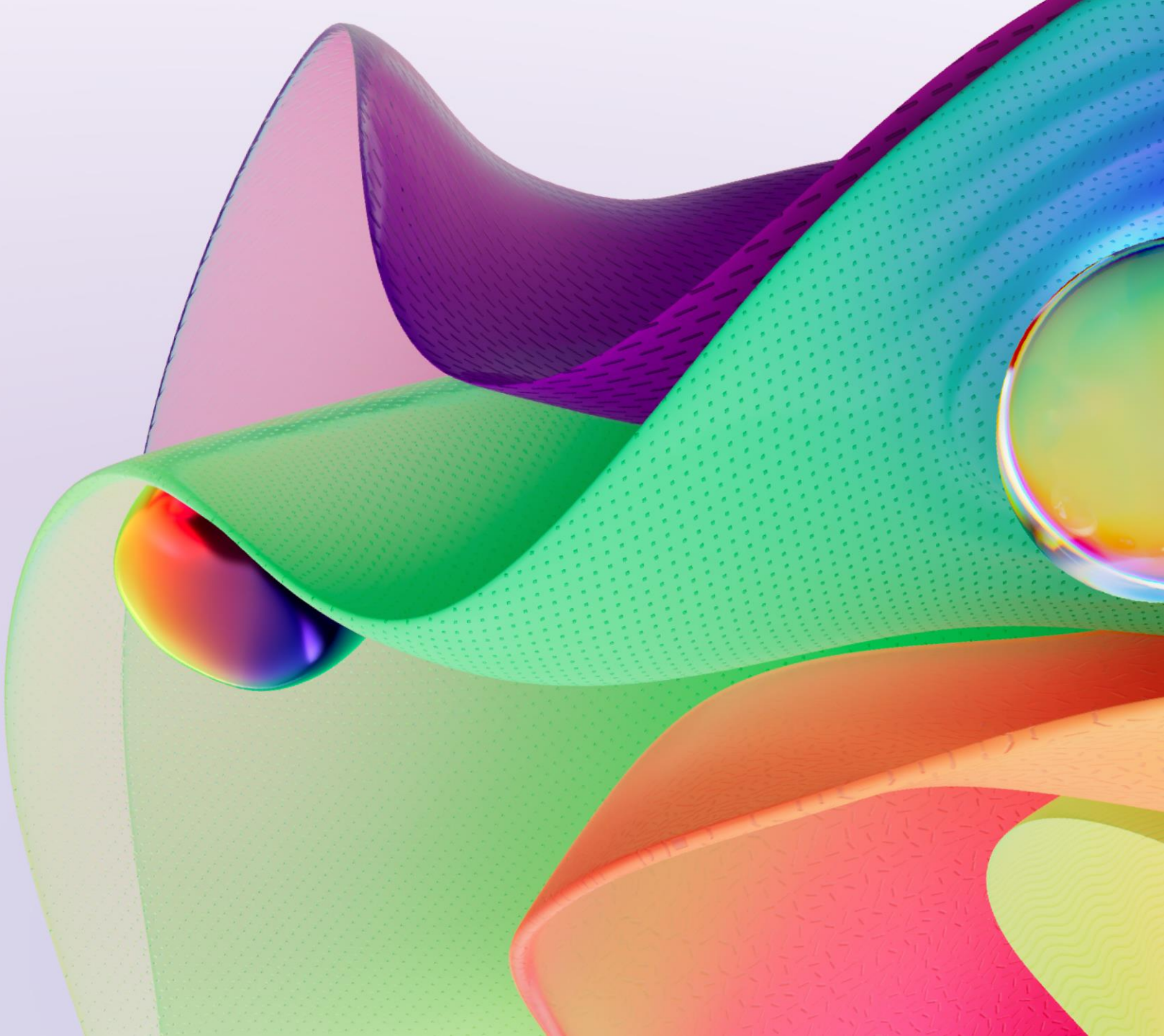
Microsoft

Microsoft AI Tour

In partnership with NVIDIA.



Microsoft

Future of Security with AI

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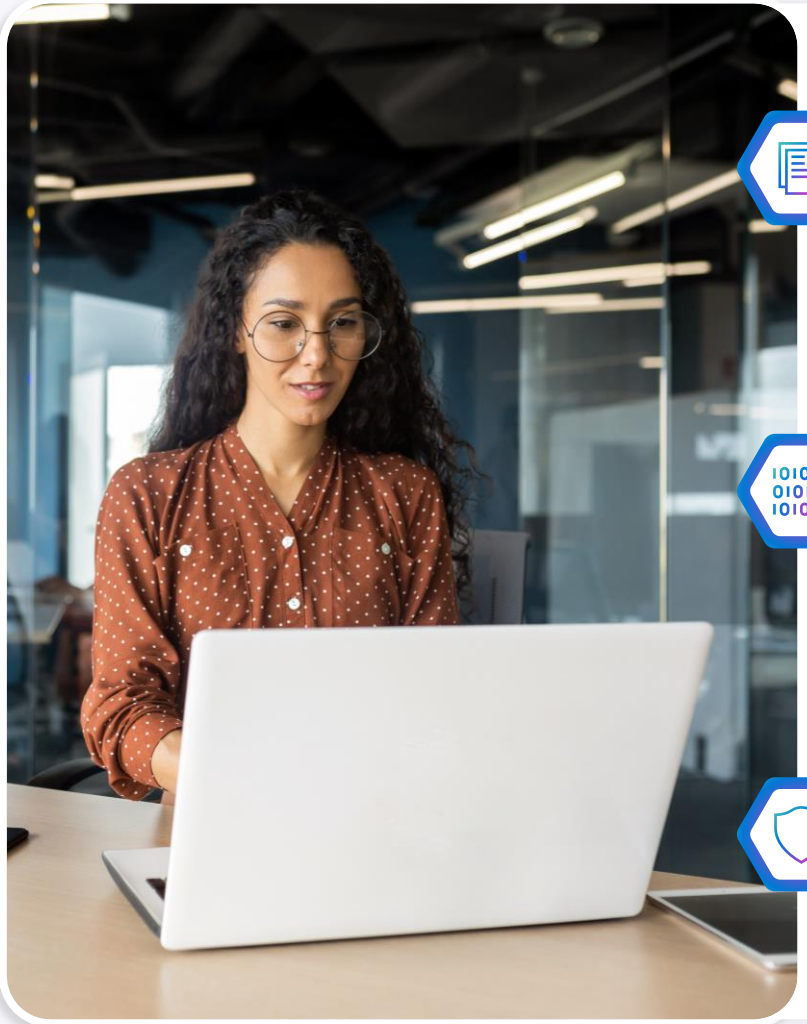
Microsoft

X: @joylynn_kirui

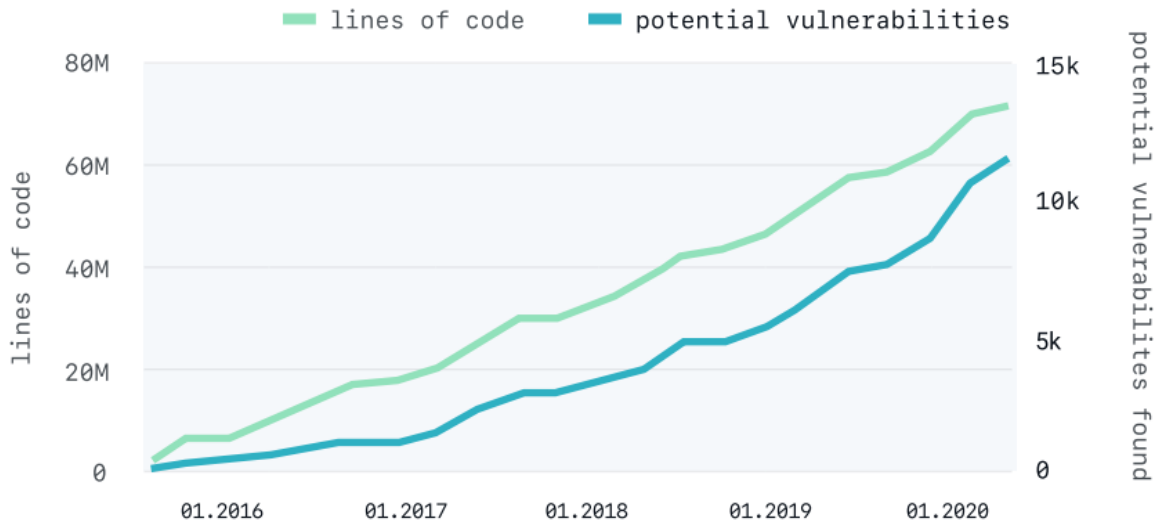
Agenda



- Introduction
- Using GitHub Advanced Security to develop code securely
- Using Security Copilot to democratize security for developers

The state of AppSec

Potential vulnerabilities found in source code scale with lines of code written



Despite billions of dollars of investment...

Of applications still contain a security issue.

Code written in 2020 is just as likely to introduce a security issue as code written in 2016.

Flaws in applications are consistently the #1 attack vector for breaches

The state of AppSec

Is falling further behind the current state of Development

1:100 Security team members to developers

Lack of knowledge voted the main AppSec challenge

Remediation trends are stagnant

Source: Verizon Data Breach Investigations reports 2016, 2017, 2018, 2019 and 2020.

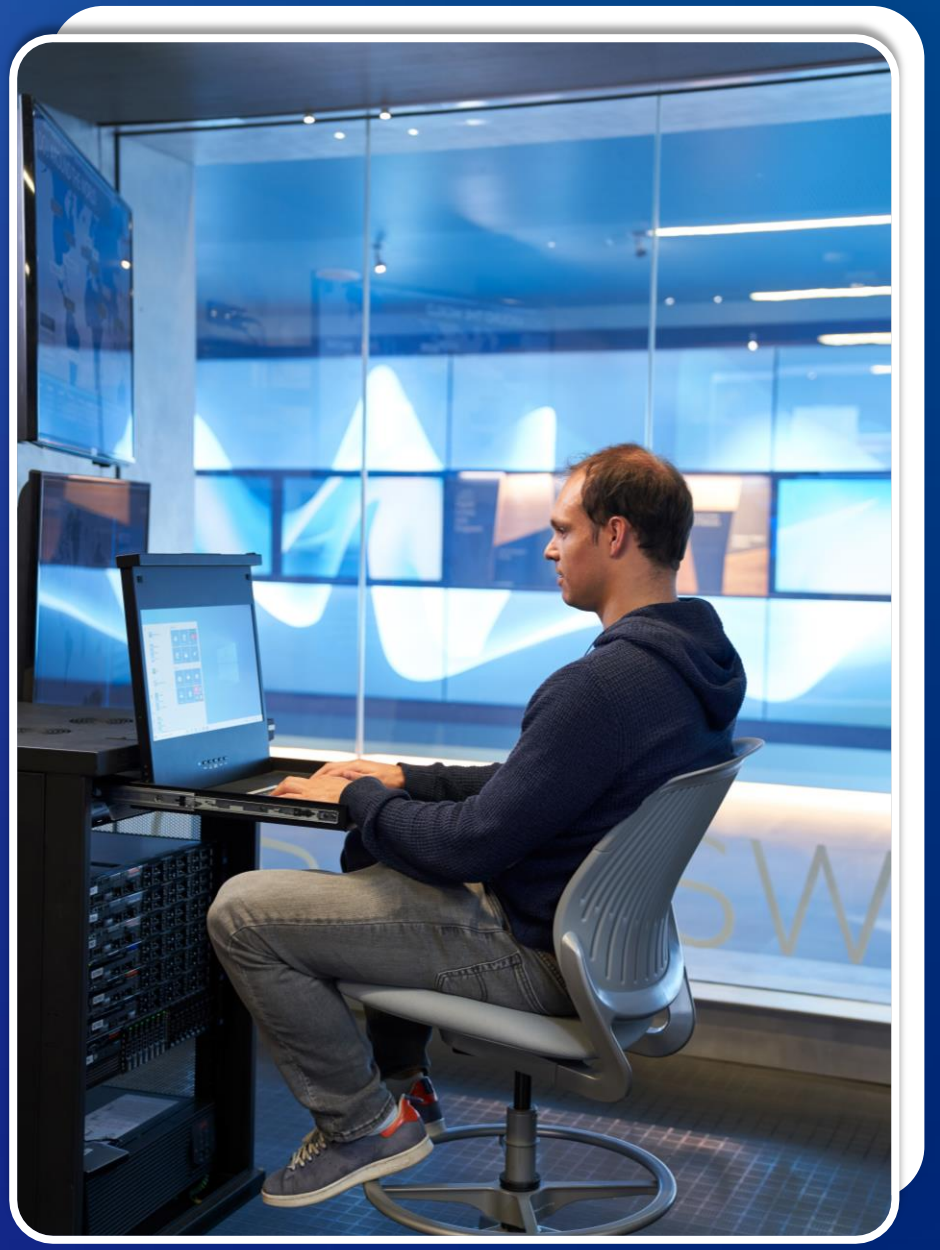
The odds are against today's security analysts

4,000 Password attacks per second

72 mins Median time for an attacker to access your private data if you fall victim to a phishing email

3.5M Global shortage of skilled cybersecurity professionals

Using GitHub Advanced Security to develop code securely



Current capabilities (core attributes)

Supply chain

Dependency graph
View your dependencies

Advisory database
Canonical database of dependency vulnerabilities

Security alerts and updates
Notifications for vulnerabilities in your dependencies, and pull requests to fix them

Dependency review
Identify new dependencies and vulnerabilities in a PR

Code

Secret scanning
Find API tokens or other secrets exposed anywhere in your git history

Code scanning
Static analysis of every git push, integrated into the developer workflow and powered by CodeQL

Development lifecycle

Branch protection
Enforce requirement for pushing to a branch or merging PRs

Commit signing
Enforce requirement that all commits are signed

Supply Chain

Dependabot

Automatically update vulnerable and out-of-date dependencies

Automated pull requests for security & version updates

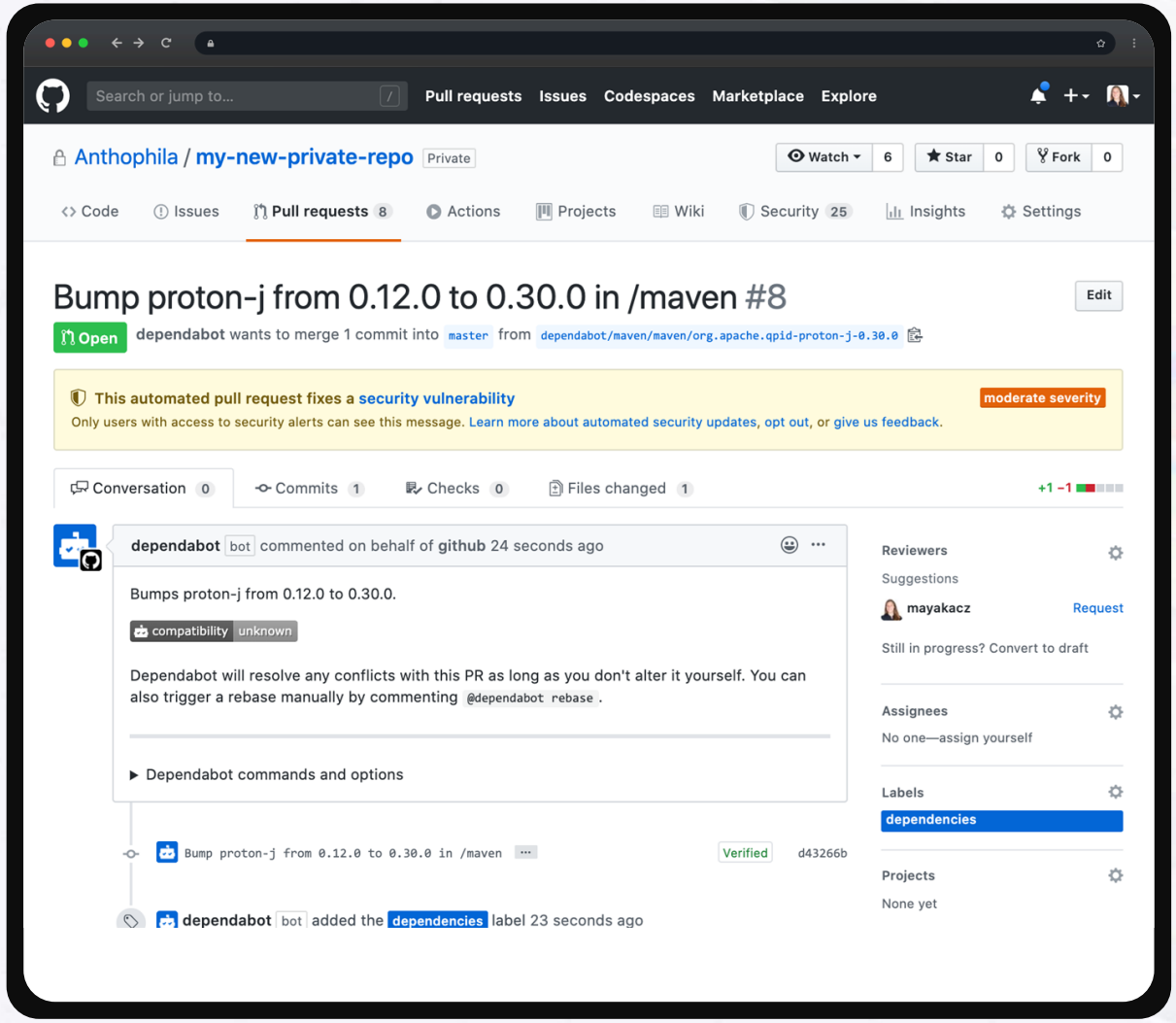
Keep your projects secure and up to date by monitoring them for vulnerable and out-of-date components. If a suggested update is found, we'll automatically open a pull request with suggested fixes.

Integrated with developer workflow

Dependabot is integrated directly into the developer workflow for a frictionless experience and faster fixes.

Rich vulnerability data

GitHub tracks vulnerabilities in packages from supported package managers using data from security researchers, maintainers, and the National Vulnerability Database—all discoverable in the GitHub Advisory Database.



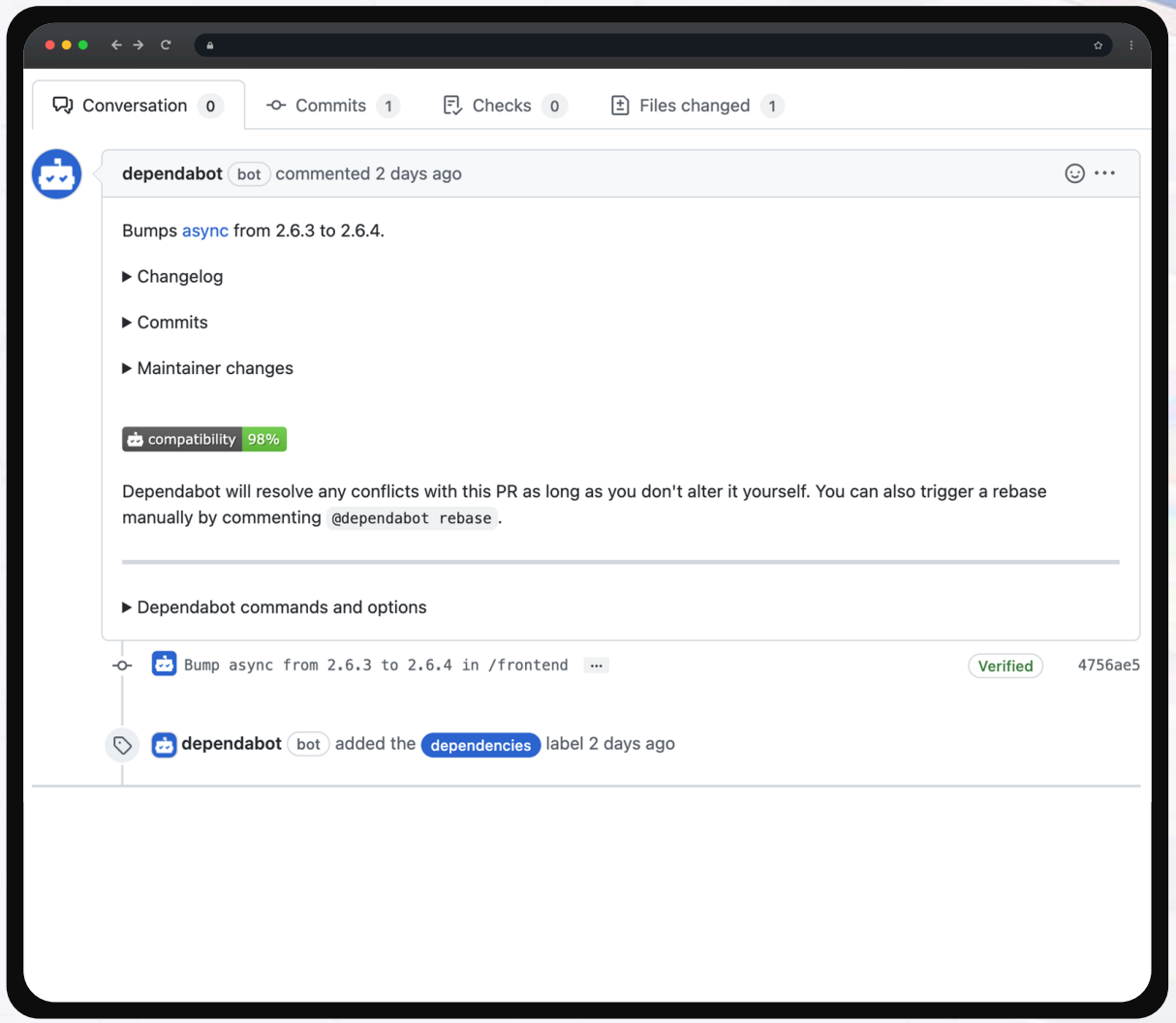
Dependabot

Automatically raise alerts when vulnerable dependencies are detected.

Automatically open pull requests to fix dependency vulnerabilities.

Notify the appropriate people about the vulnerability.

Rate the compatibility of a vulnerability patch.



Secret Scanning

Secret scanning

Find and manage hard-coded secrets

Identifies secrets as early as possible

Finds secrets (including Azure secrets) the moment they are pushed to GitHub and immediately notifies developers when they are found.

Community of secret scanning partners

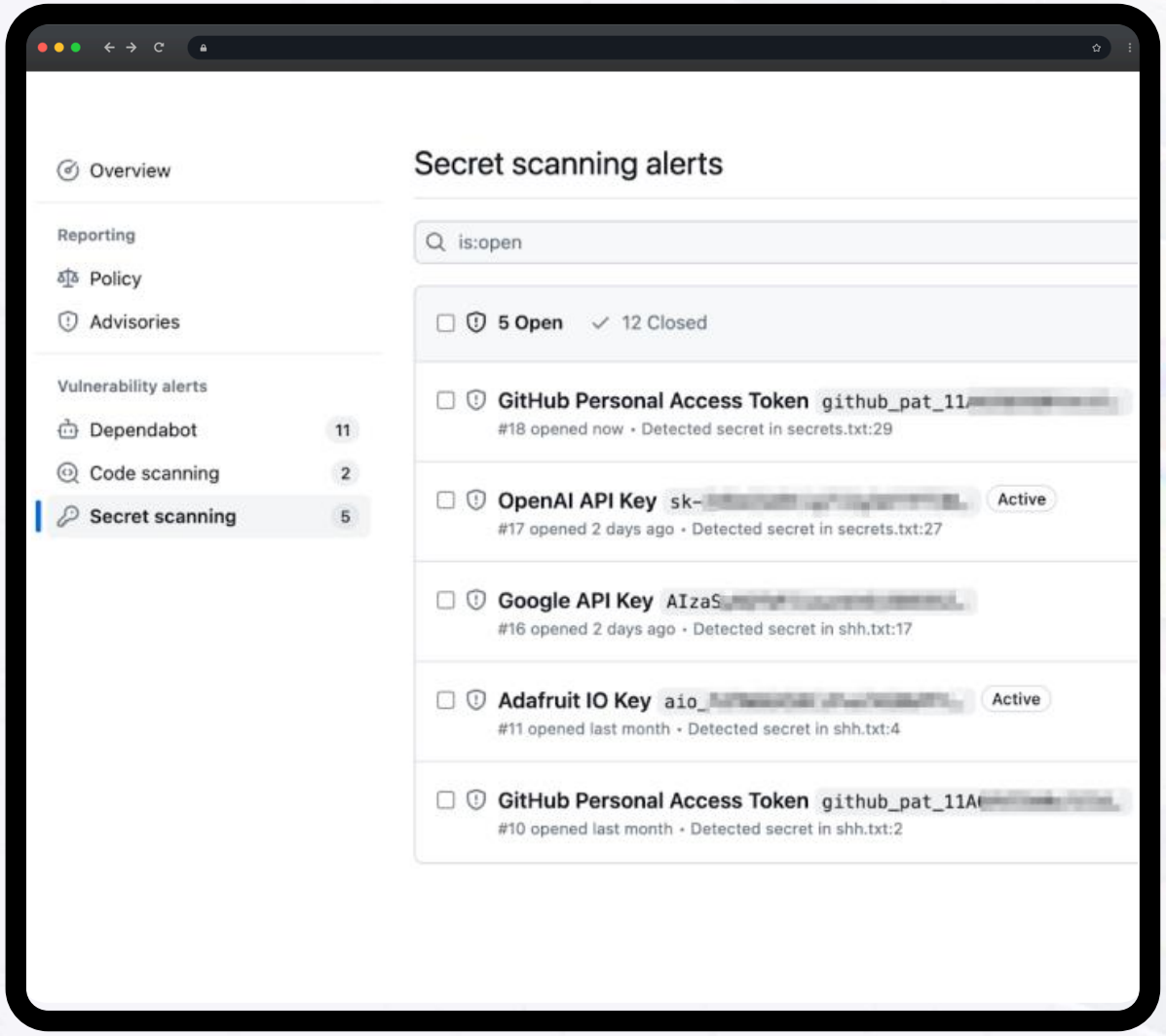
For every commit made to your repository and its full git history, we'll look for secret formats from secret scanning partners.

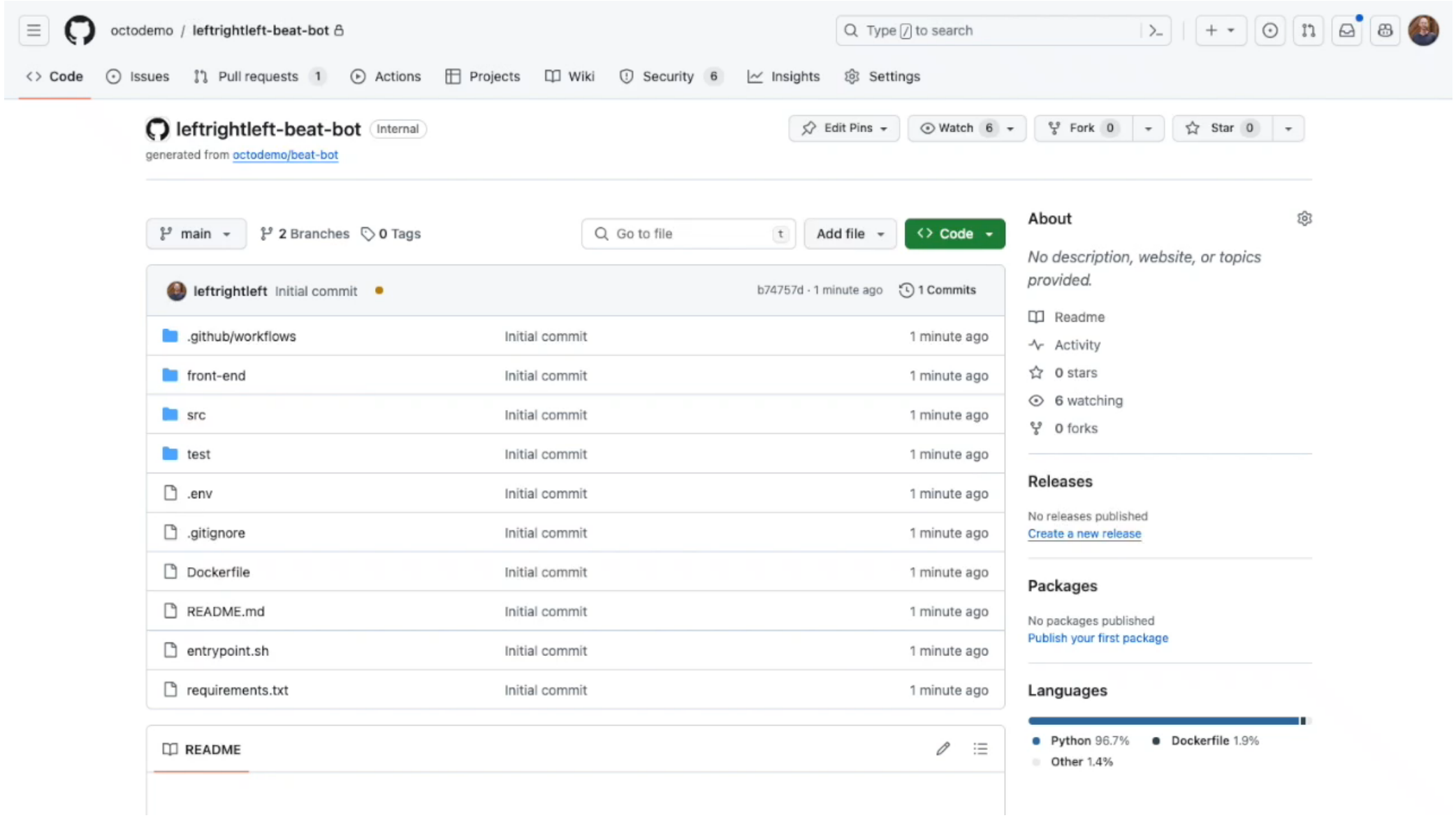
Define custom patterns

Scan for patterns that are internal to your organization across your repositories.

Supports both public and private repos

Secret scanning watches both public and private repos for potential secret vulnerabilities.




octodemo / leftrightleft-beat-bot
Type / to search
Code
Issues
Pull requests 1
Actions
Projects
Wiki
Security 6
Insights
Settings
leftrightleft-beat-bot
Internal
generated from octodemo/beat-bot
Edit Pins
Watch 6
Fork 0
Star 0
main
2 Branches
0 Tags
Go to file
t
Add file
Code
leftrightleft Initial commit
b74757d · 1 minute ago
1 Commits
.github/workflows Initial commit 1 minute ago
front-end Initial commit 1 minute ago
src Initial commit 1 minute ago
test Initial commit 1 minute ago
.env Initial commit 1 minute ago
.gitignore Initial commit 1 minute ago
Dockerfile Initial commit 1 minute ago
README.md Initial commit 1 minute ago
entrypoint.sh Initial commit 1 minute ago
requirements.txt Initial commit 1 minute ago
README
About
No description, website, or topics provided.
Readme
Activity
0 stars
6 watching
0 forks
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Languages
Python 96.7%
Dockerfile 1.9%
Other 1.4%

Code Scanning

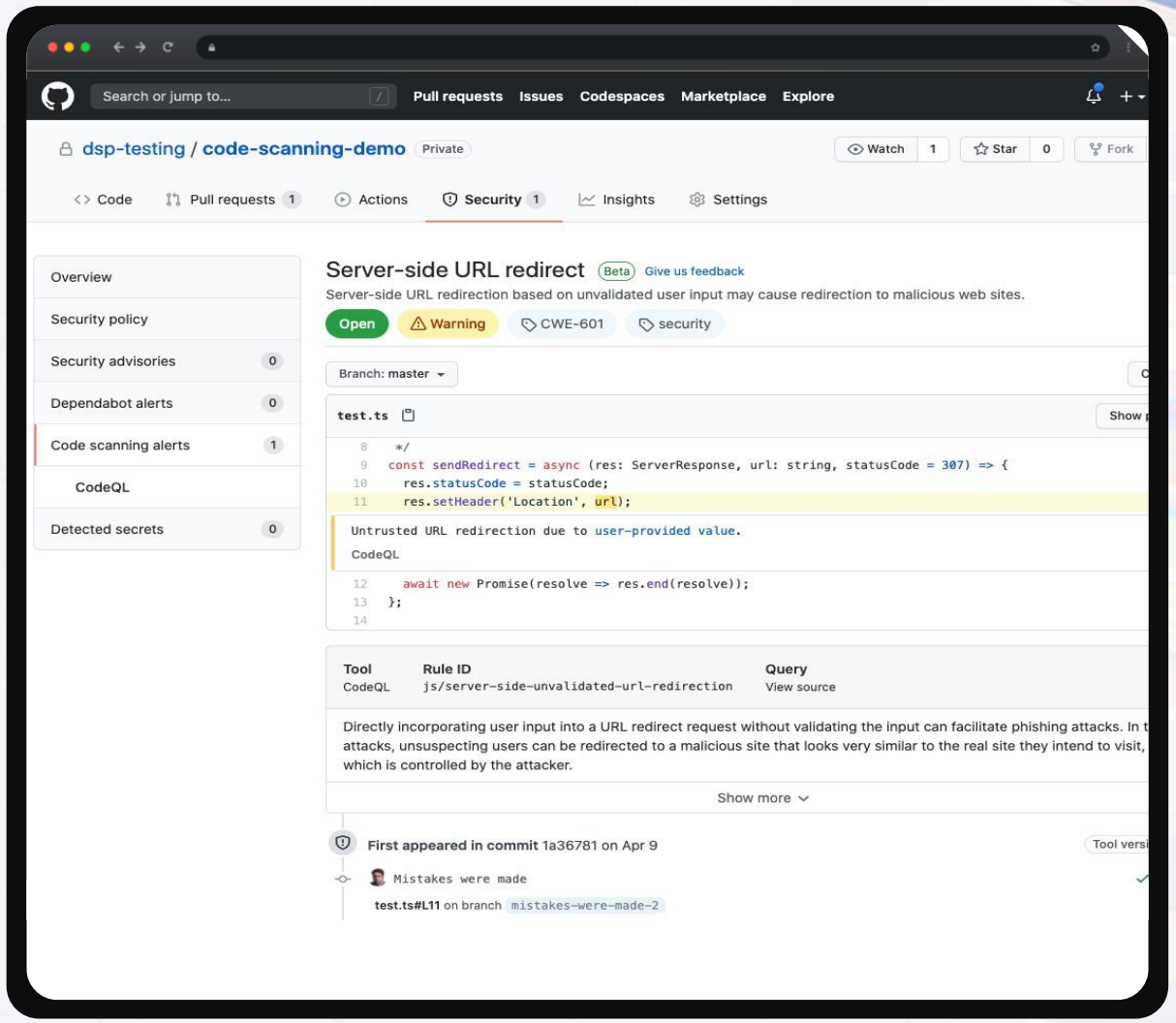
Code Scanning

Find vulnerabilities before they are merged into the code base with automated CodeQL scans.

Integrate results directly into the developer workflow.

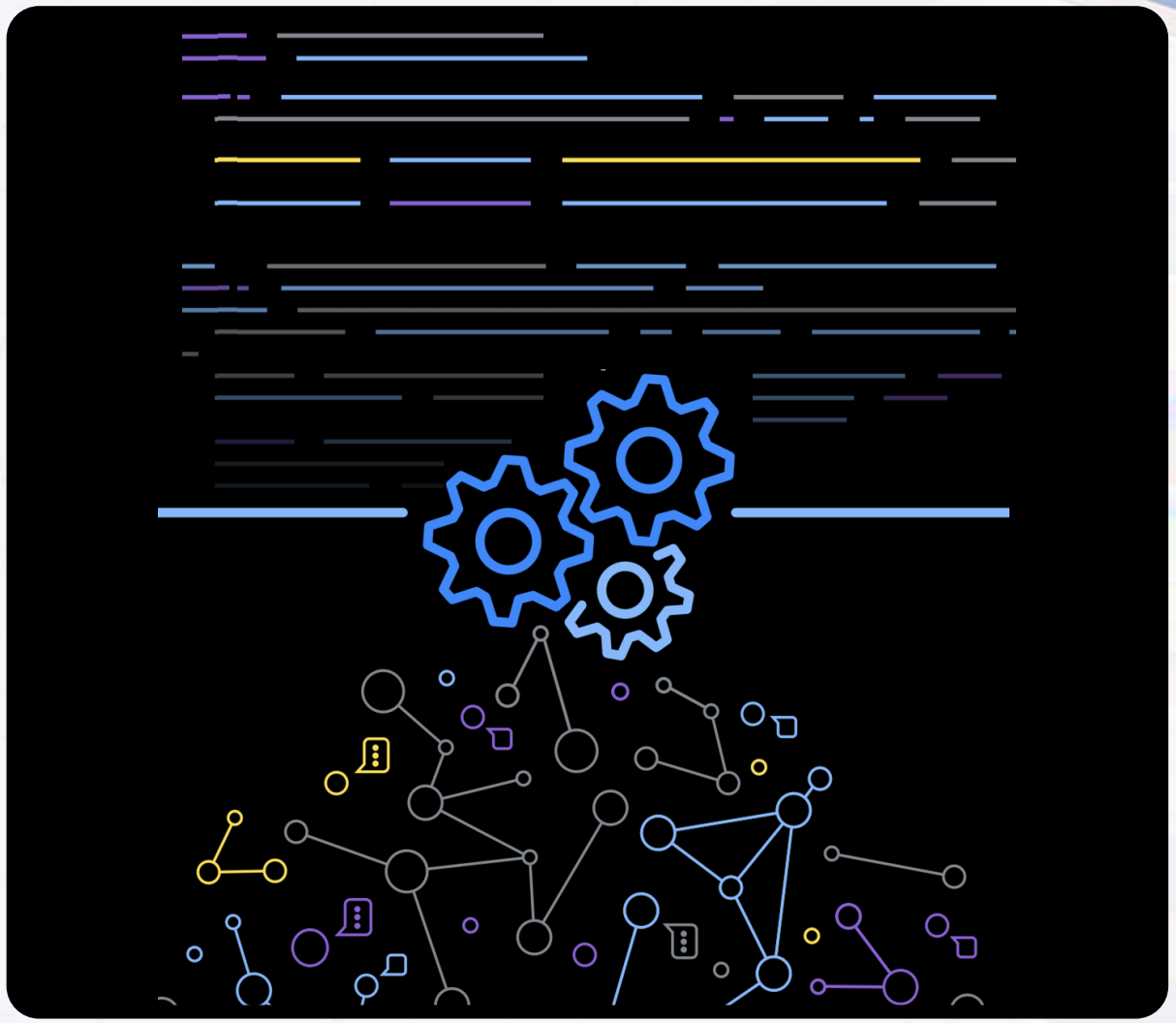
Run custom queries and the community-powered GitHub query set.

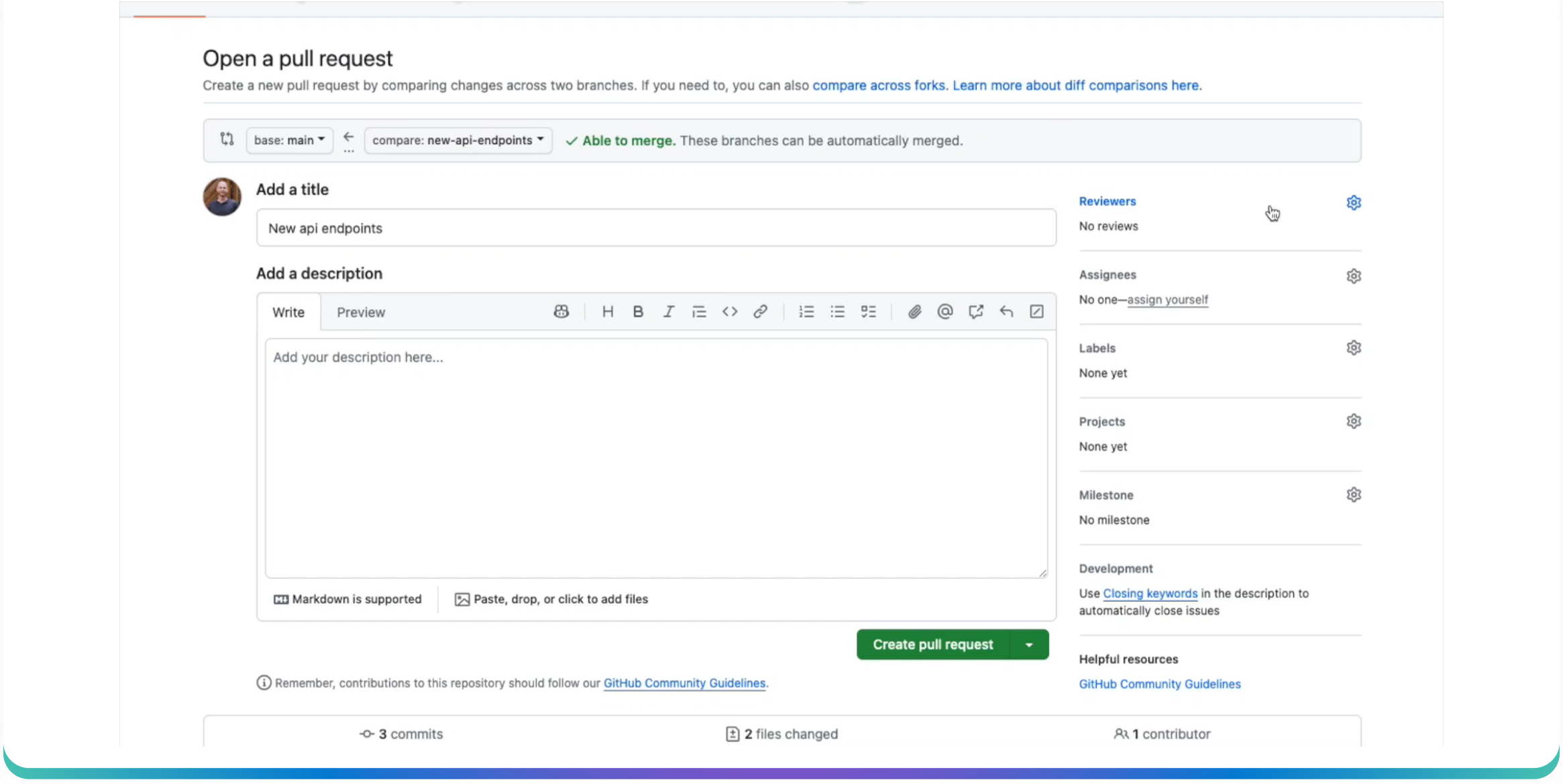
Extensible, with support for other SAST tools.



CodeQL: A revolutionary semantic code engine

- Advanced code analysis engine based on 13 years of research by a 30-person team from Oxford University.
- Allows you to query your code's logic to find vulnerabilities.
- Queries can be quickly customized to adapt to your specific threat topology.
- Community-driven query set powers every project with a world-class security team.

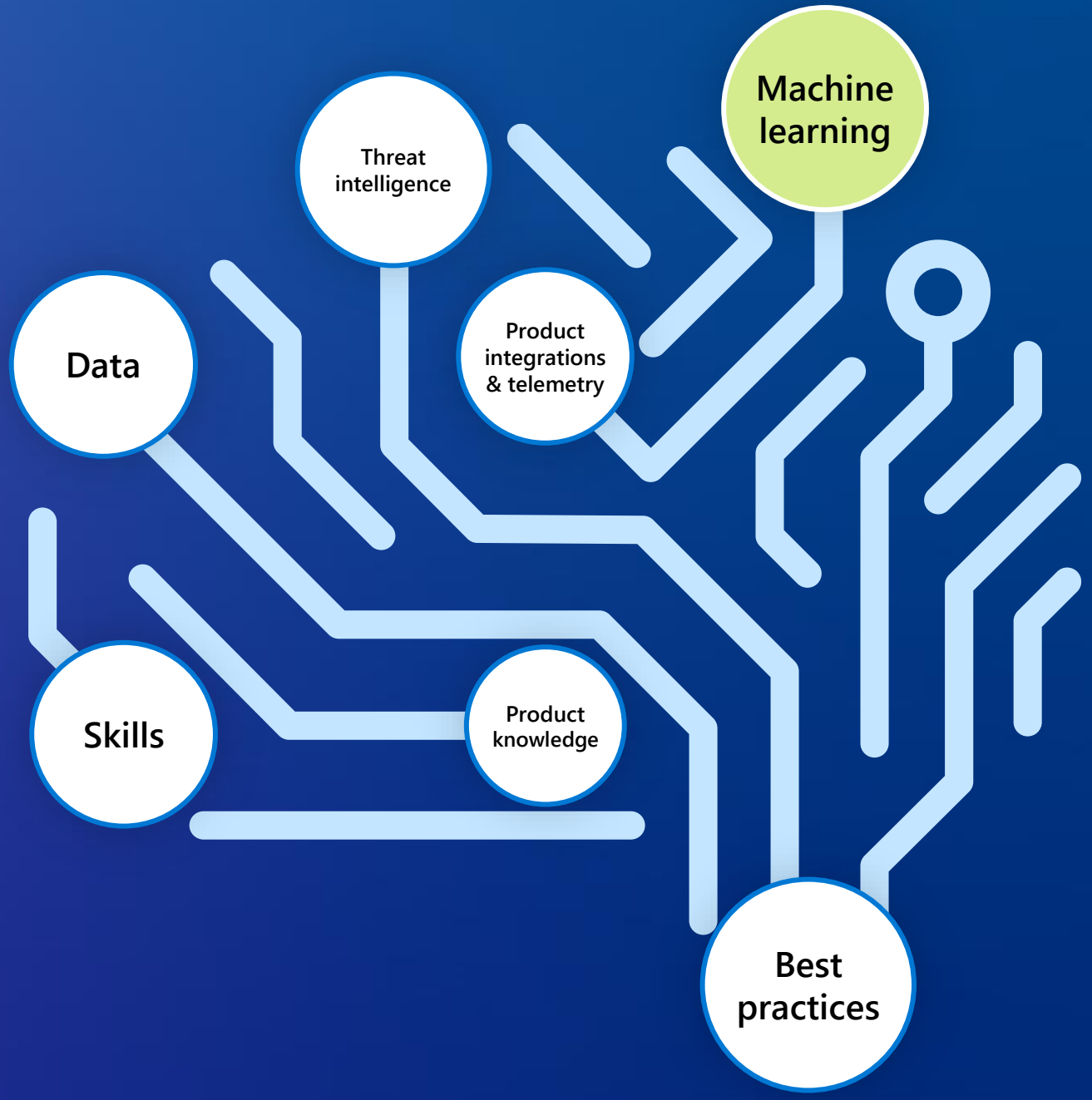



Open a pull request
Create a new pull request by comparing changes across two branches. If you need to, you can also compare across forks. Learn more about diff comparisons here.
base: main
compare: new-api-endpoints
Able to merge. These branches can be automatically merged.
Add a title
New api endpoints
Add a description
Write
Preview
Add your description here...
Markdown is supported
Paste, drop, or click to add files
Create pull request
Remember, contributions to this repository should follow our GitHub Community Guidelines.
Reviewers
No reviews
Assignees
No one—assign yourself
Labels
None yet
Projects
None yet
Milestone
No milestone
Development
Use Closing keywords in the description to automatically close issues
Helpful resources
GitHub Community Guidelines
3 commits
2 files changed
1 contributor

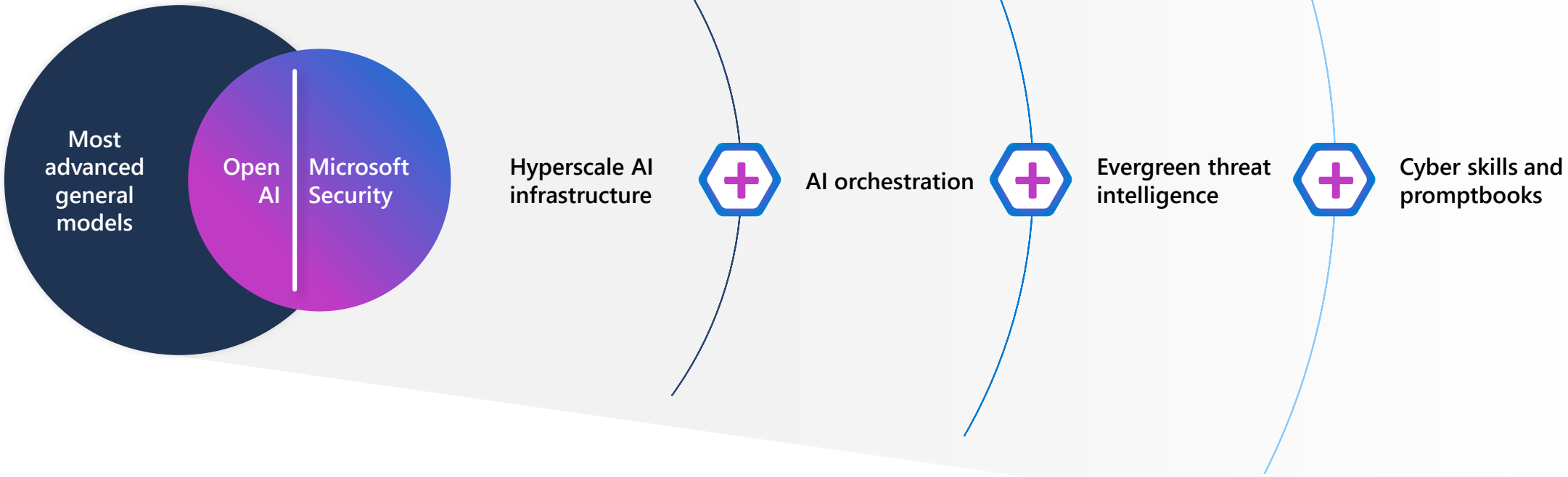
Using Security Copilot to democratize security for developers

Microsoft Security Copilot

The first generative AI security product that empowers security and IT teams to defend at machine speed and scale



The Microsoft Security Copilot advantage

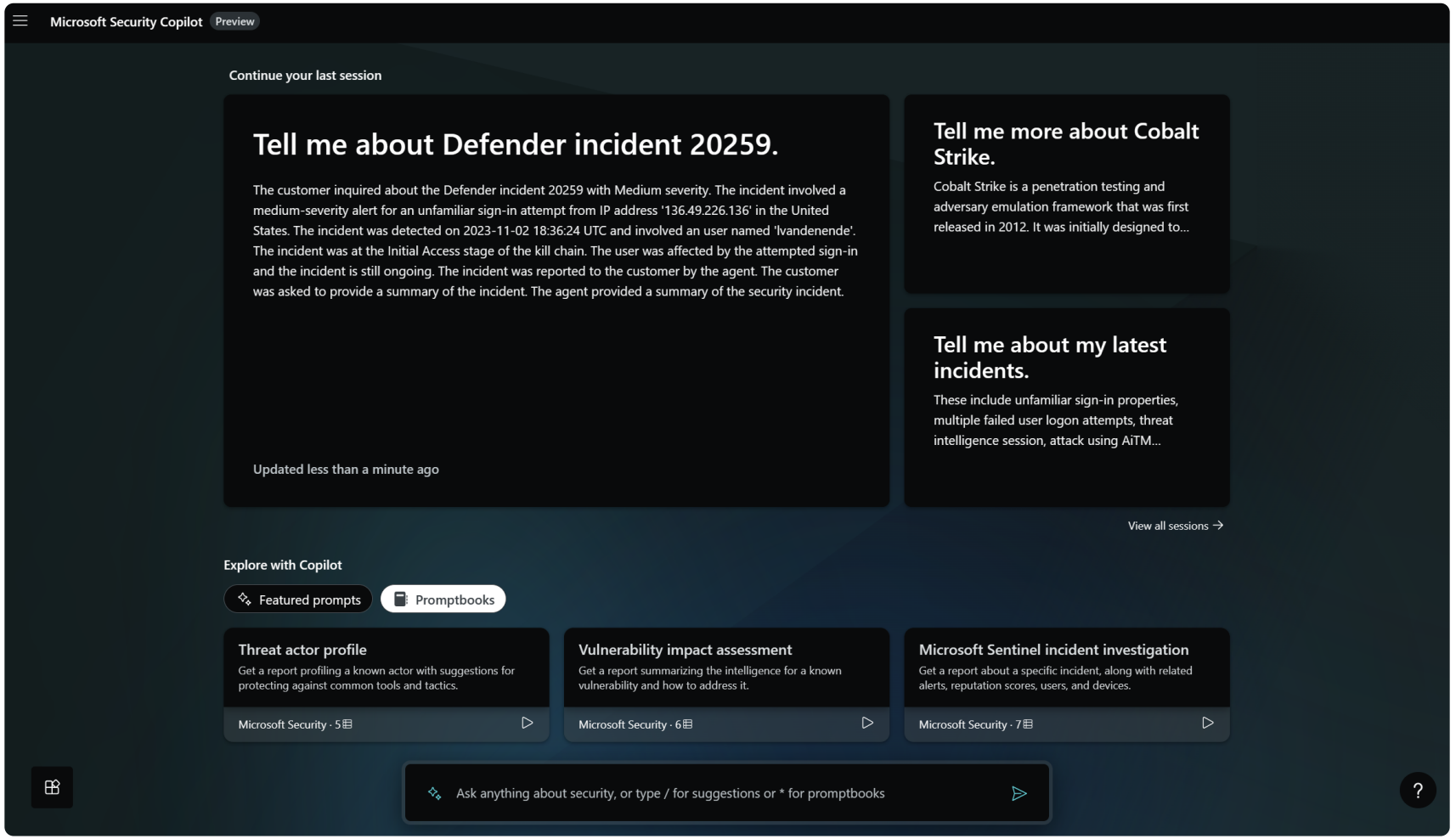


Operated with simple natural language queries

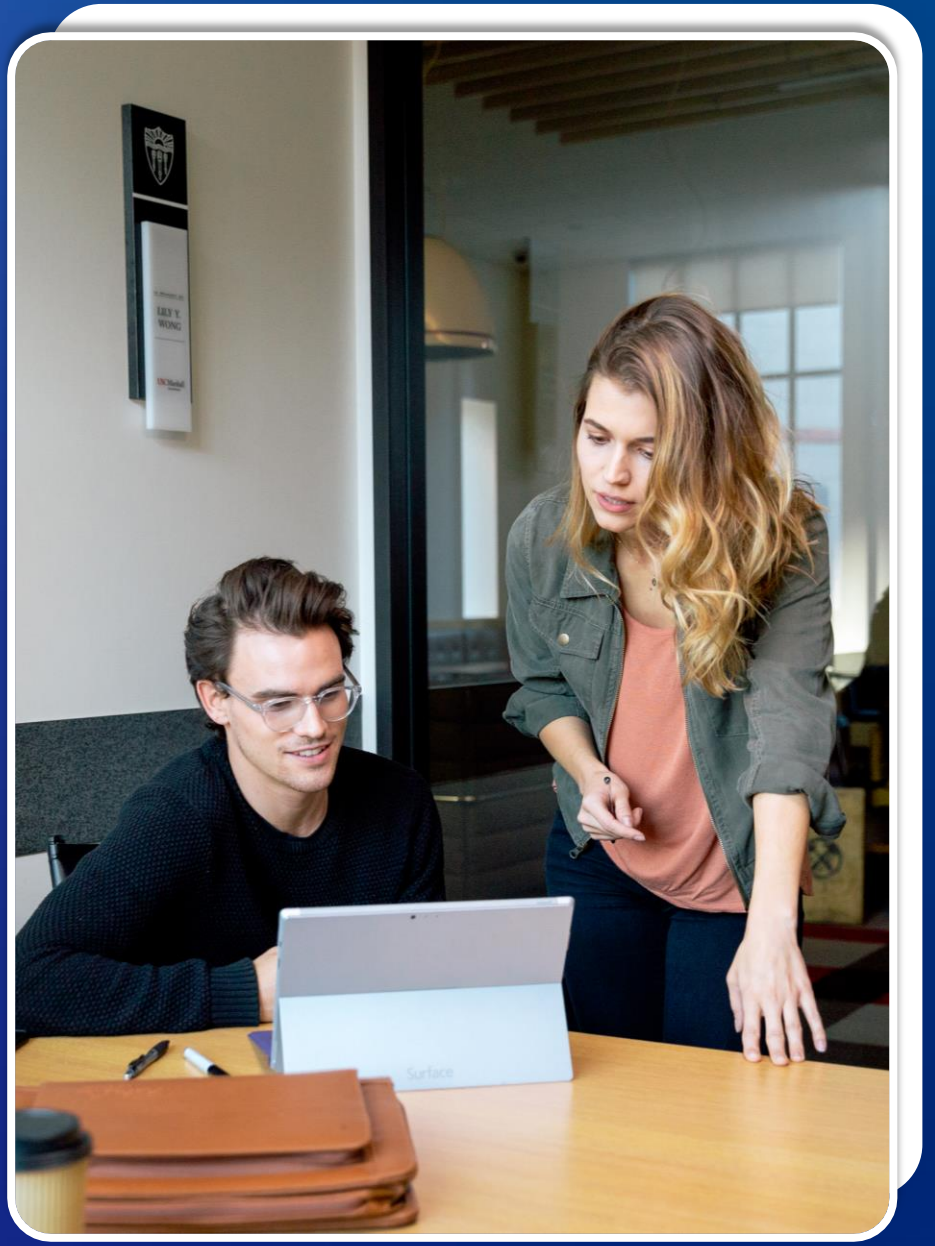
	Prompt	Planner	Build Context	Responding	Response
Human	Submits a prompt				Receives response
Security Copilot		Determines initial context and builds a plan using all the available skills	Executes the plan to get the required data context to answer the prompt	Combines all data and context and the model will work out a response	Formats the data

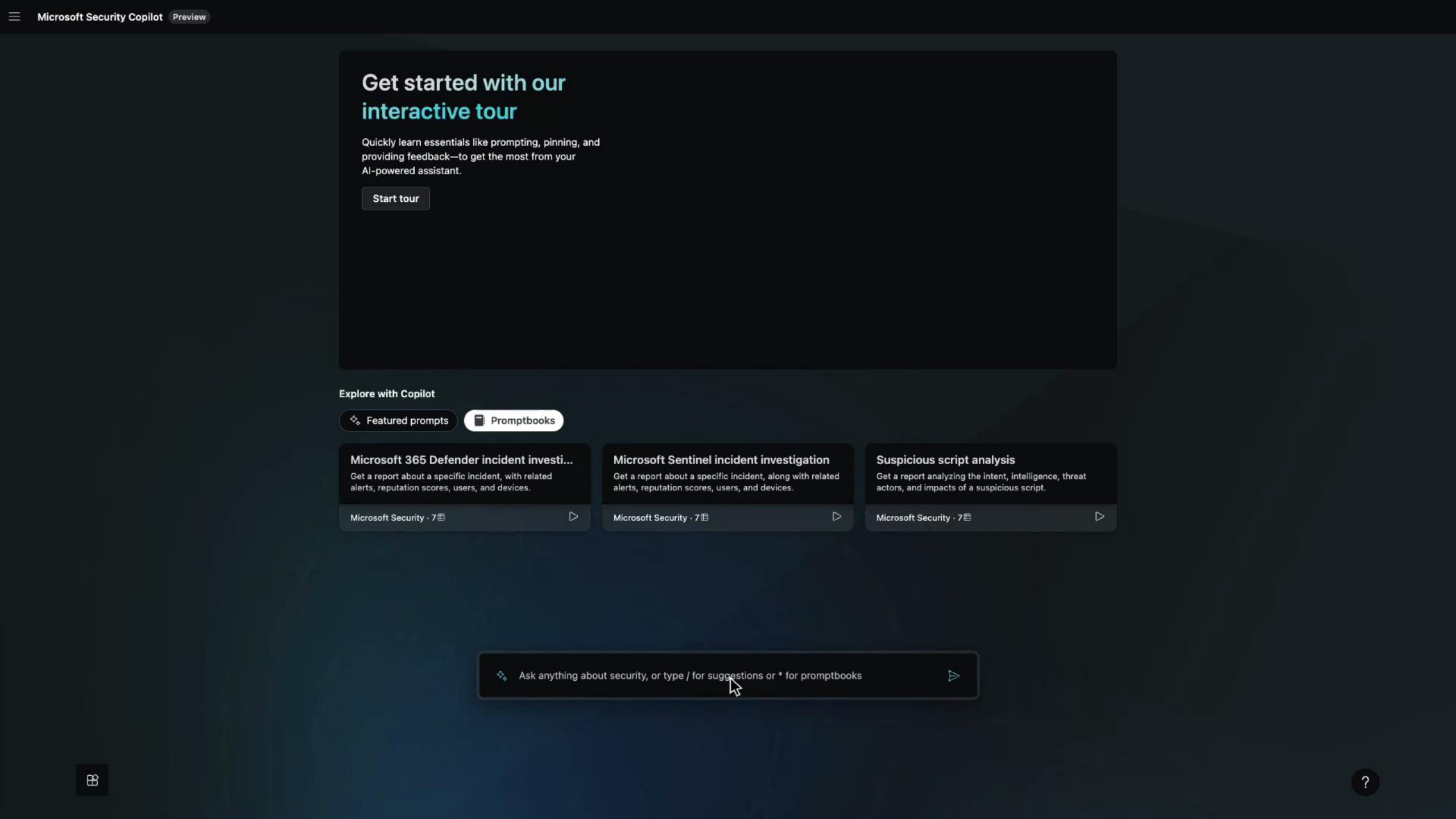
Microsoft Security Copilot – Video

Security Copilot standalone experience



Demo




Microsoft Security Copilot
Preview
Get started with our interactive tour
Quickly learn essentials like prompting, pinning, and providing feedback—to get the most from your AI-powered assistant.
Start tour
Explore with Copilot
Featured prompts
Promptbooks
Microsoft 365 Defender incident investi...
Get a report about a specific incident, with related alerts, reputation scores, users, and devices.
Microsoft Security · 7
Microsoft Sentinel incident investigation
Get a report about a specific incident, along with related alerts, reputation scores, users, and devices.
Microsoft Security · 7
Suspicious script analysis
Get a report analyzing the intent, intelligence, threat actors, and impacts of a suspicious script.
Microsoft Security · 7
Ask anything about security, or type / for suggestions or * for promptbooks

Wrap up

GHAS

- Shift left with AI-powered AppSec blog post: https://github.blog/2023-11-08-ai-powered-appsec/
- Waitlist for AI-Powered AppSec: https://github.com/features/preview/security\
- GHAS-Lab: https://github.com/skills/secure-code-game
- GHAS certifications: Examregistration.github.com

Security Copilot

- Microsoft Security Copilot documentation | Microsoft Learn

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Register for our AI security webinar series

Copilot L33T Sp34k is a new webinar series where we interview industry experts about how to use AI securely and how organizations should use AI, like Microsoft Copilot for Security, to enhance their security.

aka.ms/copilotl33tsp34k

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Let's connect!

Joylynn Kirui
Senior Cloud Security Advocate, Microsoft