AWS re:Invent

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BGB201

Level up your bug-fixing skills with AWS BugBust

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Agenda

Impacts of increased software complexity

Preventing software bugs in production

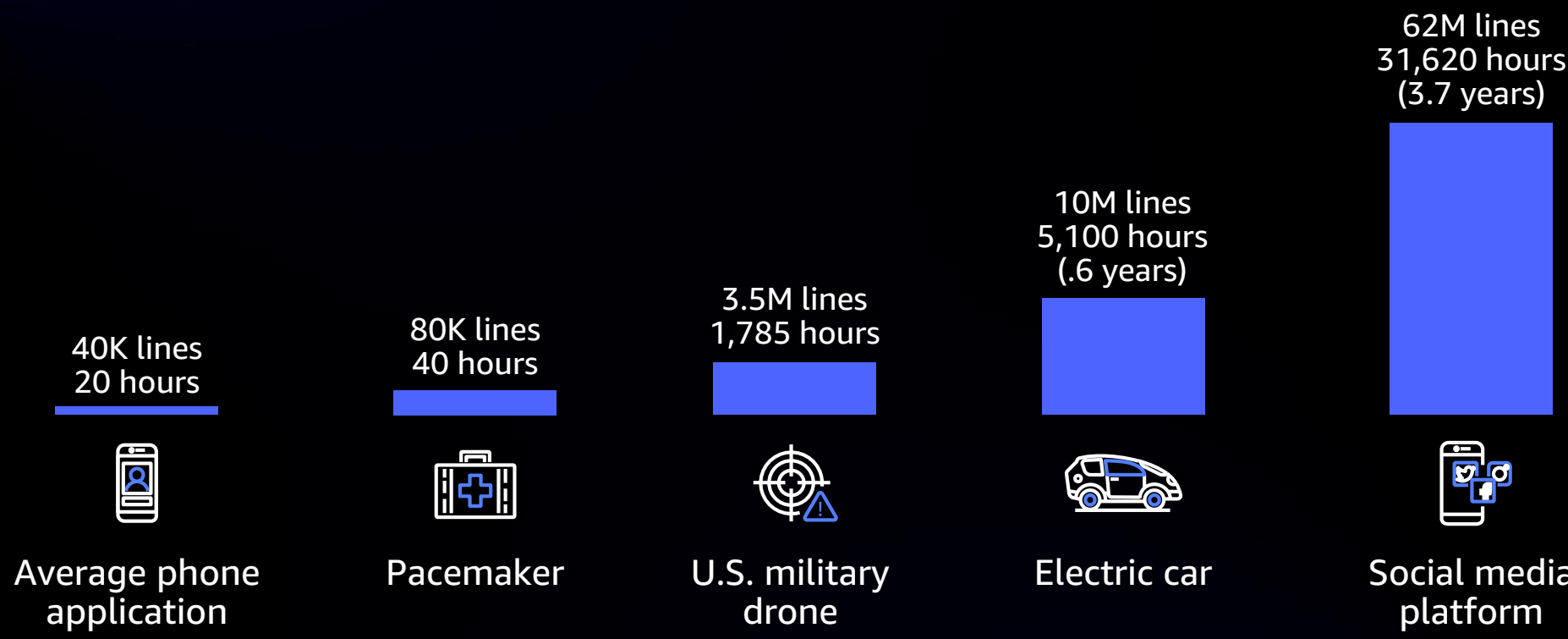
Customer use case

AWS BugBust re:Invent Challenge

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Increasing complexity of software code

SOFTWARE CODE IS GROWING EXPONENTIALLY AND BECOMING INCREASINGLY COMPLEX



Lines of code by device/application & average time to read manually

A million lines of code, if printed, would be about 18,000 pages of text

Source: informationisbeautiful.net; swiftread.com

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Increased complexity drives more room for error

On average, software developers make **100–150 errors** for every thousand lines of code

These software quality errors cost organizations **$2.8T** in the US in 2018

18.22% of this cost was attributed to technical debt

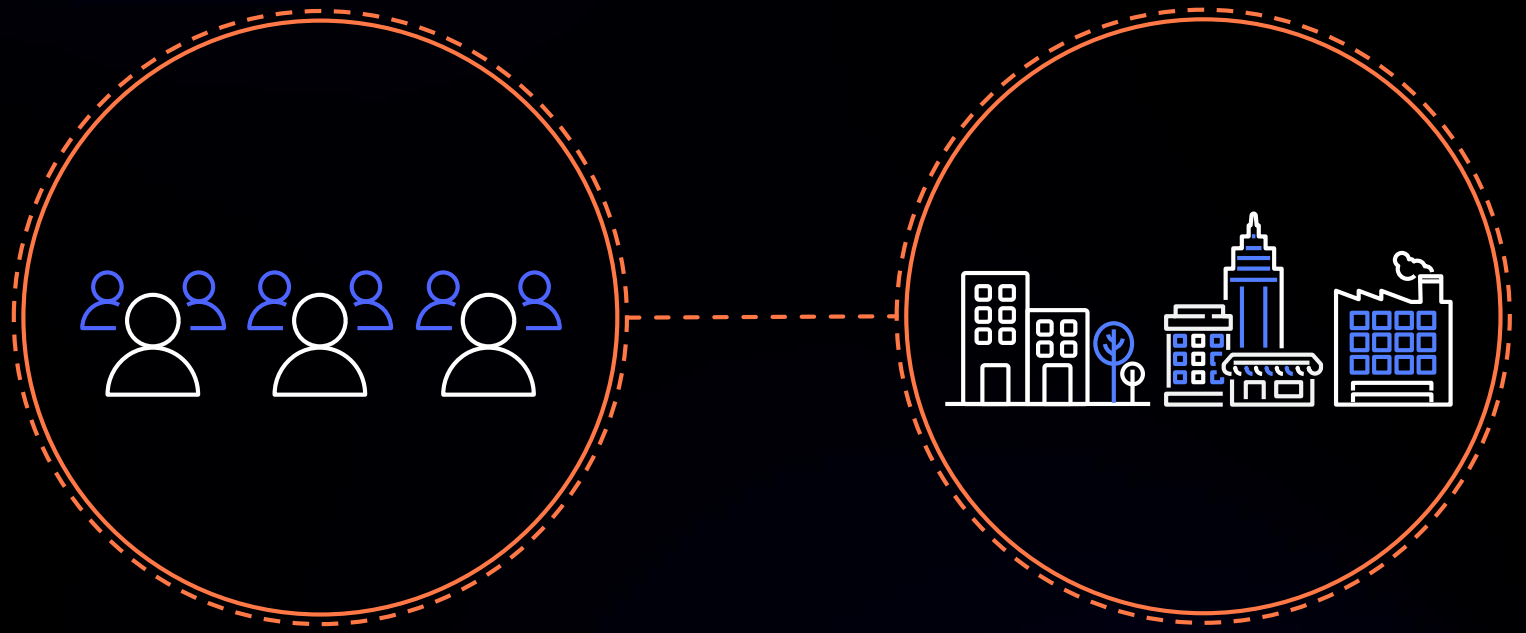


Source: The Cost of Poor Software Quality in the US: A 2020 Report, CONSORTIUM FOR INFORMATION & SOFTWARE QUALITY (CISQ)

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Code bugs in production have negative impacts



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Code bugs in production have negative impacts

SOME CODE BUGS CAN BE DANGEROUS FOR YOUR CUSTOMERS



A major automobile company had a bug in their software code that caused the car to **accelerate to 100+ MPH** and the antilock brakes to **lag**

A bug in a major healthcare system put **10k heart patients** at risk for receiving the **incorrect medication**

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Code bugs in production have negative impacts

BUGS CAN ALSO HAVE NEGATIVE IMPACTS TO YOUR COMPANY'S FINANCIALS AND REPUTATION

A security vulnerability in a multinational credit reporting agency resulted in **exposing** the personal data of **146M+ consumers** and **$45M+ in settlement payments**

A major trading firm experienced a software bug which caused them to unintentionally **send out 4M stock orders** in under 1 hour, costing the company **$440M in losses**



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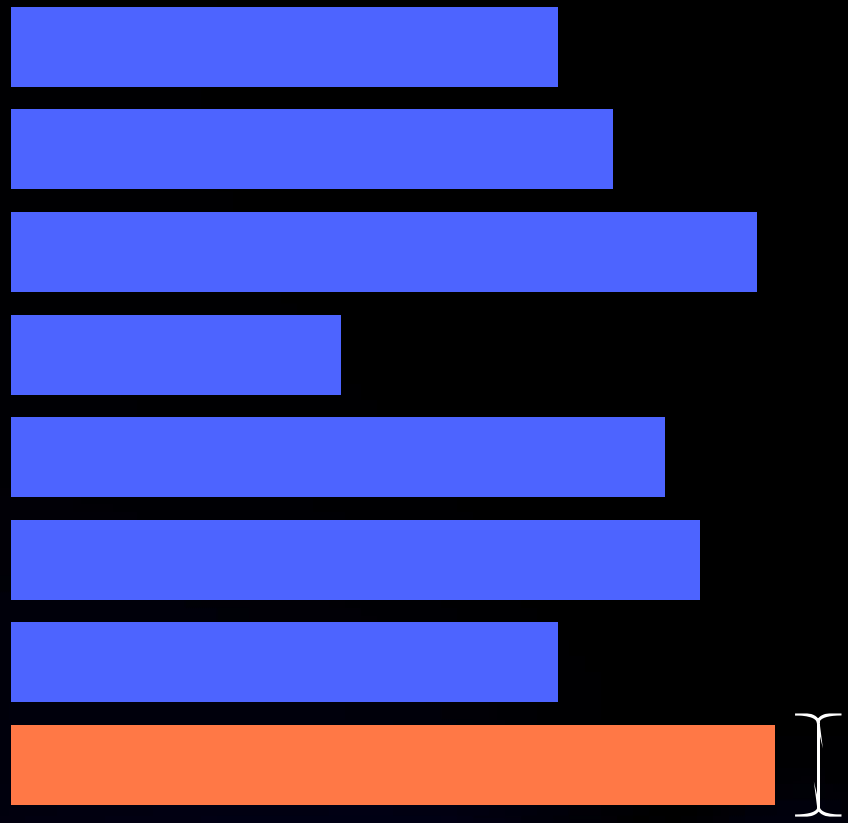
How to prevent software bugs in production

620 million developer hours a year are spent on debugging software failures

To prevent bugs from reaching production, software development teams have code review processes in place

Organizations approach the code review process in different ways:

- **Manual reviews vs. automated reviews**
- **Ongoing vs. scheduled**



Source: State of App Testing 2021: Business Software, Testlio

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Bug bashes to eliminate bugs

A HACKATHON-STYLE EVENT WHERE MEMBERS ACROSS TEAMS COME TOGETHER TO FIND AND FIX BUGS



Steps for effective bug bash

1. Schedule the event with a start and end time
2. Define process for documenting bugs
3. Set up a communication channel for the team to use during the bug bash
4. Provide incentives for your team
5. Provide recognition for your team

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Hold more effective bug bashes with AWS BugBust

AWS BUGBUST TAKES CARE OF BUG IDENTIFICATION, DOCUMENTATION, AND INCENTIVES AND RECOGNITION FOR YOUR TEAM FOR YOU

Populate bugs and recommendations in platform automatically

Looking for a way to recognize your most effective developers? They can compete to win the most points and be recognized on your private leaderboard

Incentive for developers to be **efficient** while having **fun:** the **more bugs** you fix, the **more points** you receive with prizes



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Customer use case

- Becoming digital to the core
- Embed themselves in the customer journey (becoming invisible)
- Create a startup culture

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AWS BugBust event setup

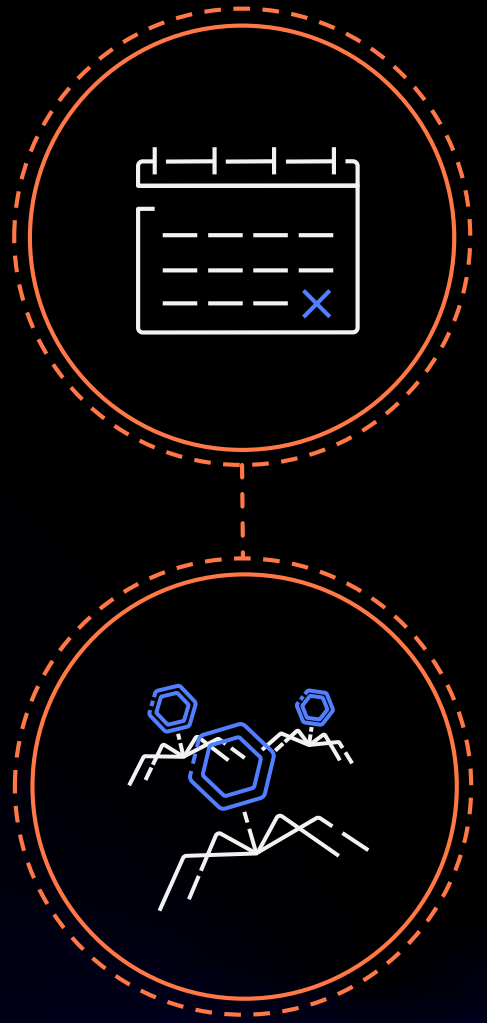
Event initiated and sponsored by Head of Technology

Motivated to have highest quality code with top security

Want to create a fun environment for developers (social media posts to attract new talent)

The engineers spent a few weeks over the course of a month to plan and set up their event – identifying and integrating repos, conducting rehearsals, etc.

The event took place over two weeks in September



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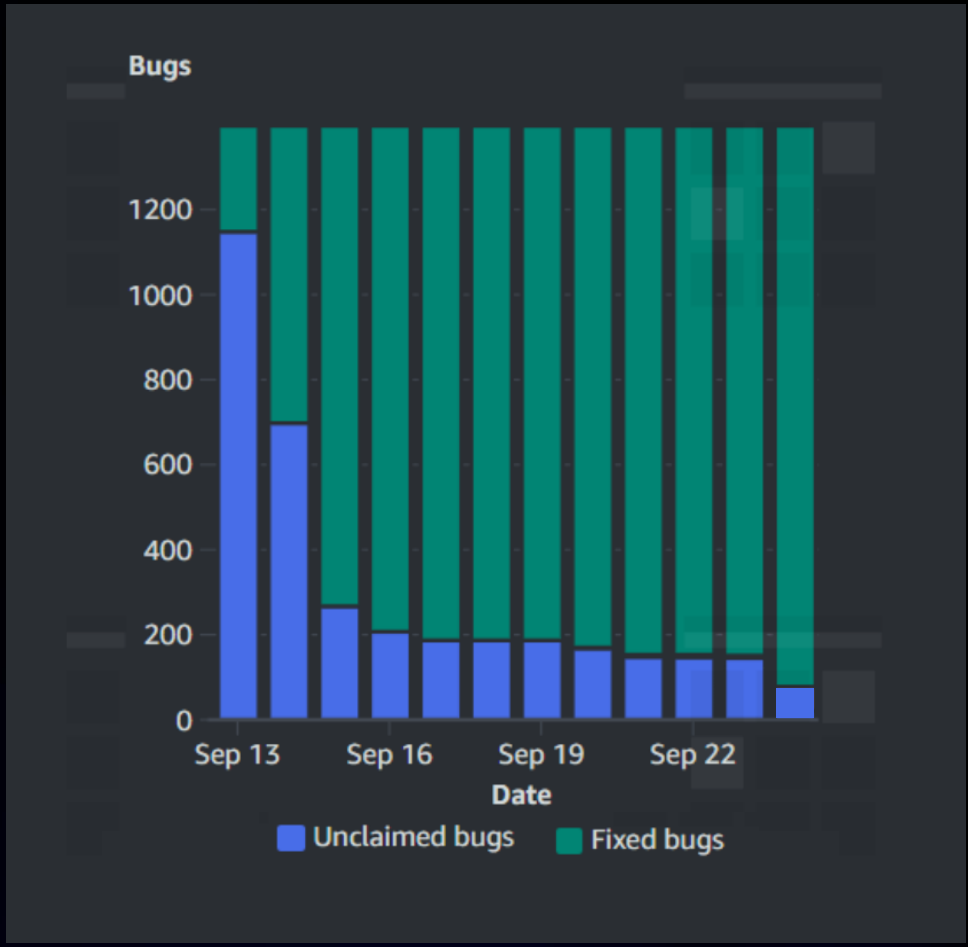
Event details

1 billion lines of code scanned

60 years to read manually

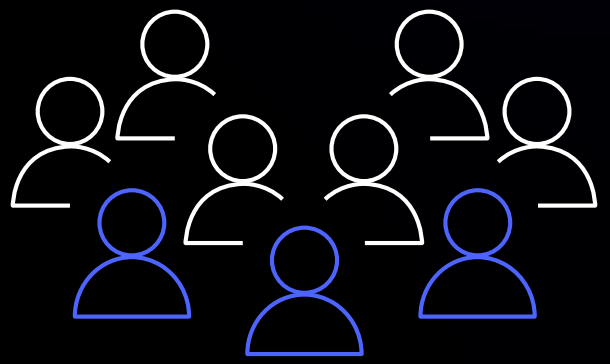
80% fixed in first 3 days

As a result, production codes will be remediated and **$1M** in technical debt was reduced



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Team engagement



Over **40** developers participated

Brought together teams from multiple countries

Hosted closing ceremony to recognize & reward developers

5 developers who participated won trips to AWS re:Invent for their top scores on the global leaderboard

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BugBust incentivizes your developers to fix the most concerning of bugs

Customers are concerned about a **variety** of bug issues at varying degrees of severity

- Code quality
- Code clone
- Security
- Concurrency
- AWS CloudFormation
- Resource leaks
- Input validations
- Sensitive information leaks
- Bug fixes
- Regular expressions
- AWS, Java, and Python best practices

AWS BugBust incentivizes your developers to fix the most concerning bugs by providing maximum points for these fixes

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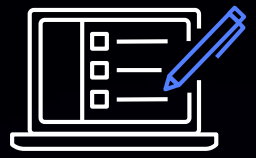
Join the first annual AWS BugBust re:Invent Challenge

PYTHON AND JAVA DEVELOPERS OF ALL SKILL LEVELS CAN PARTICIPATE

How it works



Create your AWS BugBust profile



Register for the AWS BugBust re:Invent Challenge on https://bugbust.aws/



Claim and fix bugs to score points and climb the re:Invent Challenge leaderboard

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Join the mission to exterminate 1 million bugs and win milestone rewards and prizes

Ultimate AWS BugBuster 2021

There will be one player who will win the ultimate AWS BugBuster 2021 to win $1,500 worth gift card.

$1,500 worth gift card

Won the ultimate AWS BugBuster 2021 title.



Achievements for everyone

When developers fix bugs and earn points, they can get achivements badges and get prizes. Check out the achievements and the prize below.



AWS BugBust Echo Dot

Earn 500 points in the AWS BugBust re:Invent challenge and win an AWS BugBust Echo Dot



AWS BugBust hoodie

Earn 300 points in the AWS BugBust re:Invent challenge and win an AWS BugBust hoodie



AWS BugBust bugJar

Earn 150 points in the AWS BugBust re:Invent challenge and win an AWS BugBust bugJar



AWS BugBust sanitizer

Earn 50 points in the AWS BugBust re:Invent challenge and win an AWS BugBust sanitizer



AWS BugBust fly swatter

Earn 1 points in the AWS BugBust re:Invent challenge and win an AWS BugBust fly swatter

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Thank you!

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