

# Developing a Console Application in Dynamics CRM

## 1. Login to Portal.Azure.com and open the Active Directory

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes a search bar and a user profile. The left sidebar lists various services, with 'App registrations' highlighted. The main content area displays the 'App registrations' page, which includes a 'New registration' button in the top navigation bar. Below this, there is a table listing applications. The table has columns for 'Display name', 'Application (client) ID', 'Created on', and 'Certificates & secrets'. One application is listed: 'Dynamics CRM' with a client ID of '9c8485ac-b9cb-48f7-8287-ad968984f38f' and a creation date of '11/21/2021'.

## 2. Register the application in Active Directory

The screenshot shows the 'Register an application' form in the Microsoft Azure portal. The form includes the following sections:

- Name:** A text input field with the value 'Any Name' and a checkmark icon.
- Supported account types:** A section with the heading 'Who can use this application or access this API?'. It contains four radio button options:
  - ☒ Accounts in this organizational directory only (DD only - Single tenant)
  - ☐ Accounts in any organizational directory (Any Azure AD directory - Multitenant)
  - ☐ Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)
  - ☐ Personal Microsoft accounts only
- Redirect URI (optional):** A section with the heading 'We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.' It includes a dropdown menu set to 'Web' and a text input field with the value 'e.g. https://example.com/auth'.

At the bottom of the form, there is a checkbox for 'By proceeding, you agree to the Microsoft Platform Policies' and a blue 'Register' button.

### 3. Open the Added Application and new need to grant the API permissions to the same

The screenshot displays the Microsoft Azure portal interface. The top navigation bar shows 'Microsoft Azure' and a search bar. The left sidebar contains the 'Company 1 | App registrations' section, with 'App registrations' highlighted. The main content area shows a list of applications under 'Owned applications'. The 'Dynamics365API' application is selected, and its details are shown, including the 'Application (client) ID'.

Below the application list, the 'Request API permissions' dialog is open. It shows a list of 'Commonly used Microsoft APIs'. The 'Dynamics CRM' API is highlighted with a red box, indicating the selection of this API for permissions.

Display name	Application (client) ID
CommonDataService	fa925963-a2b3-40e6-a7f7-e01b0dc38933
Dynamics CRM	44724ddb-ccfd-4f69-bd0a-a3a14fdd7dfb
Dynamics365API	e2f8f6c4-1cbf-496d-bf2d-dfb406dbdcfb

API / Permissions name	Type	Description
Dynamics CRM (1)		
user_impersonation	Delegated	Access Common Data Service
Microsoft Graph (1)		
User.Read	Delegated	Sign in and read user profile

API Name	Description
Microsoft Graph	Take advantage of the tremendous amount of data in Office 365, Enterprise Mobility + Security, and Windows 10. Access Azure AD, Excel, Intune, Outlook/Exchange, OneDrive, OneNote, SharePoint, Planner, and more through a single endpoint.
Azure Communication Services	Rich communication experiences with the same secure CPaaS platform used by Microsoft Teams
Azure Rights Management Services	Allow validated users to read and write protected content
Azure Service Management	Programmatic access to much of the functionality available through the Azure portal
Data Export Service for Microsoft Dynamics 365	Export data from Microsoft Dynamics CRM organization to an external destination
Dynamics 365 Business Central	Programmatic access to data and functionality in Dynamics 365 Business Central
Dynamics CRM	Access the capabilities of CRM business software and ERP systems
Flow Service	Embed flow templates and manage
Intune	Programmatic access to Intune data
Office 365 Management APIs	Retrieve information about user, admin,

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The "Admin consent required" column shows the default value for an organization. However, user consent can be customized per permission, user, or app. This column may not reflect the value in organizations where this app will be used. [Learn more](#)

## Configured permissions

Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs. [Learn more about permissions and consent](#)

[+ Add a permission](#) [✓ Grant admin consent for Company 1](#)

API / Permissions name	Type	Description	Admin consent requ...	Status
▼ Dynamics CRM (1)				...
user_impersonation	Delegated	Access Common Data Service as organization users	No	✓ Granted for Company 1 ...
▼ Microsoft Graph (1)				...
User.Read	Delegated	Sign in and read user profile	No	✓ Granted for Company 1 ...

To view and manage permissions and user consent, try [Enterprise applications](#).

#### 4. Grant Admin Consent to the Active Directory

Microsoft Azure

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sumit@sumit1231.onmi...  
DD (SUMIT1231.ONMICROSOFTC...

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API / Permissions name	Type	Description	Admin consent requ...	Status
> Dynamics CRM (1)				...
▼ Microsoft Graph (1)				...
User.Read	Delegated	Sign in and read user profile	No	✓ Granted for DD ...

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#### 5. We need to add the application to Dynamics CRM and grant the required roles and permissions based upon the requirement

Microsoft Azure

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### Dynamics CRM

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Essentials

Display name : Dynamics CRM

Application (client) ID : 9c8485ac-b9cb-48f7-8287-ad968984f38f

Object ID : 1c396833-5a04-4232-bac8-db4880fac065

Directory (tenant) ID : c713dc04-a4c4-4441-9c77-f9412147c338

Supported account types : My organization only

Client credentials : 0 certificate, 1 secret

Redirect URIs : Add a Redirect URI

Application ID URI : Add an Application ID URI

Managed application in L... : Dynamics CRM

Starting June 30th, 2020 we will no longer add any new features to Azure Active Directory Authentication Library (ADAL) and Azure AD Graph. We will continue to provide technical support and security updates but we will no longer provide feature updates. Applications will need to be upgraded to Microsoft Authentication Library (MSAL) and Microsoft Graph. [Learn more](#)

Get Started Documentation

### Build your application with the Microsoft identity platform

The Microsoft identity platform is an authentication service, open-source libraries, and application management tools. You can create modern, standards-based authentication solutions, access and protect APIs, and add sign-in for your users and customers. [Learn more](#)

Dynamics 365 Settings Security

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### Application Users

	Full Name ↑	Application L...	Azure AD Obj...	Application L...
<input type="checkbox"/>	# Dynamics CRM	9c8485ac-b9...	730381d6-d8...	9c8485ac-b9...

1 - 1 of 1 (0 selected) All # A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Page 1

**Dynamics 365** Settings > Security > Dynamics CRM >

Apps for Dynamics 365 View Dynamics 365 information on the go with apps for your phone, tablet, Outlook, and more! Get Apps for Dynamics 365

CONNECT DELETE PROCESS APPROVE EMAIL REJECT EMAIL REASSIGN RECORDS MANAGE ROLES JOIN TEAMS CHANGE BUSINESS UNIT

USER : APPLICATION USER

# Dynamics CRM

The information provided in this form is viewable by the entire organization.

**Summary**

**Account Information**

User Name DynamicsCRM\_9c8485ac-b9cb-48f7-8287-ad968984f38f@19d53f98-

Application ID \* 9c8485ac-b9cb-48f7-8287-ad968984f38f

Application ID URI 9c8485ac-b9cb-48f7-8287-ad968984f38f

Azure AD Object ID 730381d6-d865-4440-8ab4-d8d2da0fae8

**User Information**

Full Name \* # Dynamics CRM

Status Enabled

CONNECT DELETE PROCESS APPROVE EMAIL REJECT EMAIL REASSIGN RECORDS MANAGE ROLES JOIN TEAMS CHANGE BUSINESS UNIT

USER : APPLICATION USER

Dynamics365API

The information provided in this form is viewable by the entire organization.

**Summary**

**Account Information**

User Name Dynamics365API\_e2f8f6c4-1cbf-496d-bf2d-dfb406dbdcfb@b7c41e7e3-f494-

Application ID \* e2f8f6c4-1cbf-496d-bf2d-dfb406dbdcfb

Application ID URI e2f8f6c4-1cbf-496d-bf2d-dfb406dbdcfb

Azure AD Object ID 0b487306-9556-4217-80ea-b0f85212df9c

**User Information**

Full Name \* Dynamics365API

Primary Email Dynamics365API\_e2f8f6c4-1cbf-

**Manage User Roles**

What roles would you like to apply to the 1 User you have selected?

Role Name	Business Unit
<input type="checkbox"/> Scheduler	sumit9922
<input type="checkbox"/> Service Reader	sumit9922
<input type="checkbox"/> Service Writer	sumit9922
<input type="checkbox"/> Solution Checker	sumit9922
<input type="checkbox"/> Survey Services Administrator(Depreca...	sumit9922
<input checked="" type="checkbox"/> System Administrator	sumit9922
<input checked="" type="checkbox"/> System Customizer	sumit9922

OK Cancel

## Dynamics365API | Certificates & secrets

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### Support + Troubleshooting

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- New support request

Credentials enable confidential applications to identify themselves to the authentication service when receiving tokens at a web addressable location (using an HTTPS scheme). For a higher level of assurance, we recommend using a certificate (instead of a client secret) as a credential.

### Certificates

Certificates can be used as secrets to prove the application's identity when requesting a token. Also can be referred to as public keys.

[Upload certificate](#)

Thumbprint	Start date	Expires	Certificate ID
No certificates have been added for this application.			

### Client secrets

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

[New client secret](#)

Description	Expires	Value	Secret ID
SecretKey	7/8/2023	D_n*****	ed274345-73fa-4c63-ad8a-01ca91b795c0

## Key to be used in Code

Microsoft Azure

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sumit@sumit00 (SUMIT123)

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Application registration certificates, secrets and federated credentials can be found in the tabs below.

Certificates (0) Client secrets (1) Federated credentials (0)

A secret string that the application uses to prove its identity when requesting a token. Also can be referred to as application password.

+ New client secret

Description	Expires	Value	Secret ID
Client ID	11/21/2023	ThC7Q~mjTfYK2MSdsGkWiz7Uhh_ctbh...	14ea924-0a50-462f-85fd-3f7675ecb440

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization;
using System.ServiceModel;
using Microsoft.Xrm.Sdk;
using System.ServiceModel.Description;
using System.Net;
using Microsoft.Xrm.Sdk.Client;
using Microsoft.Crm.Sdk.Messages;
using Microsoft.Xrm.Sdk.Query;
using System.Threading;
using System.IO;
using Microsoft.Xrm.Sdk.Messages;
using Microsoft.Xrm.Tooling.Connector;
using Plugins_Training;

namespace ConsoleApp
{
    public class Program
    {
        public static void Main(string[] args)
        {
            IOrganizationService orgService = GetOrganizationServiceClientSecret(
                "11e428dd-7153-42bb-9988-a08eebfdd86a",
                "qu27Q~Xq6MMD_NiEb8NnV6Yl2qP0npQIfH~eK",
                "https://org53e65b9b.crm.dynamics.com");

            var response = orgService.Execute(new WhoAmIRequest());

            Entity x = new Entity("lead");
            x["title"] = "abc";
            orgService.Create(x);
        }

        public static IOrganizationService GetOrganizationServiceClientSecret(string
clientId, string clientSecret, string organizationUri)
        {
            try
            {
                var conn = new
CrmServiceClient($"AuthType=ClientSecret;url={organizationUri};ClientId={clientId};Clien
tSecret={clientSecret}");

                return conn.OrganizationWebProxyClient != null ?
conn.OrganizationWebProxyClient : (IOrganizationService)conn.OrganizationServiceProxy;
            }
            catch (Exception ex)
            {
                Console.WriteLine("Error while connecting to CRM " + ex.Message);
                Console.ReadKey();
                return null;
            }
        }
    }
}

```



```
}  
  }  
}
```

```
//dvantages  
// We can debugg our code  
// we can perform actions like creation of record
```