



Connect Azure Boards to GitHub

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Azure Boards | Azure DevOps Server 2019

By connecting your Azure Boards project with GitHub.com repositories, you support linking between GitHub commits and pull requests to work items. You can use GitHub for software development while using Azure Boards to plan and track your work.

ⓘ Observação

We recommend that you use the [Azure Boards app for GitHub](#) to configure and manage your connections to GitHub.com. The app provides a more streamlined configuration experience and has the advantage of authenticating and operating as the app rather than an individual. Once you have configured your connection, you can manage the connected repositories either from Azure Boards or GitHub.com.

When you make the connection from GitHub.com, the list of repositories correspond to ones that you allow the Azure Boards app to access. When you make the connection from Azure Boards, the list of repositories correspond to some or all of the repos from the first selection that you make to associate to a particular project. In the first instance, you can limit what the app can access overall, and limit what a particular project can access or split the management of work across different Azure Boards projects.

ⓘ Observação

Azure Boards and Azure DevOps Services support integration with GitHub.com and GitHub Enterprise Server repositories.

Azure DevOps Server 2019 supports integration with GitHub Enterprise Server repositories.

Prerequisites

- You must connect to an Azure Boards or Azure DevOps project. If you don't have a project yet, [create one](#).
- You must be a member of the [Project Administrators group](#) and the project's [Contributors group](#). If you

created the project, then you have permissions.

- You must be an administrator or owner of the GitHub repository you'll be connecting to.

Importante

You can connect to multiple GitHub repositories so long as you are an administrator for those repositories.

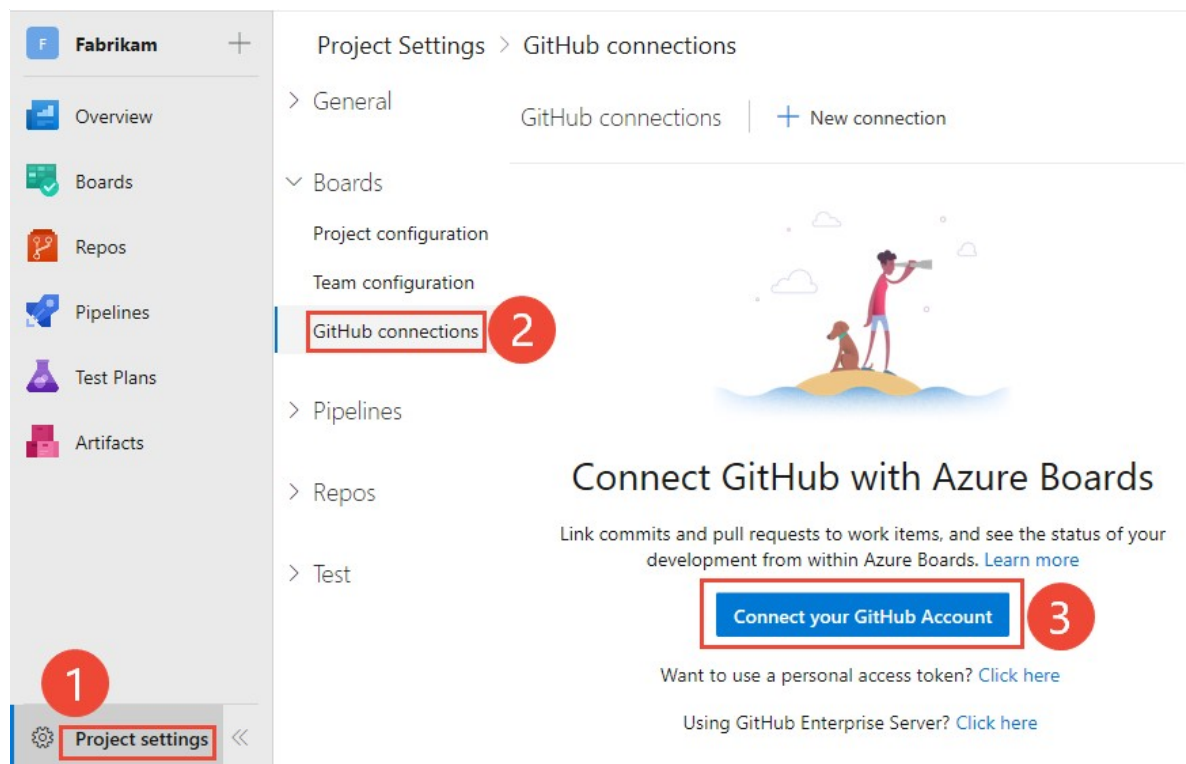
Authentication options

Depending on the platform you work from to connect to GitHub, you have a choice of the credentials you use. The recommended authentication method in all instances is **OAuth**.

Platform	GitHub.com	GitHub Enterprise Server
Azure DevOps Services	<ul style="list-style-type: none">• OAuth (preferred, no registration steps)• Personal access token (PAT)	<ul style="list-style-type: none">• OAuth (preferred, registration required)• PAT• Username plus password
Azure DevOps Server	<ul style="list-style-type: none">• Not supported	<ul style="list-style-type: none">• OAuth (preferred, registration required)• PAT• Username plus password

Add a GitHub connection using OAuth

1. Sign into Azure Boards.
2. Choose (1) **Project Settings**, choose (2) **GitHub connections** and then (3) **Connect your GitHub Account**.

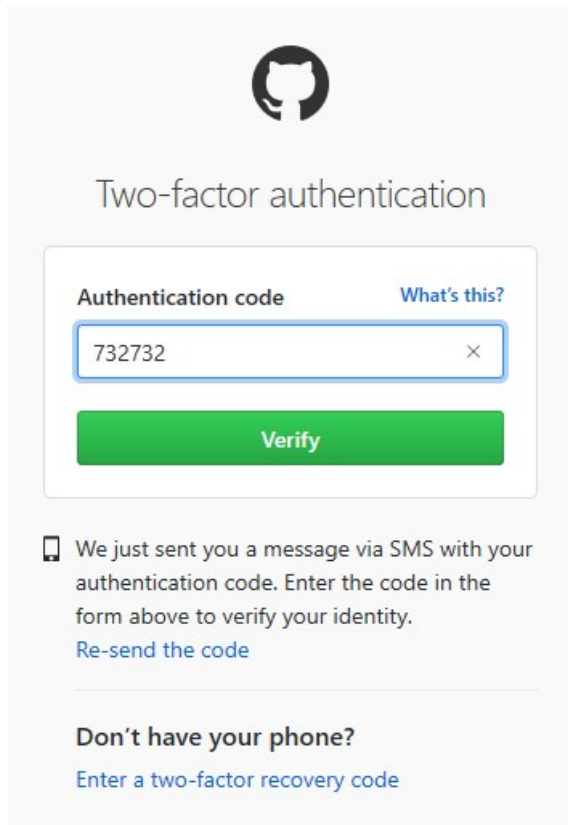


If connecting using PAT, see [Add a GitHub connection using PAT](#). If connecting to a GitHub Enterprise Server, see [Register Azure DevOps in GitHub as an OAuth App](#).

3. Enter your GitHub account credentials. Choose an account for which you are an administrator for the repositories you want to connect to.

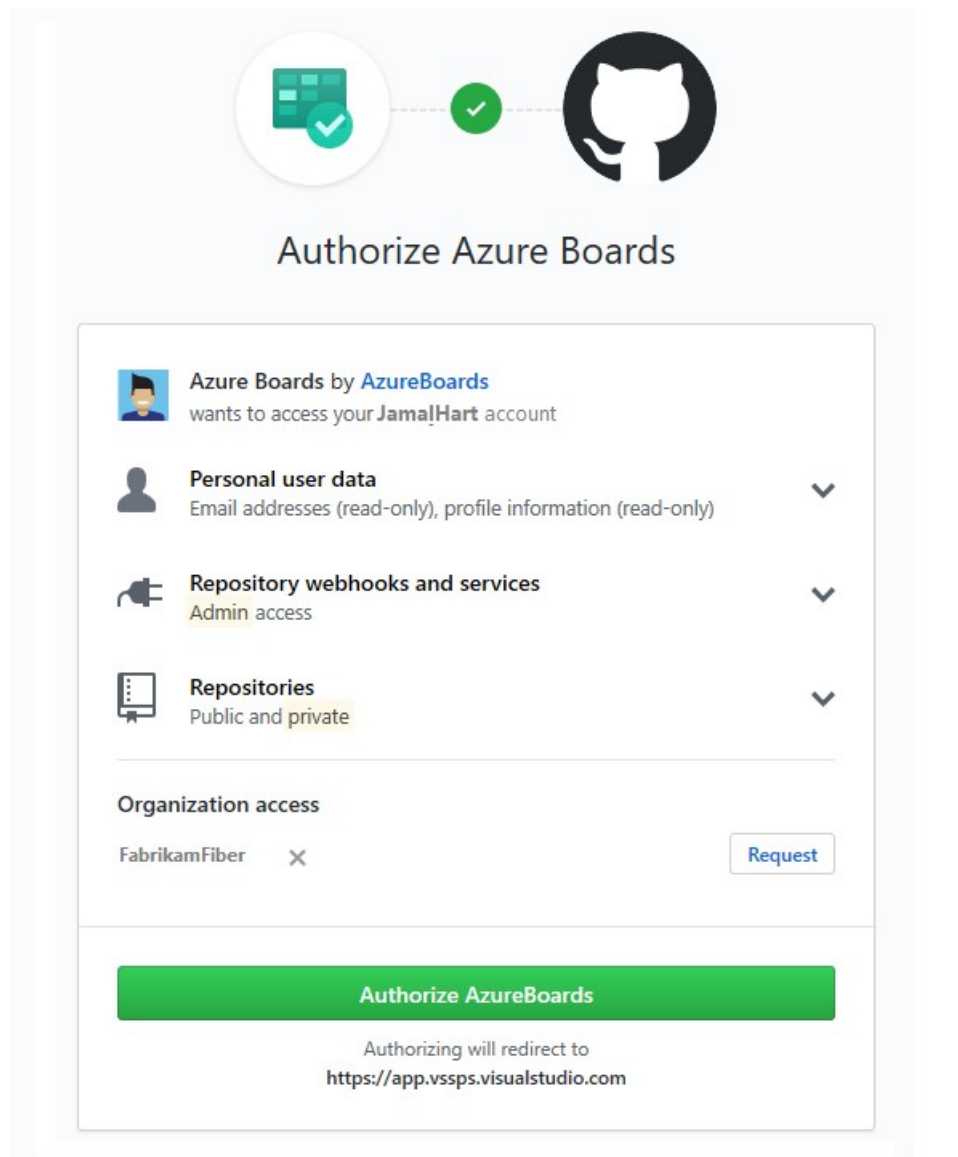
4. If you have enabled two-factor authentication, enter the authentication code that GitHub sent you and

choose **Verify**.



The image shows a GitHub Two-factor authentication dialog. At the top is the GitHub logo. Below it, the text "Two-factor authentication" is centered. A form box contains the label "Authentication code" with a link "What's this?". Below the label is a text input field containing the code "732732" and a clear button (X). Below the input field is a green button labeled "Verify". Below the form box, there is a message: "We just sent you a message via SMS with your authentication code. Enter the code in the form above to verify your identity." followed by a link "Re-send the code". At the bottom, there is a section titled "Don't have your phone?" with a link "Enter a two-factor recovery code".

5. Review the GitHub authorization dialog that appears which indicates the information you'll allow Azure Boards to access from GitHub. Choose **Authorize AzureBoards** when ready.



6. In the Add GitHub repositories dialog, you'll see the list of repositories for which you are an administrator.

Add GitHub repositories



Add the GitHub repositories you want to use with your Azure Boards.

[Learn more](#)

Filter by keywords
 All

JamalHart/fabrikam-apps

JamalHart/fabrikam-demo

JamalHart/fabrikam-open-source

JamalHart/fabrikam-suite

Can't find a repository? [Add manually](#)

Cancel
Save

Check the ones that you want to add and then choose **Save**. When done, you should see the new connection with the selected repository listed.

GitHub connections		+ New connection	
Connection	Auth type	Repos	Created by
Fabrikam GitHub	OAuth	JamalHart/fabrikam-apps	Jamal Hartnett

Dica

We recommend that you only connect a GitHub repo to projects defined in a single Azure DevOps organization. Connecting the same GitHub repo to projects defined in two or more Azure DevOps organizations can lead to unexpected AB# mention linking. For details, see [Troubleshoot GitHub & Azure Boards integration](#).

Add a GitHub connection using PAT

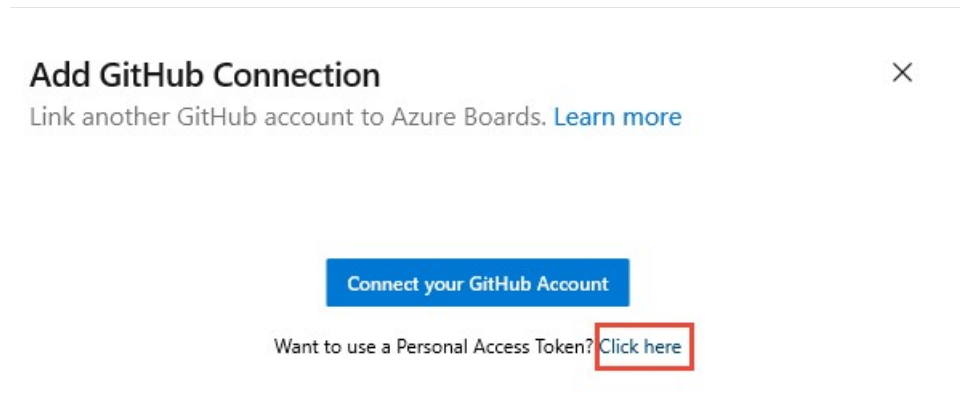
We recommend that you use OAuth to connect to your GitHub repository. However, if you need to use a PAT, you can by following these procedures.

Dica

When creating your GitHub PAT, make sure that you include these scopes:

```
repo, read:user, user:email, admin:repo_hook
```

1. To choose a PAT when connecting a GitHub repository, choose **+ New Connection** and then choose the **Click here** link.



Add GitHub Connection ×

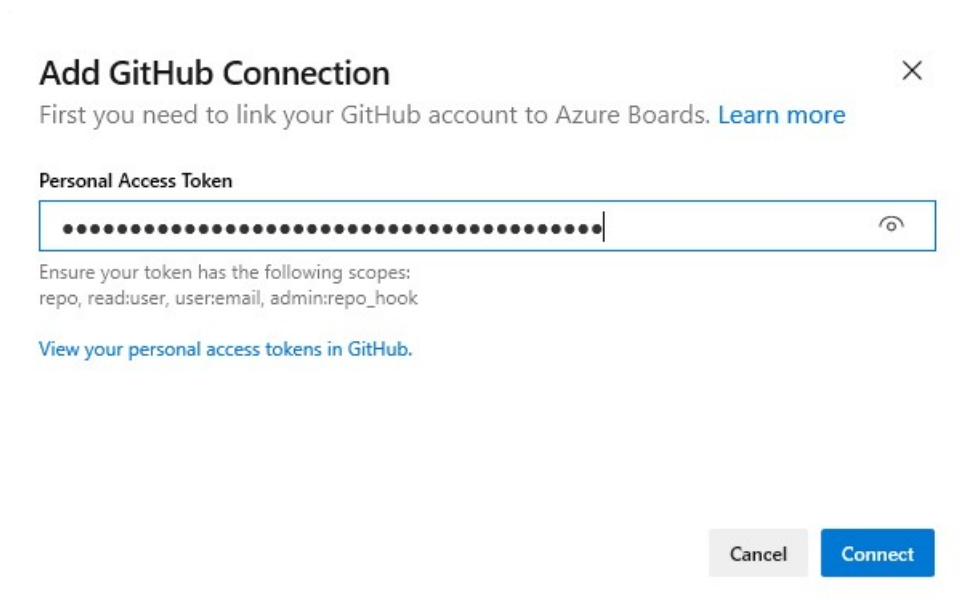
Link another GitHub account to Azure Boards. [Learn more](#)

[Connect your GitHub Account](#)

Want to use a Personal Access Token? [Click here](#)

To create a GitHub PAT, go to [GitHub Developer Settings>Personal access tokens](#).

2. Enter the PAT and choose **Connect**.



Add GitHub Connection ×

First you need to link your GitHub account to Azure Boards. [Learn more](#)

Personal Access Token

.....

Ensure your token has the following scopes:
repo, read:user, user:email, admin:repo_hook

[View your personal access tokens in GitHub.](#)

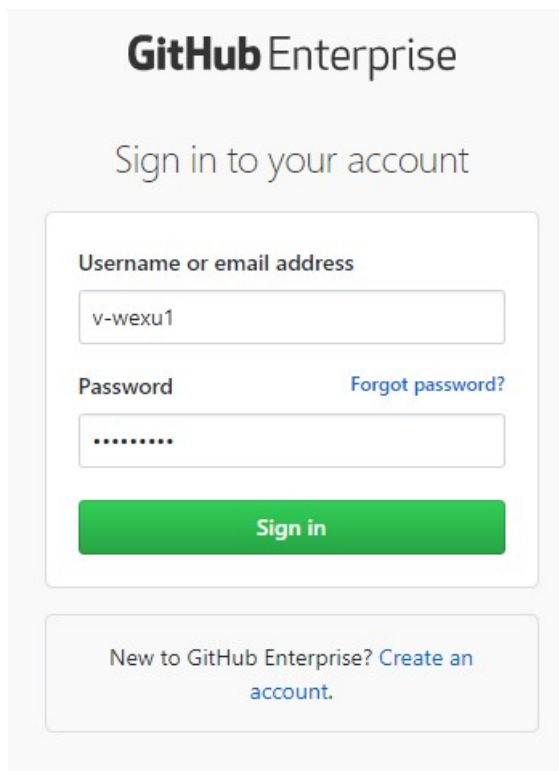
[Cancel](#) [Connect](#)

Register Azure DevOps in GitHub as an OAuth App

If you plan to use OAuth to connect Azure DevOps Services or Azure DevOps Server with your GitHub Enterprise Server, you first need to register the application as an OAuth App. For details, see [Creating an OAuth App](#).

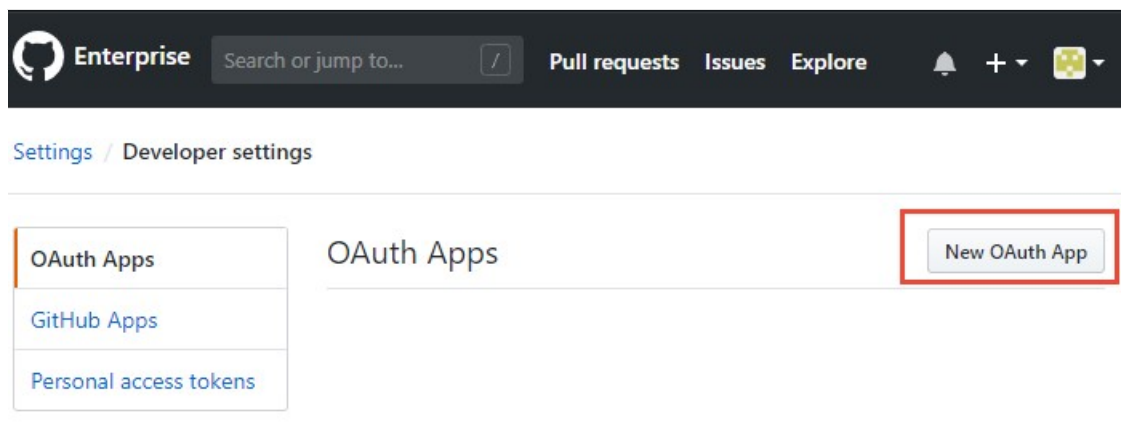
Register Azure DevOps Services

1. Sign into the web portal for your GitHub Enterprise server.



The image shows the GitHub Enterprise sign-in page. At the top, it says "GitHub Enterprise" and "Sign in to your account". Below this is a form with two input fields: "Username or email address" containing "v-wexu1" and "Password" with masked characters. There is a "Forgot password?" link next to the password field. A green "Sign in" button is below the fields. At the bottom, there is a link to "Create an account" for new users.

2. Open **Settings>Developer settings>OAuth Apps** and choose **New OAuth App**.



3. Fill out the form to register your Azure DevOps Server application.

For the **Homepage URL**, specify the **Organization URL** of your organization.

For the **Authorization callback URL**, use the following pattern to construct the URL.

```
{Azure DevOps Services Organization URL}/_admin/oauth2/callback
```

For example:

```
http://dev.azure.com/fabrikam/_admin/oauth2/callback
```


Register a new OAuth application

Application name *

Something users will recognize and trust.

Homepage URL *

The full URL to your application homepage.

Application description

This is displayed to all users of your application.

Authorization callback URL *

Your application's callback URL. Read our [OAuth documentation](#) for more information.

[Register application](#)[Cancel](#)

4. Choose **Register application**.

5. Upon success, you'll see a page that provides the **Client ID** and **Client Secret** for your registered OAuth application.

Application created successfully ×


[Settings](#) / [Developer settings](#)

[OAuth Apps](#)

[GitHub Apps](#)

[Personal access tokens](#)

FabrikamOAuth

 **v-wexu1** owns this application. [Transfer ownership](#)

0 users

Client ID
dc6713da4f33545db51f

Client Secret
f6dbf8016ec9eaf6f237f13779e244b49e8bccdc

[Revoke all user tokens](#) [Reset client secret](#)

Register your OAuth configuration in Azure DevOps Services

1. Sign into the web portal for Azure DevOps Services.

2. Add the GitHub Enterprise OAuth configuration to your organization.
3. Open **Organization settings**>**Oauth configurations**, and choose **Add OAuth configuration**.

Organization Settings

General

- Overview
- Projects
- Users
- Global notifications
- Usage
- Extensions
- Azure Active Directory

Security

- Policies
- Permissions


Boards

- Process

Pipelines

- Agent pools
- Deployment pools
- Retention and parallel jobs
- OAuth configurations**

OAuth configurations | + Add Security



Add OAuth configuration

OAuth client configurations define underlying settings that are required to set up service connections in your projects

Add OAuth configuration

[Learn more about OAuth client configurations](#)

4. Fill in the form that appears, and then choose **Create**.

OAuth configurations > FabrikamOAuth*

Name

FabrikamOAuth

Source Type

GitHub Enterprise ✓

GitHub Enterprise server URL

https://ice-ghe-21603-ghe.southcentralus.cloudapp.azure.com

Client Id

dc6713da4f33545db51f

Secret

.....

Create


Connect Azure DevOps Services to GitHub Enterprise Server

📘 Importante

To connect Azure DevOps Services to your GitHub Enterprise Server, your GitHub Enterprise Server must be sufficiently accessible from the Internet. Make sure Azure DNS can resolve your GitHub Enterprise Server name and your firewall allows access from Azure Data Center IP addresses. To determine the IP address range, see [Microsoft Azure Datacenter IP Ranges](#). A common error message encountered when connectivity issues exist is:

The remote name could not be resolved: 'github-enterprise-server.contoso.com'

If you encounter this error, check that your server is accessible. For more information, see [Azure DNS FAQ](#).

1. Choose the  Azure DevOps logo to open **Projects**, and then choose the Azure Boards project you want to configure to connect to your GitHub Enterprise repositories.
2. Choose (1) **Project Settings**, choose (2) **GitHub connections** and then (3) **Click here** to connect to your GitHub Enterprise organization.

The screenshot shows the 'Project Settings' page for a project named 'Fabrikam'. In the left-hand navigation pane, 'Project settings' is highlighted with a red circle and the number 1. Under the 'Boards' section, 'GitHub connections' is highlighted with a red circle and the number 2. The main content area is titled 'Connect GitHub with Azure Boards' and includes a blue button labeled 'Connect your GitHub Account'. Below this button, there are two links: 'Want to use a personal access token? [Click here](#)' and 'Using GitHub Enterprise Server? [Click here](#)', with the second link highlighted by a red circle and the number 3.

Choose from one of the following options—**OAuth**, **Personal Access Token**, **Username and Password**—based on the credentials you've chosen.

The screenshot shows a dialog box titled 'Select authentication method' with a close button (X) in the top right corner. Below the title, it says 'Select an authentication method for your GitHub Enterprise Server connection.' and provides a 'Learn more' link. There are three buttons stacked vertically: 'OAuth' (highlighted in blue), 'Personal Access Token', and 'Username and Password'.

To create a PAT, see [Creating a personal access token](#).

The screenshot shows a 'Dica' (Tip) box with a light green border. It contains a lightbulb icon followed by the word 'Dica'. The text inside reads: 'When creating your GitHub Enterprise Server PAT, make sure that you include these scopes: repo, admin:repo_hook, read:user, user:email .'

Connect using OAuth

Choose the configuration that you set up in [Step 4 of Register your OAuth configuration in Azure DevOps Services](#), and then choose **Connect**.

New GitHub Enterprise connection

Link your GitHub Enterprise account to Azure Boards with OAuth. [Learn more](#)

Azure DevOps GitHub Enterprise OAuth configuration

FabrikamOAuth

Manage OAuth configurations for GitHub Enterprise servers in your organization settings. [organization settings](#)

Cancel

Connect

Connect using a Personal Access Token

Enter the URL for your GitHub Enterprise server and the **Personal access token** credentials recognized by that server. And then choose **Connect**.

New GitHub Enterprise connection

Link your GitHub Enterprise account to Azure Boards with a personal access token. [Learn more](#)

GitHub Enterprise server URL

<https://ice-ghe-21603-ghe.southcentralus.cloudapp.azure.com>

For example, <https://github.fabrikam.com>

☐ Accept untrusted SSL certificates

Personal access token

.....

Ensure your token has the following scopes:
repo, admin:repo_hook, read:user, user:email

[Learn more about creating personal access tokens.](#)

Cancel

Connect

Connect using a Username and Password

Enter the URL for your GitHub Enterprise server and the administrator account credentials recognized by that server. And then choose **Connect**.

New GitHub Enterprise connection



Link your GitHub Enterprise account with a username and password.

[Learn more](#)

GitHub Enterprise server URL

https://ice-ghe-21603-ghe.southcentralus.cloudapp.azure.com

For example, https://github.fabrikam.com

☐ Accept untrusted SSL certificates

Username

v-wexu1

Password

.....

Cancel

Connect

3. The dialog lists all repositories for which you have GitHub administration rights. You can toggle between **Mine** and **All** to determine if others appear, and then check the ones that you want to add. Choose **Save** when done.

Add GitHub Enterprise repositories



Add the GitHub Enterprise repositories you want to use with your Azure Boards. [Learn more](#)

Filter by keywords

Mine



Viewing 3, 3 selected

- ☒ v-wexu1/help-content private
- ☒ v-wexu1/voice-apps private
- ☒ v-wexu1/web-apps private

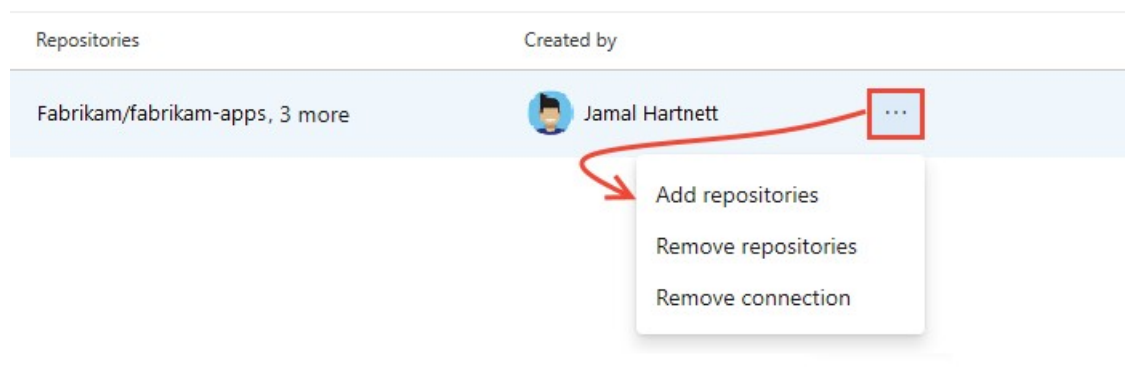
Can't find a repository? [Add manually](#)

Cancel

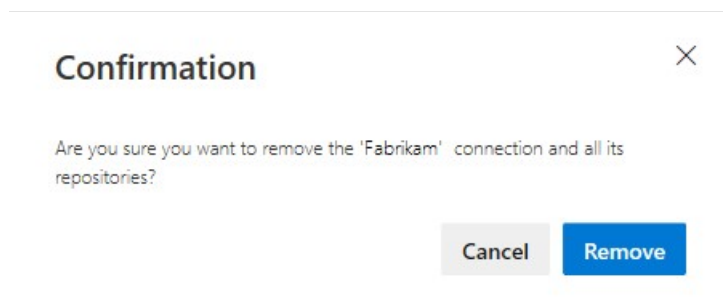
Save

Add or remove repositories, or remove a connection

1. To add or remove repositories, open the **...** actions icon for the connection and choose **Add** repositories or **Remove** repositories from the menu.



2. To remove all repositories and the connection, choose the **Remove connection** option. Then, choose **Remove** to confirm.



Resolve connection issues

See [Troubleshoot GitHub repository connection](#).

Try this next

Link GitHub commits and pull requests to work items

Related articles

- [What is Azure Boards?](#)
- [Install and configure the Azure Boards app for GitHub](#)
- [Configure status badges to add to GitHub README files](#)
- [Troubleshoot GitHub & Azure Boards integration](#)