Create application access token & authorization header

To authentication against the Microsoft Graph API there are two general concepts. Application permissions allow an application in Microsoft Entra ID to act as it's own entity, rather than on behalf of a specific user. Delegated permissions allow an application in Microsoft Entra ID to perform actions on behalf of a particular user.

This guide focuses on authentication as an application to create unattended automations. To create or renew a token in the user context there are other instructions.

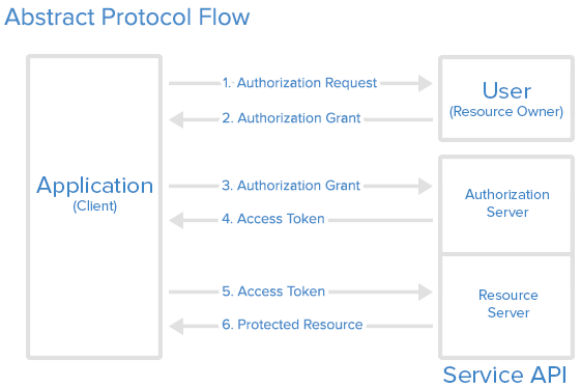
Use case

This authentication is required if you want to retrieve, update, or create resources using the Microsoft APIs (Azure Management API, Microsoft Graph API). This is for application-based permissions such as regular or triggered automations.

Graph API authentication

To authenticate with application permission you have to use an Microsoft Entra ID App Registration. There you can specify an Client Secret as it is described here: Get app details and gr... | LNC Docs (lucanoahcaprez.ch)

The authentication method used for Microsoft Graph API is the industry-standard OAuth 2.0. This concept uses access tokens for authenticating against API endpoints. These access tokens are then sent to the resource server in the HTTP header. Therefore we have to create the header correctly to use the resources of the Microsoft Graph API.



Build header via PowerShell script

The following scripts creates the header that contains the header property and the corresponding Bearer token. This function needs the arguments Tenant ID, Client (Application) ID and the Client Secret. This function has to be called the first time with these three parameters. Then you can use the refresh token of the first authentication request to consist the session.

Attention: This function returns a complete header. If you want to specify more information in the request header you have to use the function lower on this page.

```
# Function for getting Microsoft Entra ID Access Header
Function Build-MicrosoftEntraIDApplicationAccessHeader(){
    param(
        [Parameter(Mandatory=$true)]
        [string] $tenantid,
        [string] $clientid,
        [string] $clientSecret,
        [string] $refreshtoken
    )

    $authenticationurl = "https://login.microsoftonline.com/$tenantid/oauth2/v2.0/token"

    if($refreshtoken -and $tenantId){
        $tokenBodySource = @{
            grant_type = "refresh_token"
            scope = "https://graph.microsoft.com/.default"
            refresh_token  = $refreshtoken
        }
    }
    elseif($tenantId -and $clientid -and $clientSecret){
        $tokenBodySource = @{
```

```
        grant_type = "client_credentials"
        scope = "https://graph.microsoft.com/.default"
        client_id  = $clientid
        client_secret = "$clientSecret"
      }
   }
   else{
      Write-Error "Authorization not successful. Not enough information provided."
   }

   while ([string]::IsNullOrEmpty($AuthResponse.access_token)) {
      $AuthResponse = try {
         Invoke-RestMethod -Method POST -Uri $authenticationurl -Body $tokenBodySource
      }
      catch {
         $ErrorAuthResponse = $_.ErrorDetails.Message | ConvertFrom-Json
         if ($ErrorAuthResponse.error -ne "authorization_pending") {
            Write-Error "Authorization not successful. Error while posting body source:
$($ErrorAuthResponse.error)"
            throw
         }
      }
   }

   if($AuthResponse.token_type -and $AuthResponse.access_token){
      $global:MicrosoftEntraIDAccessToken = "$($AuthResponse.token_type) $($AuthResponse.access_token)"
      $global:MicrosoftEntraIDHeader = @{
         "Authorization" = "$global:MicrosoftEntraIDAccessToken"
      }
      Write-Output "Authorization successful! Token saved in variable."
   }
   else{
      Write-Error "Authorization not successful. Not enough information provided."
   }
}

# Authorization Header with ClientId & ClientSecret
$tenantId="<tenantid>"
$ClientId="<appregistrationclientapp>"
```

```
$ClientSecret="<appregistrationclientsecret>"
Build-MicrosoftEntraIDApplicationAccessHeader -tenantid $tenantid -clientid $clientid -clientSecret $clientSecret

# Authorization Header with refresh_token
$tenantId="<tenantid>"
$refreshtoken="<yourrefreshtoken>"
Build-MicrosoftEntraIDApplicationAccessHeader -tenantid $tenantid -refreshtoken $refreshtoken
```

Get Bearer Token via PowerShell script

This function allows you to use more than one header property. It only returns the access token which then has to be built into a header by itself. But the other functionalities and parameters work like the function above.

```
# Function for getting Microsoft Entra ID Access Token
function Get-MicrosoftEntraIDApplicationAccessToken {
    param(
        [Parameter(Mandatory=$true)]
        [string] $tenantid,
        [string] $clientid,
        [string] $clientSecret,
        [string] $refreshtoken
    )

    $authenticationurl = "https://login.microsoftonline.com/$tenantid/oauth2/v2.0/token"

    if($refreshtoken -and $tenantId){
        $tokenBodySource = @{
            grant_type = "refresh_token"
            scope = "https://graph.microsoft.com/.default"
            refresh_token  = $refreshtoken
        }
    }
    elseif($tenantId -and $clientid -and $clientSecret){
        $tokenBodySource = @{
            grant_type = "client_credentials"
            scope = "https://graph.microsoft.com/.default"
```

```
            client_id  = $clientid
            client_secret = "$clientSecret"
        }
    }
    else{
        Write-Error "Authorization not successful. Not enough information provided."
    }

    while ([string]::IsNullOrEmpty($AuthResponse.access_token)) {
        $AuthResponse = try {
            Invoke-RestMethod -Method POST -Uri $authenticationurl -Body $tokenBodySource
        }
        catch {
            $ErrorAuthResponse = $_.ErrorDetails.Message | ConvertFrom-Json
            if ($ErrorAuthResponse.error -ne "authorization_pending") {
                Write-Error "Authorization not successful. Error while posting body source:
$($ErrorAuthResponse.error)"
            }
        }
    }

    if($AuthResponse.token_type -and $AuthResponse.access_token){
        $global:MicrosoftEntraIDAccessToken = "$($AuthResponse.token_type) $($AuthResponse.access_token)"
        Write-Output "Authorization successful! Token saved in variable."
    }
    else{
        Write-Error "Authorization not successful. Not enough information provided."
    }
}

# Authorization with ClientId & ClientSecret
$tenantId="<tenantid>"
$ClientId="<appregistrationclientapp>"
$ClientSecret="<appregistrationclientsecret>"
Get-MicrosoftEntraIDApplicationAccessToken -tenantid $tenantid -clientid $clientid -clientSecret $clientSecret

# Authorization with refresh_token
$tenantId="<tenantid>"
$refreshtoken="<yourrefreshtoken>"
Get-MicrosoftEntraIDApplicationAccessToken -tenantid $tenantid -refreshtoken $refreshtoken
```

Revision #16
Created 7 December 2022 22:07:13
Updated 21 July 2024 15:11:16