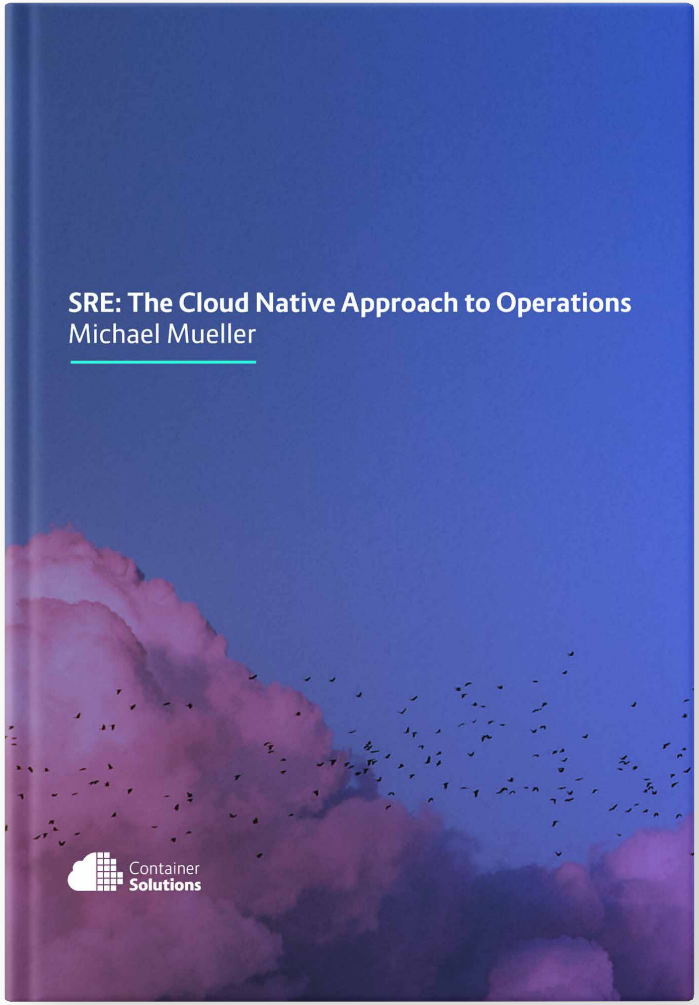

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