B2C Graph API

Hands-on Lab

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“About the Authors” is an important item as it establishes the credibility of the text by explaining how much experience the author team has in the field. Add as many “About the Authors” as needed from the Quick Parts Gallery. Change “Author” to a different title, such as “Subject Matter Expert” if that is more appropriate. Include SMEs who assisted with the development of the course. Add this to every Module.

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# Lab Overview

Several paragraphs – or longer – describing an overview of the lab including a description of the lab and why certain topics are covered. This is also called the ‘LAB ABSTRACT’ that will be used for hand-off to conferences as part of the content hand-off process

###### Abstract

During this lab, you will run several exercises that will help you understand the programmatic access features available via Azure AD Graph API in Azure AD B2C.

###### Learning Objectives

After completing the exercises in this lab, you will be able to:

* Understand how Azure AD Graph API allows you to perform CRUD (Create-Read-Update-Delete) operations on local accounts in your B2C tenant.
* Understand how to use a service application to do programmatic, automated tasks in your B2C applications.
* Understand the use of custom attributes (directory extensions) in your B2C tenant.

**Estimated time to complete this lab: *20* minutes**

# Exercise 0: Setup

Each exercise consists of a scenario and learning objectives, the scenario describes the purpose of the exercices, while the objectives are listed and have bullet points.

#### Scenario

In this exercise, we will do the necessary setup to complete the rest of the exercises. As part of this setup, we will:

* Download the required tooling (Microsoft Online Services Sign-In Assistant & Azure AD module for Windows PowerShell).
* Create a service application for use with Azure AD Graph API and give it the right permissions.
* Download and build the B2CGraphClient sample command line app.

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| Task | Detailed Steps |
| Download tooling | Steps need to have BOLD when you indicate a certain path or a step to click and execute, always use numbering for each of the steps that need to be executed. .   1. Download and install the [Microsoft Online Services Sign-In Assistant](http://go.microsoft.com/fwlink/?LinkID=286152). 2. Download and install the [Azure Active Directory module for Windows PowerShell](http://go.microsoft.com/fwlink/p/?linkid=236297). |
| Create a service application for use with Azure AD Graph API and give it the right permissions | 1. Open Powershell. 2. Connect to your B2C tenant using the following commands:   > $msolcred = Get-Credential  > Connect-MsolService -credential $msolcred   1. Sign in with your B2C Admin user credentials. 2. Create a **Client Secret** to use with your application.   > $bytes = New-Object Byte[] 32  > $rand = [System.Security.Cryptography.RandomNumberGenerator]::Create()  > $rand.GetBytes($bytes)  > $rand.Dispose()  > $newClientSecret = [System.Convert]::ToBase64String($bytes)  > $newClientSecret   1. Copy down the **Client Secret** that is shown on screen for later. 2. Create your service application.   > New-MsolServicePrincipal -DisplayName "My B2C Graph API App" -Type password -Value $newClientSecret   1. Copy down both the **ObjectID** and **AppPrincipalID** for later use. 2. List all directory roles using the following command:   > Get-MsolRole   1. Copy down **ObjectID**s of the following 3 directory roles:    1. Directory readers (to read users)    2. Directory writers (to create and update users)    3. User account administrator (to delete users) 2. Replace the above 3 **ObjectID**s in the commands below (which adds the service application to these 3 directory roles):   > Add-MsolRoleMember -RoleObjectId <ObjectID1> -RoleMemberObjectId <Your-App’s-ObjectId> -RoleMemberType servicePrincipal  > Add-MsolRoleMember -RoleObjectId <ObjectID2> -RoleMemberObjectId <Your-App’s-ObjectId> -RoleMemberType servicePrincipal  > Add-MsolRoleMember -RoleObjectId <ObjectID2> -RoleMemberObjectId <Your-App’s-ObjectId> -RoleMemberType servicePrincipal  You now have a service application ready to use with Azure AD Graph API in your B2C tenant.Download and |
| Download & build B2C sample command line app | 1. Download the B2C sample command line app [here](https://github.com/AzureADQuickStarts/B2C-GraphAPI-DotNet/archive/master.zip). 2. Open the B2CGraphClient\B2CGraphClient.sln Visual Studio solution in Visual Studio. 3. In the B2CGraphClient project, open the file App.config. 4. Replace the following app settings with your own values (generated earlier):   <appSettings>  <add key="b2c:Tenant" value="{Your tenant ID}" />  <add key="b2c:ClientId" value="{The AppPrincipalId from above}" />  <add key="b2c:ClientSecret" value="{The client secret you generated above}" />  </appSettings>   1. Right-click on the B2CGraphClient solution and rebuild the sample. 2. Test the sample app   > cd B2CGraphClient\bin\Debug  > B2C Help |

# Exercise 1: Run local account CRUD operations

Each exercise consists of a scenario and learning objectives, the scenario describes the purpose of the exercices, while the objectives are listed and have bullet points.

#### Scenario

In this exercise, you will take your service application and perform local account CRUD operations. After completing this exercise, you will understand:

* The local account CRUD tasks possible using Azure AD Graph API.
* The most important properties in B2C user objects.

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| Task | Detailed Steps |
| Get all users in your B2C tenant | 1. Run the following command:   > B2C Get-User |
| Create new username-based and email-based local accounts in your B2C tenant  *. Product information or explanation about a certain feature goes here.* | 1. Run the following commands:   > B2C Create-User ..\..\..\usertemplate-email.json  > B2C Create-User ..\..\..\usertemplate-username.json   1. Save the object IDs of the users you just created. You’ll need them in the next exercise. 2. Open up both the .json files and inspect the contents. 3. Run the previous “Get-User” command to see the new local accounts in your tenant. |
| Search for specific users in your B2C tenant  *Product information or explanation about a certain feature goes here.* | 1. Run the following commands (use the object ID of one of the local accounts created in the previous step):   > B2C Get-User 2bcf1067-90b6-4253-9991-7f16449c2d91  > B2C Get-User $filter=signInNames/any(x:x/value%20eq%20%27joeconsumer@gmail.com%27) |

# Exercise 2: Use custom attributes

Each exercise consists of a scenario and learning objectives, the scenario describes the purpose of the exercices, while the objectives are listed and have bullet points.

#### Scenario

Most consumer applications need to store some type of custom user profile information. One way you can do this is to define a custom attribute in your B2C tenant. In this exercise, you will learn how to find custom attributes defined in your B2C tenant.

After completing this exercise, you will understand:

* How to find & update custom attributes defined your B2C tenant.
* Understand the use of the B2C Extensions app.

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| Task | Detailed Steps |
| Read & update custom attributes in your B2C tenant | 1. Run the following commands:   > B2C Get-B2C-Application  > B2C Get-Extension-Attribute <object-id-from-above >   1. Update one of your .json files with the new property and a value for the property and run the following:   > B2C Update-User <object-id-of-user> <path-to-json-file> |

This Appendix provides information about the actual lab manual and labcode, as well as the virtual machine requirements needed for this lab. Use this page to keep information about lab updates / modifications and corrections to the manual, as well as the uniquely defined labcode.