

# MS Teams Integration

LMS Teams Integration Prerequisites imc Learning Suite

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## **MS Teams Integration**

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# 1 Description

This document provides information on integration steps for MS Teams APIs and is divided among three sections as:

- Creation of new account on Azure portal along with steps to register a new application.
- Adding permissions to the registered application.

## 2 **Prerequsites / Limitations**

- The service (social-integration-backend) needs to be configured to be part of the delivery package.
- A MS Teams tenant is needed (usually included in an Office 365 subscription / tenant).
- A technical user / app needs to be created to access the Microsoft Graph API with specifc permissions.
- The frontend URL need to be configured in the client properties.
- Only internal users belonging to the company's tenant can be added to the teams no guests.
- The following MS Teams administration rights are required: Group.Read.All, Group.ReadWrite.All, TeamsTab.ReadWrite (see <a href="https://docs.microsoft.com/en-us/graph/permissions">https://docs.microsoft.com/en-us/graph/permissions</a>-reference for more details).

## 3 Functional Summary

- Sharing of visual representation of courses into Teams and Channels.
- Creation of an individual Teams Team per Course from within Course's Creation.
- Representation of the Course Content (Syllabus) inside the Course's Team.

## 4 Configuration

## 4.1 Creation of the technical user / app

#### 4.1.1 System Requirements

**Application / Web Server** 

Product	Version	Fix Level
Tomcat	9	

#### 4.1.2 Technology Stack

The following table provides a list of the technologies used for the implementation of MS Teams API's.

Name	Version	Comments
Java	1.8	
Spring boot	2.1.8	
Gradle	4.10	
Microsoft Graph SDK	1.0	
Junit	4.12	
lombok	1.18.10	

#### 4.1.3 Integration Steps

#### **Register New Application on Azure**

To register a new application using the <u>Azure Portal</u> follow these steps:

- 1. Sign in to the Azure portal using either a work or school account or a personal Microsoft account.
- 2. If your account gives you access to more than one tenant, select your account in the top right corner, and set your portal session to the Azure AD tenant that you want.

- 3. In the left-hand navigation pane, select the **Azure Active Directory** service, and then select **App registrations > New registration**.
- 4. When the **Register an application** page appears, enter your application's registration information:
  - Name Enter a meaningful application name that will be displayed to users of the app.
  - Supported account types Select which accounts you would like your application to support.

Supported Account Types	Description
Accounts in this organizational directory only	Select this option if you're building a line-of-business (LOB) application. This option is not available if you're not registering the application in a directory. This option maps to Azure AD only single-tenant. This is the default option unless you're registering the app outside of a directory. In cases where the app is registered outside of a directory, the default is Azure AD multi-tenant and personal Microsoft ac-
Accounts in any organizational directory	Select this option if you would like to target all busi- ness and educational customers. This option maps to an Azure AD only multi-tenant. If you registered the app as Azure AD only single-ten- ant, you can update it to be Azure AD multi-tenant and back to single-tenant through the Authentication blade.
Accounts in any organizational directory and per- sonal Microsoft accounts	Select this option to target the widest set of customers. This option maps to Azure AD multi-tenant and personal Microsoft accounts. If you registered the app as Azure AD multi-tenant and personal Microsoft accounts, you cannot change this in the UI. Instead, you must use the application manifest editor to change the supported account types

 Redirect URI (optional) - Select the type of app you're building, Web or Public client (mobile & desktop), and then enter the redirect URI (or reply URL) for your application. This option is optional and can be skipped.

5. When finished, select Register.

Microsoft Azure <i>Search</i>	resources, services, and docs >_ 日子 口 🔅 ? 😳 isabelleh@contosoen
«	Home > App registrations > Register an application
+ Create a resource	Register an application ×
i≣ All services	Phone
— 🕇 FAVORITES ————————————————————————————————————	* Name
🖪 Dashboard	The user-facing display name for this application (this can be changed later).
All resources	ContosoApp_1
📦 Resource groups	
🔇 App Services	Supported account types
Iunction Apps	Who can use this application or access this API?
👼 SQL databases	Accounts in this organizational directory only (Contoso Enterprises)
🬌 Azure Cosmos DB	Accounts in any organizational directory
🧕 Virtual machines	Accounts in any organizational directory and personal Microsoft accounts (e.g. Skype, Xbox, Outlook.com)
🚸 Load balancers	Help me choose
🧮 Storage accounts	
🖘 Virtual networks	Redirect LIRL (ontional)
🚸 Azure Active Directory	We'll return the authentication response to this URL after successfully authenticating the user. Providing this now is optional
🔭 Monitor	and it can be changed later, but a value is required for most authentication scenarios.
🔷 Advisor	Web        https://contosoapp1/auth
Security Center	
Ost Management + Billing	
P Help + support	
	Register
	(

Fig. 4.1: Register an application.

Azure AD assigns a unique application (client) ID to your app, and you're taken to your application's Overview page. To add additional capabilities to your application, you can select other configuration options including branding, certificates and secrets, API permissions, and more.



Fig. 4.2: New registered application – Overview.

#### 4.1.4 Adding Permissions on Registered Application

Permissions are required to the registered application so as to create a new group, add and remove members from a group and adding tabs to channels. To add permissions, perform below steps:

- 1. In the left-hand navigation pane, select the Azure Active Directory service, and then select App registrations. This will list all the registered applications. Now select the newly registered application. This will redirect to the overview page of application.
- 2. In left-hand navigation pane select API Permissions.
- 3. Click on Add a permission button and assign below permissions to your app at Application level and Grant admin concent:
  - Group.Create
  - Group.Read.All
  - Group.ReadWrite.All
  - GroupMember.ReadWrite.All
  - TeamsTab.Create
  - TeamsTab.ReadWrite.All
  - User.Read.All

🔥 IMC-API   API permissions - Mir 🗙	+										٥	$\times$
← → ♂ ☆	🛈 🔒 https://portal.azure.	com/#blad	le/Microsoft_AAD_RegisteredApps/Applicati	onN 80%	… ☆	Q Search	ı		11	\	Cors	≡
≡ Microsoft Azure	,○ Search res	sources, service	es, and docs (G+/)				N 16 0 @	? 😅	atcs@lo	calenv.o	nmicro.	: 🙁
Home > localenv   App registrations >												
<sub></sub>	ONS 🖈 Click on this I	outton to										$\times$
	C Refresh	nissions 1 level.										
Overview A	oplications are autoorized to call APIs wh	en they are gr	anted permissions by users/admins as part of the consent pr	ocess. The list of configure	d permissions	should include a	l the					^
Quickstart P	ermissions the application needs. Learn n	nore about per	rmissions and consent			Add	d These Permissions	so that the	applicat	ion is		- 84
💉 Integration assistant (preview)	+Add a permission Grant	admin consen	nt for localenv			add	I/remove users from	group	and able			
Manage	API / Permissions name	Туре	Description	Admin consent requ	Status							
Branding	V Microsoft Graph (14)											
Authentication	Sef47bde-23a3-4cfb-be03-6a	Application		Yes	🔺 Not gr	anted for localen	v					
Certificates & secrets	Directory.Read.All	Application	Read directory data	Yes	Grante	d for localenv						
Token configuration	Directory.ReadWrite.All	Application	Read and write directory data	Yes	Grante	d for localenv						
API permissions	Group.Create	Application	Create groups	Yes	🕑 Grante	d for localenv						
Expose an API Select API	Group.Read.All	Application	Read all groups	Yes	🕑 Grante	d for localenv						
Owners Permissions to add new permissions	Group.ReadWrite.All	Application	Read and write all groups	Yes	🕑 Grante	d for localenv						
Roles and administrators (Preview)	GroupMember.ReadWrite.All	Application	Read and write all group memberships	Yes	🕑 Grante	d for localenv						
Manifest	TeamsApp.ReadWrite.All	Application	Manage all users' Teams apps	Yes	🕑 Grante	d for localenv						
Support + Troubleshooting	TeamsTab.Create	Application	Create tabs in Microsoft Teams.	Yes	🕑 Grante	d for localenv						
P Troubleshooting	TeamsTab.ReadWrite.All	Application	Read and write tabs in Microsoft Teams.	Yes	Grante	d for localenv						
New support request	User.Export.All	Application	Export user's data	Yes	🕑 Grante	d for localenv						
	User.Invite.All	Application	Invite guest users to the organization	Yes	🕑 Grante	d for localenv						
	User.Read.All	Application	Read all users' full profiles	Yes	🕑 Grante	d for localenv						
	User.ReadWrite.All	Application	Read and write all users' full profiles	Yes	🕑 Grante	d for localenv						~

Fig. 4.3: API permissions.

#### 4.1.5 MS Teams application configuration

To configure Back-end application follow below steps:

- 1. Under the project root directory go to src > main > resources and edit these properties files (application-dev.properties, application-prod.properties and application-test.properties).
- 2. Replace <graph-client-id> with Application (client) ID of the registered application.
- 3. Replace <graph-authority> with Directory (tenant) ID of the registered application.
- 4. Replace <graph-client-secret> with client secret key. To generate client secret, navigate to overview page of application and select Certificates & secrets. Under Client secrets click on New Client Secret Button and select Add. This will generate key. Refer Screenshot for more info:

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📍 TestRegistra	ation   Co	ertificates & secrets 🛛 🖈									
Search (Ctrl+/)	*	<ol> <li>Copy the new client secret value. Yo</li> </ol>	u won't be able to retrieve it after vo	u perform another	operation or leave	this blad	le.				
Overview	^		· · · · · · · · · · · · · · · · · · ·								
📣 Quickstart		Certificates can be used as secrets to p	rove the application's identity wi	en requesting a ti	oken. Also can b	e referre	ed to a	s public k	eys.		
🚀 Integration assistant (pr	eview)	T Upload certificate	St	art date			E	xpires			
Manage		No certificates have been added for this	sapplication								
Branding		No certificates have been added for this	application.								
Authentication											
📍 Certificates & secrets	$\supset$	Client secrets									
Token configuration		A secret string that the application uses	to prove its identity when reque	sting a token. Also	o can be referre	d to as a	applicat	tion passv	ord.		
API permissions		+New client secret									
Expose an API		Description		Expires	Value				Client	secret ke	еу
Owners		Password uploaded on Thu Jul 02 20	20	7/2/2021	z_ED0G9d	IL9UjP.	z806f~	tbN.4HxV	GWCW	-	0 🗐
Roles and administrato	rs (Pre									/	)
III Manifest											
Support + Troubleshooting	, ,										

Fig. 4.4: Certificates & secrets.



Fig. 4.5: New client secret.

#### 4.1.6 REST API Documentation

Documentation of API's for teams can be found in Back-end project structure under doc folder in root directory.

- For Postman collection refer file: IMC\_Teams\_Postman\_Collection.json.
- For Swagger documentation refer file: swagger-document.json.

### 4.2 Known Issues

- MS Teams owners are created from Administrator and Tutors on the first saving, they are currently not updated later
- Tab name only in one language; will be moved to a bundle
- Teams are not removed when course is deleted / archived Teams can be deleted by owners inside Teams.