

Lab requirements

- This lab requires **Microsoft Edge** or an [Azure DevOps supported browser](#).
- Microsoft Teams. This will be installed as part of prerequisites for this lab.
- Set up a Microsoft 365 subscription. Create a free trial subscription from [Microsoft Teams sign-up page](#).

Note: Your Microsoft 365 subscription and the Azure DevOps organization must share the same Azure Active Directory (Azure AD) tenant.

Lab overview

Microsoft Teams is a hub for teamwork in Microsoft 365. It allows you to manage and use all your team's chats, meetings, files, and apps together in one place. It provides software development teams with a hub for teams, conversations, content, and tools from across Microsoft 365 and Azure DevOps.

In this lab, you'll implement integration scenarios between Azure DevOps and Microsoft Teams.

Note: Azure DevOps Services integration with Microsoft Teams provides a comprehensive chat and collaborative experience across the development cycle. Teams can easily stay informed of important activities in your Azure DevOps team projects with notifications and alerts on work items, pull requests, code commits, and build and release events.

Objectives

After you complete this lab, you will be able to:

- Integrate Microsoft Teams with Azure DevOps.
- Integrate Azure DevOps Kanban boards and Dashboards in Teams.
- Integrate Azure Pipelines with Microsoft Teams.
- Install the Azure Pipelines app in Microsoft Teams.
- Subscribe for Azure Pipelines notifications.

Estimated timing: 60 minutes

Instructions

Exercise 0: Configure the lab prerequisites

In this exercise, you will set up the prerequisites for the lab, which consist of the preconfigured **Tailwind Traders** team project based on an Azure DevOps Demo Generator template and a team created in Microsoft Teams.

Task 1: Configure the team project

In this task, you will use Azure DevOps Demo Generator to generate a new project based on the **Tailwind Traders** template.

1. On your lab computer, start a web browser and navigate to [Azure DevOps Demo Generator](#). This utility site will automate the process of creating a new Azure DevOps

project within your account that is prepopulated with content (work items, repos, etc.) required for the lab.

2. **Note:** For more information on the site, see <https://docs.microsoft.com/en-us/azure/devops/demo-gen>.
3. Click **Sign in** and sign in using the Microsoft account associated with your Azure DevOps subscription.
4. If required, on the **Azure DevOps Demo Generator** page, click **Accept** to accept the permission requests for accessing your Azure DevOps subscription.
5. On the **Create New Project** page, click **Choose template**.
6. In the list of templates, in the toolbar, click **General**, select **Tailwind Traders** and click **Select Template**.
7. Back on the **Create New Project** page, in the **New Project Name** textbox, type **Tailwind Traders** and, in the **Select organization** dropdown list, select your Azure DevOps organization.
8. On the **Create New Project** page, if prompted to install a missing extension, select the checkbox below the **ARM Outputs** and click **Create Project** (Ignore GitHub forking).
9. **Note:** Wait for the process to complete. This should take about 2 minutes. In case the process fails, navigate to your DevOps organization, delete the project, and try again.
10. On the **Create New Project** page, click **Navigate to project**.

Task 2: Create a team in Microsoft Teams

In this task, you will create a team in Microsoft Teams.

11. On the lab computer, start a web browser, navigate to the [Microsoft Teams download page](#), and, from there, download and install Microsoft Teams with the default settings.
12. On the lab computer, launch **Microsoft Teams** by using the desktop app.
13. **Note:** Alternatively, you can use a web browser and navigate to the [Microsoft Teams launch page](#)
14. When prompted to sign in, sign in with a user account that is part of the Microsoft 365 subscription and has access to your Azure DevOps organization.
15. In Microsoft Teams, in the toolbar on the left side of the page, click **Teams** and then, at the bottom of the teams list, click **Join or create a team**.
16. **Note:** A team is a collection of people who gather together around a common goal.
17. On the **Join or create team** pane, click **Create team**.
18. On the **Create a team** panel, click ***From scratch*** and, on the **What kind of team will this be?** panel, click **Private**
19. On the **Some quick details about your private team** panel, replace **Give your team a name** with **Tailwind Traders** and click on **Create**.

20. On the **Add members to Tailwind Traders** panel, click **Skip**.

Exercise 1: Integrate Azure Boards with Microsoft Teams

In this exercise, you will implement integration between Azure Boards and Microsoft Teams.

Task 1: Install and configure Azure Boards app in Microsoft Teams

In this task, you will install and configure Azure Boards app in the newly created team in Microsoft Teams.

21. In the Microsoft Teams window, in the lower left corner, click the **Apps** icon. This will open the **Apps** pane.
22. On the **Apps** pane, in the **Search all apps** textbox, type **Azure Boards** and, in the list of apps, click **Azure Boards**. Click the down facing arrowhead directly to the right of the **Open** button and select the **Add to a team** entry in the dropdown.
23. On the **Set up Azure boards for a team** panel, in the **Search** text box, type **Tailwind Traders**. Select the **Tailwind Traders > General** entry from the search result, and click **Set up a bot**.
24. From the list of posts in the **General** channel of the **Tailwind Traders** team, select the post titled **Azure Boards** and press the **Enter** key to review additional messages posted by the bot, as below:

25. CodeCopy

26. Here are some of the things you can do:
 - `link [project url]` - Link to a project to create work items and receive notifications
 - `subscriptions` - Add or remove subscriptions for this channel
 - `addAreapath [area path]` - Add an area path from your project to this channel
 - `signin` - Sign in to your Azure Boards account
 - `signout` - Sign out from your Azure Boards account
 - `unlink` - Unlink a project from this channel
 - `feedback` - Report a problem or suggest a feature
 - To know more see documentation.

27. Open a **New conversation** and type **@** and as you type **Azure**, you will be prompted with results, select **Azure Boards** followed by **signin** in the command panel. Follow the steps to make sure you have access to the Azure DevOps organizations.

28. Copy the url of your Azure DevOps **Tailwind Traders** project. Example: <https://dev.azure.com/myorg/myproject> . Open **New conversation** in the Teams channel and type **@** and as you type **Azure**, you will be prompted with results, select **Azure Boards** followed by **link** in the command panel. At this point, paste your project

url that you had copied. Your post should look like, 'Azure Boards link <https://dev.azure.com/myorg/myproject>'. Press **Enter**.

29. Review the message received:

30. CodeCopy

31. NAME has linked this channel to project Tailwind Traders. Create work items using @Azure Boards create. To monitor work items, please add subscription Add subscription

32. Click on **Add subscription**. From the dropdown, select **works item created** from the list of events and click **Next**. Leave defaults and click **Submit**. click **OK** and close. A message will be posted in the channel with details about the newly added subscription.

33. Switch to the web browser displaying the **Tailwind Traders** project in the Azure DevOps portal, click on **Boards > Work items**. Click on **New work item** and choose **User Story** on the dropdown. Give a title to the userstory, something like **Test Azure Boards integration with Teams** and **Save**. The Teams channel we recently set up will post a notification/card with information about the created user story.

Task 2: Add Azure Boards Kanban boards to Microsoft Teams

In this task, you will add Azure Boards Kanban boards to tabs in Microsoft Teams.

Note: Kanban board turns your backlog into an interactive signboard, providing a visual flow of work. As work progresses from idea to completion, you update the items on the board. Each column represents a work stage, and each card represents a user story (blue cards) or a bug (red cards) at that stage of work. You can bring in your teams kanban board or favorite dashboard directly into Microsoft Teams by using Tabs. **Tabs** allow team members to access your service on a dedicated canvas, within a channel or in user's personal app space. You can leverage your existing web app to create a great tab experience within Teams.

34. On your lab computer, switch to the web browser displaying the **Tailwind Traders** project in the Azure DevOps portal, in the vertical menu bar at the far left of the Azure DevOps portal, click **Boards**, and, in the **Boards** section, click **Boards**.

35. On the **Boards** pane, in the **My team boards (1)** section, click **Tailwind Traders Team boards** entry.

36. While on the **Tailwind Traders Team** pane, in the web browser window, copy its URL into Clipboard.

37. Switch to the Microsoft Teams window, ensure that the **General** channel of the newly created team **Tailwind Traders** is selected, and, in the upper section of the **General** pane, click the plus sign, next to **Posts, Files and Wiki tabs**. This will display the **Add a tab** panel.

38. On the **Add a tab** panel, click **Website**, on the **Website** panel, set **Tab name** to **Tailwind Traders Team boards**, set the **URL** to the URL you just copied into Clipboards, and then click **Save**.
39. In the Microsoft Teams window, with the **General** channel of the **Tailwind Traders** team selected, in the list of tabs in the top menu, click the newly added **Tailwind Traders Team boards** tab and ensure that it contains the content matching the **Tailwind Traders Team** board available in the Azure DevOps portal (you may need to Sign in).

Note: All the work can be monitored during the daily standup's and the updates are reflected in real-time, whenever the corresponding work items states change. You also have the option to modify the Kanban board from Microsoft Teams.

Exercise 2: Integrate Azure Pipelines with Microsoft Teams

In this exercise, you will implement integration between Azure Pipelines and Microsoft Teams.

Task 1: Install and configure Azure Pipelines app in Microsoft Teams

In this task, you will install and configure Azure Pipelines app in the designated team in Microsoft Teams.

Note: Azure Pipelines app on Microsoft Teams enables you to monitor the events for your pipelines. You can set up and manage subscriptions for such events as releases, pending approvals, and completed builds, with notifications being posted directly into your Teams channel. You can also approve releases from within the Teams channel.

40. Go to Microsoft Teams window, in the lower left corner, click the **Apps** icon. This will open the **Apps** pane.
41. On the **Apps** pane, in the **Search all apps** textbox, type **Azure Pipelines** and, in the list of apps, click **Azure Pipelines**.
42. On the **Azure Pipelines** panel, click the down facing arrowhead directly to the right of the **Open** button and, in the dropdown list, click the **Add to a team** entry.
43. On the **Set up Azure Pipelines for a team** panel, in the **Search** text box, type **Tailwind Traders**, in the list of results, select the **Tailwind Traders > General** entry, and click **Set up a bot**. You will be redirected automatically to the post view in the **General** channel of the **Tailwind Traders** team.
44. In the list of posts in the **General** channel of the **Tailwind Traders** team, open **New conversation** and type **@** and as you type **Azure**, you will be prompted with results, select **Azure Pipelines** and press **Enter** key to review additional messages posted by the bot, such as below:
45. CodeCopy
46. Here are some of the things you can do:
subscribe [pipeline url/ project url] - Subscribe to a pipeline
or all pipelines in a project to receive notifications
subscriptions - Add or remove subscriptions for this channel

feedback - Report a problem or suggest a feature
signin - Sign in to your Azure Pipelines account
signout - Sign out from your Azure Pipelines account
To know more see documentation.

Task 2: Subscribe to the Azure Pipeline notifications in Microsoft Teams

In this task, you will subscribe to the Azure Pipeline notifications in Microsoft Teams

Note: You can use the `@Azure Pipelines` handle to start interacting with the app.

47. With the **Posts** tab selected, in the **General** channel of the **Tailwind Traders** team, type `@` and as you type **Azure**, you will be prompted with results, select **Azure Pipelines** followed by **signin** in the command panel and press **Enter**.
48. In the **Azure Pipelines Sign in** pane, click **Sign in**.
49. If prompted to grant **Service hooks (read and write)**, **Build (build an execute)**, **Release (read, write, execute, and manage)**, **Project and team (read)**, **Identity picker (read)**, and **Teams Integration** permissions, click **Accept** and then click **Close**.
50. **Note:** Now you can run the `@azure pipelines subscribe [pipeline url]` command to subscribe to an Azure Pipeline.
51. Switch to the web browser displaying the **Tailwind Traders** project in the Azure DevOps portal, in the vertical menu bar at the far left of the Azure DevOps portal, click **Pipelines**, on the **Pipelines** pane, click the **Website-CI** entry, and, while on the **Website-CI** pane, in the web browser window, copy its URL into Clipboard.
52. **Note:** The URL will be in the format https://dev.azure.com/<organization_name>/Tailwind%20Traders/build?definitionId=<number>, where the `<organization_name>` is the placeholder representing the name of your DevOps organization.
53. **Note:** The pipeline URL can be to any page within your pipeline that has a *definitionId* or *buildId*/*releaseId* present in the URL.
54. Back in Teams, with the **Posts** tab selected, in the **General** channel of the **Tailwind Traders** team, type `@` and as you type **Azure**, you will be prompted with results, select **Azure Pipelines** followed by **subscribe** in the command Panel. At this point, paste the pipeline URL that you had copied. Your post should look like, `@Azure Pipelines subscribe https://dev.azure.com/<organization_name>/Tailwind%20Traders/build?definitionId=<number>` (make sure to replace the `<organization_name>` placeholder with the name of your DevOps organization). Press **Enter**.
55. Wait for the confirmation that the subscription has been successfully created.

56. **Note:** For Build pipelines, the channel is subscribed to the **Run stage state changed** and **Run stage waiting for approval** notifications.
57. Switch to the web browser displaying the **Tailwind Traders** project in the Azure DevOps portal, in the vertical menu bar at the far left of the Azure DevOps portal, click **Pipelines**, in the **Pipelines** section, click **Releases**, in the list of releases, click the **Website-CD*** entry, and, with the ****Website-CD** entry selected, in the web browser window, copy its URL into Clipboard.
58. **Note:** The URL will be in the format [https://dev.azure.com/<organization_name>/Tailwind%20Traders/ release? a=releases&view=mine&definitionId=2](https://dev.azure.com/<organization_name>/Tailwind%20Traders/release? a=releases&view=mine&definitionId=2), where the **<organization_name>** is the placeholder representing the name of your DevOps organization.
59. With the **Posts** tab selected, in the **General** channel of the **Tailwind Traders** team, type **@** and as you type **Azure**, you will be prompted with results, select **Azure Pipelines** followed by **subscribe** in the command Panel. At this point, paste the release URL that you had copied. Your post should look like, **@Azure Pipelines subscribe** [https://dev.azure.com/<organization_name>/Tailwind%20Traders/ release? a=releases&view=mine&definitionId=2](https://dev.azure.com/<organization_name>/Tailwind%20Traders/release? a=releases&view=mine&definitionId=2) to subscribe to the release pipeline (make sure to replace the **<organization_name>** placeholder with the name of your DevOps organization). Press **Enter**.
60. **Note:** For Release pipelines, the channel is subscribed to the **Deployment started**, **Deployment completed** and **Deployment approval pending** notifications.

Task 3: Using filters to customize subscriptions to Azure Pipelines in Microsoft Teams

In this task, you will use customize subscriptions to Azure Pipelines in Microsoft Teams.

Note: When a user subscribes to any pipeline, a few subscriptions are created by default without any filters being applied. Often, users have the need to customize these subscriptions. For example, users may want to get notified only when builds fail or when deployments are pushed to a production environment. The Azure Pipelines app supports filters to customize what you see on your channel.

Note: You can list and manage subscriptions by using **@Azure Pipelines subscriptions** command. This command lists all of the current subscriptions for the channel.

61. With the **Posts** tab selected, in the **General** channel of the **Tailwind Traders** team, type **@** and as you type **Azure**, you will be prompted with results, select **Azure Pipelines** followed by **subscriptions** and press **Enter**. In the reply from the **Azure Pipelines** bot, select **Add Subscription**.
62. In the **Azure Pipelines Add subscription** panel, in the **Choose event** dropdown list, ensure that **Build completed** is selected and click **Next**.

63. In the **Azure Pipelines Add subscription** panel, in the **Choose pipeline** dropdown list, ensure that **Website-CI** is selected and click **Next**.
64. In the **Azure Pipelines Add subscription** panel, in the **Build status** dropdown list, ensure that **[Any]** is selected and click **Submit**.
65. In the **Azure Pipelines Add subscription** panel, click **OK** to acknowledge the confirmation message.
66. In the **Azure Pipelines View subscriptions** panel, review the list of subscriptions and close the panel.
67. Switch to the web browser displaying the **Tailwind Traders** project in the Azure DevOps portal, in the vertical menu bar at the far left of the Azure DevOps portal, click **Pipelines**, on the Pipelines pane, click the **Website-CI** entry, and, while on the Website-CI pane, click **Run Pipeline > Run**.
68. The Teams channel will post notifications about the failed execution of the pipeline, as an expected behaviour (the pipeline has missing setup).

Review

In this lab, you implemented integration scenarios between Azure DevOps services and Microsoft Teams.