

Step-by-Step Guide to Install Hybrid DMS

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1, Introduction

Azure Database Migration Service hybrid mode manages database migrations by using a **migration worker** that is hosted on-premises together with an instance of Azure Database Migration Service running in the cloud. Hybrid mode is especially useful for scenarios in which there's a lack of site-to-site connectivity between the on-premises network and Azure or if there's limited site-to-site connectivity bandwidth.

This whitepaper walks you through how to install this migration worker (hybrid mode) on your local server.

2, Installing Hybrid DMS migration worker

2.1 Create a "Azure Database Migration Service"

On Microsoft Azure Portal, choose to create a service "Azure Database Migration Service" as shown below. As of this document written, the Hybrid Mode is enabled only in "East US" and "East US 2" regions. After this first step, you can simply click the button below "Review+create".

After hitting the button of "Create", it usually takes about 30 seconds to create this service.

Create Migration Service

[Basics](#) [Networking](#) [Tags](#) [Review + create](#)

Azure Database Migration Service is designed to streamline the process of migrating on-premises databases to Azure. [Learn more.](#)

Project details

Select the subscription to manage deployed resources and const. Use resource groups as you would folders, to organize and manage all of your resources.

Subscription * ⓘ

Resource group * ⓘ [Create new](#)

Instance details


Migration service name * ⓘ

Location * ⓘ

Service mode * ⓘ ☐ ☒

All migration activities are run from an on-premises machine.

✓ Your deployment is complete

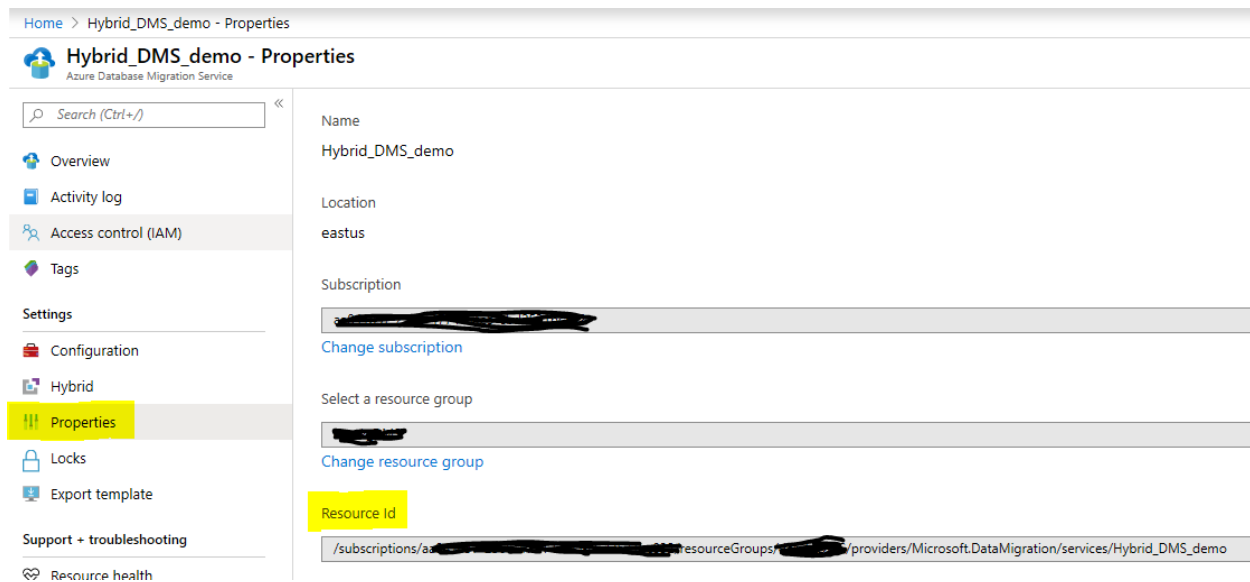
 Deployment name: Microsoft.AzureDMS Start time: 11/7/2019, 2:43:50 PM
Subscription: [Data Migration Jumpstart POD1](#) Correlation ID: 5ddbc57c-596c-41b0-b889-57197e6f5f73
Resource group: ██████████

✓ Deployment details [\(Download\)](#)

^ Next steps

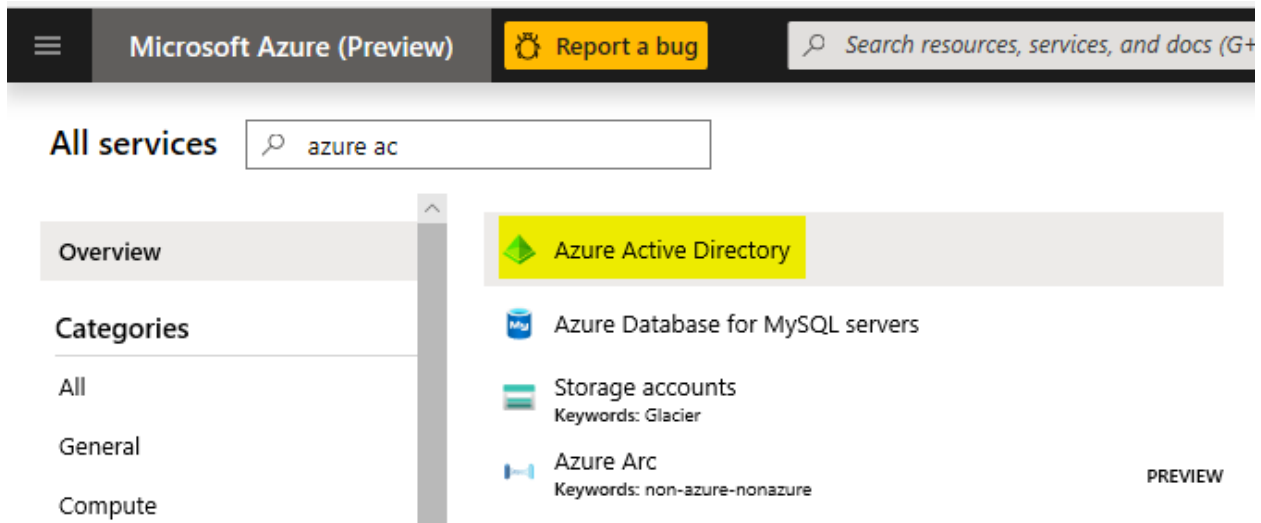
[Go to resource](#)

Once the provision is done, navigate to "Property" on the left panel, and mark down "Resource Id".



2.2 Create an Azure Active Directory Application

On Azure portal, in “All services”, click “Azure Active Directory”.



When it navigates you to the page of Azure Active Directory, click the “App registrations” on the left panel as shown below.

Microsoft Azure (Preview)

Report a bug

Search resources, services, & more

All services > Microsoft - Overview

Microsoft - Overview

Azure Active Directory

Search (Ctrl+ /)

Overview

Getting started

Manage

Users

Groups

Organizational relationships

Roles and administrators

Enterprise applications

Devices

App registrations

Identity Governance

Application proxy

Licenses

Switch directory

Delete directory

microsof-microsoft.com

Microsoft

Azure AD Premium P2

Sign-ins

Only global administrators, security readers, and report readers can view

Your role User



What's new in Azure AD

Stay up to date with the latest release notes and blog posts

36 entries since July 20, 2019. [View archive](#)

Click “New registration”, on the below page, simply provide the app name and keep every else by default then press the button “Register”. This application can be provision instantly and on the page following, please note down the app name and Application ID.

Register an application

 If you are building an application for external users that will be distributed by Microsoft, you must register as a developer to meet all security, privacy, and compliance policies. [Read our decision guide](#) 

* Name

The user-facing display name for this application (this can be changed later).

Hybrid_DMS_Demo

Supported account types

Who can use this application or access this API?

- ☒ Accounts in this organizational directory only (Microsoft 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

[Help me choose...](#)

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional, but a value is required for most authentication scenarios.

Web



e.g. <https://myapp.com/auth>

By proceeding, you agree to the [Microsoft Platform Policies](#) 

Register

> Hybrid_DMS_Demo

 Delete  Endpoints

Display name	: Hybrid_DMS_Demo	Supported account types	: My organization only
Application (client) ID	: c1f07b65-adc4-4666-88f5-8125e63fbb56	Redirect URIs	: Add a Redirect URI
Directory (tenant) ID	: 72f988bf-86f1-41af-91ab-2d7cd011db47	Application ID URI	: Add an Application ID URI
Object ID	: 6de14874-8214-4dcf-8602-a47262242d8f	Managed application in ...	: Hybrid_DMS_Demo



Welcome to the new and improved App registrations. Looking to learn how it's changed from App registrations (Legacy)? [Learn more](#)

Call APIs

Build more powerful apps with rich user and business data from Microsoft services and your own company's data sources.

[View API permissions](#)

Documentation

[Microsoft identity platform](#)
[Authentication scenarios](#)
[Authentication libraries](#)
[Code samples](#)
[Microsoft Graph](#)
[Glossary](#)
[Help and Support](#)

2.3, Download the installer

1, Download the installer

On Azure portal, click the Database Migration Service just created, on the following page, click the "Hybrid" on the left panel, and then click the button "Installer download", shown below.

Home > hybridDMS_east - Hybrid

hybridDMS_east - Hybrid

Azure Database Migration Service

Search (Ctrl+ /)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Settings
 - Configuration
 - Hybrid**
 - Properties
 - Locks

Installer download

Please use the installer to register and unregister hybrid world

Hybrid workers

Worker Name
hybridDMS_east-f92r253528pdaz8x74im4p48

After downloading, extract the zip file into the folder. It should look like below.

Name	Date modified	Type	Size
DMSWorker	10/30/2019 10:19 PM	File folder	
logs	10/30/2019 11:24 PM	File folder	
appsettings.json	10/30/2019 10:17 PM	JSON File	1 KB
DMS Hybrid App Key.cer	10/30/2019 10:40 PM	Security Certificate	2 KB
DMS_HYBRID_EULA.txt	10/30/2019 10:19 PM	Text Document	1 KB
dmsSettings.json	10/30/2019 10:38 PM	JSON File	1 KB
DMSWorkerBootstrap.exe	10/30/2019 10:19 PM	Application	81,155 KB
hostSettings.json	10/30/2019 10:19 PM	JSON File	1 KB

2, Modify the configuration file

Open the file <dmsSettings.json> in the installer folder with your preferred editor tool, fill in the values we generated in above steps including "ApplicationId", "resourceId", "subscriptionId", "resourceGroup" and "serviceName".

```
{
  "Authentication": {
    "isCertificateAuthentication": true,
    "ApplicationId": "32e266f0-3bea-4f43-8442-b181ce41c2f0",
    "CertificateThumbprint": "[placeholder]"
  },
  "DMSService": {
    "resourceId":
      "/subscriptions/[redacted]/resourceGroups/[redacted]/",
    "subscriptionId": "[redacted]",
    "resourceGroup": "[redacted]",
    "serviceName": "hybridDMS_east"
  }
}
```

2.4, Generate the public key for AD authentication

1, Generate the public key

Launch the command windows as an administrator, use “CD” command to make the installer folder to be the current working folder. Then run the command below,

```
DMSWorkerBootstrap.exe -a GenerateCert -l AcceptDMSLicenseTerms
```

After running this command, the cert can be found in the installer directory under the name 'DMS Hybrid App Key.cer'

2, Update the public key to you Azure AD application

On Azure portal, navigate to the application we created under the Azure Active Directory. Click the label “Certificates & secrets” on the left panel, and then on the right side blade, click the button of “Upload certificate” to upload the cert file generated above.



Hybrid_DMS_Demo - Certificates & secrets

Search (Ctrl+/,)

Overview

Quickstart

Manage

Branding

Authentication

Certificates & secrets

API permissions

Expose an API

Owners

Credentials enable applications to identify themselves to the higher level of assurance, we recommend using a certificate.

Certificates

Certificates can be used as secrets to prove the application's identity.

Upload certificate

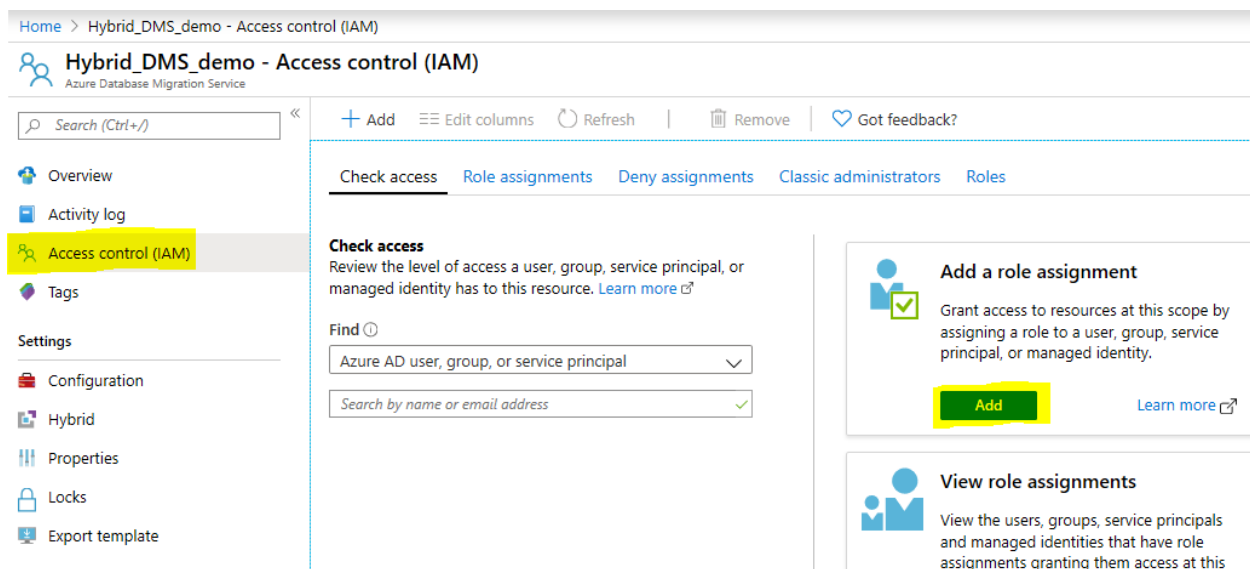
No certificates have been added for this application.

Thumbprint

Client secrets

2.5, Grant contributor role permission in DMS to the application

From Azure portal home page, navigate to the page of Database Migration Service created in the first step, example here is <Hybrid_DMS_demo>. On the page of <Hybrid_DMS_demo>, Click "Access control (IAM)" and on the blade right side to click "Add" button to grant the "Contributor" role to the application we created in Azure AD.



2.6, Run the installer to install

Switching back to your local server again, launch the command window in the administration mode, and run the command below.

```
DMSWorkerBootstrap.exe -a install -l AcceptDMSLicenseTerms
```

By default, the installer location will be "C:\Program Files\DatabaseMigrationServiceHybrid". Optionally, if you want to change the installation path, the augment "-p" can be used in your command above.

If the installation runs without error, we can verify it through both ways below.

1, The worker is running as a backend windows service.

Or run the PowerShell command to check

```
Get-Service -Name Scenario*
```

Work Folders	This service syncs files with the Work...	Manual	Local Service
Workflow Host Service for: ScenarioEngine.4.4.4582.2		Running	Automatic
Workstation	Creates and maintains client network...	Running	Automatic

2, On Azure portal, when navigating to the DMS created, the status shows "Online" as below,

Home > hybridDMS_east

hybridDMS_east
Azure Database Migration Service

Search (Ctrl+F)

Overview
Activity log
Access control (IAM)
Tags
Settings
Configuration
Hybrid
Properties

+ New Migration Project Delete service Refresh Start Service Stop Service

Resource group: [REDACTED] Status: Online
Virtual network & IP Ad...: --- Location: East US 2
Subscription: Data Migration Jumpstart POD1 Subscription ID: aa841837-2566-4774-b4e5-cbd2531bc832
SKU: --- Service/UI Version: 4.4.4582.2/4.4.4593.2
Tags (change): Click here to add tags

Name	Source	Target	Created
dms-sqlmi	SQL Server	Azure SQL Database Managed Instance	10/30/2019, 11:39:51 PM
dms_sqlmi	SQL Server	Azure SQL Database Managed Instance	10/30/2019, 11:32:55 PM

At this point, the hybrid DMS worker has been successfully installed in your local server. And you can use the DMS online to connect to on-premises database server now without setting up any VNET/site-to-site connection.

2.7 Uninstall the DMS worker

In the administrative mode command window, run below command can uninstall and unregister the hybrid worker.

```
DMSWorkerBootstrap.exe -a uninstall -I AcceptDMSLicenseTerms
```

2.8 Logging

The log files are located under the folder of "C:\Users\{USER}\AppData\Local\DMS".

3, Reference

QuickStart: Create an instance of Azure Database Migration Service in hybrid mode using the Azure portal (Preview), <https://docs.microsoft.com/en-us/azure/dms/quickstart-create-data-migration-service-hybrid-portal>

4, Feedback and suggestions

If you have feedback or suggestions for improving this data migration asset, please contact the Data Migration Jumpstart Team (askdmjfordmtools@microsoft.com). Thanks for your support!

Note: For additional information about migrating various source databases to Azure, see the [Azure Database Migration Guide](#).