



Amazon CodeWhisperer

Build applications faster and more
securely with your AI coding companion

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Agenda

- Customer challenges
- Service overview, benefits, and features
- Demo
- Roadmap

Quickly building reliable, secure code is challenging



Shortage of developers¹



Time spent on undifferentiated code



Appropriate use of open source



Data privacy



Time spent learning technologies, APIs, and best practices

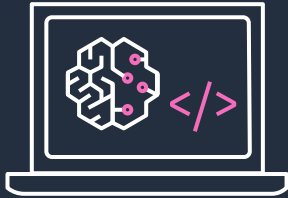


Write secure code

¹Gartner: [2023 Planning Guide for Application Development](#)

CodeWhisperer

BUILD APPLICATIONS FASTER AND MORE SECURELY WITH YOUR AI CODING COMPANION



Generate code suggestions in real time



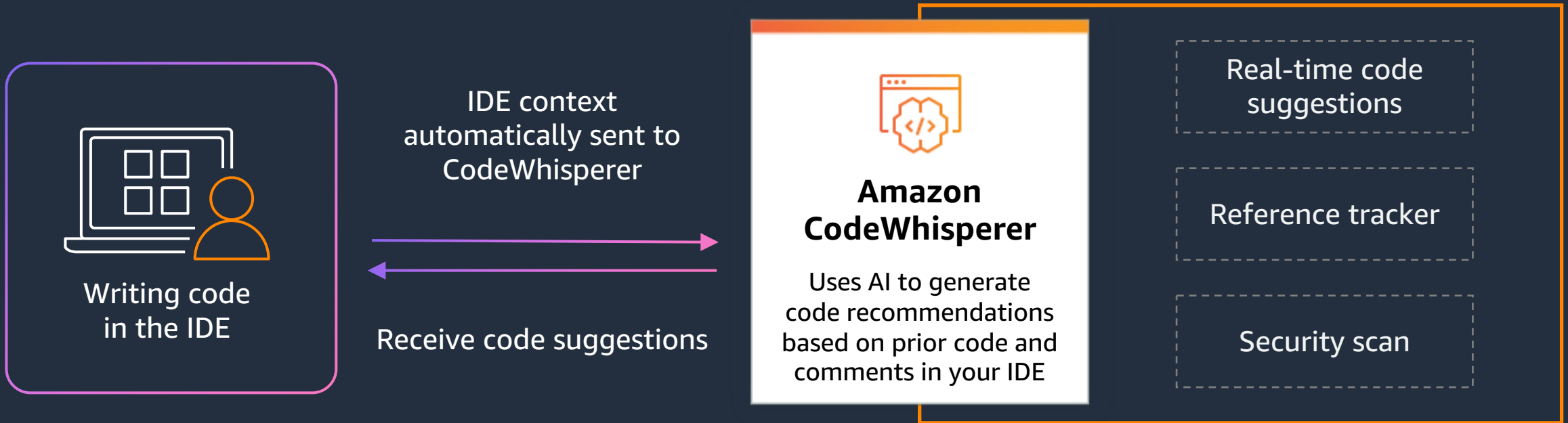
Scan code for hard-to-find vulnerabilities



Flag code that resembles open-source training data or filter by default

During preview Amazon ran a productivity challenge, and participants who used Amazon CodeWhisperer were **27% more likely to complete tasks successfully and did so an average of 57% faster** than those who did not use CodeWhisperer.

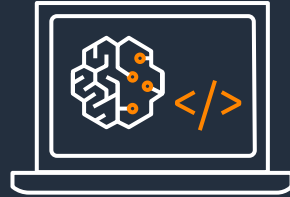
How it works



➔ **Content processed by CodeWhisperer Professional is not stored or used for service improvement.**

Use with your tools

BUILD APPLICATIONS FASTER AND MORE SECURELY WITH YOUR AI CODING COMPANION



Code generation



AND

Go, Rust, PHP, Ruby, Kotlin, C, C++,
Shell scripting, SQL, and Scala



AND

Amazon SageMaker Studio, CLion,
GoLand, WebStorm, Rider, PhpStorm,
RubyMine, and DataGrip

Benefits



Quickly accomplish
basic coding tasks



More easily use unfamiliar
APIs and frameworks



Get high-quality
suggestions for AWS
services



Use AI responsibly



Improve
application security



Use your
favorite tools

Why CodeWhisperer?

MAKES IT MORE EFFICIENT TO USE AWS SERVICES BY
PROVIDING CODE SUGGESTIONS OPTIMIZED FOR AMAZON APIs



Reference tracking



Security scanning



Bias avoidance

Code generation

- Get multiple code suggestions in seconds based on natural language (English) description of coding task and surrounding code
- Provides high-quality suggestions for popular AWS services
- Generated code matches developer style and patterns



Reference tracking

- Trained on billions of lines of code
- Flags code similar to open-source training data
- Tracks accepted suggestions so that you can provide appropriate attribution
- Enterprise controls to more easily deactivate/filter code suggestions similar to open-source training data

```
ion to iterate over an S3 bucket and send the files to a lambda  
const getFiles = async (bucketName, S3Client) => {
```

reference code under MIT License.

```
params = {  
  bucket: bucketName,
```

```
files = [];  
truncated = true;  
continuationToken;
```

```
(isTruncated) {  
  const response = await s3Client.listObjectsV2(params);  
  truncated = response.IsTruncated;
```

```
contin  
spons
```

```
return
```

✓ CodeWhisperer reference log

[3/24/2023, 3:17:34 PM] Accepted recommendation with c
response. Contents.forEach((file) => files.push(file.K
with reference under MIT from repository function-temp
/demos/reference-tracker.js (line at 14).

Security scanning

- Scan generated and developer-written code to detect security vulnerabilities
- Receive vulnerability remediation suggestions
- Scan for hard-to-find security vulnerabilities
- Supports VS Code and JetBrains IDEs for Python, Java, and JavaScript

🟢 Security scan completed. 3 issues found.



lambda_function.py

user/project



Not setting the S3 bucket owner condition might intr accidentally using a wrong bucket. For example, a cor lead to accidentally writing production data into test



The elevated privilege level required to perform oper immediately after the operation is performed. [Line 1



Recreating AWS clients from scratch in each Lambda expensive and can lead to availability risks. Clients sh invocations. [Line 190]

Enterprise controls

- Provision and manage team access through AWS IAM Identity Center and single sign-on
- Set organizational policies, such as automatic filtering of code suggestions similar to open-source code

Amazon CodeWhisperer > Set up CodeWhisperer

Set up CodeWhisperer

Select which users and groups in your organization have access to CodeWhisperer. Authorized users can activate CodeWhisperer through the AWS Toolkit in Visual Studio Code, AWS Cloud9 or JetBrains. CodeWhisperer will then provide suggestions, inside the IDE, for completing the user's code. Before users and groups appear in the lists below, you must add them to your organization in IAM Identity Center. [IAM Identity Center](#)

Details

This setting applies to all users and groups.

Suggestions

☒ Include suggestions with code references

CodeWhisperer learns, in part, from open-source projects. Sometimes, a suggestion it's giving you may be similar to a specific piece of training data. Keeping this box checked allows CodeWhisperer to offer suggestions in such cases. CodeWhisperer will also provide references, so that you can learn more about where the training data comes from. Un-checking this box causes CodeWhisperer to hide recommendations that have references associated with them.

Terms

By setting up CodeWhisperer, you agree to the terms.


[View terms](#)

Users (3) | **Groups (1)**


Users (3)

Find resources

< 1 >



<input type="checkbox"/>	Name	Email
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

 No users or groups will be given access to CodeWhisperer.

[Cancel](#)

[Set up CodeWhisperer](#)

SmugMug improved focus

“Distractions are a constant challenge while coding, especially when it’s necessary to switch context to look up code samples and documentation on the web. Amazon CodeWhisperer **keeps me focused on the code** by automatically offering helpful suggestions right when I need them, so I never have to leave my editor.”

Ryan Grove

Staff Software Engineer, SmugMug



Getting started



Get started



**Dive deep with
a workshop**



**Learn how to build an
event-driven
serverless app**



Demo



Roadmap



Questions?



Thank you!