



## Winner

# Embracing tools to improve remote productivity

Recognizes outstanding success by implementing easy-to-use tools to improve engineer productivity

## About

[Lowe's Companies, Inc.](#) is a FORTUNE® 50 home improvement company serving approximately 19 million customer transactions a week in the United States and Canada. With fiscal year 2021 sales of over \$96 billion, Lowe's and its related businesses operate or service nearly 2,200 home improvement and hardware stores and employ over 300,000 associates. Based in Mooresville, N.C., Lowe's supports the communities it serves through programs focused on creating safe, affordable housing and helping to develop the next generation of skilled trade experts.

## Challenges

Starting in 2018, Lowe's began its business transformation by focusing on retail fundamentals. Within this framework, technology modernization has been a key element. Some of the company's challenges were working with a traditional monolith infrastructure and overly complex, laborious IT processes. To underpin this transformation, Lowe's started moving from on-premises to cloud computing on Google Cloud in early 2019.

During the global pandemic that hit in March 2020, consumers stuck at home turned their attention to home improvement projects en masse. Store and website traffic surged, and this presented an imminent need to enhance the overall experience of its online channels, improve reliability, and accelerate time to market.

This situation also added urgency for addressing manual steps in its CI/CD workflows, extended development cycles, and concerns about system resilience to change.

## Objectives

Lowe's broader strategy sought to improve customer experience online and offline, increase agility, and achieve greater operational efficiencies. Technology modernization was a key enabler to execute this strategy, and the team realized it needed to accelerate its cloud transition timeline.

The Lowe's team set out to:

- Increase automation
- Maximize software release velocity while ensuring site reliability
- Achieve closer alignment among product, site reliability engineering, and development teams

Lowe's understood that cultural change would be necessary too. The most complex aspect was aligning multiple cross-functional teams, including ones responsible for more than 30 domains and 200 services, IT service management, performance, and security engineering.

## Solution

The retailer leveraged Google's [site reliability engineering](#) (SRE) framework and Google Cloud to become more efficient and effective. As part of this transformation, Lowe's transitioned from its legacy architecture to an architecture that takes full advantage of Google's SRE framework and Cloud Platform.

The urgency to meet increased online business traffic during the pandemic demonstrated the need to advance more quickly.

This had four primary drivers:

- **Automation.** The goal was to eliminate repetitive manual work and free engineers to focus on activities that drive business results and shape customer experiences.
- **Alignment.** This was a key strategy to increase release velocity while maintaining reliability. By embedding site reliability engineers (SREs) in domain and product teams, the company ensures that from the start of product development stakeholders are in alignment with initiatives to improve reliability, performance, scalability, and velocity. To achieve seamless collaboration, SREs iteratively lay out the stability plan and surface it into the product teams' quarterly roadmap.
- **One-touch releases.** Removing manual steps and validations sped up release velocity. Once the product team decides to release the feature, SREs do the pre-release reliability validation and a PR merge triggers an automated continuous pipeline that deploys the changes securely. This hit the right balance between speed and stability.
- **Capacity planning.** To anticipate traffic surges, SREs give priority to capacity planning and constantly monitor performance for service stability and reliability.

## Results

Despite working remotely, a Lowe's team of **15 engineers implemented the solution in six months.** It currently supports more than 250 concurrent deployments, which is expected to grow to more than 350.

Greater alignment and teamwork has supported the continuation of a hybrid work model that includes some staff fully working in office, some who split their time, and others who work from home. These are based on operational needs and enable Lowe's to attract top talent in a competitive market.

Since its transformation, Lowe's has seen striking improvements in speed and efficiency. Release velocity has increased 300 percent, from one release every two weeks to more than 20 per day. From just over 30 releases per year, the team has handled more than 4,500 a year since moving to Google Cloud.

**Code delivery time has dropped from four hours to less than 30 minutes.** The one-touch release process means that eight engineers are no longer needed for pre-release checks. All that's needed is approval of the pull request.

The solution has also enabled Lowe's to **reduce its mean time to recover (MTTR) from an incident by 12 percent**, with no negative impact on site availability and reliability.

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## Working with Google

Since the start of its cloud transformation, Lowe's has met biweekly with their Google [technical account management](#) (TAM) team. These sessions are used to discuss open issues, blockers, and SREs best practices, as well as to exchange technical expertise on Google products.

To learn more about Lowe's successful project, [check out this video](#).

