This document explains the required steps to configure the Azure Active Directory (AD) Assessment included with your Microsoft Azure Log Analytics Workspace and entitled Microsoft On-Demand assessment.

! **Important:** There are configuration and setup tasks to be completed prior to executing the assessment setup tasks in this document. For all prework, follow the Assessment Setup Guide from the Services Hub Resource Center.

Key Assessment Features

Services Hub Connector: **Creating your Connector**
Programs: **Creating your Program**

This document was last updated on April 18th, 2023 To ensure you have the latest version of this document, check here: https://docs.microsoft.com/en-US/services-hub/health/assessment_prereq_docs/prereqsazureadassessment.pdf

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System Requirements and Configuration at Glance

According to the scenario you want to use, review the following details to ensure that you meet the necessary requirements.

Supported Environments

- Azure AD tenant (AzureCloud, AzureChinaCloud, AzureGermanCloud, AzureUSGovernment)

Environment Permissions

- **Assessment account rights:**
    - An assessment scheduled task account with the following rights:
        - Administrative access to the data collection machine
        - Log on as a batch job privileges on the data collection machine
    - An Azure AD account for the setup of the Azure AD Registered Application with the following properties
        - Global Administrator
        - Non-Federated

Data Collection Machine

- A **data collection machine** running the Azure AD Assessment requires computers running Windows Server 2016 or Windows Server 2019 or Windows 10.
- The **data collection machine** may be Azure AD joined, Active Directory joined, or Workgroup joined.
- The **data collection machine** must be able to connect to the Internet using HTTPS to successfully perform all steps detailed in this document. This connection can be direct, or via a proxy.
- **Data collection machine hardware:** Minimum 16 gigabytes (GB) of RAM, 2 gigahertz (GHz dual-core processor, minimum 10 GB of free disk space.
    - Depending on the size and complexity of your environment, you will need to increase the total amount of RAM to ensure that the data collection is successful and completes in a timely manner.
- **Antivirus** and any other type of **Security software** need to be configured to exclude Assessment related files, file types, working directory folders and process (Omsassessment.exe) to avoid process termination, blockage and alerts. Add an exclusion to Windows Security
- Microsoft .NET Framework 4.8 or newer installed ○ Download from: Download .NET Framework 4.8 Web Installer

- The CLR version on the data collection machine should be using .NET 4.0 or greater. This can be verified by running $PSVersionTable.CLRVersion in the PowerShell prompt
- Azure AD Preview Module for PowerShell needs to be installed (this will be installed automatically) •

MSOnline Powershell module. Install MSOnline PowerShell module:

1. Open a PowerShell session with Administrator privileges
2. On Start Menu type: PowerShell
3. Right Click on the Icon and choose Run as Administrator
4. On the shell type the following command: *Install-Module MSOnline -Verbose -AllowClobber -Force*

- Microsoft.Graph Powershell module. Install Microsoft.Graph PowerShell module:

5. Open a PowerShell session with Administrator privileges
6. On Start Menu type: PowerShell
7. Right Click on the Icon and choose Run as Administrator
8. On the shell type the following command: *Install-Module Microsoft.Graph -Verbose -AllowClobber -Force*

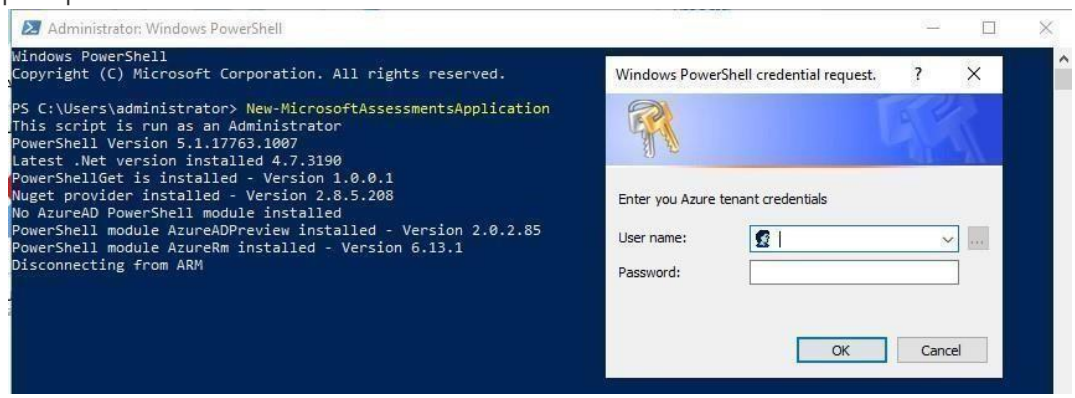
Getting started with Microsoft Azure AD Assessment

Be sure to complete the steps in the following link before proceeding to assessment setup:

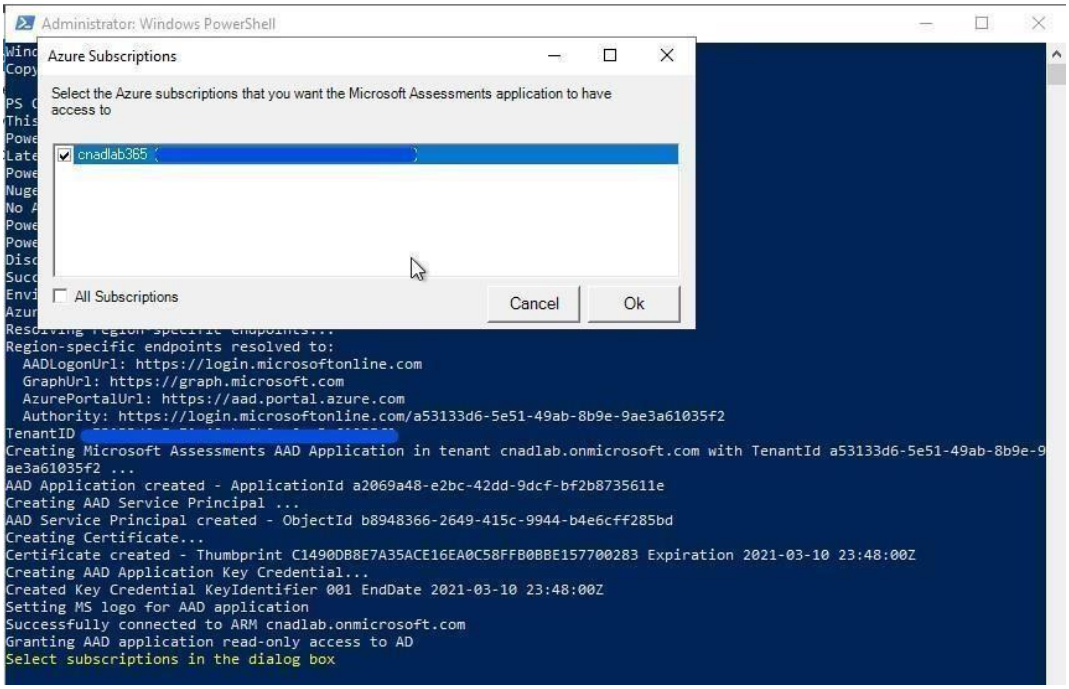
[Get started - Azure Active Directory On-Demand Assessment]

Setup the Azure AD Application for Graph API authentication.

1. Open a PowerShell session on the data collection machine with Administrator privileges.
2. Ensure the running of scripts is permitted on the machine: *Set-ExecutionPolicy RemoteSigned*.
3. Run the following cmdlet: *New-MicrosoftAssessmentsApplication*.
4. This will prompt for Azure AD tenant Global administrator credentials:

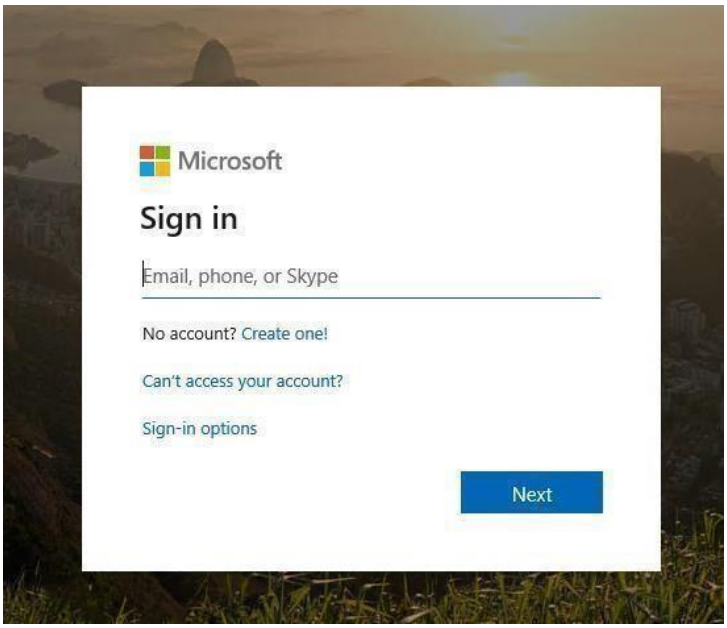


5. Enter the credentials for the Azure AD Tenant Global Administrator to be used to create the Azure application.
6. Once the credentials are entered the application will be created, the AzureAD Preview PowerShell module installed as well as other prerequisites verified.

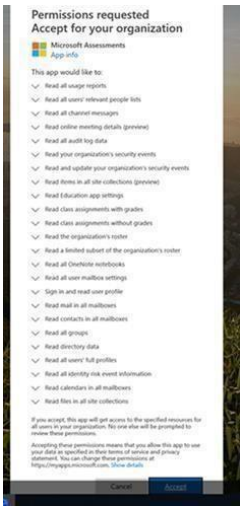


7. Select the Azure subscription that is in scope for the assessment:

8. An internet browser prompt will appear for Azure portal login with Global Administrator credentials:



9. The required application consent **read** permissions will be displayed:



Select accept to complete the application registration.

Note: Please refer to [Permissions for Microsoft Azure AD Assessment Application] for consent details.

10. Once everything is complete, the application registration can be viewed in the Azure AD portal and the PowerShell output will state that the Azure AD Application has been successfully created:

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\judtest> New-MicrosoftAssessmentsApplication
This script is run as an Administrator
PowerShell Version 5.1.14393.2608
Latest .Net version installed 4.7.3062
PowerShellGet is installed - Version 1.0.0.1

The provider 'nuget v2.8.5.208' is not installed.
nuget may be manually downloaded from https://oneget.org/Microsoft.PackageManagement.NuGetProvider-2.8.5.208.dll and
installed.
Would you like PackageManagement to automatically download and install 'nuget' now?
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): Y
Nuget provider installed - Version 2.8.5.208
No AzureAD PowerShell module installed
Installing AzureADPreview PowerShell module
PowerShell module AzureADPreview installed - Version 2.0.2.5
Successfully connected to M365x802575.onmicrosoft.com
TenantID c4c5243a-e122-48c1-a51f-c2edef214e6c
Creating Microsoft Assessments AAD Application in tenant M365x802575.onmicrosoft.com with TenantId c4c5243a-e122-48c1-a5
1f-c2edef214e6c ...
AAD Application created - ApplicationId 40ffdd7e-f7cc-4655-9ec4-f324069fb010
Creating AAD Service Principal ...
AAD Service Principal created - ObjectId 02c6f491-220c-4b31-a1e2-dedb37216ef5
Creating Certificate...
Certificate created - Thumbprint 159FE915BC5B22FC450F5FD695A8C17C801C3277 Expiration 2019-12-13 04:21:16Z
Creating AAD Application Key Credential...
Created Key Credential KeyIdentifier 001 EndDate 2019-12-13 04:21:16Z
Setting MS logo for AAD application
Granting AAD application read-only access to AD
Getting Graph application
Assigning Graph roles to AAD application
Waiting for the AAD application to be ready (30 seconds)...
Granting admin consent...
We are opening a browser page for you to provide the admin consent for this application.
If you receive error AADSTS700016, wait a few seconds and refresh the page

Azure AD Application successfully created

Once the admin consent has been provided, you will be redirected to the Azure AD portal
You can view this new application under 'Azure Active Directory', 'App Registrations', 'View All Application' and select
 'Microsoft Assessments'
```

11. If you encounter issues with setting up the Assessment Application, for example if you do not receive an authentication prompt please refer to the troubleshooting section in the appendix.

Setup the Azure AD Assessment

When you have finished the installation of the Microsoft Management Agent/OMS Gateway, you are ready to setup the Azure AD Assessment. The assessment runs as a scheduled task and requires a user account for execution.

Configure assessment

On the designated data collection machine, complete the following:

1. Open the Windows PowerShell command prompt as an Administrator

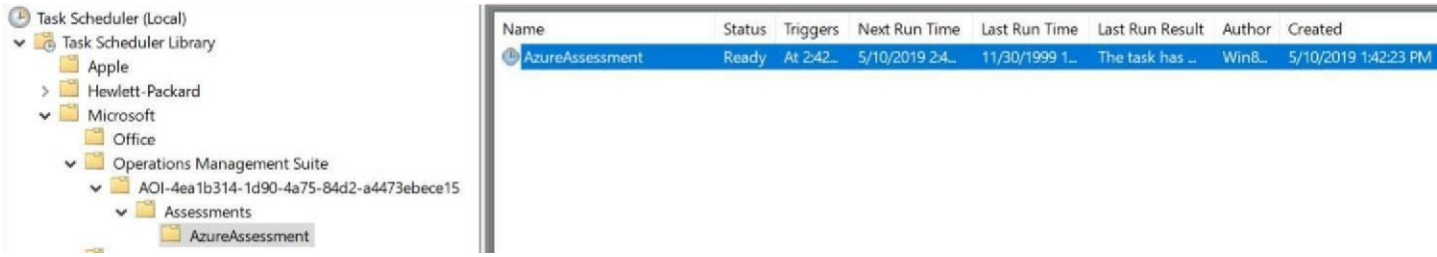
2. Run the **Add-AzureAssessmentTask** command using the parameters below, replacing **<Directory>,** and **<AccountName>** with an assessment working directory, and assessment scheduled task account name:
   PS C:\OmsAssessment> Add-AzureAssessmentTask -WorkingDirectory <Directory> -ScheduledTaskUsername <accountname>

Note. If the command **Add-AzureAssessmentTask** is not available, the module is not yet found. It can take some time after installing the agent before it to show up.

3. The script will continue with the necessary configuration. It will create a scheduled task that will trigger the data collection.

Scheduled Task Details

Assessment execution is triggered by the **scheduled task** named **AzureAssessment** within an hour of running the previous script and then every 7 days. The task can be modified to run on a different date/time or even forced to run immediately.



For guidance and details on working with assessment results, visit Working with Assessment Results in the Services Hub Resource Center.

Appendix

Data Collection Methods

The **Azure AD Assessment** uses a couple data collection methods to collect information from the Azure AD tenant. This section describes the methods used to collect data from the environment. No Microsoft Visual Basic (VB) scripts are used to collect data.

1. Windows PowerShell
2. Graph API

4. **Windows PowerShell**
   PowerShell is used extensively in the Azure AD Assessment to gather configuration data. This includes scripts that directly call Graph API endpoints as well as cmdlets from MSOnline and AzureADPreview modules.

5. **Graph API**
   Graph API is used to collect configuration and assessment data from Secure Score.

Troubleshooting Azure AD Assessment Setup

General Troubleshooting OnDemand Assessment Guide

Troubleshoot On-Demand Assessments | Microsoft Learn

Azure datacenter IP address ranges

The Azure AD Assessment requires connectivity to the Internet from the data collection machine or proxy server. The endpoints listed in the following articles should be reachable from the data collection machine for successful assessment setup and execution. These are in addition to those required by Azure Log Analytics and the Microsoft Management Agent.

- Public: https://www.microsoft.com/en-us/download/details.aspx?id=56519
- US Gov (including DoD): http://www.microsoft.com/en-us/download/details.aspx?id=57063
- Germany: http://www.microsoft.com/en-us/download/details.aspx?id=57064
- China: http://www.microsoft.com/en-us/download/details.aspx?id=57062

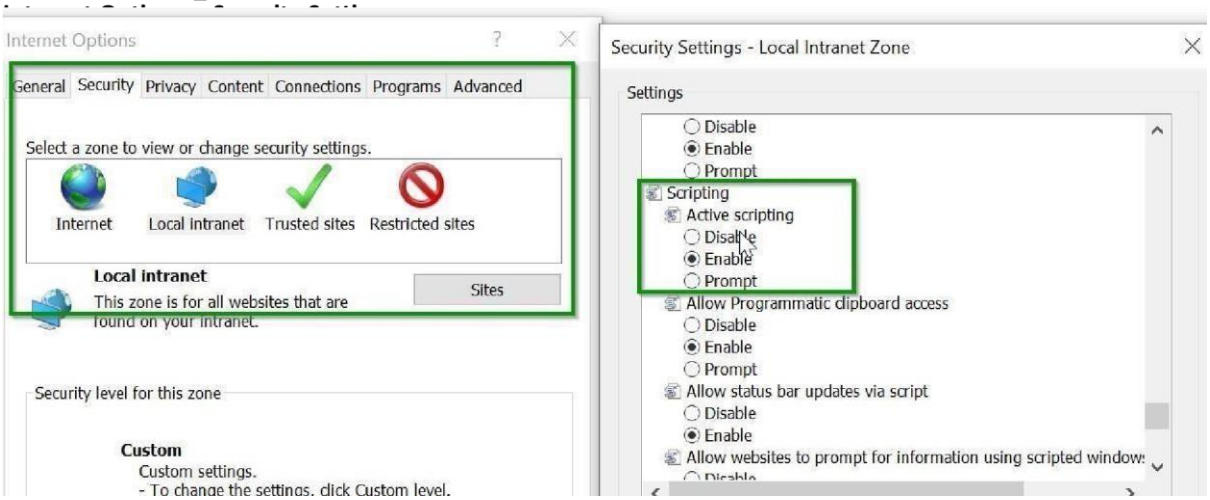
New-MicrosoftAssessmentApplication

If there are URL restrictions in place in order to correctly setup the assessment application, you will need to ensure you whitelist the following URLs:

URLs
aadcdn.msauth.net:443
az818661.vo.msecnd.net:443
c.urs.microsoft.com:443
go.microsoft.com:443
iecvlist.microsoft.com:443
ieonline.microsoft.com:443
login.microsoftonline.com:443
oneget.org:443

psg-prod-eastus.azureedge.net:443
www.powershellgallery.com:443

Along with above URLs, ensure the following settings are enabled in Internet Explorer as JavaScript needs to run on the page.



While executing the New-MicrosoftAssessmentsApplication command, you may be prompted to add additional links to trusted sites to allow the authentication screen to display. These can be added by clicking the “Add” button shown on the popup.

Prerequisites Error

If you encounter any prerequisites errors, please check for any errors in Event Viewer as shown below: