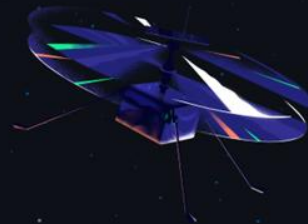




GitHub Copilot Administration & Security

Let's build from here



AGENDA



GitHub Copilot - Introduction



Policies and settings



Telemetry



Integrations



Troubleshooting



Data Privacy

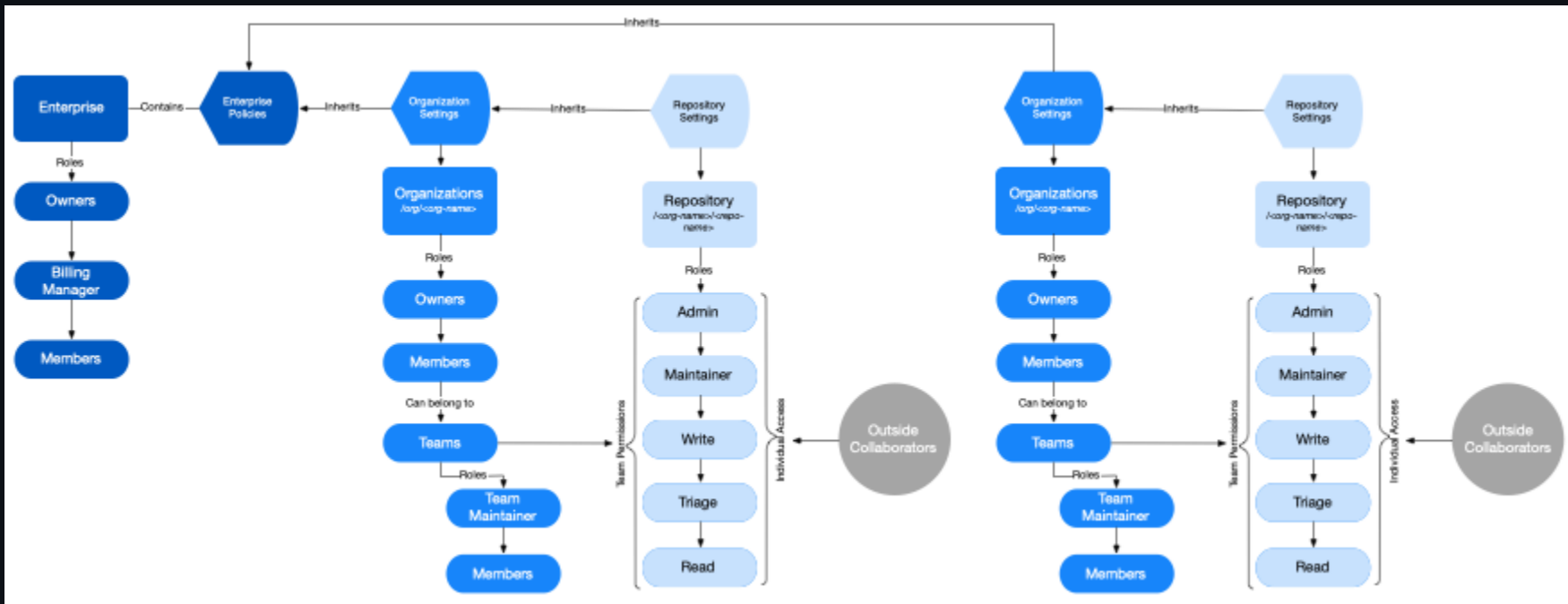


Q & A

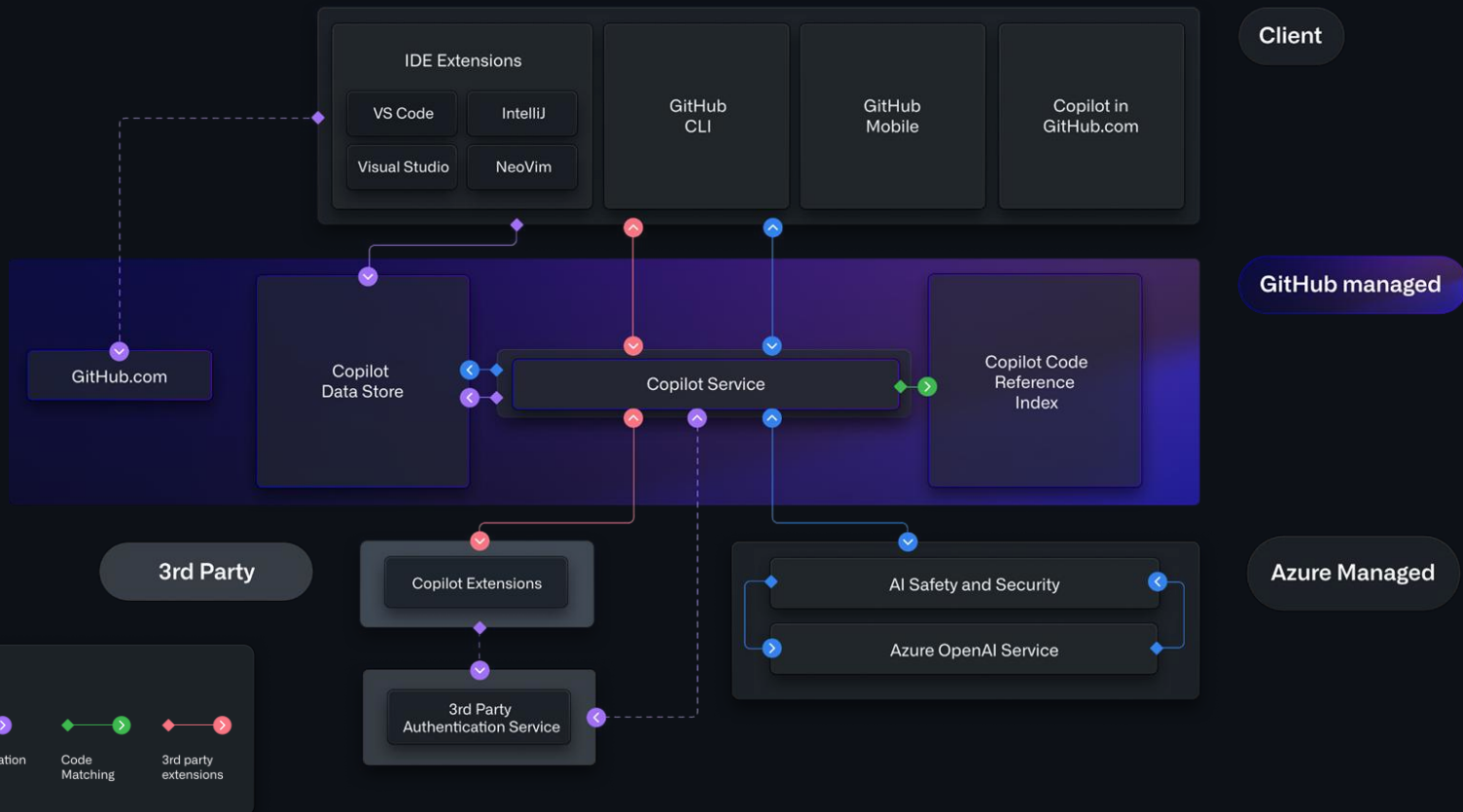
Architecture



Flow of policies and permissions



GitHub Copilot Architecture





Policies and Settings

Govern the usage of GitHub Copilot in your Enterprise

Copilot Policies Categories

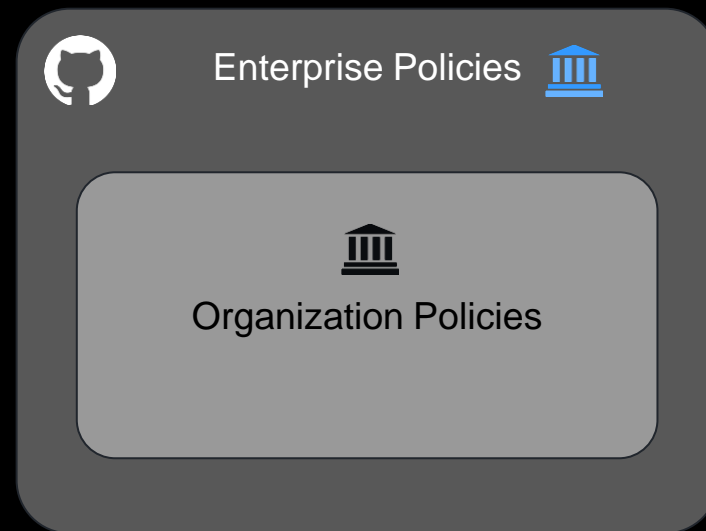
Enterprise Policies

Manage the policies for all the organizations owned by your enterprise

You cannot select a more permissive policy at the organization level

Organization Policies

In the absence of a defined Enterprise Policy, individual organizations within the enterprise have the flexibility to choose their own.



Enterprise Access Management

Copilot Enterprise is **active** in your enterprise


- Disabled
- Allow for all organizations
- Allow for specific organizations

GitHub Copilot Enterprise

[Access management](#) [Policies](#)

Total seats assigned
38
Number of unique seats across enterprise account.

Estimated monthly cost
\$1,482.00
Estimated cost based on Enterprise plan.
[View billing](#)

 **Copilot Enterprise is active in your enterprise**
Control which organizations will have access to GitHub Copilot inside your enterprise.
Admins of an organization will receive an email with setup instructions.

Allow for specific organizations ▾

Disabled
Disable GitHub Copilot access for my organizations

Allow for: All organizations
Allow access to GitHub Copilot for all organizations, including any created in the future

Allow for: Specific organizations
Only specifically-selected organizations may use GitHub Copilot

Copilot: Enabled ▾

Enterprise Policies

Control whether suggestions matching public code is allowed or blocked

- No policy
- Blocked
- Allow

Copilot in github.com

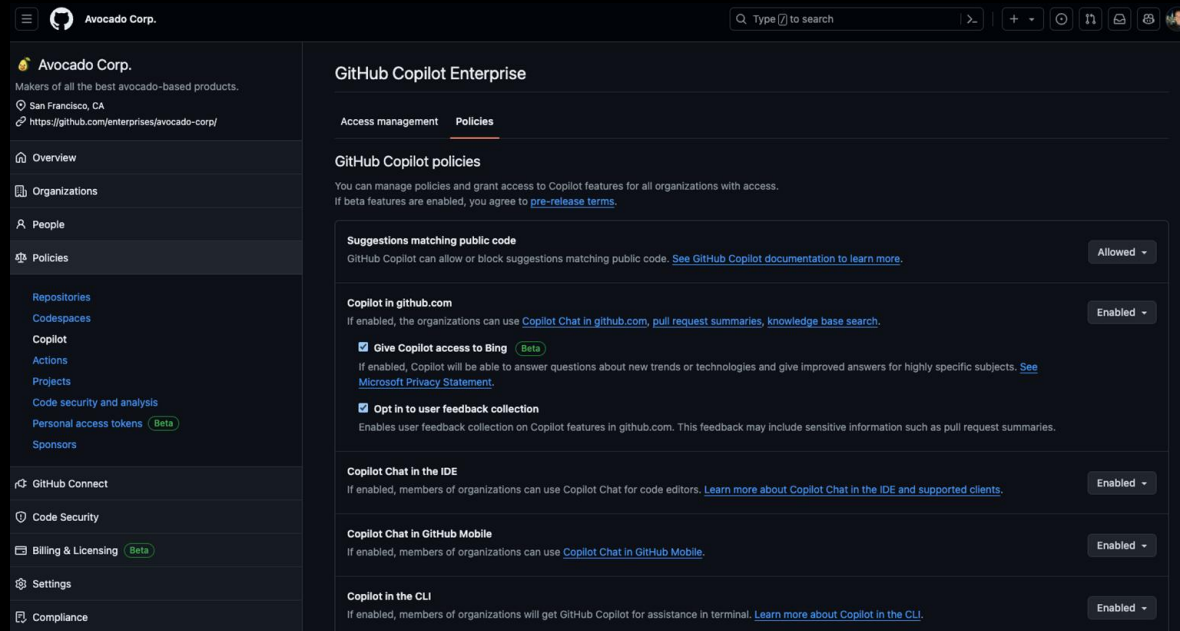
- No policy
- Enabled
- Disabled

Copilot Chat in the IDE

- No Policy
- Enabled
- Disabled

Copilot Chat in GitHub Mobile

- No Policy
- Enabled
- Disabled



The screenshot shows the GitHub Copilot Enterprise administration interface for 'Avocado Corp.'. The left sidebar contains a navigation menu with options: Overview, Organizations, People, Policies, Repositories, Codespaces, Copilot, Actions, Projects, Code security and analysis, Personal access tokens (Beta), Sponsors, GitHub Connect, Code Security, Billing & Licensing (Beta), Settings, and Compliance. The main content area is titled 'GitHub Copilot Enterprise' and has a sub-header 'Access management Policies'. Below this, it says 'GitHub Copilot policies' and 'You can manage policies and grant access to Copilot features for all organizations with access. If beta features are enabled, you agree to [pre-release terms](#).' The interface lists several policies with their status and a dropdown menu to toggle them:

- Suggestions matching public code**: GitHub Copilot can allow or block suggestions matching public code. [See GitHub Copilot documentation to learn more.](#) Status: Allowed
- Copilot in github.com**: If enabled, the organizations can use [Copilot Chat in github.com](#), [pull request summaries](#), [knowledge base search](#). Status: Enabled
 - ☒ **Give Copilot access to Bing** (Beta): If enabled, Copilot will be able to answer questions about new trends or technologies and give improved answers for highly specific subjects. [See Microsoft Privacy Statement.](#)
 - ☒ **Opt in to user feedback collection**: Enables user feedback collection on Copilot features in github.com. This feedback may include sensitive information such as pull request summaries.
- Copilot Chat in the IDE**: If enabled, members of organizations can use Copilot Chat for code editors. [Learn more about Copilot Chat in the IDE and supported clients.](#) Status: Enabled
- Copilot Chat in GitHub Mobile**: If enabled, members of organizations can use [Copilot Chat in GitHub Mobile](#). Status: Enabled
- Copilot in the CLI**: If enabled, members of organizations will get GitHub Copilot for assistance in terminal. [Learn more about Copilot in the CLI.](#) Status: Enabled

Copilot in the CLI

- No Policy
- Enabled
- Disabled

Organization Settings

Categorization of Copilot Organization settings

Access

Manage, control and audit the users Copilot interaction

Policies

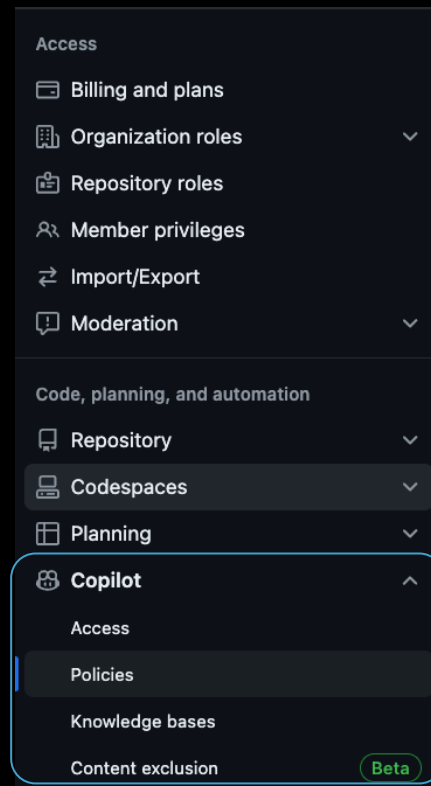
Regulate Copilot functionality and feature enablement

Knowledge bases

Groups of repositories that are used by Copilot to ground responses in your organization's data

Content exclusion

Repositories and paths that need to be excluded from Copilot within the organization



Organization Settings

Manage & Control Access

Access Settings

- View Number of Copilot license utilized
- Estimated cost of Copilot Usage within the Organization
- Policy to enable Copilot for all members in the Organization or selective members
- Extract report of Copilot activity per user

Copilot seats


831 seats

Number of purchased seats in this organization.
[Learn more on licenses.](#)

Estimated monthly cost

\$15,789.00


Each purchased seat is \$19 USD/month.
[Review billing details.](#)

 Copilot in your organization


Control which users or teams will have access to GitHub Copilot inside your organization. Invited users with approved access will receive an email with setup instructions. [Organization settings documentation.](#)


Enabled for: All members of the organization

Access management




831 members with access to Copilot

 Sort

 @abhi-dutta

Last active 2 days ago

 Get report

Organization Settings

Access - Copilot user activity report (sample)

octodemo-seat-usage-1696435416

Login	Status	Team	Last Activity Date	Last Editor Used
Abc	Active	No team	2023-10-04	vscode/1.83.0-insider/copilot-chat/0.8.2023092902
Lakes	Active	No team	2023-09-13	vscode/1.82.0/copilot-chat/0.7.2023090101
Chaos	Active	No team	2023-10-04	vscode/1.82.1/copilot/1.111.404
Akjsda	Active	No team	2023-10-04	vscode/1.82.2/copilot-chat/0.7.1
Sbdkajs	Active	No team	2023-10-04	vscode/1.82.3/copilot-chat/0.7.1
Asa	Active	No team	2023-05-26	vscode/1.78.2/copilot/1.86.82
Baksjdb	Active	No team	2023-10-04	vscode/1.82.3/copilot-chat/0.7.2023090101
Jshbda	Active	No team	2023-10-04	/

Organization Settings - Policies

- Policies and features settings
- Allows Organization owners to define whether “public code” matching is allowed in suggestions
- Copilot in github.com
- Can users use Copilot Chat in the supported IDE’s
- Can users use Copilot Chat in GitHub Mobile
- Can users use Copilot in the CLI

GitHub Copilot policies

You can manage policies and grant access to Copilot features for all members with access.
Note that users from other organizations may gain access if permitted by their administrators.

Suggestions matching public code

🔒 This setting has been set by [enterprise administrators](#).

Allowed ▾

Copilot in github.com

🔒 This setting has been set by [enterprise administrators](#). Learn more about [Copilot Enterprise](#).

Enabled ▾

☒ Give Copilot access to Bing Beta

Learn more about using [Bing for GitHub Copilot in github.com](#) [Copilot Chat in github.com](#) to improve responses.

☒ Opt in to user feedback collection

Enables user feedback collection on Copilot features in github.com. This feedback may include sensitive information such as pull request summaries.

Copilot Chat in the IDE

🔒 This setting has been set by [enterprise administrators](#). Learn more about [Copilot Chat in the IDE](#).

Enabled ▾

Copilot Chat in GitHub Mobile

🔒 This setting has been set by [enterprise administrators](#). Learn more about [Copilot Chat in GitHub Mobile](#).

Enabled ▾

Copilot in the CLI

🔒 This setting has been set by [enterprise administrators](#). Learn more about [Copilot in the CLI](#).

Enabled ▾

If beta features are enabled, you agree to [pre-release terms](#). For more information about the data your organization receives regarding your use of GitHub Copilot, please review [GitHub's Privacy Statement](#).



Organization Settings - Knowledge Bases

The screenshot shows the GitHub Copilot organization settings interface for the organization 'continuous-copilot'. The top navigation bar includes a search bar and links to Overview, Repositories, Projects, Packages, AI Teams, People, Security, Insights, and Settings. The left sidebar contains a menu with options: General, Access, Billing and plans, Organization roles, Repository roles, Member privileges, Import/Export, Moderation, Code, planning, and automation, Repository, Codespaces, Planning, Copilot, Access, Policies, and Knowledge bases. The main content area is titled 'Knowledge bases' and features a 'New knowledge base' button. Below this, a description states: 'Knowledge bases are groups of repositories that are used by Copilot to ground responses in your organization's data. When chatting with Copilot on GitHub.com, members of your organization may choose which knowledge base should be used to answer their questions.' A single knowledge base is listed: 'Continuous Copilot Knowledge Base' with 2 repositories and the description 'The knowledge base of the Continuous Copilot Organization'. Edit and delete icons are visible for this entry.

Organization Settings - Knowledge Bases

The screenshot displays the GitHub Copilot Administration & Security interface for the 'continuous-copilot' organization. The top navigation bar includes links for Overview, Repositories, Projects, Packages, Teams, People, Security, Insights, and Settings. The left sidebar shows the organization's profile and a list of settings categories: General, Access, Billing and plans, Organization roles, Repository roles, Member privileges, Import/Export, Moderation, Code, planning, and automation, Repository, Codespaces, Planning, Copilot, Access, Policies, and Knowledge bases. The main content area is titled 'Knowledge bases' and features a 'New knowledge base' button. Below the title, there is a description of knowledge bases and a list of existing knowledge bases:

- Continuous Copilot Knowledge Base**
2 repositories - The knowledge base of the Continuous Copilot Organization
- Continuous Copilot Demo Knowledge Base**
4 repositories - Knowledge base for CC demos

Organization Settings - Content Exclusion

GitHub Copilot - Administration & Security

The screenshot shows the GitHub Copilot organization settings interface for 'continuous-copilot'. The left sidebar contains a navigation menu with options: Overview, Repositories, Projects, Packages, Teams, People, Security, Insights, and Settings. The 'Settings' section is expanded, showing sub-options: General, Access, Billing and plans, Organization roles, Repository roles, Member privileges, Import/Export, Moderation, Code, planning, and automation, Repository, Codespaces, Planning, Copilot, Access, Policies, Knowledge bases, Content exclusion (highlighted), and Actions. The main content area is titled 'Content exclusion' and includes a 'Beta' badge and a 'Give feedback' link. It explains that users can choose repositories and paths to exclude from GitHub Copilot's access. A text area labeled 'Repositories and paths to exclude:' contains example patterns: `smiler`, `~/secrets/*`, `git@internal-corp.net:my-team/my-repo`, `~/**/*.env`, and `~/releases/**/*`. A footer note states: 'Use separate lines to choose which folders and files will be excluded by GitHub Copilot'.

continuous-copilot
Organization, part of Avocado Corp. [Switch settings context](#)

Go to your organization profile

Beta Give feedback

Content exclusion

Choose the repositories and paths within your organization that GitHub Copilot should exclude. Copilot won't be able to access or utilize the contents located in those specified paths.

All exclusions defined at the repository and organization level will apply to all members of your enterprise. [Learn more about setup and usage.](#)

Repositories and paths to exclude:

```
1 | Example patterns:  
  
   smiler  
   ~ /secrets/*  
  
   git@internal-corp.net:my-team/my-repo  
   ~ /**/*.env  
   ~ /releases/**/*  
  
   ↵
```

Use `Control + Shift + ⌘` to toggle the `tab` key moving focus. Alternatively, use `esc`, then `tab` to move to the next interactive element on the page.

Use separate lines to choose which folders and files will be excluded by GitHub Copilot



Client Side Settings

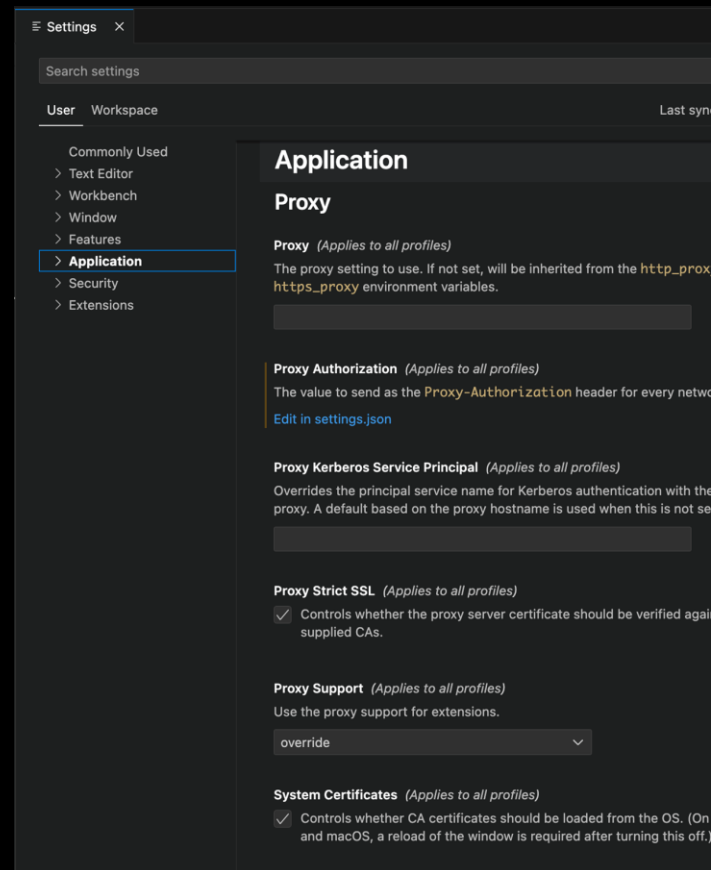
Network Settings

Proxy Settings

- GitHub Copilot supports basic HTTP proxy setups.
- If the proxy URL starts with `https://`, the proxy is not currently supported.
- If a proxy URL is set in any of the following environment variables, listed from highest to lowest priority.
 - `HTTPS_PROXY`
 - `https_proxy`
 - `HTTP_PROXY`
 - `http_proxy`

Authentication Modes

- Basic Authentication
- Kerberos Authentication



Firewall Settings

If you or your organization employs security measures like a firewall, it may be beneficial to include certain domain URLs in an "allowlist" and open specific ports and protocols.

Domain and/or URL	Purpose
https://github.com/login/*	Authentication
https://api.github.com/user	User Management
https://api.github.com/copilot_internal/*	User Management
https://copilot-telemetry.githubusercontent.com/telemetry	Telemetry
https://default.exp-tas.com/	Telemetry
https://copilot-proxy.githubusercontent.com/	API service for Copilot suggestions
https://origin-tracker.githubusercontent.com	API service for Copilot suggestions
https://*.githubcopilot.com	API service for Copilot suggestions



IDE Advanced Settings

Supported IDEs



Visual Studio



**Visual Studio
Code**



Jet Brains



Vim/Neovim



**Azure Data
Studio**

Enable non-programming Meta Files

In `settings.json`, add

```
"github.copilot.enable": {
  "*": true,
  "yaml": true,
  "plaintext": false,
  "markdown": true
}
```

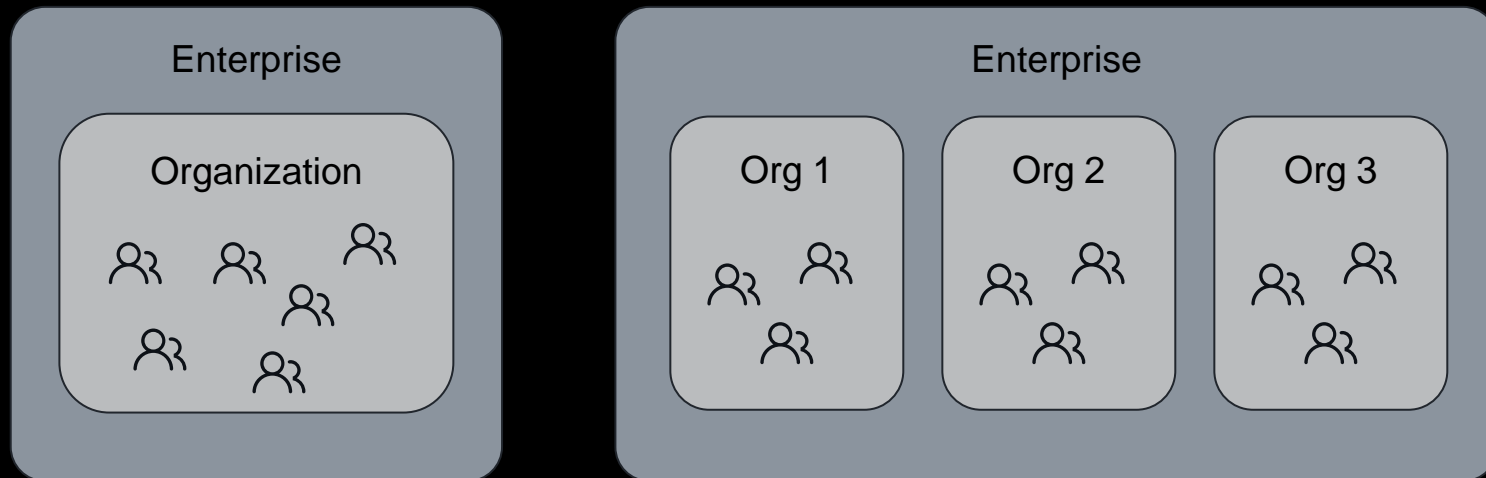


```
{ settings.json •
Users > bryantson > Library > Application Support > Code > User > {} settings.json > ...
1  {
2    "editor.inlineSuggest.enabled": true,
3    "github.copilot.enable": {
4      "*": true,
5      "yaml": true,
6      "plaintext": false,
7      "markdown": true
8    },
9    "[python]": {
10     "editor.formatOnType": true
11   },
12   "github.copilot.advanced": {
13
14   },
15   "editor.inlineSuggest.showToolbar": "always",
16   "window.zoomLevel": 1,
17   "appService.connections": []
18 }
19 }
```



User Onboarding Best Practices

Single Organization vs Multi Organization







Telemetry

Insights about GitHub Copilot acceptance in your enterprise

Telemetry - GitHub REST API



Get Copilot for Business seat information and settings for an enterprise
Copilot Usage

OAuth app tokens and personal access tokens (classic) need the `copilot`, `manage_billing:copilot`, `admin:enterprise`, or `manage_billing:enterprise` scope to use this endpoint.

GET `/enterprises/{enterprise}/copilot/usage`

`cURL` `JavaScript` `GitHub CLI`

```
curl -L \
-H "Accept: application/vnd.github+json" \
-H "Authorization: Bearer <YOUR-TOKEN>" \
-H "X-GitHub-Api-Version: 2022-11-28" \
https://api.github.com/enterprises/ENTERPRISE/copilot/usage
```

Response

`Example response` `Response schema`

Example response

Response schema

Status: 200

```
[
  {
    "day": "2023-10-15",
    "total_suggestions_count": 5000,
    "total_acceptances_count": 3000,
    "total_lines_suggested": 7000,
    "total_lines_accepted": 3500,
    "total_active_users": 15,
    "total_chat_acceptances": 45,
    "total_chat_turns": 350,
    "total_active_chat_users": 8,
    "breakdown": [
      {
        "language": "python",
        "editor": "vscode",
        "suggestions_count": 3000,
        "acceptances_count": 2000,
        "lines_suggested": 3000,
        "lines_accepted": 1500,
```

Telemetry - GitHub REST API



Get Copilot for Business seat information and settings for an organization

Copilot Usage

The token must have at least one of the following permissions:

- `organization_copilot_seat_management:write`
- `organization_administration:read`

GET /orgs/{org}/copilot/usage

cURL JavaScript GitHub CLI

```
curl -L \
-H "Accept: application/vnd.github+json" \
-H "Authorization: Bearer <YOUR-TOKEN>" \
-H "X-GitHub-Api-Version: 2022-11-28" \
https://api.github.com/orgs/ORG/copilot/usage
```

Response

Example response Response schema

Example response

Response schema

Status: 200

```
[
  {
    "day": "2023-10-15",
    "total_suggestions_count": 1000,
    "total_acceptances_count": 800,
    "total_lines_suggested": 1800,
    "total_lines_accepted": 1200,
    "total_active_users": 10,
    "total_chat_acceptances": 32,
    "total_chat_turns": 200,
    "total_active_chat_users": 4,
    "breakdown": [
      {
        "language": "python",
        "editor": "vscode",
        "suggestions_count": 300,
        "acceptances_count": 250,
        "lines_suggested": 900,
        "lines_accepted": 700,
```

Telemetry - GitHub REST API



Get Copilot for Business seat information and settings for an organization
Copilot User Management

Note: You must authenticate using an access token with the *manage_billing:copilot* scope

GET /orgs/{org}/copilot/billing

cURL JavaScript GitHub CLI

```
// Octokit.js
// https://github.com/octokit/core.js#readme
const octokit = new Octokit({
  auth: 'YOUR-TOKEN'
})

await octokit.request('GET /orgs/{org}/copilot/billing', {
  org: 'ORG',
  headers: {
    'X-GitHub-API-Version': '2022-11-28'
  }
})
```

Example response

Response schema

Status: 200

```
{
  "seat_breakdown": {
    "total": 12,
    "added_this_cycle": 9,
    "pending_invitation": 0,
    "pending_cancellation": 0,
    "active_this_cycle": 12,
    "inactive_this_cycle": 11
  },
  "seat_management_setting": "assign_selected",
  "public_code_suggestions": "block"
}
```

Telemetry - GitHub REST API



Get Copilot for Business seat information and settings for an organization

Copilot User Management

Note: You must authenticate using an access token with the ***manage_billing:copilot*** scope

GET /orgs/{org}/copilot/billing/seats

cURL JavaScript GitHub CLI

```
// Octokit.js
// https://github.com/octokit/core.js#readme
const octokit = new Octokit({
  auth: 'YOUR-TOKEN'
})

await octokit.request('GET /orgs/{org}/copilot/billing/seats', {
  org: 'ORG',
  headers: {
    'X-GitHub-API-Version': '2022-11-28'
  }
})
```

Example response

Response schema

Status: 200

```
{
  "total_seats": 2,
  "seats": [
    {
      "created_at": "2021-08-03T18:00:00-06:00",
      "updated_at": "2021-09-23T15:00:00-06:00",
      "pending_cancellation_date": null,
      "last_activity_at": "2021-10-14T00:53:32-06:00",
      "last_activity_editor": "vscode/1.77.3/copilot/1.86.82",
      "assignee": {
        "login": "octocat",
        "id": 1,
        "node_id": "MDQ6VXNlcjE=",
        "avatar_url": "https://github.com/images/error/octocat_happy.gif",
        "gravatar_id": "",
        "url": "https://api.github.com/users/octocat",
        "html_url": "https://github.com/octocat",
        "followers_url": "https://api.github.com/users/octocat/followers",
        "following_url": "https://api.github.com/users/octocat/following{/other_user}",
        "gists_url": "https://api.github.com/users/octocat/gists{/gist_id}",
        "starred_url": "https://api.github.com/users/octocat/starred{/owner}/{repo}",
        "subscriptions_url": "https://api.github.com/users/octocat/subscriptions"
      }
    }
  ]
}
```

Telemetry - GitHub REST API



Get Copilot for Business seat assignment details for a user

Copilot User Management

GET /orgs/{org}/members/{username}/copilot

cURL JavaScript GitHub CLI

```
// Octokit.js
// https://github.com/octokit/core.js#readme
const octokit = new Octokit({
  auth: 'YOUR-TOKEN'
})

await octokit.request('GET /orgs/{org}/members/{username}/copilot', {
  org: 'ORG',
  username: 'USERNAME',
  headers: {
    'X-GitHub-Api-Version': '2022-11-28'
  }
})
```

Example response

Status: 200

```
{
  "created_at": "2021-08-03T18:00:00-06:00",
  "updated_at": "2021-09-23T15:00:00-06:00",
  "pending_cancellation_date": null,
  "last_activity_at": "2021-10-14T00:53:32-06:00",
  "last_activity_editor": "vscode/1.77.3/copilot/1.86.82",
  "assignee": {
    "login": "octocat",
    "id": 1,
    "node_id": "MDQ6VXNlcjE=",
    "avatar_url": "https://github.com/images/error/octocat_happy.gif",
    "gravatar_id": "",
    "url": "https://api.github.com/users/octocat",
    "html_url": "https://github.com/octocat",
    "followers_url": "https://api.github.com/users/octocat/followers",
    "following_url":
```

Note: As of 24th April 2024 - The GitHub [Copilot for Business API endpoints](#) are in public beta and subject to change.

Telemetry - GitHub Audit Logs



Copilot for Business users will now be able to review updates and changes to their Copilot settings through the audit log.

In large organizations or enterprises, tracking setting updates and purchases is crucial.

Our goal is to empower organization and enterprise admins to investigate changes to their Copilot for Business account and settings independently, eliminating the need to rely on support.



Audit log

Events Log streaming Settings

Filters

Events matching search query



dhruvg20 - copilot.cfb_seat_added

Copilot for Business seat was added for dhruv-gupta-live in the [redacted] organization because they were added to the organization
Unknown location | Unknown IP address | 2 weeks ago | ...



jschanfung - copilot.cfb_org_settings_changed

Copilot Chat setting changed from unconfigured to enabled for the [redacted] organization
Australia | 120.158.194.167 | 2 weeks ago | ...



dhruvg20 - copilot.cfb_seat_added

Copilot for Business seat was added for jschanfung in the [redacted] organization because they were added to the organization
Unknown location | Unknown IP address | on Sep 1 | ...



dhruvg20 - copilot.cfb_seat_added

Copilot for Business seat was added for dhruv-gupta-live in the [redacted] organization
India | 101.0.62.219 | on Jun 14 | ...





Integrations

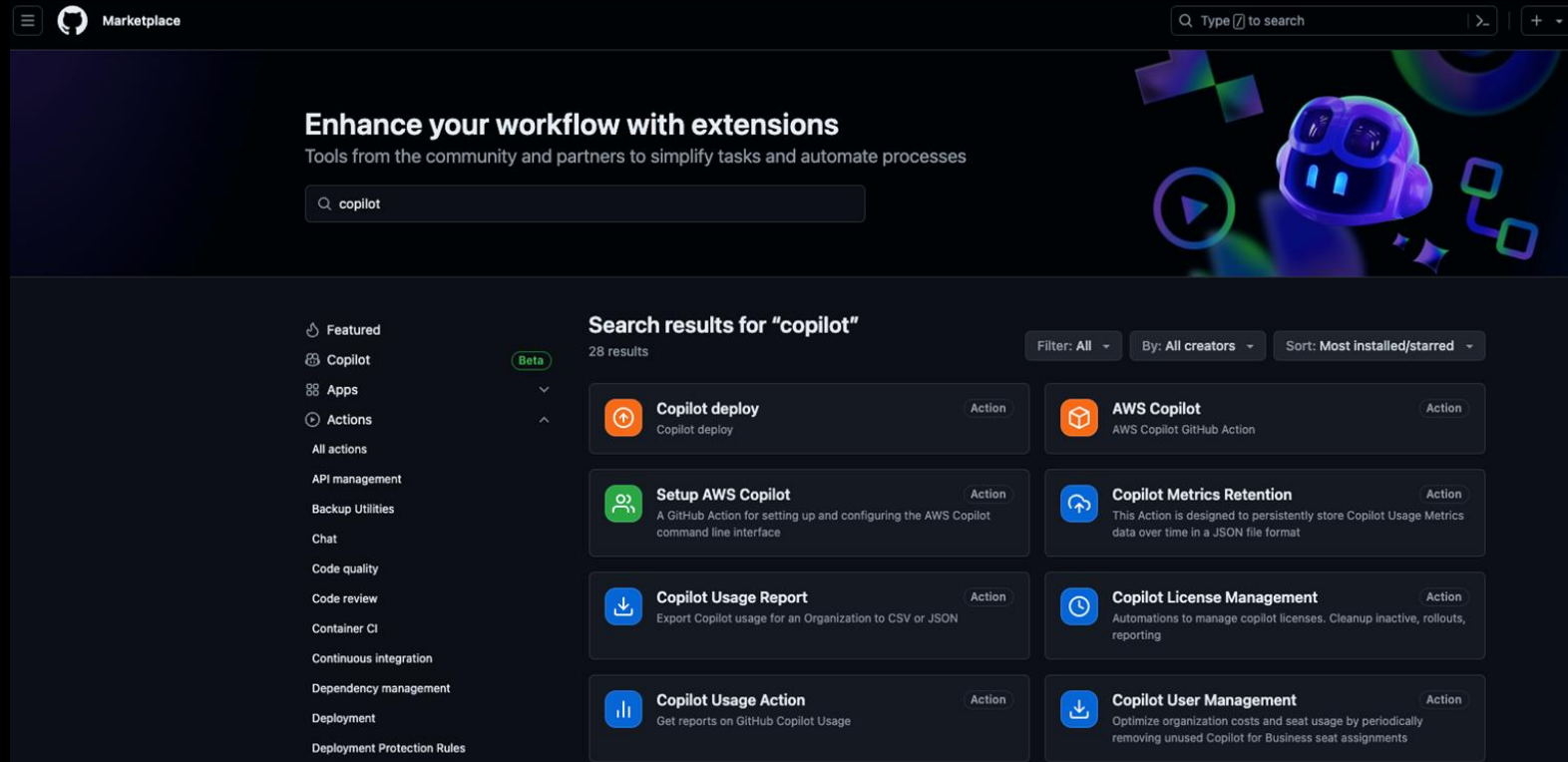
Use GitHub Copilot Endpoints and data with Enterprise tools

REST API - Copilot for Business

- Copilot usage
 - GET `/enterprises/{enterprise}/copilot/usage`
 - GET `/orgs/{org}/copilot/usage`
- Copilot user management
 - GET `/orgs/{org}/copilot/billing`
 - GET `/orgs/{org}/copilot/billing/seats`
 - POST `/orgs/{org}/copilot/billing/selected_teams`
 - DELETE `/orgs/{org}/copilot/billing/selected_teams`
 - POST `/orgs/{org}/copilot/billing/selected_users`
 - DELETE `/orgs/{org}/copilot/billing/selected_users`
 - GET `/orgs/{org}/members/{username}/copilot`

GitHub Copilot Usage and User Management

GitHub Actions Marketplace for Copilot



The screenshot shows the GitHub Actions Marketplace interface for Copilot. At the top, there's a navigation bar with the GitHub logo, the word "Marketplace", a search bar with the placeholder "Type to search", and a plus icon. Below the navigation bar is a hero section with the heading "Enhance your workflow with extensions" and the subtext "Tools from the community and partners to simplify tasks and automate processes". A search bar with the text "copilot" is present. To the right of the hero section is a decorative graphic featuring a stylized robot head and various geometric shapes. Below the hero section is a sidebar on the left with a list of categories: Featured, Copilot (marked with a "Beta" badge), Apps, Actions, All actions, API management, Backup Utilities, Chat, Code quality, Code review, Container CI, Continuous integration, Dependency management, Deployment, and Deployment Protection Rules. The main content area displays "Search results for 'copilot'" with "28 results". Above the results are filters: "Filter: All", "By: All creators", and "Sort: Most installed/starred". The results are presented in a grid of six cards, each representing a GitHub Action. Each card includes an icon, the action name, a brief description, and an "Action" button. The actions listed are: "Copilot deploy" (Copilot deploy), "AWS Copilot" (AWS Copilot GitHub Action), "Setup AWS Copilot" (A GitHub Action for setting up and configuring the AWS Copilot command line interface), "Copilot Metrics Retention" (This Action is designed to persistently store Copilot Usage Metrics data over time in a JSON file format), "Copilot Usage Report" (Export Copilot usage for an Organization to CSV or JSON), and "Copilot License Management" (Automations to manage copilot licenses. Cleanup inactive, rollouts, reporting). Below these are two more cards: "Copilot Usage Action" (Get reports on GitHub Copilot Usage) and "Copilot User Management" (Optimize organization costs and seat usage by periodically removing unused Copilot for Business seat assignments).

Marketplace

Search Type to search

Enhance your workflow with extensions

Tools from the community and partners to simplify tasks and automate processes

Search copilot

Search results for "copilot"

28 results

Filter: All By: All creators Sort: Most installed/starred

- Copilot deploy** (Action)
Copilot deploy
- AWS Copilot** (Action)
AWS Copilot GitHub Action
- Setup AWS Copilot** (Action)
A GitHub Action for setting up and configuring the AWS Copilot command line interface
- Copilot Metrics Retention** (Action)
This Action is designed to persistently store Copilot Usage Metrics data over time in a JSON file format
- Copilot Usage Report** (Action)
Export Copilot usage for an Organization to CSV or JSON
- Copilot License Management** (Action)
Automations to manage copilot licenses. Cleanup inactive, rollouts, reporting
- Copilot Usage Action** (Action)
Get reports on GitHub Copilot Usage
- Copilot User Management** (Action)
Optimize organization costs and seat usage by periodically removing unused Copilot for Business seat assignments

GitHub Copilot Usage

Copilot usage action

← Copilot Usage

✓ Copilot Usage #15

Summary

Jobs

✓ Copilot Usage Reports

Run details

Usage

Workflow file

Manually triggered last month

arilivigni 71fe816 main

Status

Success

Total duration

51s

Billable time

1m

Artifacts

2

copilot-usage.yml

on: workflow_dispatch

✓ Copilot Usage Reports 42s

Artifacts

Produced during runtime

Name

Size

copilot-usage

3.19 KB

pdf

3.9 MB

Audit Logs

Review the configuration actions taken by users at an Organization & Enterprise level.

- Organization's Copilot settings and policies
 - Changes to the Enablement Policy
 - Organization Settings changes
 - Enterprise settings changes
- Addition or removal of seats
 - Seat management changed
 - Seat assignment reused
 - Seat assignment refreshed
- Editor chat Settings
- Code Referencing Settings

Audit Log Events

cfb_enterprise_settings_changed	copilot.cfb_seat_cancelled
copilot.cfb_enterprise_org_enablement_changed	copilot.cfb_seat_assignment_reused
clickwrap_save_event	copilot.cfb_seat_assignment_refreshed
cfb_org_settings_changed	copilot.cfb_seat_assignment_created
copilot.cfb_seat_cancelled_by_staff	copilot.cfb_seat_assignment_unassigned
cfb_seat_management_changed	editor_chat_setting
copilot.cfb_seat_added	code_referencing_setting

Audit Logs

To review the actions taken by users at an Enterprise level.

The screenshot shows the GitHub Copilot Administration & Security interface for the organization 'Fabrikam EMU'. The left sidebar contains a navigation menu with the following items: Fabrikam EMU (Computer Company in Seattle, Washington, https://fabrikam.com), Organizations, People, Identity provider, Policies, GitHub Connect, Code Security, and Settings. The 'Settings' item is expanded, showing sub-items: Profile, Billing, Enterprise licensing, Authentication security, Code security and analysis, Verified & approved domains, **Audit log** (highlighted with a red box), and Hooks. The main content area is titled 'Audit log' and has tabs for 'Events', 'Log streaming', and 'Settings'. The 'Events' tab is active. It features a search bar with the query 'action:copilot actor:jefeish_fabrikam', a 'Clear current search query' button, and two green buttons: 'Export Git Events' and 'Export'. Below the search bar, a section titled 'Events matching search query' displays a single event: 'jefeish_fabrikam - copilot.cfb_org_settings_changed'. The event description states: 'Copilot Chat setting changed from unconfigured to enabled for the copilot-for-emus organization'. It includes the location 'United States | 146.70.100.100' and the date 'on Sep 27'. There is a 'View SSO details' link and the email 'jefeish@ghemu.onmicrosoft.com'. At the bottom of the event list, there are 'Newer' and 'Older' links. A 'ProTip!' message at the bottom reads: 'View all events created yesterday created:2023-11-15'.

Audit Logs

To review the actions taken by users at an Organisation level.

The screenshot displays the GitHub Copilot Administration & Security interface. On the left is a sidebar with a navigation menu. The 'Audit log' option is highlighted with a red rectangle. The main content area is titled 'Audit log' and shows a list of events matching the search query 'action:copilot'. The events are listed in a table-like format with columns for user, action, description, location, and time. The first two events show 'Copilot Business seat was added' for 'taylorreis-guest_fabrikam' and 'taylorreis-slow_fabrikam' respectively. The third event shows 'Copilot Business public code suggestions setting changed'.


Navigation Menu:


- General
- Features
- Access
 - Billing and plans
 - Organization roles
 - Repository roles
 - Member privileges
 - Import/Export
 - Moderation
- Code, planning, and automation
 - Repository
 - Codespaces
 - Copilot
 - Actions
 - Webhooks
- Archive
 - Logs
 - Sponsorship log
 - Audit log**
 - Deleted repositories

Audit log interface:

- Tabs: Events, Settings
- Filters: action:copilot
- Buttons: Export Git Events, Export
- Clear current search query
- Events matching search query
 - taylorreis_fabrikam - copilot.cfb_seat_added**
Copilot Business seat was added for [taylorreis-guest_fabrikam](#) in the [copilot-for-emus](#) organization because they were added to the organization
[United States](#) | [136.36.100.100](#) | 3 weeks ago | ...
▶ View SSO details
 - taylorreis_fabrikam - copilot.cfb_seat_added**
Copilot Business seat was added for [taylorreis-slow_fabrikam](#) in the [copilot-for-emus](#) organization
[United States](#) | [136.36.100.100](#) | 3 weeks ago | ...
▶ View SSO details
 - taylorreis_fabrikam - copilot.cfb_org_settings_changed**
Copilot Business public code suggestions setting changed from [unconfigured](#) to [allowed](#) for the [copilot-for-emus](#) organization
[United States](#) | [136.36.100.100](#) | on May 28 | ...
▶ View SSO details

GitHub Copilot Extensions

 Marketplace



Enhance your workflow with extensions

Tools from the community and partners to simplify tasks and automate processes

Featured

Copilot Beta

Apps


Actions

+ Create a new extension


Copilot Extensions

Extend Copilot capabilities using third party tools, services, and data


Filter: All By: All creators Sort: Most installed/starred

 **Docker for GitHub Copilot** Copilot


Learn about containerization, generate Docker assets and analyze project vulnerabilities in GitHub Copilot

 **Sentry Copilot Extension** Copilot


The Sentry Copilot Extension allows developers to fix broken code from the GitHub UI

 **LambdaTest** Copilot


Design, implement and analyze test automation right where you code

 **DataStax** Copilot


Chat with your data! Write queries and code with natural language

 **Octopus for GitHub Copilot** Copilot


The Octopus extension allows a cloud hosted Octopus instance to be queried via the GitHub Copilot chat interface

 **ReadMe API** Copilot

Ask questions about the ReadMe API and get help with code, directly in VS code

 **Product Science** Copilot

Get help with performance optimization techniques to make your code faster

 **Teams Toolkit** Copilot

Create, debug, and deploy Teams apps with Teams Toolkit for GitHub Copilot





Troubleshooting

Common issues and where to look

Common Issues

- GitHub's [Status Page](#)
- Update GitHub Copilot Extension
- Error: "GitHub Copilot could not connect to server. Extension activation failed"
- Open [Discussions on Copilot Community](#) with relevant files

Viewing Logs for GitHub Copilot

Supported IDEs



Visual Studio



Visual Studio
Code



Vim/Neovim



Jet Brains

Firewall settings



Internal Network



Firewall
|



Attacker



Internet

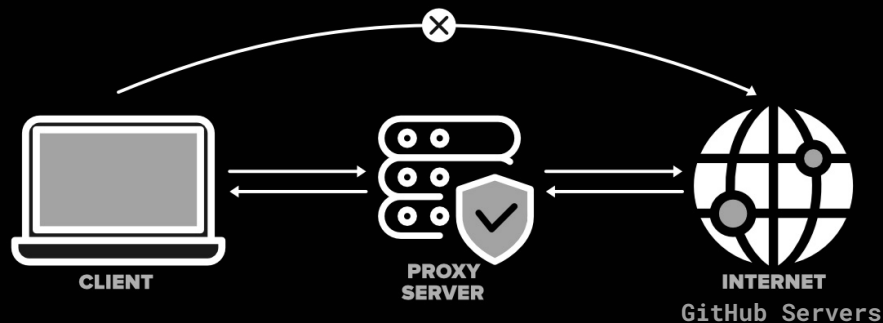
```

PROBLEMS 1  DEBUG CONSOLE  OUTPUT  TERMINAL  PORTS  AZURE  COMMENTS  GitHub Copilot
2024-05-30 14:27:04.461 [info] [fetcher] Using Electron fetcher, feature flag is enabled.
2024-05-30 14:29:45.019 [info] [fetchCompletions] request.response: [https://copilot-proxy.githubusercontent.com/v1/
engines/copilot-codex/completions] took 304 ms
2024-05-30 14:29:45.027 [error] [fetchCompletions] Unhandled status from server: 503 <html>
<head>
<title> - Web Application Blocked (Restricted App-ID)</title>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<META HTTP-EQUIV="PRAGMA" CONTENT="NO-CACHE">
<meta name="viewport" content="initial-scale=1.0">
<style>
#content {
  border:3px solid#aaa;
  background-color:#fff;
  margin:1.5em;
  padding:1.5em;
  font-family:Tahoma,Helvetica,Arial,sans-serif;
  font-size:1em;
}
h1 {
  font-size:1.3em;
  font-weight:bold;
  color:#cc6600;
}
b {
  font-weight:bold;
  color:#cc6600;
}
</style>

```


Network Proxy setup

- Company Equipment or Corporate Network
- Connecting to Internet via VPN or HTTP Proxy server
- Prevent connecting to GitHub' Servers



Network Proxy Errors

- Error: GitHub Copilot could not connect to server. Extension activation failed: "read ETIMEDOUT" or "read ECONNRESET"
- Configuring network settings for GitHub Copilot
- Proxy Specific errors:
 - Proxy's URL `https://` currently not supported by GitHub Copilot
 - Authenticated supported basic authentication or with Kerberos
 - Custom certificates issues

Diagnosing Network Issues

- `curl requests with --verbose`
- `curl --verbose https://copilot-proxy.githubusercontent.com/_ping`
- `curl --verbose -x http://YOUR-PROXY-URL:PORT -i -L https://copilot-proxy.githubusercontent.com/_ping
--insecure -> Certificate related issues`
- Diagnostic logs from editors



Certificate Problems

- Errors: "certificate signature failure", "custom certificate", or "unable to verify the first certificate"
- Github Copilot for Business supports Custom Certificates
- Corporate proxy configurations
- Check GitHub Copilot certificate path
- Ignore Certificate Errors in Proxy settings
Warning: Ignoring certificate errors can cause security issues and is not recommended

Issues with GitHub Copilot Chat

- Organization or Enterprise owners give access to GitHub Copilot Chat beta for users
- Install GitHub Copilot Chat Prerequisites
- Authentication Issues
- Error: "Oops, your response got filtered"





Data privacy

How GitHub protects your data

What Personal Data is Collected & How?

- User Engagement Data
 - Events generated with an IDE
 - Personal Data such as pseudonymous identifiers
- Prompts
 - Collection of code & contextual information to generate suggestions
 - User using a designated keyboard shortcut or pauses typing to request a suggestion
- Suggestions
 - One or more lines of proposed code and other output returned

Personal Data

- Uses the **source code** in IDE only to generate a suggestion.
- Performs several scans to identify and remove certain **information** within a prompt.
- **Prompts** are only transmitted to the AI model to generate suggestions in real-time
- Deleted once the **suggestions** are generated.
- **User engagement data** is used to improve the performance of the Copilot Service; specifically, it's used to
 - a. Evaluating GitHub Copilot
 - b. Sort algorithms
 - c. Detecting potential abuse of GitHub Copilot

Under the hood - Responding to a prompt

- Suggestions are not copied and pasted from any code database.
- Uses probabilistic reasoning to generate suggestions.
- GitHub Copilot sends a prompt to its AI model, which makes a probabilistic determination of what is likely to come next in your coding sequence and provides suggestions.

Aiding Secure Development

GitHub Copilot leverages a variety of security measures

- Remove sensitive information in code
- Block insecure coding patterns *
- Detect vulnerable patterns in incomplete fragments of code.

** The Copilot prompt needs to be specific in it's request*



FAQ

- How long the collected personal data will be retained?
 - User Engagement Data - 24 Months
 - Prompts - Discarded once a suggestion is returned
 - Suggestions - Not Retained
- Can the users control the sharing & use of their data?
 - User engagement data is required for the use of GitHub Copilot
 - General usage data
 - Pseudonymous identifiers

FAQ

- How does our collected data gets processed by GitHub?
 - Billing & Account Management
 - Produce Aggregated Reports
- How's our collected data used?
 - To measure the impact it has on the user
 - Fine Tune ranking & Sorting Algorithms and Prompt Crafting
 - Detect violation of Acceptable Use Policies.
 - Developers and their use of developer tools and services.

FAQ

- Is Telemetry available?
 - Yes, Telemetry is available for Copilot
- Organization-wide policy management
 - Yes, Policy settings can be implemented at an Organization level.
- Audit Logs?
 - Yes, Audit Logs are available along with Copilot specific events
- Http Proxy Support
 - Yes, HTTP proxy support via custom certificates available

GitHub Copilot Trust Center

As GitHub's Chief Legal Officer, I understand the nuanced challenges of enabling company-wide AI adoption, especially in an evolving regulatory landscape. GitHub Copilot is enterprise-ready, but organizations need to clearly understand how the tool meets their compliance, security, and accessibility requirements.

Our aim is to bring you that clarity with the **GitHub Copilot Trust Center**.



<https://resources.github.com/copilot-trust-center/>





Q & A



Thank you