

Click on “Create a Resource”

The screenshot shows the Microsoft Azure portal dashboard. The browser address bar displays <https://portal.azure.com/#>. The top navigation bar includes a search bar with the placeholder text "Search resources, services, and docs" and a user profile for "mohammedowais@h...".

On the left sidebar, the "Create a resource" button is highlighted with an orange rectangle. Below it, the "All services" link is visible, followed by a "FAVORITES" section containing links to Dashboard, Resource groups, All resources, Recent, App Services, Search services, Virtual machines, SQL servers, SQL databases, SQL data warehouses, Storage accounts, Security Center, Subscriptions, Azure Active Directory, Monitor, Cost Management + Bill..., Help + support, Advisor, Event Hubs, and Stream Analytics jobs.

The main dashboard area features a "Dashboard" header with options to "New dashboard", "Upload", "Download", "Edit", "Share", "Full screen", "Clone", and "Delete". Below this, the "All resources" section lists resources across all subscriptions, with a "Refresh" button. The list includes:


Resource Name	Resource Type
HYPERVHOST	Virtual machine
momigrationday	Storage account
mohammedowais	Storage account
WideWorldImporters	SQL database
mohammedowais	SQL server
mohammedowais1	SQL server
DemoTextAnalyticsAPI	Cognitive Services
DemoComputerVisionAPI	Cognitive Services

Other dashboard tiles include "Service Health" (with a "Learn more" link), "Labs" (MachineLearningWorkspace), "Marketplace", and "Help + support".

Search for “SQL Server 2017 Developer” and select **SQL Server 2017 Developer on Windows Server 2016** from the list (or on some flavor of linux if you are feeling particularly brave)

Home > New > Marketplace > Everything

Marketplace

My Saved List  0













- Everything
- Compute
- Networking
- Storage
- Web
- Mobile
- Containers
- Databases
- Analytics
- AI + Machine Learning
- Internet of Things
- Integration
- Security
- Identity
- Developer tools
- Management Tools

Everything

Search: sql server 2017 developer

Pricing: All | Operating System: All | Publisher: All

Results

NAME	PUBLISHER	CATEGORY
 Free SQL Server License: SQL Server 2017 Developer on Ubuntu Server 16.04 LTS	Microsoft	Compute
 Free SQL Server License: SQL Server 2017 Developer on Windows Server 2016	Microsoft	Compute
 Free SQL Server License: SQL Server 2017 Developer on SUSE Linux Enterprise Server (SLES) 12 SP2	Microsoft	Compute
 Free SQL Server License: SQL Server 2017 Developer on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute
 SQL Server 2017 Ent w/ Vulnerability Assessment	Cognosys Inc.	Compute
 SQL Server 2017 Web with Vulnerability Assessment	Cognosys Inc.	Compute
 SQL Server Std 2017 Production w/ Debug Utilities	Cognosys Inc.	Compute
 SQL Server 2017 Standard on Windows Server 2016	Microsoft	Compute
 (BYOL) SQL Server 2017 Standard on Windows Server 2016	Microsoft	Compute
 SQL Server 2017 Web on Windows Server 2016	Microsoft	Compute
 SQL Server 2017 Enterprise Windows Server 2016	Microsoft	Compute
 Free SQL Server License: SQL Server 2017 Express on Windows Server 2016	Microsoft	Compute

Click on the **Create** button

[Home](#) > [New](#) > [Marketplace](#) > [Everything](#) > Free SQL Server License: SQL Server 2017 Developer on Windows Server 2016

✕

Operating System

All

▼

Publisher

All

	PUBLISHER	CATEGORY
SQL Server 2017 Developer on Ubuntu Server	Microsoft	Compute
SQL Server 2017 Developer on Windows	Microsoft	Compute
SQL Server 2017 Developer on SUSE Linux	Microsoft	Compute
SQL Server 2017 Developer on Red Hat	Microsoft	Compute
Security Assessment	Cognosys Inc.	Compute
Security Assessment	Cognosys Inc.	Compute
SQL w/ Debug Utilities	Cognosys Inc.	Compute
Windows Server 2016	Microsoft	Compute
SQL on Windows Server 2016	Microsoft	Compute
Windows Server 2016	Microsoft	Compute
Windows Server 2016	Microsoft	Compute
SQL Server 2017 Express on Windows Server	Microsoft	Compute

Free SQL Server License: SQL Server 2017 Developer on ...

Microsoft

This image contains the Developer edition of SQL Server 2017 on Windows Server 2016. This free edition (no SQL Server licensing cost) includes all the functionality of Enterprise edition, but it is licensed for development and testing only, not production. It provides comprehensive capabilities for mission-critical transactional processing, data warehousing, and real-time business intelligence. It includes the database engine with support for In-Memory transactional processing and analytics, automatic database tuning and new graph capabilities for modeling many-to-many relationships. This edition also includes Always On for +99.99% high availability and read scale-out capabilities. Various layers of protection, including innovative features like Always Encrypted and Row-Level Security for the highest data protection. SQL Server Machine Learning Services for integrated advanced analytics with Python and R language support. Includes Integration Services for moving and transforming data, Analysis Services for data mining and Master Data Services for data modeling. We recommend that you use a virtual machine size of DS2 or higher for development and functional testing, DS13 or higher for performance testing.

Legal Terms

By clicking the Create button, I acknowledge that I am getting this software from Microsoft and that the [legal terms](#) of Microsoft apply to it. Microsoft does not provide rights for third-party software. Also see the [privacy statement](#) from Microsoft.

Save for later

PUBLISHER	Microsoft
USEFUL LINKS	Documentation SQL Server 2017 information Support forum Pricing details

Select a deployment model ⓘ
Resource Manager

Create

Fill out the form (Screen 1). Select Standard SSD for test servers

Home > New > Marketplace > Everything > Free SQL Server License: SQL Server 2017 Developer on W

Create virtual machine

1 Basics
Configure basic settings

2 Size
Choose virtual machine size

3 Settings
Configure optional features

4 SQL Server settings
Configure SQL server settings

5 Summary
Free SQL Server License: SQL S...

Basics

* Name
batman ✓

VM disk type ⓘ
Standard SSD ✓

* Username
batman-admin ✓

* Password
..... ✓

* Confirm password
..... ✓

Subscription
Visual Studio Enterprise: BizSpark ✓

* Resource group ⓘ
MigrationDay ✓
[Create new](#)

* Location
West Europe ✓

Save money
Save up to 49% with a license you already own.

* Already have a Windows license? ⓘ

For server size, choose D2S_v3

Choose a size

Browse the available sizes and their features

Compute type

Current generation

Disk type

All disk types

vCPUs

1

128

RECOMM...	SKU	TYPE	COMPUT...	VCPUS	GB RAM	DATA DIS...	MAX IOPS	LOCAL SS...	PREMIU...	ADDITIO...	ZONES	USD/MO...
Available												
	B2s	Standard	General purpo	2	4	4	1600	8 GB	Yes		1,2,3	\$35.71
	B2ms	Standard	General purpo	2	8	4	2400	16 GB	Yes		1,2,3	\$71.42
	B4ms	Standard	General purpo	4	16	8	3600	32 GB	Yes		1,2,3	\$142.85
	B8ms	Standard	General purpo	8	32	16	4320	64 GB	Yes		1,2,3	\$285.70
	D2s_v3	Standard	General purpo	2	8	4	3200	16 GB	Yes		1,2,3	\$89.28
	D4s_v3	Standard	General purpo	4	16	8	6400	32 GB	Yes		1,2,3	\$178.56
	D8s_v3	Standard	General purpo	8	32	16	12800	64 GB	Yes		1,2,3	\$357.12
	D16s_v3	Standard	General purpo	16	64	32	25600	128 GB	Yes		1,2,3	\$714.24
	E2s_v3	Standard	Memory optim	2	16	4	3200	32 GB	Yes		1,2,3	\$119.04
	E4s_v3	Standard	Memory optim	4	32	8	6400	64 GB	Yes		1,2,3	\$238.08
	E4-2s_v3	Standard	Memory optim	2	32	8	6400	64 GB	Yes		1,2,3	\$238.08
	F8s_v3	Standard	Memory optim	8	64	16	12800	128 GB	Yes		1,2,3	\$476.16

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Recommended sizes are determined by the publisher of the selected image based on hardware and software requirements.

Select

On the settings page, add a new VNET to keep the database server on a separate network

Settings

Standard SSD

Use managed disks

NoYes

Managed disks are required for Standard SSD disk type.

Network

* Virtual network

OnPremVNET

* Subnet

VMHOST (10.0.0.0/24)

* Public IP address

(new) batman-ip

Network Security Group

BasicAdvanced

* Select public inbound ports

0 selected

Extensions

Extensions

No extensions

Auto-shutdown

OK

Choose virtual network

These are the virtual networks in the selected subscription and location 'West Europe'.

Create new

OnPremVNET

MigrationDay

ResourceGroup1-vnet

ResourceGroup1

Create virtual network

* Name

MigrationDay

* Address space

10.1.0.0/16

10.1.0.0 - 10.1.255.255 (65536 addresses)

* Subnet name

default

* Subnet address range

10.1.0.0/24

10.1.0.0 - 10.1.0.255 (256 addresses)

OK

Rest of the settings (disabled **diagnostics** and selected **no public inbound ports**)

Home > New > Marketplace > Everything > Free SQL Server License: SQL Server 2017 Developer on V

Create virtual machine


- 1 Basics Done ✓
- 2 Size Done ✓
- 3 Settings Configure optional features >
- 4 SQL Server settings Configure SQL server settings >
- 5 Summary Free SQL Server License: SQL S... >

Settings

* Public IP address ⓘ
(new) batman-ip >

Network Security Group ⓘ
Basic Advanced

* Select public inbound ports ⓘ
No public inbound ports ⓘ ▾

 All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Extensions

Extensions ⓘ
No extensions >

Auto-shutdown

Enable auto-shutdown ⓘ
Off On

Monitoring

Boot diagnostics ⓘ
Disabled Enabled

Guest OS diagnostics ⓘ

OK

On SQL Server settings page, change **connectivity** to Public (DO NOT USE THIS SETTING IN PRODUCTION!) and enable SQL Authentication

Home > New > Marketplace > Everything > Free SQL Server License: SQL Server 2017 Developer on V

Create virtual machine

1 Basics
Done ✓

2 Size
Done ✓

3 Settings
Done ✓

4 SQL Server settings
Configure SQL server settings >

5 Summary
Free SQL Server License: SQL S... >

SQL Server settings

SQL connectivity ⓘ
Public (Internet) ▼

* Port ⓘ
1433

SQL Authentication ⓘ
Disable Enable

* Login name ⓘ
batman-admin

* Password ⓘ
.....

Storage configuration ⓘ
General >

Automated patching ⓘ
Sunday at 2:00 >

Automated backup ⓘ
Disabled >

Azure Key Vault integration ⓘ
Disabled >

SQL Server Machine Learning Services (In-Database) ⓘ
Disable Enable

OK

On the summary screen, click on the **Create** button. Takes about 15 minutes to create the server.

Home > New > Marketplace > Everything > Free SQL Server License: SQL Server 2017 Developer on Windows Server 2016 > Create virtual machine

Create virtual machine

1 Basics Done ✓

2 Size Done ✓

3 Settings Done ✓

4 SQL Server settings Done ✓

5 Summary Free SQL Server License: SQL S... >

Create

Create

Validation passed

Offer details

Standard D2s v3 by Microsoft 0.1200 USD/hr
[Terms of use](#) | [privacy policy](#) [Pricing for other VM sizes](#)

Azure resource
You may use your Azure monetary commitment funds or subscription credits for these purchases. Prices presented are retail prices and may not reflect discounts associated with your subscription.

Summary

Basics

Subscription	Visual Studio Enterprise: BizSpark
Resource group	MigrationDay
Location	West Europe

Settings

Computer name	batman
---------------	--------

Terms of use

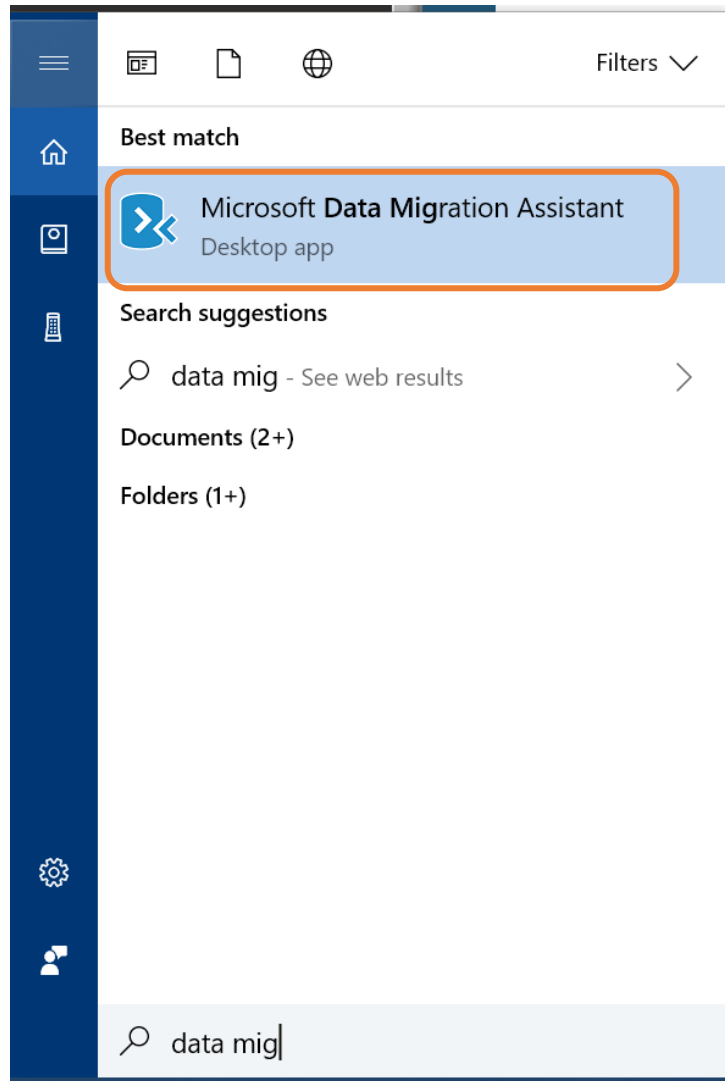
By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with each Marketplace offering above, (b) authorize Microsoft to charge or bill my current payment method for the fees associated with my use of the offering(s), including applicable taxes, with the same billing frequency as my Azure subscription, until I discontinue use of the offering(s), and (c) agree

☐ I give Microsoft permission to use and share my contact information so that Microsoft or the Provider can contact me regarding this product and related products.

Create

[Download template and parameters](#)

Install the Data Migration Assistant on the the source server (you can also install it on another machine which has access to both servers). Download it from here: <https://www.microsoft.com/en-us/download/details.aspx?id=53595> . Open the DMA once it has installed.



First create an assessment (optional). Make sure you select the correct target server type as SQL Server on Azure Virtual Machine

Data Migration Assistant

New

Project type

☒ Assessment

☐ Migration

Project name

MigrationTest

Source server type

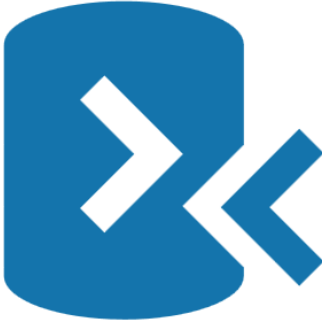
SQL Server

Target server type

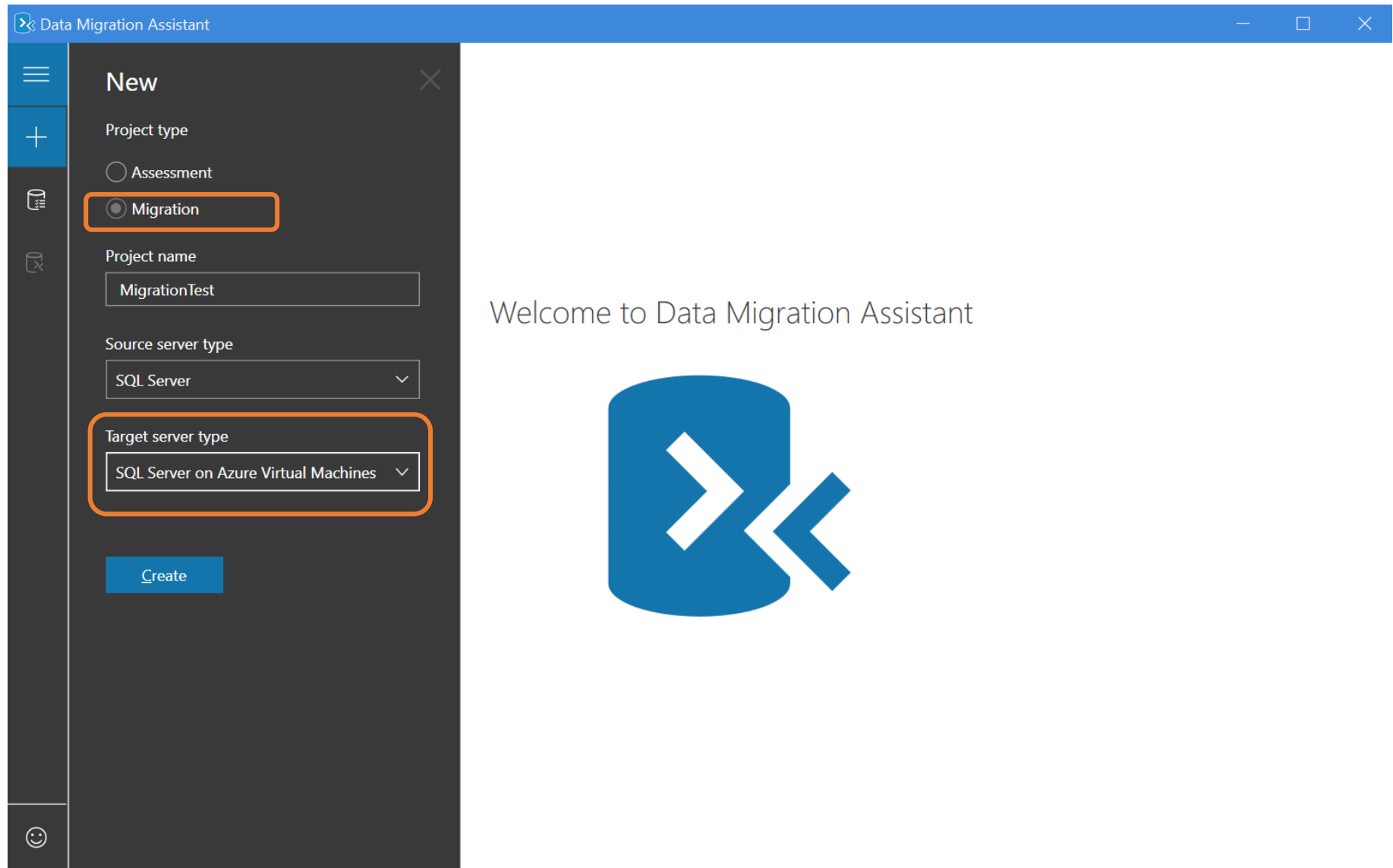
SQL Server on Azure Virtual Machines

Create

Welcome to Data Migration Assistant



After the assessment has been completed (I have skipped those steps here), create a new Migration



The screenshot shows the 'Data Migration Assistant' application window. On the left is a dark sidebar with icons for a menu, adding new items, and recent projects. The main area is titled 'New' and contains the following fields:

- Project type:** Two radio buttons are present. 'Assessment' is unselected, and 'Migration' is selected and highlighted with an orange border.
- Project name:** A text input field containing 'MigrationTest'.
- Source server type:** A dropdown menu with 'SQL Server' selected.
- Target server type:** A dropdown menu with 'SQL Server on Azure Virtual Machines' selected, highlighted with an orange border.
- Create:** A blue button at the bottom of the form.

The main content area on the right displays the text 'Welcome to Data Migration Assistant' and a large blue logo consisting of a cylinder with two white arrows pointing in opposite directions.

On your Azure portal, navigate to the newly created Virtual Machine to find its IP address

Home > Resource groups > MigrationDay > batman

batman

Virtual machine

Search (Ctrl+/,)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Settings

- Networking
- Disks
- Size
- Security
- Extensions
- Continuous delivery (Preview)
- Availability set
- Configuration
- Identity
- SQL Server configuration
- Properties
- Locks
- Automation script

Connect Start Restart Stop Capture Delete Refresh

Resource group [\(change\)](#)
MigrationDay

Status
Running

Location
West Europe

Subscription [\(change\)](#)
Visual Studio Enterprise: BizSpark

Subscription ID
13301ae4-0c27-468e-942d-2cc2d69b5a52

Computer name
batman

Operating system
Windows

Size
Standard D2s v3 (2 vcpus, 8 GB memory)

Public IP address
40.113.111.92

Virtual network/subnet
MigrationDay/default

DNS name
[Configure](#)

Tags [\(change\)](#)
[Click here to add tags](#)

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

CPU (average)

Percentage CPU (Avg)
batman

Network (total)

Network In (Sum)
batman

Network Out (Sum)
batman

Fill out the source and target server details (make sure both the Encrypt Connection and Trust Server Certificate options are ticked for the target)

Data Migration Assistant

MigrationTest

Delete Migration

+

1 Specify source & target

2 Add databases

3 Select logins

4 View results

Source server details

Server name

.sql2016

Authentication type

Windows Authentication

Connection properties

☐ Encrypt connection

☐ Trust server certificate

Source SQL Server permissions

Credentials used to connect to source SQL Server instance must have CONTROL SERVER permission.

Target server details

Server name

40.113.111.92

Authentication type

SQL Server Authentication

SQL Authentication credentials

Username

batman-admin

Password

••••••••••

Connection properties

☒ Encrypt connection

☒ Trust server certificate

Target SQL Server permissions

Credentials used to connect to target SQL Server instance must be a member of the sysadmin server role.

Next

Next, we select the databases we want to migrate. The shared location is a little tricky to set up. When you have a production setup, you will probably have a VPN that will allow the Azure VM to communicate with your on-premise network. For our test setup, though, we will need to use something else. I have used a File share on Azure Blob Storage to bridge this gap between the on-prem and cloud servers (see next page for guide), mapped to Z:

Data Migration Assistant

MigrationTest

1 Specify source & target ✓ 2 Add databases 3 Select logins 4 View results

Source server: DEV8-ABS\SQL2016
SQL Server 2016

Target server: batman
SQL Server 2017

DEV8-ABS\SQL2016 (11)

- ☐ AdventureWorksDW2014
- ☐ AdventureWorksDW2014Test
- ☒ aspnet1
- ☐ aspnetdb
- ☒ commerce
- ☐ dbatools
- ☐ dbatools1
- ☐ dbatools4
- ☐ dbatools5
- ☐ ProductCatalog
- ☐ SentryOne

DEV8-ABS\SQL2016

Shared location accessible by source and target servers for backup operation*

Z:\

☐ Copy the database backups to a different location that the target server can read and restore from

Specify the location to restore data files on the target server

F:\Data\

Specify the location to restore log files on the target server

F:\Log\

***Backup folder permissions**

Service account running source SQL Server instance must have write privileges on the network location. Service account running target SQL Server instance must have read privileges on the network location.

Back Next

Steps for setting up a file share for both servers to access

Log into the source SQL server using SSMS and run the following script. Note this will connect to my storage account with the given key. I will probably change this key in a few days, so if this script stops working, please create your own file share [using the steps defined here](#).

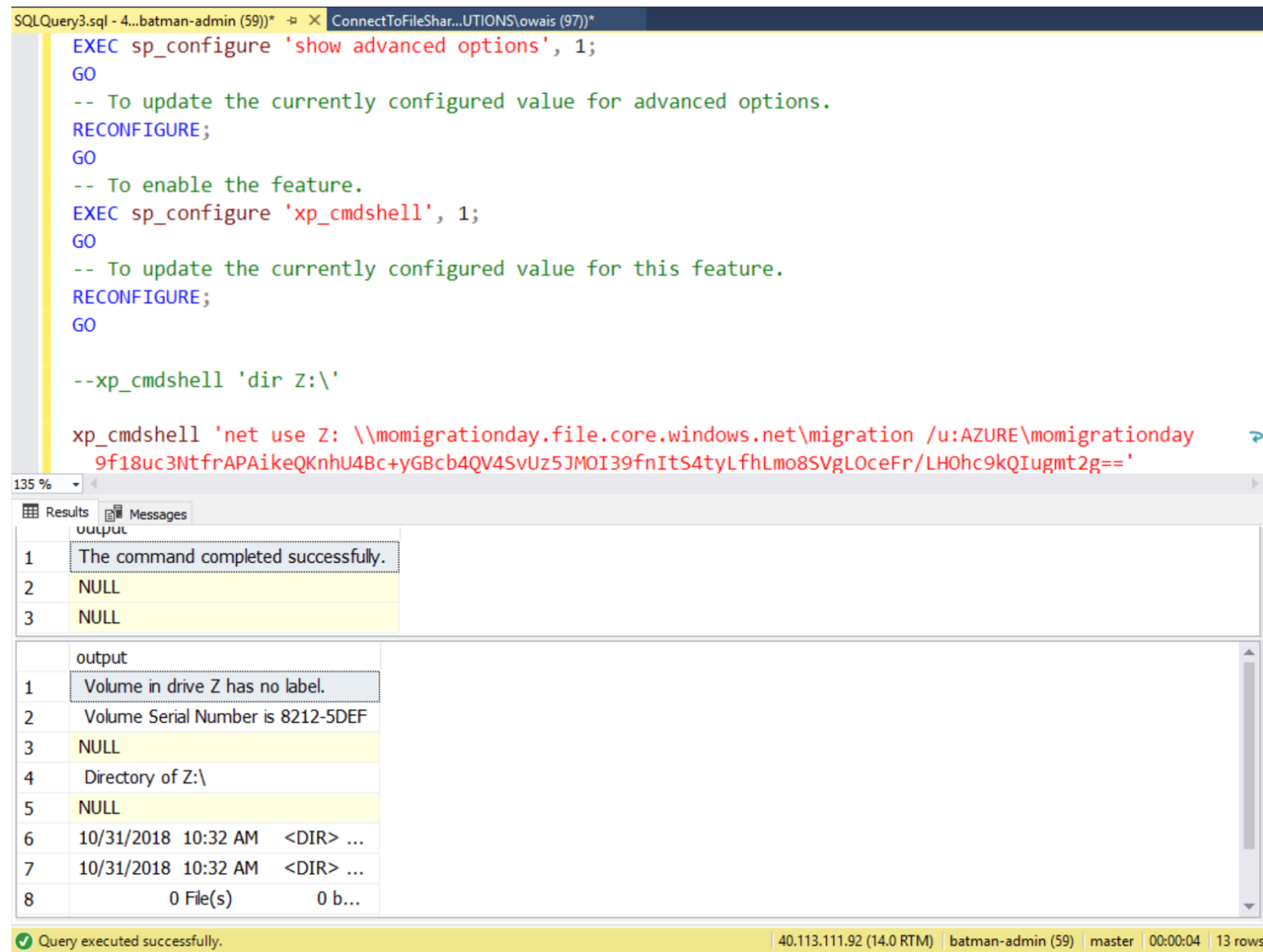
```
EXEC sp_configure 'show advanced options', 1;
GO
-- To update the currently configured value for advanced options.
RECONFIGURE;
GO
-- To enable the feature.
EXEC sp_configure 'xp_cmdshell', 1;
GO
-- To update the currently configured value for this feature.
RECONFIGURE;
GO

xp_cmdshell 'net use Z: \\momigrationday.file.core.windows.net\migration /u:AZURE\momigrationday
9f18uc3NtfrAPAIkeQKnhU4Bc+yGBcb4QV4SvUz5JMOI39fnItS4tyLfhlmo8SVgLOceFr/LH0hc9kQIugmt2g=='
GO

xp_cmdshell 'dir Z:\'
GO
```

Now login to the target server using SSMS and run the same script. Now both SQL Server instances have access to a Z: drive that connects to the same network share. This will allow them to exchange the backup files.

Output of the script confirming that the Z: drive has been mapped



```
SQLQuery3.sql - 4...batman-admin (59))* X ConnectToFileShar...UTIONS\owais (97))*
EXEC sp_configure 'show advanced options', 1;
GO
-- To update the currently configured value for advanced options.
RECONFIGURE;
GO
-- To enable the feature.
EXEC sp_configure 'xp_cmdshell', 1;
GO
-- To update the currently configured value for this feature.
RECONFIGURE;
GO

--xp_cmdshell 'dir Z:\'

xp_cmdshell 'net use Z: \\momigrationday.file.core.windows.net\migration /u:AZURE\momigrationday
9f18uc3NtfrAPAikeQKnhU4Bc+yGBcb4QV4SvUz5JMOI39fnIts4tyLfhlmo8SVgLOceFr/LH0hc9kQIugmt2g=='
```

135 %

Results Messages

	output
1	The command completed successfully.
2	NULL
3	NULL

	output
1	Volume in drive Z has no label.
2	Volume Serial Number is 8212-5DEF
3	NULL
4	Directory of Z:\
5	NULL
6	10/31/2018 10:32 AM <DIR> ...
7	10/31/2018 10:32 AM <DIR> ...
8	0 File(s) 0 b...

Query executed successfully. 40.113.111.92 (14.0 RTM) batman-admin (59) master 00:00:04 13 rows

Now back to the Data Migration Assistant, choose the logins you want to migrate (I only want **tailspin**)

Data Migration Assistant

MigrationTest

Delete Migration

1 Specify source & target ✓

2 Add databases ✓

3 Select logins

4 View results

Source server

DEV8-ABS\SQL2016

SQL Server 2016

Target server

batman

SQL Server 2017

Selected Logins (1/6)

<input checked="" type="checkbox"/>	Login name	Login type	Default database	Source status	Ready to move
<input type="checkbox"/>	HIRINGSOLUTIONS\owais	Windows	master	Enabled	OK
<input type="checkbox"/>	olap_user	SQL	AdventureWorksDW2014	Enabled	OK
<input type="checkbox"/>	product	SQL	master	Enabled	OK
<input checked="" type="checkbox"/>	tailspin	SQL	master	Enabled	OK
<input type="checkbox"/>	##MS_PolicyEventProcessingLo...	SQL	master	Disabled	No: Created by a SQL component.
<input type="checkbox"/>	##MS_PolicyTsqlExecutionLogi...	SQL	master	Disabled	No: Created by a SQL component.

After the migration is complete, remember to validate your logins and the permissions on the securables associated with those logins.

Back

Start Migration

Once you click on the Start Migration button, it begins the process.

Data Migration Assistant

MigrationTest

1 Specify source & target ✓2 Add databases ✓3 Select logins ✓4 View results

3
Server objects

3
In-progress

0
Successful

0
Warnings

0
Failed

Source server
DEV8-ABS\SQL2016
SQL Server 2016

Target server
batman
SQL Server 2017

▼ Databases (2)

Status	Database name	Migration details
<div></div>	aspnet1	<div></div> 2 of 6Backup in progress: 100 %
<div></div>	commerce	<div></div> 2 of 6Backup in progress: 71 %

► Logins (1)

Migration in-progress: 0h 0m 5s

Export report

Depending on your connection speed, this should take 3-5 minutes for our sample database. And we are done!

MigrationTest

1 Specify source & target ✓2 Add databases ✓3 Select logins ✓4 View results

3
Server objects

1
In-progress

2
Successful

0
Warnings


0
Failed


Source server
DEV8-ABS\SQL2016
SQL Server 2016

Target server
batman
SQL Server 2017

▸ Databases (2)

▾ Logins (1)

Status	Login name	Login type	Migration details
	tailspin	SQL	<div><div></div></div> 2 of 4 Mapping the users and assigning role memberships

Migration in-progress: 0h 2m 7sExport report