Infrastructure preparation
BC Cloud on Local Server

Contents

1 About BI4Dynamics BC Cloud installation

1.1 Infrastructure and application installations

BI4Dynamics for BC Cloud installation comes in two steps:

1.1.1 Infrastructure part: installation of On-Premises Server

Resources must be prepared ahead of BI4Dynamics application installation. Installation is focused on settings of On-Premise Server and settings resources in Azure Portal.

1.1.2 Application part: installation of BI4Dynamics application

BI4Dynamics application on On-Premise Server is very similar to installation on Azure VM installation. Please head over to https://www.bi4dynamics.com to find the BI4Dynamics Application installation instructions document.

1.2 Settings of On-Premises Server

This document will guide you through setting up On-Premises Server and resources needed to run BI4Dynamics for BC Cloud.

1.2.1 Prerequisites

Please use an Administrator user you have set up in line with the System Requirement document.

1.2.2 Deliverables

✓ On-Premise Server with SQL Server and SQL PolyBase component installed
✓ Blob Storage Account with Container to store data exported from BC Cloud

1.2.3 Expected installation time

First time user:

Installation step	Time (min)
Blob Storage and Container instance	20
Setting up Virtual Machine	20
Total time	40

Deployment time of Azure resources may vary 50% (no rule in respect of daytime or region).

2   Create Resources in Azure Portal

2.1   Create Blob Storage

Blob storage will keep BC and application data.

2.1.1   Create storage account

Go to **Azure portal**, go to **Resource group**, click **Add**
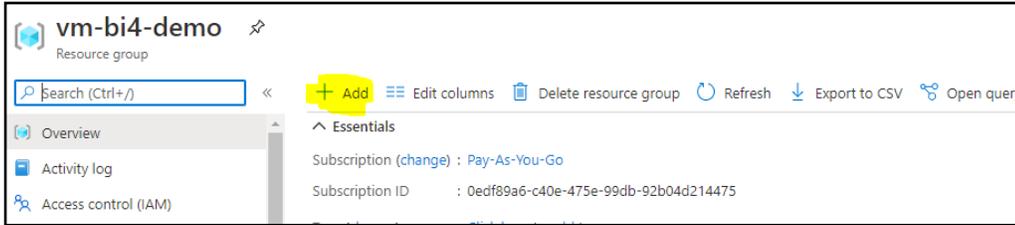
Enter **Storage Account** into search window, click on **Create**
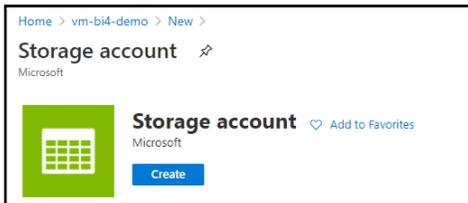
Add **Storage account name**, select the same **Location** as BC and change **Replication** to LRS.
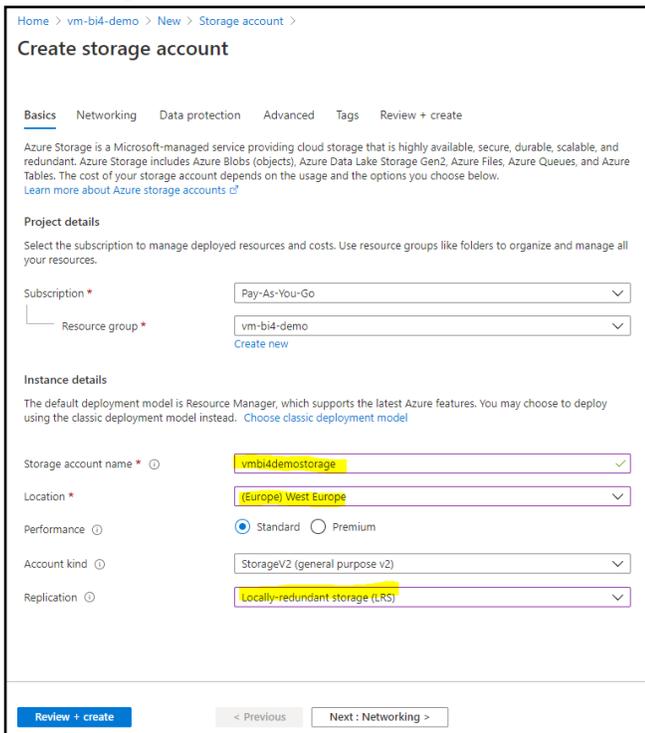
Keep other tab option default.
Click **Review and Create.** (finish in 20- 30 seconds)

Go to **Storage Account,** select **Access Key**, select **Show keys**

Copy the content of the key
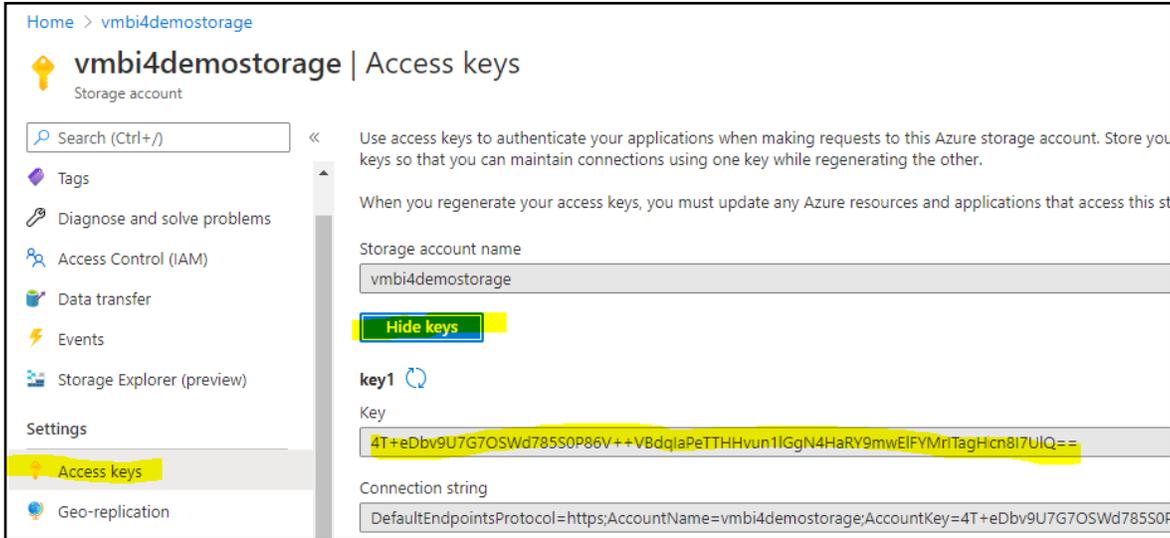
Save Storage Key to notepad file.

2.1.2   Create (storage) container

Go to Storage Account **Overview** and select **Containers**
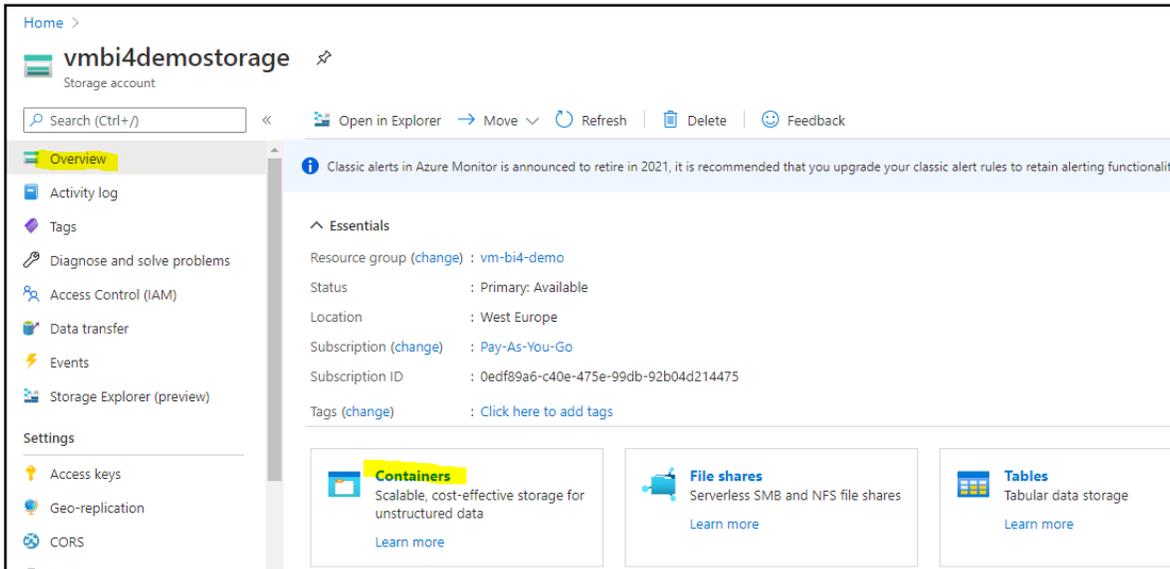
Click on **+ Container** and enter new container **Name**
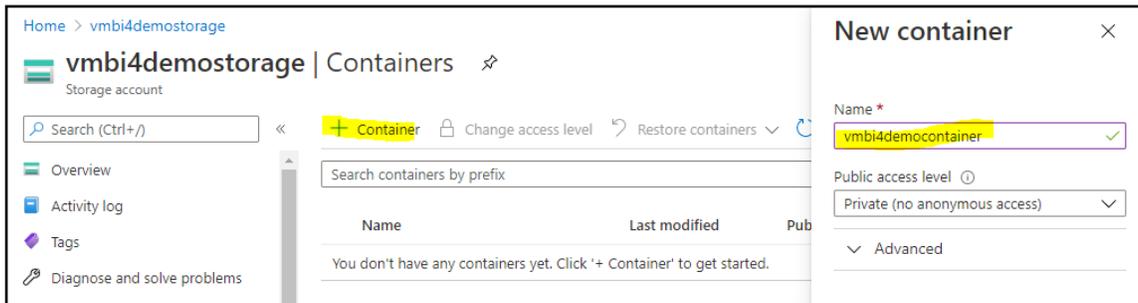
Click **Create**.

> You have successfully created Storage Account with one container.

2.1.3 Container name used as Storage Container and Docker Container – confusing?

To someone new, a name Container may be confusing as it is used in two Azure Services:

- Under Storage Account we have created storage Containers to store data in Azure Data Lake
- Under Container Instance, a Docker Container is self-contained Azure resource that acts like light virtual machine for specific task

Both services are used in BI4Dynamics BC Cloud solution.

2.2   Create Docker container instance

With these settings we will create a docker container (a light virtual machine) based on BI4Dynamics image that is used for running table export from BC to Blob storage. Docker will run at scheduled time and automatically shut down after finishing the export.

Go to Azure service, click **Container instance**
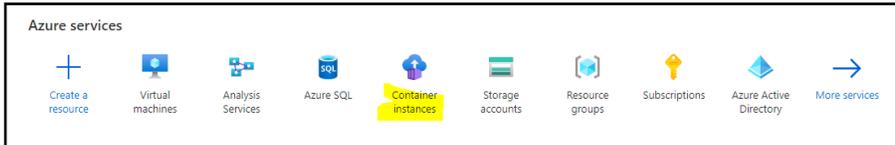
click **+ New** to create a new container instance
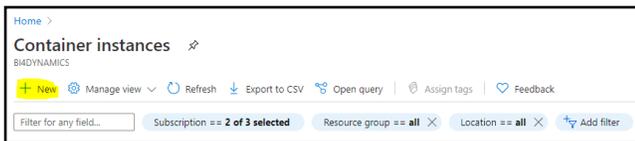
Select:

- Subscription: *Pay-As-You-Go*
- Resource group: *vm-bi4-demo*
- Container name (any name): *vm-bi4-demo-container*
- Region (same as BC)

Important: following settings
MUST be exactly like below:

- Image source:
  Docker Hub or other registry
- Image type: **Public**
- Image:
  bi4dynamicsdevelopment/bc2lake
- OS Type:
  Windows
- Size change to
  1vcpu, 8GiB memory (minimum)
- Confirm change **OK**

Click **Next: Networking**
Click **Next: Advanced**

Under Advanced tab set the following

- Restart policy: **Never**
- Environment variables keys must be exact:
  - **StorageAccountName** enter the name of storage account that is used for Blob Storage
  - **BlobAccessKey** of the same storage account
  - **ContainerName** of the storage account
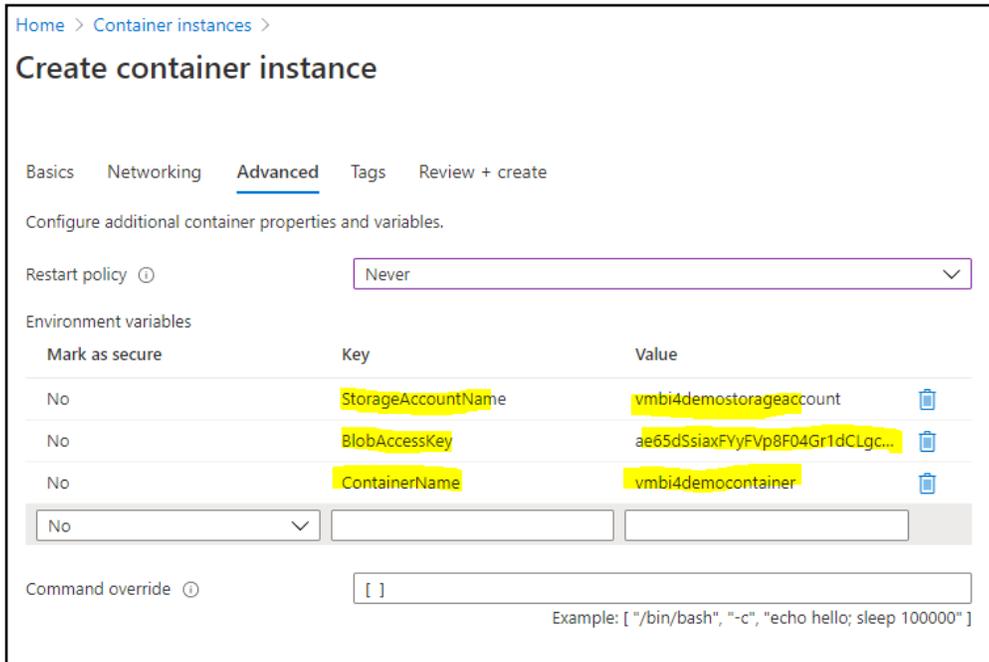
These Keys and Values give Docker instance access to Blob Storage.

Click **Review and Create**

Click **Create**

You have successfully created Docker instance

3 Setup up On-Premises Server

Now we continue with server settings and adding Azure resources.

3.1 Install Azure CLI

3.1.1 About CLI

The **Azure command-line interface** (**Azure CLI**) is a set of commands used to create and manage **Azure** resources. The **Azure CLI** is available across **Azure** services and is designed to get you working quickly with **Azure**, with an emphasis on automation.

3.1.2 Install CLI

Go to https://docs.microsoft.com/en-us/cli/azure/install-azure-cli-windows?view=azure-cli-latest&tabs=azure-cli and install Azure CLI.

Install or update

The MSI distributable is used for installing or updating the Azure CLI on Windows. You don't need to uninstall current versions before using the MSI installer because the MSI will update any existing version.

Microsoft Installer (MSI)   Microsoft Installer (MSI) with Command

When the installer asks if it can make changes to your computer, click the "Yes" box.

Azure CLI current version

Download and install the current release of the Azure CLI.

Current release of the Azure CLI

3.2   Setup Hosts file

3.2.1   Download auxiliary installation files

Here is the link to auxiliary installation files: https://www.bi4dynamics.com/dl/azure/VM.zip. There are 2 files:

1. **Enable PolyBase script**: SQL script that will enable PolyBase feature.
2. **Loopback script**: this script will enable access to SQL server on VM from resource outside of VM. We will be using Docker to interface with SQL server.

enable_polybase	12/1/2020 12:40 PM	Microsoft SQL Ser...	1 KB
loopback	11/30/2020 11:34 ...	Registration Entries	1 KB

3.3   Setup SQL Server Analysis Services

SQL Server Analysis Services is by default running as service user. We need to change it to administrator user that we created.

Go to **SQL Server 2019 Configuration Manager** and go to **SQL Server Services** menu:
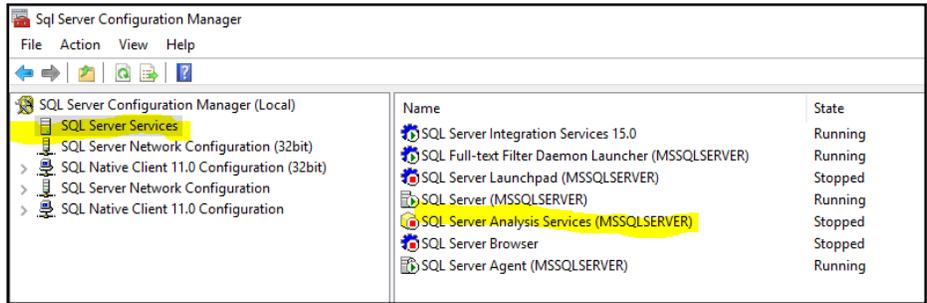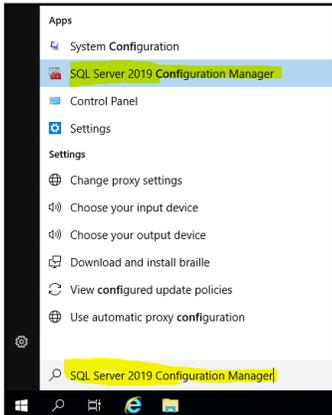
Change Log-on **Account** for **SQL Server Analysis Services**
to VM admin account:
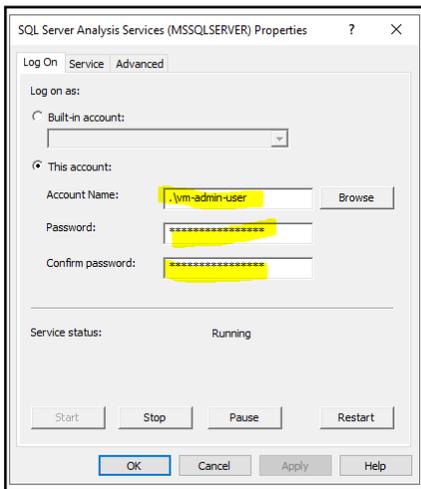
Set start mode to **Automatic**:
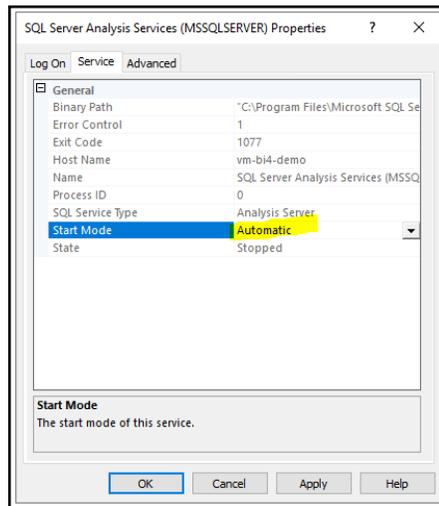
And **Start** the service.

3.4   Install PolyBase

3.4.1   Install PolyBase SQL feature

Every server with SQL server has folder containing SQL installation files **C:\SQLServerFull**
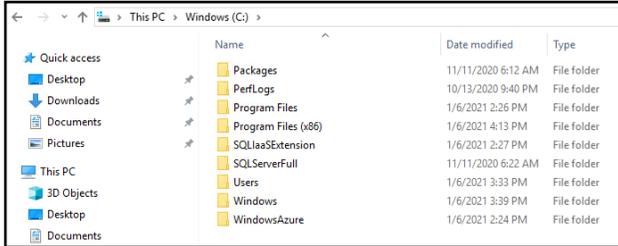
Run **C:\SQLServerFull\setup.exe**

Select **Installation** and **New SQL Server stand-alone installation or add features to existing installation.**
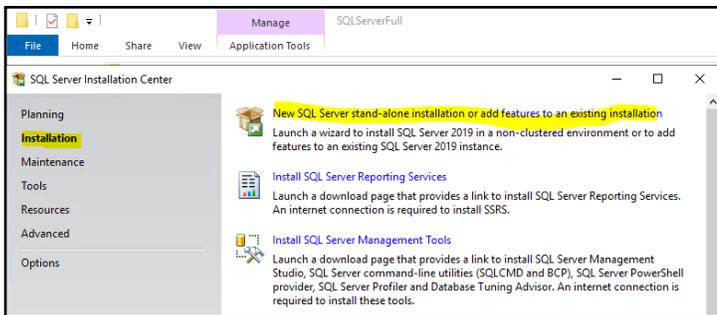
Select **Add features to an existing instance**
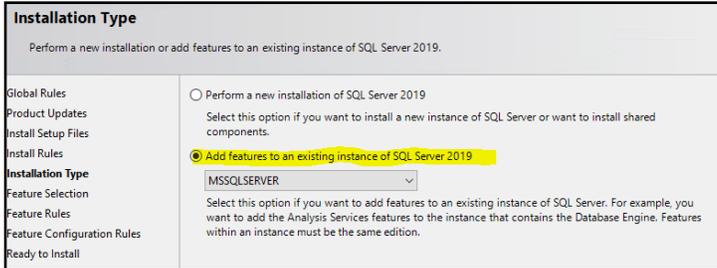
Select **PolyBase Query Service** and **Java connector**   Select **Use this SQL Server as standalone …**
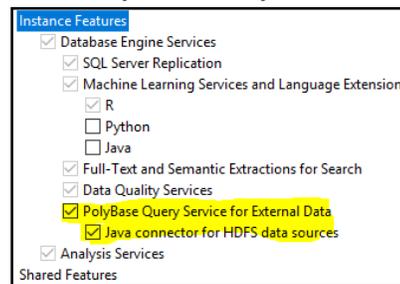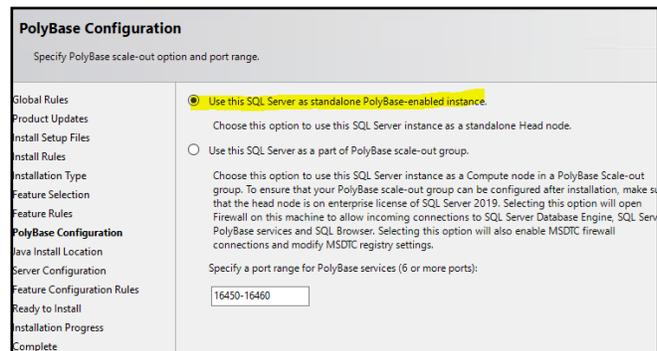
Keep the option **Install open JRE** selected.
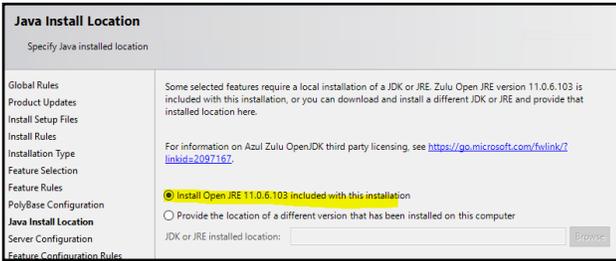
Follow the next steps to finish the installation and **Install** newly selected features. It will take 4 minutes.

When installation is completed, close configuration windows and **Restart** the server from Taskbar:
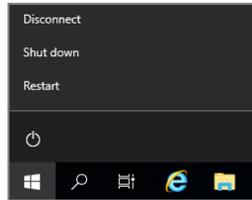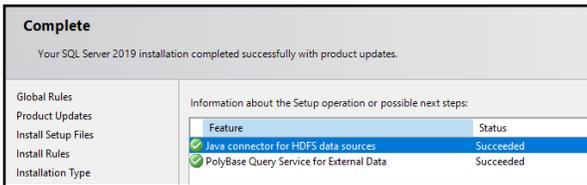
3.4.2   Enable PolyBase

Open SSMS (SQL Server Management Studio), **connect** to SQL server instance, select **master** database in System Databases and create **New query**:
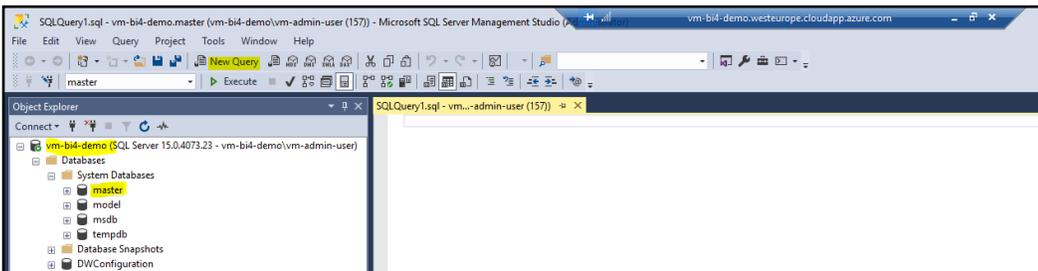
Open **enable_polybase.sql file** provided with by BI4Dynamics in master database connection
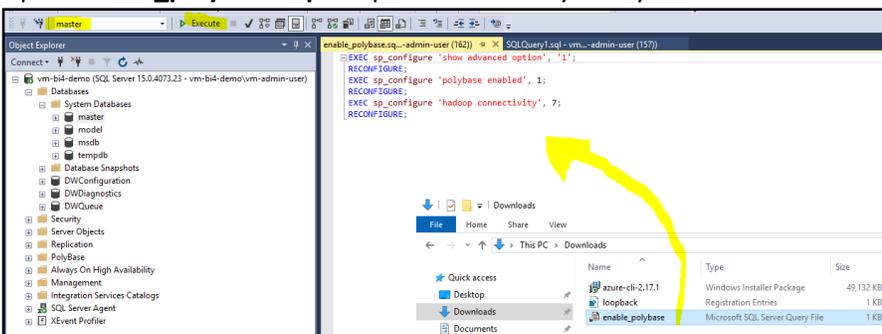
and **Execute** query on master database.
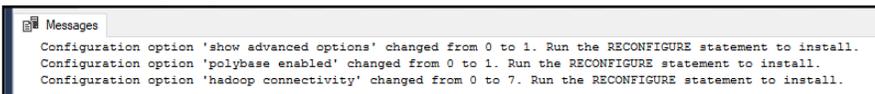
Restart the server.

You have successfully installed and enabled PolyBase.

3.5   Install Azure modules

In this step we will add Azure modules that are needed for Azure authentication and registration. These are official Microsoft modules available on the internet. Process requires installation of **NuGet** provider, that will manage the packages. Download and installation is done by **PowerShell**.

By typing windows search **power** open **PowerShell**, a desktop application:
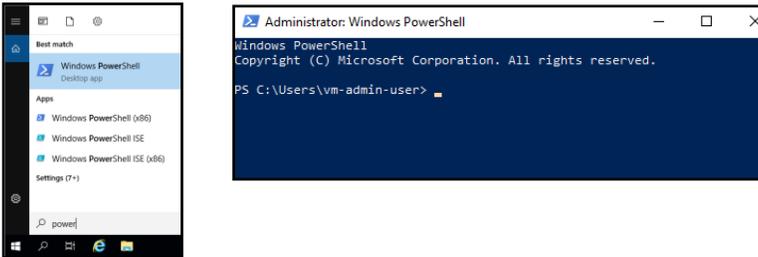
Run command (copy exact text): **Install-Module –Name Az –AllowClobber**

This message will display. Confirm **"Y"**

Process will need few minutes to complete…
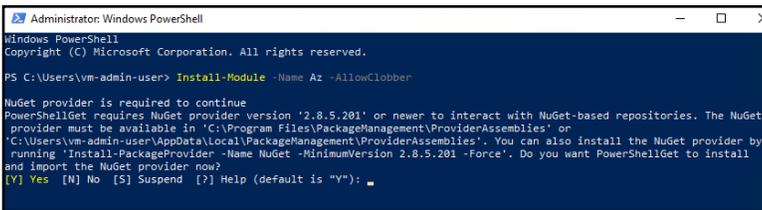
Another message will display. Confirm **"Y"**
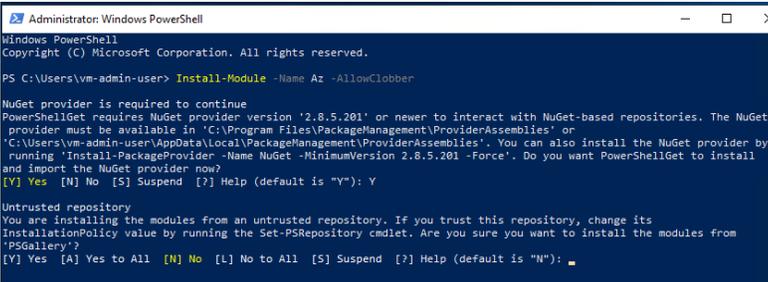
During 2-minute installation, this window will be displayed:
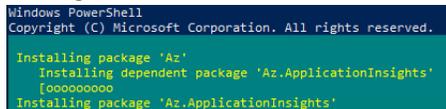
Run command (copy exact text): **Install-Module "AzureAD"**

Confirm **"Y"** to install the package and close PowerShell.

You have successfully configured On-Premise server with required resources.

4   Result

4.1   Information needed for BI4Dynamics application installation

The fields created in this installation will be needed in BI4Dynamics **application** installation.

4.1.1   Information about Azure Storage and Container instance

Description	Value
Subscription	Pay-As-You-Go
Resource Group	vm-bi4-demo
Azure Storage Account Name	vmbi4demostorage
Container Name	vmbi4democontainer
Storage Account Blob Key	4T+eDbv9U7G7Wd785S0P86V++VBdqIaPeTTHHvun1lGgN4I==
Container Instance Name	vm-bi4-demo-container

Next step – BI4Dynamics applications installation