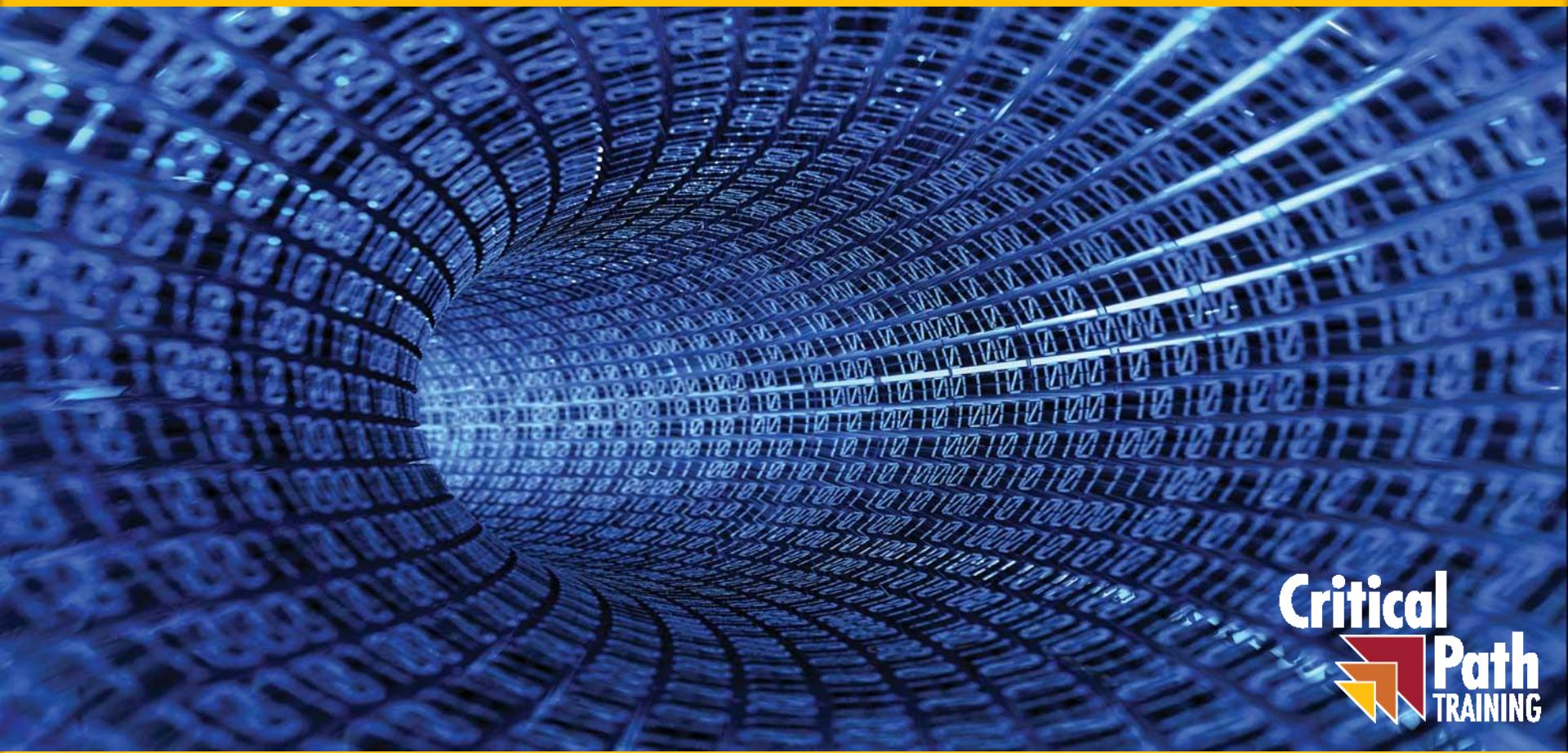


Developing for Microsoft Teams



Critical
Path
TRAINING

Agenda

- Understanding the Teams Service, Teams and Channels
- Developing Team Apps with Tabs, Bots and Connectors
- Developing a Teams App using App Studio
- Developing a Teams App using Visual Studio and C#
- Developing a Teams App using Node.js
- Packaging and Publishing a Microsoft Teams App



Microsoft 365 admin center

Home > Services & add-ins

Deploy Add-In View All Search Search for add-ins and services

Name Host Apps Status

manage and update your Microsoft Forms settings

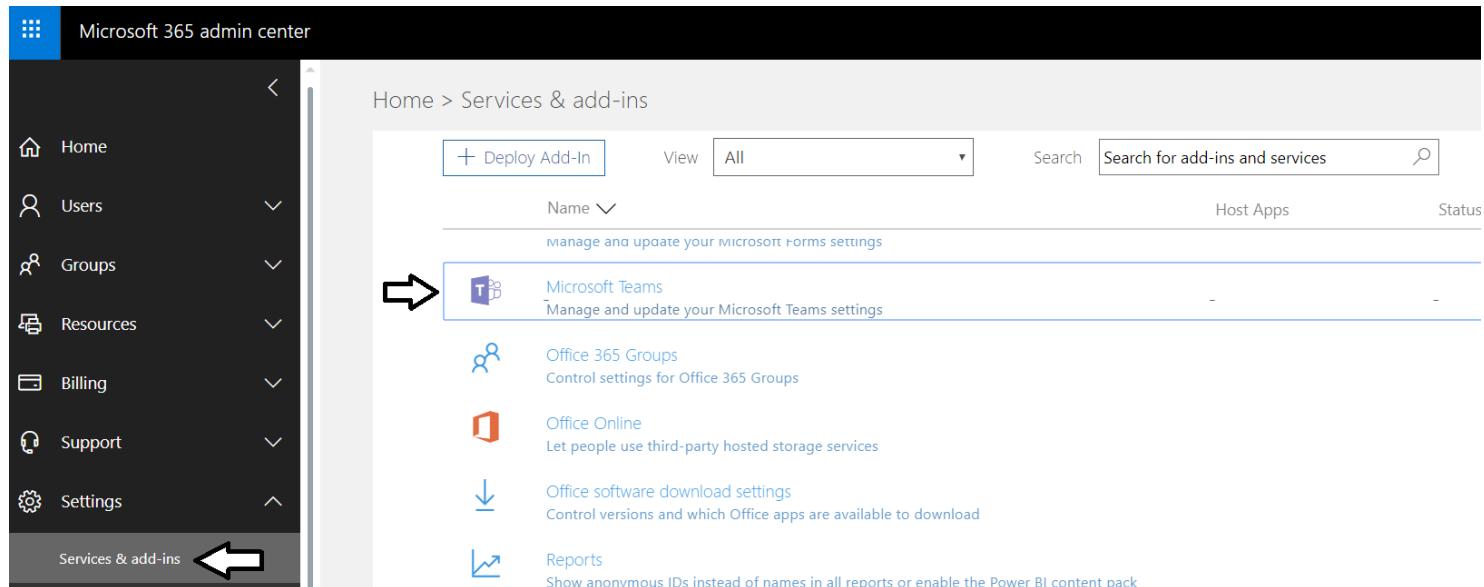
Microsoft Teams Manage and update your Microsoft Teams settings

Office 365 Groups Control settings for Office 365 Groups

Office Online Let people use third-party hosted storage services

Office software download settings Control versions and which Office apps are available to download

Reports Show anonymous IDs instead of names in all reports or enable the Power BI content pack



Services & add-ins

Activity

Chat

Teams

Meetings

...

Store

Feedback

Search or type a command

TP

Join or create a team

Create a team

Join a team with a code

Enter code

Join team

To start, create a team here.

Join or create a team

Create your team

Collaborate closely with a group of people inside your organization based on project, initiative, or common interest. [Watch a quick overview](#)

Team name

MSD

Description

Team for Modern SharePoint and Office 365 Development

Privacy

Private - Only team owners can add members

To start, here.

Join or create a team

Cancel

Next

Add members to MSD

Start typing a name, distribution list, or mail enabled security group to add to your team.

Add



Carrie Mathison
CARRIEM

Owner ▼



Maxwell Smart
MAXWELLS

Member ▼ X



Austin Powers
AUSTINP

Member ▼ X

Close

Chat-based workspace in Office 365



Chat for today's teams

Communicate in the moment and keep everyone in the know



A hub for teamwork

Give your team quick access to information they need right in Office 365



Customizable for each team

Tailor your workspace to include content and capabilities your team needs everyday



Security teams trust

Get the enterprise-level security and compliance features you expect from Office 365



Extensible platform

Build apps with a rich set of capabilities to enable these higher-performing teams

Introducing the Microsoft Teams App Platform



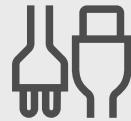
Tabs

Surface rich content within Teams



Bots

Help users get tasks done in conversations



Connectors

Post rich updates to channels



Actionable Messages

Add rich interaction to your connector cards



Activity Feed

Engage users via feed notifications



Compose Extensions

Allow users to query and share rich cards in conversations



Office Store

Drive engagement by submitting your app to the Office Store

Available now

Available in Developer Preview

Reach your users in their chats, channels, notifications, and personal workspace

Tabs



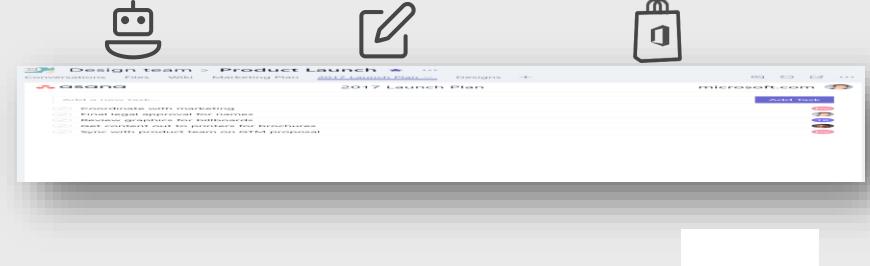
Rich surface area for your app

As simple as hosting your existing web app

Team productivity: within channels

Personal productivity: app flyout

Your services, experience, & users



Connectors with Actionable Messages



Push rich interactive cards into channels

Users can take quick actions like comment, select options, set a date

Uses incoming webhook API

Fully supported in both Teams and Outlook

The screenshot shows a Microsoft Teams message card. At the top, it says "Design team > Product Launch". Below that is a "Conversations" tab bar. The main content area displays a Trello card from "Trello" at 11:29 AM. The card text is "Card created: 'Sync with marketing team on GTM plans'". It includes details: "Larry Jin" (posted on 5/6/2017 6:29 PM), "Board: Actionable Messages Test", and "List: Sync with marketing team on GTM plans". Below the card are buttons for "Set due date", "Move", "Add a comment", and "View in Trello". A large purple input field below the card asks "Pick a date (Required)" with "May 11, 2017" selected. A "Save" button is present. At the bottom of the card, there's a "See less" link and a "Reply" button. The footer of the message card has a "Start a new conversation" input field and various message icons.

Activity feed



Notify users personally via the activity feed

Same API as sending bot messages

Deep link straight into tabs

The screenshot shows the Microsoft Teams interface with the 'Activity' tab selected. On the left is a sidebar with icons for Activity (highlighted with a red notification badge '6'), Chat, Teams, Meetings, Files, and Apps. The main area is the 'Feed' tab, which displays the following notifications:

- ContosoApp Just now Den Sasaki sent you a pull request. 29381: Ensure Icon Visibility at various zoom levels
- Babek Shamma 2h ago @Mentioned you in Marketing I can get on board with that. Thanks for taking a look! Would you mind...
- Aadi, Keiko & 5 others 2h ago Liked your reply in UX You: I can't wait for Wednesday!
- Daichi Fukuda 3h ago Posted a new reply on your file. NewDesign-Proposal.pptx

Bots



Bots make it easy for users to interact with your app in Team conversations or 1:1

Built using Microsoft Bot Framework

Complete tasks via basic commands, menu or natural language

Rich Microsoft Teams features, e.g.

- ✓ Input menus
- ✓ Dynamic message updates
- ✓ Integrate with tabs

Design team > Product Launch ★ ...

Conversations Files Wiki Marketing Plan Intro Video +

Larry Jin 11:50 AM Polly Where should we host the launch event? Hong Kong, Portland, Toronto

Polly 11:50 AM Where should we host the launch event?

Larry Jin created a poll!

Hong Kong (100%)
Portland (0%)
Toronto (0%)

Start a new conversation

Compose Extensions



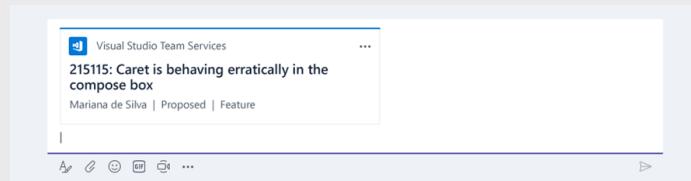
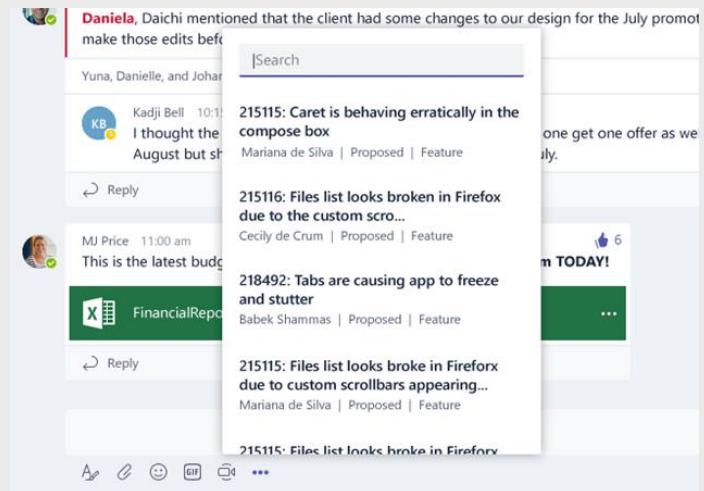
Personalize Teams Compose box with your App & Services content

Users can query and insert your app content into conversations

Example: Bug details from VSTS

Example: Sales opportunities from CRM

You can reuse services you built for Bots or Tabs



Tying it all together – Microsoft Teams App



Microsoft Teams Apps

- With a single package, deliver one or more capabilities to end users, in contexts that make sense in your experience

Single App definition – manifest.json

Single package (.ZIP) used for Sideload or Office Store submission

Microsoft Teams is open!



Register and submit your app today to the Office Store

Your app will be ready in the Developer Preview once approved

Discover apps

Introducing Apps for Microsoft Teams

All

Apps with Tabs

ISVs – Distribute through the Office Store

- Create or use your existing DevCenter / Seller Dashboard
- Upload your package and enter your product page
- Office Store Validate ensure compliance with Office Store Policy
- ISV app packages are published into the Office Store and will appear in Microsoft Teams Discovery view

Line-of-Business apps – Sideload your package

- Leverage the same testing methodology to deploy within your org
- Note: Enhanced LCI support coming soon

Asana

Polysync

Trello

Wrike

Zenefits

Track your team's tasks and projects.

Real-time collaboration designed for Teams

Human Resources + Recruit

Financial Management

Developer Tools

Customer Support

Data Visualization + BI

Customer + Contact Management

Communication

Analytics

Connectors

Bots

Tabs

Building a Great Microsoft Teams app



Light up your experience how and where you want it:

Teams Scope - your experience exists in the team context

- Team owners may add your experience to a team:
 - Bots and Compose Extensions – available on all channels
 - Teams Tabs (“Configurable”) – added and customized on a per-channel basis

Personal Scope – your experience exists in an individual user context

- Individuals add the experiences they want for personal use
 - Bots and Compose Extensions – available in 1:1 chat
 - Personal Tabs (“Static”) – available to end users via the App bar or alongside 1:1 bots

Getting Started



Tabs - Bring your own Service

- Light-weight Javascript APIs to tie your experience to Teams context

Connectors – Leverage the Connectors Developer Portal

- Build once, run on both Outlook and Teams
- Use new Actionable Cards layouts

Bots – Build using the Bot Framework

- Use the .NET and Node.js SDKs, or call the REST endpoints with your language of choice
- Teams Extension SDKs facilitate easy access to Teams-specific functionality
- Flag important messages for inclusion in Activity Feed

Compose Extensions – Reuse your bot

- Use the .NET and Node.js SDKs, or call the REST endpoints with your language of choice
- Teams Extension SDKs facilitate easy access to Teams-specific functionality

Testing and hosting



These are your services, hosted by you, in your cloud

Build, test, deploy are your processes

For testing within Microsoft Teams, create an Apps package, and sideload into a team

The screenshot shows the Microsoft Teams interface for a team named "Dream Team". The "Apps" tab is selected. A single app entry is visible:

Name	Description
Bot Templ...	The Bot Template is meant to create an environment in which to ea...

Below the table, there is a link to "Create a custom bot" and a button labeled "Create a custom bot | Sideload an app".

Deploying



ISVs – Distribute through the Office Store

- Create or use your existing DevCenter / Seller Dashboard account
- Upload your package and enter your product page metadata
- Office Store Validation ensure compliance with Office Store Policy
- Validated apps are published into the Office Store and will appear in Microsoft Teams Discovery view

A screenshot of the Microsoft Teams App Store. At the top, a banner says "Introducing Apps for Microsoft Teams". Below it, there's a section for "Apps with Tabs" with a "Tabs" filter selected. A grid of app cards is shown, including Asana, Hootsuite, Intercom, Polyscribe, Sapho, Smartsheet, Trello, Wrike, and Zenefits. On the left, there's a sidebar with categories like All, Tabs, Bots, Connectors, Analytics, Communication, Customer + Contact Ma..., Customer Support, Data Visualization + BI, Developer Tools, Files + Documents, Financial Management, Human Resources + Rec..., and IT/Admin.

Line-of-Business apps – Sideload your package

- Leverage the same testing methodology to deploy within your org
- Note: Enhanced LOB support coming soon

Tabs

Tabs



Embed-ready web UX on
web/desktop, deep link to native
apps on mobile

Leverages Microsoft Teams Tab
Library javascript for context and
interactivity

Team or Personal Scope



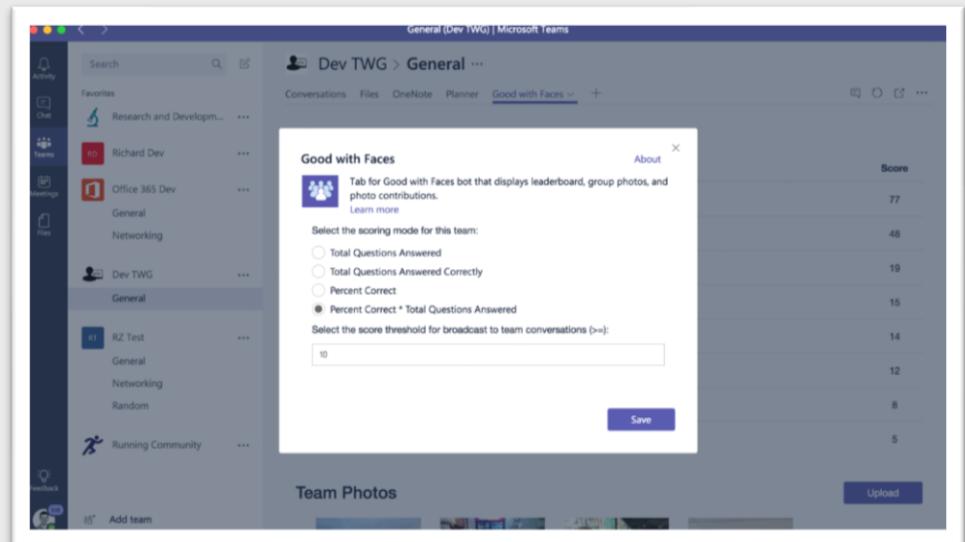
Tabs Pages



Configuration Page: page used to add or update the tab and set content page

Content Page: the primary page displayed in the tab

Remove Page: optional page displayed when a tab is removed



Tabs - Config Page



Used to add/edit a tab

Must reference Microsoft Teams Tab Library

Sets the `contentUrl` for the tab

Calls `setSettings` to save tab configuration

Must call `setValidityState` to enable the save button and `notifySuccess` when saved

```
microsoftTeams.initialize();
microsoftTeams.settings.registerOnSaveHandler(function
(saveEvent){
    microsoftTeams.settings.setSettings({
        entityId: "someid",
        contentUrl: "https://somedomain/tab.html",
        suggestedDisplayName: "Tab Title",
        websiteUrl: "https://somedomain/info.html",
        removeUrl: "https://somedomain/tabremove.html"
    });
    saveEvent.notifySuccess();
});

function onSaveClick() {
    microsoftTeams.settings.setValidityState(true);
}
```

Tabs - Context information



getContext returns team/channel context:

- **tid** – id of tenant
- **groupId** – id of the O365 group
- **teamId** – id of the team
- **channelId** – id of the channel
- **entityId** – id of the entity
- **theme** – theme of the teams client
- **locale** – the locale of the client
- **upn** – UPN of the user

```
microsoftTeams.getContext(function (context) {  
    // context contains all context info  
});
```

Tabs - Deep linking to Entities



Share a Link from your Tab

Trigger the creation of a deep link to a specific Entity for a user to copy / paste into a conversation.

Resultant link may be clicked on by any user to launch the tab and navigate directly to that Entity.

Generate your own Deep Link

Programmatically create your own link, for use via bot or other code flows.

```
microsoftTeams.shareDeepLink({  
    subEntityId: <subEntityId>,  
    subEntityLabel: <subEntityLabel>,  
    subEntityWebUrl: <subEntityWebUrl>  
})
```

```
https://teams.microsoft.com/l/entity/<appId>/<entityId>?webUrl=<entityWebUrl>&label=<entityLabel>&context=<context>
```

Microsoft Teams

Activity 6

Search

Favorites

Northwind Traders

General

Customer Accounts

Development

Marketing

Project Management

Website

32 more channels

Contoso

Engineering

General

Fun stuff

Marketing

Weekly Specials

4 more channels

More

Add team

Northwind Traders > Development

Conversations Files Notes Feature Backlog Deployments Pull Requests +

Find

CONTOSO

Future Features

- Add Customizer config for logo's background colour 1
- Sticker face tracking issue with Video Calls 1/3
- Add power by Edify Hub to login page when using someone else's branding 2
- Sermons page and widgets-sync with SermonAudio 1/3

Backlog

- Add Customizer config for logo's background colour 4
- Zendesk SSO 2/3
- Admin notifications when info changes - with option to update info block 1
- Set up archive of logs. 1/3
- Upgrade OpenSSL (after Jul. 9) 1/3
- Add ability to force password reset 4
- Update login page to use new branding and styling 4

Required for Open Beta

- Info.edifyhub.com, default to http instead of https. 2
- Support "mark inactive" 2/3
- Add keyboard shortcuts 1
- Test Accounts Server 1
- Want tips, usage examples, or API info? 2
- CMS-2345: Categorize more of the unknown locations 2

Add a list

Add a card... Add a card... Add a card...

Microsoft Teams

Activity 6

Search

Favorites

- Northwind Traders
- General
- Customer Accounts

Development

- Marketing
- Project Management**
- Website
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Contoso

Engineering

- General

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More

Add team

Northwind Traders > Development

Conversations Files Notes Feature Backlog Deployments Pull Requests +

Find

Future Features Backlog Required for Open Beta Add a list

Test bug
in list Project Tasks

Labels

- mobile
- ios
-

Edit the description...

Write a comment

send

Activity Hide Details

Will Little added this card to Project Tasks Jan 31 at 1:08 pm

Add

- Members
- Labels
- Checklist
- Due Date
- Attachment

Power-Ups

- Github

Actions

- Move
- Copy
- Subscribe

Archive

4 Add a card... Add a card... Add a card...

Building a Great Tabs experience



Tabs in Microsoft Teams

- Put information at the fingertips of users
- Leverage collaborative nature of the product
- Minimize context switching – easy to find what users needs
- Focus on content that makes sense in the solution
- Minimize extra chrome – focus on what you want the user to do
- Design for bite-size tasks – power users should use your full SaaS

Building a Great Tabs experience



Configurable Tabs

- In a channel, tabs should allow the user to configure the view to the relevant content
- Content should be the same for all users – leverage collaboration
- Content should be locked – don't allow users to browse away

Static Tabs

- In personal scope, this content should be the relevant for either the all-up app (e.g. Help, FAQ, forums) or for a personal view of the experience

Bots

Bots



Web Service you create and host, using whatever web technology you prefer (though we recommend Node.js or .NET on Azure)

Built using Microsoft Bot Framework, leverage other tech like LUIS

Node.js and .NET/C# libraries, or call REST APIs directly

New Microsoft Teams Extension libraries (Node.js and .NET) facilitate channel-specific functionality

A screenshot of a Microsoft Teams conversation in the "Design team > Product Launch" channel. A message from "Polly" at 11:50 AM asks, "Where should we host the launch event? Hong Kong, Portland, Toronto". Below the message, it says "Larry Jin created a poll!" and shows three options: "Hong Kong" (100% (1)), "Portland" (0%), and "Toronto" (0%). At the bottom of the message card, there are "Reply" and "Start a new conversation" buttons, along with standard message input and media icons.

Bots – Getting up and running



Set up basic development environment and install Bot Builder and Microsoft Teams extension SDKs for chosen language

Leverage existing Bot Framework sample or Teams Getting started sample

Run locally in the Bot Emulator

Bots - Getting Teams-ready



Register your bot in the Bot Framework Dev Portal

- Set a unique bot name and handle
- Set your bot Endpoint – your hosted domain, or your debug instance (we recommend Ngrok)
- Create an AppID (aka BotID) and Password
- Add Microsoft Teams as a Channel

Note: for 1:1 bot, you may reference your bot directly via its AppID

Enter your AppID and Password into your Development environment

Build and publish or run locally with Ngrok

Bots - Accessing in Teams



Create a Teams App Manifest

- We have provided a SimpleBot package in MSDN – a basic bot manifest with sample icons

Add your BotID in the Bots object

Sideload into a Team

```
{  
  "manifestVersion": "1.0",  
  "version": "1.0.0",  
  "id": "%APP_GUID%",  
  "packageName": "com.samples.samplebot",  
  "developer": {  
    "name": "Microsoft",  
    "websiteUrl": "https://www.microsoft.com",  
    "privacyUrl": "https://www.microsoft.com/privacy",  
    "termsOfUseUrl": "https://www.microsoft.com/termsofuse"  
  },  
  "name": {  
    "short": "Sample Bot App"  
  },  
  "description": {  
    "short": "This is a sample bot manifest",  
    "full": "This is a sample bot manifest that has the bare minimum you need for a bot, which will work  
in Teams and Personal scopes."  
  },  
  "icons": {  
    "outline": "contoso20x20.png",  
    "color": "contoso96x96.png"  
  },  
  "accentColor": "#60A18E",  
  "bots": [  
    {  
      "botId": "%BOT_FRAMEWORK_ID%",  
      "scopes": [  
        "team",  
        "personal"  
      ]  
    }  
  ],  
  "permissions": [  
    "identity",  
    "messageTeamMembers"  
  ]  
}
```

Bot - Messaging



Responsive messages (via 1:1 or @mentioning in channel)

Proactively create messages

- Create direct (1:1) message – must know user ID
- Create new channel reply – bot must be added to team and know channel information

Update messages sent by Bot

One-way only – e.g. push notifications

Bot - Content



User to bot

- Plain or rich text
- Inline images
- Note: files not currently supported

Bot to user

- Plain text
- Markdown or XML
- Cards
 - Hero Cards
 - Thumbnails
 - Sign-in
 - Carousel or List layouts
 - Buttons
 - openUrl – open in browser
 - imBack – trigger chat response
 - invoke – silent JSON payload

A screenshot of a Microsoft Teams message. At the top is a hero card featuring a large image of several pieces of sushi. Below the image are the card title "Card title", the card subtitle "Bacon ipsum dolor amet flank ground round chuck pork loin. Sirloin meatloaf boudin meatball ham hock shoulder capicola tri-tip sausage biltong cupim", and three action buttons labeled "Action 1", "Action", and "Action". To the right of the hero card is a card with the heading "Homegrown Sandwiches and salads" and the address "104 Lake St, Kirkland, WA 98033 (425) 123-4567". At the bottom are two more buttons: "View in article" and "See more like this".

A screenshot of a Microsoft Teams message from a bot named "T-Bot". The message shows a list of team members: Audi Kapoor, Aaron Burton, Adam Jaraman, and Angus McNeil. Below the list is a knowledge base card with the heading "How do I let people know I created a team?". The card contains text explaining how to @mention the team in the compose box. To the right of the knowledge base card is another card with the heading "How do I create a new team?" and "What are teams and channels?".

Bots in team channels - Basics



Bot only listens to @mentions

- Replies go to the conversation thread

Inbound payload in channels as flagged as `isGroup` and contains Teams channel data:

```
"channelData": {  
    "channel": {  
        "id": "19:293ecdb923ac4458a5c23661b505fc84@thread.skype",  
    },  
    "team": {  
        "id": "19:293ecdb923ac4458a5c23661b505fc84@thread.skype"  
    },  
    "tenant": {  
        "id": "72f988bf-86f1-41af-91ab-2d7cd011db47"  
    }  
}
```

The screenshot shows a Microsoft Teams channel named 'Bots In Channel Playground > Polly'. The channel has tabs for Conversations, Files, Notes, Poll Results, and a plus sign. A message from Larry Jin at 2:31 PM mentions a poll about lunch options: "Polly What's for lunch?" with choices "fish", "chicken", and "salad". A reply from Polly at 2:31 PM asks "What's for lunch?". Below it, a poll result shows the following distribution:

Option	Percentage	Votes
fish	36%	(4)
chicken	27%	(3)
salad	36%	(4)

Total votes: 11

Bots in team channels – Special functions



Retrieve a list of all team members, including:

- Name
- Email
- AAD Object
- UPN

Retrieve a list of all channels

@Mentioning users

Proactively create New Reply chain

Team/channel event monitoring

- User addition/remove
- Channel creation/removal/renaming

Building a Great Bot experience



Bots in Microsoft Teams

- Whether used as a CLI for your SaaS, or a conversation bot to facilitate work, create the experience that makes the most sense for your product.
- Take advantage of scope to provide the appropriate information in channel or via 1:1.
- Leverage the Bot Framework and Microsoft Teams Extension SDK to gain insight to the team and channel, or act as an intelligent notification system.
- Leverage Static Tabs to provide additional help and user education, right alongside the chat stream.

Compose Extensions

Microsoft Teams

Activity 6

Search

Favorites

- Northwind Traders
- General
- Customer Accounts

Development

- Marketing
- Project Management**
- Website
- 32 more channels

Contoso

Engineering

- General
- Fun stuff
- Marketing
- Weekly Specials
- 4 more channels

More

Add team

Northwind Traders > Development

Conversations Files Notes Feature Backlog Deployments Pull Requests +

Reply

Aadi Kapoor 9:05 am
Daniela, I've made some changes to the client APIs. Can you do a quick verification text to make sure I didn't break anything?
Thank you thank you!

5 replies from Ivan, Kadji, and Keiko

Kayo Miwa 10:15 am
My test team did a full test pass. Looks like we have some bugs in the international markets. I'll kick off a build with the fixes. Should be super simple.

Reply

Cecily De Crum 10:30 am
This is the latest bug breakdown. Please send you feedback by **5pm Today!**

Bug_Report_Breakdown.xlsx

Reply

Will Little 10:45 am
Team, we will take today's arch session to talk about the Graph layer for the app obj model

14 replies from Babek, Daphne, and Marie

Babek Shamma 10:50 am
One of the things we were planning to do - move objects (with all the properties) defined for startup and reply chain to nugget, so that these classes can be shared - we will go ahead and do this and then we can decide to extend specific classes?

Reply

Start a new conversation

Microsoft Teams

Activity 6

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Bug_Report_Breakdown

Meet up

Create poll

Create greeting card

Code Snippet

Contoso

Trello

Planner

Start a new conversation

A C G D ...

app obj model

the properties) defined for startup and go ahead and do this and then we

Microsoft Teams

Activity (6)

Search

Favorites

Northwind Traders

General

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Development

Marketing

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Website

32 more channels

Contoso

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Weekly Specials

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Search Contoso

Bug_Report_Breakdown

Reply

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Babek S. | Backlog

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Louisa C. | Required for Open Beta

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Reply

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Daniela M. | Backlog

Categorize more of the unknown locations
Kayo M. | Required for Open Beta

Sticker face tracking issue with Video Calls

Start a new conversation

A C Gif

...

Reply

@

Microsoft Teams

Activity 6

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Conversations Files Notes Feature Backlog Deployments Pull Requests +

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Bug_Report_Breakdown.xlsx

Reply

Will Little 10:45 am
Team, we will take today's arch session to talk about the Graph layer for the app obj model

Can anyone jump in on Louisa's bugs while she's out?

Contoso

Info.edifyhub.com, default to http instead of https
Owner: Louisa Cain
Tag: Required for Open Beta

Microsoft Teams

Activity 6

Search

Favorites

- Northwind Traders
- General
- Customer Accounts

Development

- Marketing
- Project Management**
- Website
- 32 more channels

Contoso

Engineering

- General

Fun stuff

Marketing

- Weekly Specials
- 4 more channels

More

Add team

Northwind Traders > Development

Conversations Files Notes Feature Backlog Deployments Pull Requests +

Cecily De Crum 10:30 am This is the latest bug breakdown. Please send you feedback by **5pm Today!**

Bug_Report_Breakdown.xlsx

Reply

Will Little 10:45 am Team, we will take today's arch session to talk about the Graph layer for the app obj model

14 replies from Babek, Daphne, and Marie

Babek Shamma 10:50 am One of the things we were planning to do - move objects (with all the properties) defined for startup and reply chain to nugget, so that these classes can be shared - we will go ahead and do this and then we can decide to extend specific classes?

Reply

Daniela Mandera 11:20 am Can anyone jump in on Louisa's bugs while she's out?

Contoso

Info.edifyhub.com, default to http instead of https
Owner: Louisa Cain
Tag: Required for Open Beta

Reply

Start a new conversation

A C

Compose Extensions



Cloud-hosted service that listens to user requests and responds with cards or rich media

Leverage the Bot you've already built, or build another

Define commands and parameters in the manifest.json

Handle via Bot Framework activity, leveraging the Microsoft Bot Extension SDKs

```
"composeExtensions": [
  {
    "botId": "57a3c29f-1fc5-4d97-a142-35bb662b7b23",
    "scopes": [
      "personal"
    ],
    "commands": [
      {
        "id": "searchCmd",
        "description": "Search Bing for information on the web",
        "title": "Search",
        "initialRun": "true",
        "parameters": [
          {
            "name": "searchKeyword",
            "description": "Enter your search keywords",
            "title": "Keywords"
          }
        ]
      }
    ]
  },
  {
    "botId": "57a3c29f-1fc5-4d97-a142-35bb662b7b23",
    "scopes": [
      "personal"
    ],
    "commands": [
      {
        "id": "searchCmd",
        "description": "Search Bing for information on the web",
        "title": "Search",
        "initialRun": "true",
        "parameters": [
          {
            "name": "searchKeyword",
            "description": "Enter your search keywords",
            "title": "Keywords"
          }
        ]
      }
    ]
  }
],
```

(Snippet)

Building a Great Compose Extension experience



Compose Extensions in Microsoft Teams

- Share content that makes sense in conversations.
- Add on as part of your core Bot offering to facilitate easier management.
- Take advantage of the rich card types provided as part of the platform.
- Optimize search results to keep compose extensions snappy and responsive.

Connectors

Microsoft Teams

Activity 6

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Page refresh is taking too long to load.
IT Service Desk | 764CVC

Details

Type:	Fault	Components:	Extranet	Status:	In Progress
Priority:	Major	Labels:	None		

Issue Links
Relates to: 762CHJ Scroll performance

Show full summary

Contoso 12:30 pm
The following item was marked as closed. **Shiproom**

Company Extranet fails to load documents section
IT Service Desk | 884CVC

Details

Type:	Fault	Components:	Extranet	Status:	Closed
Priority:	Major	Labels:	None		

Issue Links
Relates to: 884CVB Users can't locate files

Show full summary

Start a new conversation

A C

Office 365 Connectors



Leverage webhooks to send activity into Teams

Build your own connector, registering on the Connector Developer Portal

Simply add Connector ID to manifest.json

Leverage new Actionable Messages, to allow users to get inline work done

The screenshot shows a Microsoft Teams conversation in the 'Ecosystem Connectors Bugbash' channel. The message from 'Stack Overflow' contains an actionable message with code snippets and a reply button. The message from 'Isabel Cariod' is also visible.

Activity Feed

Microsoft Teams

Activity 6

Search

Feed

Daichi Fukuda Posted a new reply on your file. NewDesign-Proposal.pptx 1m ago

Marie Beaudouin Replied to you in Website Yes, but not all the concerns have been addressed. 25m ago

Contoso Cassandra Dunn assigned you to a task CMS-2346: Categorize more of the unknown locations 30m ago

Babek Shamma mentioned you in Marketing I can get on board with that. Thanks for taking a look! Would you mind... 2h ago

Contoso Daichi Fukuda sent you a pull request. Your response is required 3h ago

Will Little Invited you to attend 11:30am 1 hour Social Calendar Client Review Accept Decline 4h ago

Ivan Averyanov Reacted to your reply in Website

Northwind Traders > Marketing

Conversations Files Notes +

Daphne Knowles 9:14 am Can someone please point me to the latest FY2017 strategy pitch deck? I'm supposed to do a design scrub for it.

2 replies from Kadji and Jakob

Daniela Mandera 9:18 am I'm not confident in recommending option 2 or 5 again and feel that we should cut those options from the deck. We've discussed those options with the client before and she believes those are too costly for the brand. If we don't acknowledge those concerns, she may lose confidence in our recommendations.

Reply

Babek Shamma 9:25 am Will, Daichi mentioned that the client had some changes to our design for the July promotional splash page. Could you make those edits before our Wednesday client sync?

5 replies from Will, Yuna, and Babek

Kadji Bell 10:15 am I thought the client wanted to include a section about the buy one get one offer as well? Originally it was slated for August but she mentioned she got the budget approved for July.

Reply

Will Little 2/13 2:23 pm Daniela, Can you please post the latest deck by tomorrow EOD? We'd like to do one more account review before the client presentation. Mainly want to take another look at the budget proposals. CC: Babek, Ivan

12 replies from Daniela, Ivan and Babek

Marie Beaudouin 1:30 pm Yes, but not all the concerns have been addressed.

Reply

Start a new conversation

Microsoft Teams

Activity

Feed

Chat

Teams

Meetings

Files

Apps

Feedback

Daichi Fukuda Posted a new reply on your file. [NewDesign-Proposal.pptx](#) 1m ago

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Northwind Traders > Development

Conversations Files Notes Feature Backlog Deployments Pull Requests +

Find

Future Features Backlog Required for Open Beta Add a list

CMS 2346: Categorize more of the unknown locations

in list Project Tasks

Labels

mobile ios +

Edit the description...

Write a comment

send

Add Members Labels Checklist Due Date Attachment

Power-Ups Github

Actions Move Copy Subscribe Archive

Activity

Cassandra Dunn assigned you to the task 2/24 at 1:00 pm

Babek Shamma created the task 2/3 at 10:32 am

Add a card...

Add a card...

Add a card...

CONTOSO

Microsoft Teams

Activity 6

Search

Feed

Daichi Fukuda Posted a new reply on your file.

1m ago

NewDesign-Proposal.pptx

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Your response is required

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Northwind Traders > Development

Conversations Files Notes Feature Backlog Deployments Pull Requests

App v 5.6 / Northwind Traders

CONTOSO

Pull requests

Filter by: Open Author Target branch I'm reviewing

Summary

Bugfix/CMS-8876B cart is crashing → master 4 1

Daichi Fukuda, last updated February 23 2017

Bugfix/CMS-5468C refresh issues → master 2

Daichi Fukuda, last updated February 22 2017

Bugfix/CMS-4453 Color picker for widget selector changes → master

Daichi Fukuda, last updated February 20 2017

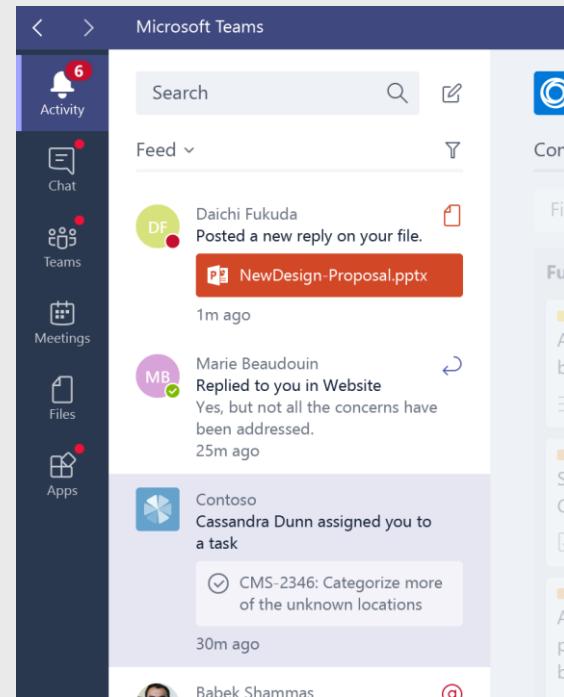
Activity Feed



Use the Activity Feed to send important information to your users

Leverage your existing Bot, to tag specific messages as notification alerts

Encode a deep link to your entity (tab) to allow one-click navigation to your content



Putting it all together

Building a Great Microsoft Teams app



Channel Tabs

- Sharing group information
- Pin information or tools important for the channel

Connectors

- Simple push notifications across channels (Outlook & Teams)

Notifications

- Get work done inline
- Keep users focused on tasks that matter

Channel Bots

- Coordinate the group
- Broadly share
- Push notifications

Personal Tabs

- Focus on the user
- Provide help or other information

Personal Bots

- Simplify commands
- Q&A
- Provide individual insight

Compose Extensions

- Provide contextual shortcuts to information users need

Building a Great Microsoft Teams CRM app



Channel Tabs

- Team account list
- Target / metrics dashboard

Personal Tabs

- Filtered account list
- Personal dashboard

Connectors

- Simple push notification from other tools

Notifications

- Flag important action items

Channel Bots

- Channel notifications of wins / losses
- In-group opportunity queries

Personal Bots

- Personal queries

Compose Extensions

- Quick way to send links to opportunities

Building a Great Microsoft Teams project app



Channel Tabs

- Project Kanban
- Task list
- Project schedule
- Burndown chart
- Other dashboards

Personal Tabs

- Personal to-do / tasks

Connectors

- Simple push notification from other tools

Notifications

- Flag important action items

Channel Bots

- Channel notifications on status changes
- Group queries

Compose Extensions

- Quick way to send links to tasks

Personal Bots

- Personal queries