

Cisco scales SDLC governance with Sonar's verification layer



Cisco is a global technology leader that is powered by thousands of engineers. As AI-assisted development has moved to the forefront, Cisco's leadership identified a critical shift: the need to verify an exponentially increasing volume of code. To maintain rigorous security and reliability standards, they required a system where every line of code—whether developer-written or AI-generated—is validated before it ever reaches a pull request.

By integrating SonarQube as a centralized verification layer, Cisco has transitioned to an AI-first engineering strategy. This approach ensures that code quality and security are managed as a system of checks and balances across the entire software development lifecycle.

The challenge: Maintaining standards within an AI-driven pipeline

With a massive codebase and thousands of developers, Cisco faced the persistent challenge of technical debt. While AI coding assistants promised increased velocity, they also introduced the risk of unverified code entering the environment.

Stephen Byrnes, Distinguished Engineer, realized that traditional code quality checks had reached a breaking point. Instead of relying on AI to write code that inevitably led to verification bottlenecks, Stephen wanted to accelerate the development cycle by producing high-quality code from the start.

Company

Cisco

Company size

Enterprise

Industry

Tech manufacturing and software

Key results

- Cleared +20,000 technical debt issues within 3 months
- Reported 3x productivity gains for certain teams
- 40% Quality Gate pass improvement

That's why Cisco moved beyond "passive" compliance and reimagined their SDLC to solve for three critical challenges:

- **Fragmented insights:** Engineering leaders needed a unified view of code quality and security to move away from tool-specific silos.
- **Workflow friction:** Developers needed actionable intelligence within their IDEs to resolve issues during the writing phase.

The review gap: The surge in code volume threatened to create a bottleneck of manual reviews, making traditional developer-only inspection impossible to sustain.

"Quality used to be table stakes—everyone knew they needed it, but they kept it at a minimum level. We've doubled down to turn quality into an engineering accelerator. By using AI to address the part of the 'iceberg' under the water, we're setting the best possible foundations for the next era of engineering." - Stephen Byrnes, Distinguished Engineer at Cisco

The solution: A system of checks and balances

Cisco established an AI-first engineering unit to standardize how teams use technology to improve productivity. Central to this strategy is the use of SonarQube to set technical benchmarks and provide the feedback loops necessary for both developers and autonomous agents.

Centralizing code intelligence for leadership

Cisco's engineering data team aggregates SonarQube metrics into centralized dashboards. This provides leadership with high-level visibility into the security and maintainability of the codebase, allowing them to make data-driven decisions about where to prioritize resources and remediation efforts.

Empowering developers with real-time feedback

To shift code security and quality left to the earliest stages of development, Cisco provides its engineers with SonarQube for IDE. This gives developers immediate, expert-driven feedback as they write code. By identifying risks early in the workflow, Cisco prevents the accumulation of debt before it reaches the repository.

Orchestrating autonomous agent workflows

Cisco also developed Coda, an internal AI agent that functions as a virtual teammate. Coda is integrated with SonarQube and Jira to handle the time-consuming tasks of codebase maintenance. When assigned a technical debt task, Coda:

1. Retrieves specific issue context directly from SonarQube.
2. Formulates a remediation plan based on established standards.
3. Executes the fix and generates a pull request for final verification.

This allows Cisco to address the hidden portions of their technical debt without taxing human developer capacity.

The result: Measurable impact on code health and velocity

Using SonarQube as an automated verification layer has allowed Cisco to increase development speed while strengthening its security posture.

- **Achieving technical debt zero:** In one large-scale program, Cisco used automated verification to fix 27,000 code issues in just three months, effectively bringing that project's debt to zero.
- **Sustainable productivity gains:** Some teams have reported productivity gains of up to 3x. Crucially, Cisco's metrics show that while velocity has increased, defect density has actually decreased.
- **Removing the review logjam:** By automating the initial verification and remediation stages, Cisco has reduced the pressure on its senior talent. This ensures that the high volume of AI-assisted code does not result in a second bottleneck during manual inspections.

Conclusion: Verification is the foundation of scalable AI engineering

For Cisco, the move toward an autonomous SDLC is rooted in a "trust and verify" philosophy. Leveraging SonarQube as the definitive verification layer, they have turned software quality and security into a driver of innovation. Cisco continues to prove that AI-first engineering is most effective when it is supported by a robust, automated system of governance.

"We're not just keeping quality high; we're actually able to go faster because we've cleared a lot of that tech debt that's been there for years. AI makes it easier to deliver velocity, but only if you provide the right context from tools like SonarQube." — Stephen Byrnes, Distinguished Engineer of AI-first engineering at Cisco

About Sonar

Sonar, the industry standard for code verification and automated code review, helps reduce outages, improve security, and lower risks associated with AI and agentic coding. As an independent verification platform, Sonar enables organizations to securely develop at the speed of AI. Sonar is the foundation for high-performance software engineering, analyzing over 750 billion lines of code daily to ensure applications are secure, reliable, and maintainable. Rooted in the open source community, Sonar is trusted by 7M+ developers globally, including teams at Nvidia, ServiceNow, Booking.com, Goldman Sachs, AstraZeneca, and Ford Motor Company.