# **Password State** Enterprise Password Management

SQL Server Always On Availability Groups

for Passwordstate High Availability

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## 1 Overview

This document will provide instructions for configuring SQL Server Always On Availability Groups for High Availability of the Passwordstate Database.

These instructions are created using SQL Server 2017 Enterprise edition and are intended as a guide only. If you have any technical issues with SQL Server, please contact Microsoft for support.

## 2 Prerequisites

Following are some pre-requisites to installing and configuring SQL Server for Basic Availability Groups:

- You will need to have SQL Server 2012 (or above) Enterprise installed on two separate servers with the default instance set, and the default Port of 1433 configured. Neither of the machines that host SQL can be a domain controller.
- You'll also need one domain service account with "domain users" permissions on your network
- Passwordstate should be installed and communicating to a database on one of your SQL servers you have set up for this exercise
- A network share that Always On technology requires for database backups
- Your Passwordstate SQL database Recovery Model must be configured as "Full"

Below is some information about a test environment used to document this process, to help you understand our instructions easier:

#### SQLDB1.halox.net - 10.0.0.146

- Microsoft Windows 2016 Server with SQL 2017 Standard installed
- Also hosts Passwordstate database

#### SQLDB2.halox.net – 10.0.0.147

• Microsoft Windows 2016 Server with SQL 2017 Standard installed

Win2k16installs.halox.net - 10.0.0.120

• Passwordstate web server

Domain privileged account:

• halox\sqlservice

Passwordstate SQL account:

• passwordstate\_user

Network Share:

- <u>\\SQLDB1\Backups</u>
- halox\sqlservice has full permissions to this share

## **3** Configure SQL Services

Confirm you have set your SQL Server service on both SQLDB1 and SQLDB2 to run under your domain account:

• Open **SQL Server Configuration Manager** and edit the properties of the SQL Server service, setting your domain account under the Log On tab.

🚟 Sql Server Configuration Manager					- 🗆 X
File Action View Help					
♦ ♦ 2 8 8 8					
Image: Solution of the service of	Name	State Stopped Running Stopped	Start Mode Other (Boot, Syste Automatic Manual	Log On As NT AUTHORITY\LO HALOX\sqlservice NT Service\SQLSER	Process ID 0 4640 0
< >	د				>

## 4 Install Windows Failover Cluster Role

On both SQLDB1 and SQLDB2, install the Failover Cluster role by following this process:

- Open Server Manager
- Select Add Roles and Features
- At the Before you Begin Page, select Next

Add Roles and Features Wizard	>
Before you begin	DESTINATION SERVER sqldb1.halox.net
Before You Begin Installation Type	This wizard helps you install roles, role services, or features. You determine which roles, role services, or features to install based on the computing needs of your organization, such as sharing documents, or hosting a website.
Server Selection	To remove roles, role services, or features:
Server Roles	Start the Remove Roles and Features Wizard
Features	Before you continue, verify that the following tasks have been completed:
	The Administrator account has a strong password
	<ul> <li>Network settings, such as static IP addresses, are configured</li> <li>The most current security updates from Windows Update are installed</li> </ul>
	If you must verify that any of the preceding prerequisites have been completed, close the wizard, complete the steps, and then run the wizard again.
	To continue, click Next.
	Skip this page by default
	< Previous Next > Install Cancel

• Select Role-based or feature-based installation and click Next

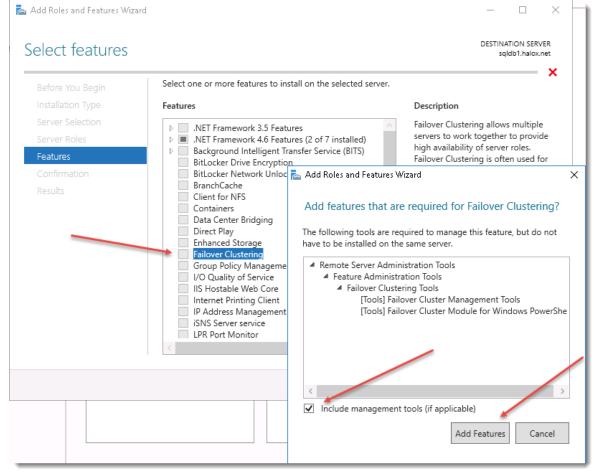
📥 Add Roles and Features Wizard		-		$\times$
Select installation	type		ATION SERV Idb1.halox.	
Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	<ul> <li>Select the installation type. You can install roles and features on a running obvict machine, or on an offline virtual hard disk (VHD).</li> <li>Role-based or feature-based installation Configure a single server by adding roles, role services, and features.</li> <li>Remote Desktop Services installation Install required role services for Virtual Desktop Infrastructure (VDI) to create a or session-based desktop deployment.</li> </ul>	·		
	< Previous Next > Ins	tall	Cance	: <b> </b>

•

alact doctinatio	on convor			DESTINATION
Select destination	JITSELVEL			sqldb1.h
Before You Begin	Select a server or a vir	tual hard disk on whicl	h to install roles and features.	
Installation Type	<ul> <li>Select a server from</li> </ul>	n the server pool		
Server Selection	O Select a virtual har	d disk		
Server Roles	Server Pool			
Features	Eithe w			
	Name	IP Address	Operating System	
	sqldb1.halox.net	10.0.0.146	Microsoft Windows Server	2016 Standard
Confirmation Results				2016 Standard
Results				
	sqldb1.halox.net	10.0.0.146	Microsoft Windows Server	2016 Standard
	sqldb1.halox.net	10.0.0.146	Microsoft Windows Server	2016 Standard
	1 Computer(s) found			
			ndows Server 2012 or a newer i	release of Winders 9
	This page shows serve and that have been ad		Servers command in Server Ma	

Leave the defaults and click Next 📥 Add Roles and Features Wizard × \_ DESTINATION SERVER Select server roles sqldb1.halox.net Select one or more roles to install on the selected server. Before You Begin Installation Type Roles Description Server Selection Active Directory Certificate Services Active Directory Certificate Service
Active Directory Domain Services Active Directory Certificate Services (AD CS) is used to create Server Roles Active Directory Federation Services
Active Directory Lightweight Director certification authorities and related Features role services that allow you to issue Active Directory Lightweight Directory Services and manage certificates used in a Active Directory Rights Management Services
 Device Health Attestation variety of applications. DHCP Server DNS Server Fax Server File and Storage Services (2 of 12 installed) Host Guardian Service  $\square$ Hyper-V MultiPoint Services Hyper-V Network Policy and Access Services Network Policy and Access Se
 Print and Document Services Remote Access Remote Desktop Services Volume Activation Services Web Server (IIS) Windows Deployment Services < Previous Next > Install Cancel

Tick Failover Clustering, Select Include Management Tools, Click Add Features and then click Next



#### Click Install 📥 Add Roles and Features Wizard × DESTINATION SERVER Confirm installation selections soldb1.halox.net To install the following roles, role services, or features on selected server, click Install. Before You Begin Installation Type Restart the destination server automatically if required Optional features (such as administration tools) might be displayed on this page because they have Server Selection been selected automatically. If you do not want to install these optional features, click Previous to clear Server Roles their check boxes. Features Failover Clustering Remote Server Administration Tools Feature Administration Tools Failover Clustering Tools Failover Cluster Management Tools Failover Cluster Module for Windows PowerShell Export configuration settings Specify an alternate source path < Previous Next > Install Cancel

- When the installation has finished, reboot the server
- Ensure you repeat this process on both servers

## 5 Set up the Failover Cluster (WSFC)

Set up a Windows Server Failover Cluster which includes both SQLDB1 and SQLDB2. To do this:

- On SQLDB1, open Server Manager
- Go to Tools -> Failover Cluster Manager
- Right click Failover Cluster Manager and select Create Cluster:

📲 Failover C	luster Manager		
File Action	View Help		
🏟 🛛 📰	?		
📲 Failover	Validate Configuration	er Manager 🔷	Actions
	Create Cluster 🚽 🖌	ailover clusters, validate	Failover Cluster Manager
	Connect to Cluster.	e for potential failover clusters, orm configuration changes to	💐 Validate Configuratic
	View	> bver clusters.	🎼 Create Cluster
		riew	📲 Connect to Cluster
	Refresh	er is a set of independent	View
	Properties	t work together to increase the erver roles. The clustered	<b>Q</b> Refresh
	Help	nodes) are connected by	Properties
	nodes fails	another node begins to provide his process is known as failover.	👔 Help
	Clu Name	sters	
		No items found.	

#### Select Next

Create Cluster Wi	zard	×
Before Yo	bu Begin	
Before You Begin Select Servers Validation Warning Access Point for Administering the Cluster Confirmation Creating New Cluster Summary	This wizard creates a cluster, which is a set of servers that work together to increase the availability of clustered roles. If one of the servers fails, another server begins hosting the clustered roles (a process known as failover). Before you run this wizard, we strongly recommend that you run the Validate a Configuration Wizard to ensure that your hardware and hardware settings are compatible with failover clustering. Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in the Validate a Configuration Wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2016." You must be a local administrator on each of the servers that you want to include in the cluster. To continue, click Next. More about Microsoft support of cluster solutions that have passed validation tests Do not show this page again Next > Cancel	1
	Mext 2 Cancer	

#### • Add SQLDB1 and SQLDB2 and click Next

📲 Create Cluster W	izard		×
Select Se	ervers		
Before You Begin Select Servers	Add the names of all the	servers that you want to have in the cluster. You must add at least one server.	
Validation Warning			
Access Point for Administering the	Enter server name:	Browse	
Cluster	Selected servers:	sqldb1.halox.net Add	
Confirmation		sqldb2.halox.net	
Creating New Cluster		Tenove	
Summary			
		· · · · · · · · · · · · · · · · · · ·	
		< Previous Next > Cancel	

#### Click No to running the validation tests and click Next

Create Cluster Wiz	rard n Warning	×
Before You Begin Select Servers Validation Warning Access Point for Administering the Cluster	For the servers you selected for this cluster, the reports from cluster configuration validation tests appear to be missing or incomplete. Microsoft supports a cluster solution only if the complete configuration (servers, network and storage) can pass all the tests in the Validate a Configuration wizard. Do you want to run configuration validation tests before continuing?	
Confirmation Creating New Cluster Summary	<ul> <li>Yes. When I click Next, run configuration validation tests, and then return to the process of creating the cluster.</li> <li>No. I do not require support from Microsoft for this cluster, and therefore do not want to run the validation tests. When I click Next, continue creating the cluster.</li> </ul>	
	< Previous Next > Cancel	]

• Add in the name of your cluster and the static IP Address it will be assigned. This will create a virtual computer object in Active Directory and a Host entry for this object in DNS.

🎲 Create Cluster Wi	鑙 Create Cluster Wizard			×
	pint for Administering	g the Cluster		
Before You Begin	Type the name you want to u	use when administering the cluster.		
Select Servers Validation Warning	Cluster Name: pwsclu	ister		]
Access Point for Administering the Cluster		ted to 15 characters. One or more IPv4 network to be used, make sure the netw		
Confirmation		Networks	Address	1
Creating New Cluster		10.0.0/24	10.0.0.149	
Summary			1	
		< Previous	Next > Cancel	

#### Click Next

韂 Create Cluster Wiz	rard ×
Confirmat	ion
Before You Begin Select Servers	You are ready to create a cluster. The wizard will create your cluster with the following settings:
Validation Warning	Cluster
Access Point for Administering the	pwscluster
Cluster	Node
Confirmation	sqldb2.halox.net
Creating New Cluster	sqldb1.halox.net
Summary	Cluster registration
	DNS and Active Directory Domain Services
	Add all eligible storage to the cluster. To continue, click Next.
	Cancel

🚏 Create Cluster Wi:	zard	
Summary		
Before You Begin Select Servers	You have successfully completed the Create Cluster Wizard.	
Validation Warning	Node	<u>^</u>
Access Point for	sqldb2.halox.net	
Administering the Cluster	sqldb1.halox.net	
Confirmation	Cluster	
Creating New Cluster	pwscluster	
Summary	Quorum	
ounnary	Node Majority	
	IP Address	
	10.0.0.149	
	Warnings	¥
	To view the report created by the wizard, click View Report. To close this wizard, click Finish.	View Report
		Finish

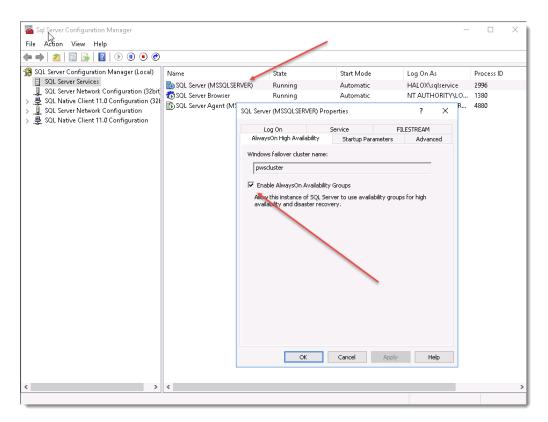
• This process will automatically create the cluster on SQLDB2, so if you log into any of your database servers now, you will see the cluster has been created, and both nodes are **Up**:

🍓 Failover Cluster Manager						- 0	$\times$
File Action View Help							
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🍓 Failover Cluster Manager	Nodes (2)					Actions	
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📷 Roles	Name	Status	Assigned Vote	Current Vote	Site	🚰 Add Node	
> 📇 Storage	sqldb1	(The second seco	1	1	Site	View	
🏢 Networks	sqldb2	🕑 Up	1	0			
🔢 Cluster Events	i squubz	000	1	U			
						🛛 👔 Help	
	<				>		
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	*						

## 6 Enable Always On Availability Groups

To enable **Always On High Availability Groups** in SQL, perform the following steps on both SQLDB1 and SQLDB2

• Open SQL Server Configuration Manager, go to the properties of the SQL Server service, and tick the Enable AlwaysOn Availability Groups option. Click OK to the warning about the services needing to be restarted.



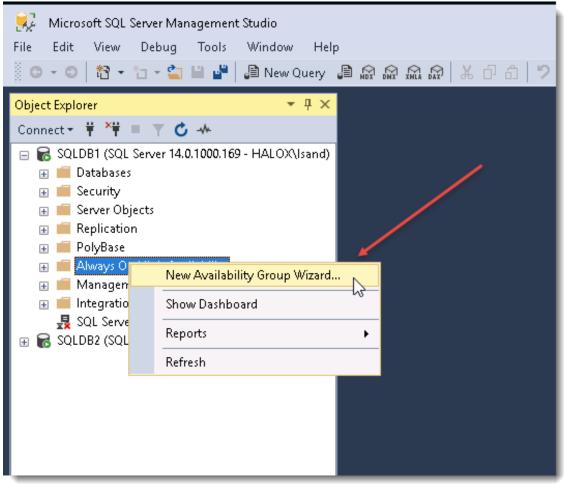
• Restart the SQL Service service on both servers after making this change

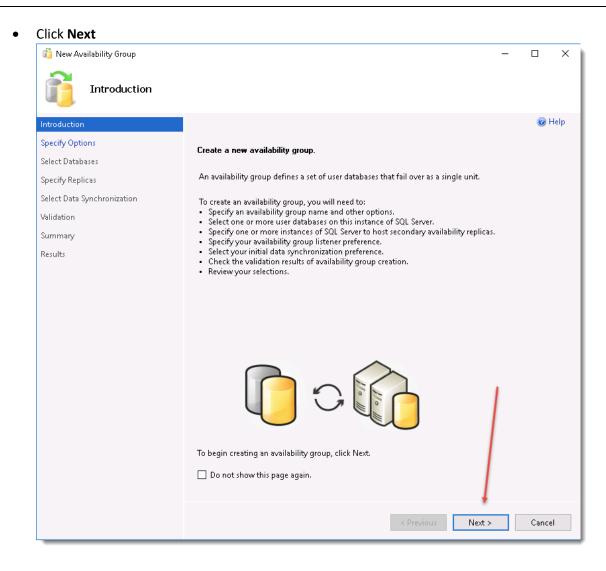
## 7 Set up a High Availability Group

We will now create a High Availability Group which will automatically failover to a working database in the event one of them become unavailable. This process will create the Availability Group on both SQL servers, and it will synchronize your Passwordstate database between them.

It will also create a **Listener**, which is a virtual computer object in Active Directory. This will be used in Passwordstate to ensure your web site is always available.

- On SQLDB1 open SQL Management Studio Tools
- Right click Always On High Availability and launch the New Availability Group Wizard





• Type in a name of the Availability Group as **Passwordstate**, select the Cluster Type as **Windows Server Failover Cluster**, and tick the option for **Database Level Health Detection**. Click **Next**.

👸 New Availability Group			_		×
Specify Availability	y Group Options				
Introduction				() H	lelp
Specify Options	Specify availability group	options			
Select Databases Specify Replicas	Availability group name:	Passwordstate			
Select Data Synchronization	Cluster type:	Windows Server Failover Cluster 🛛 🗸			
Validation	6	🗹 Database Level Health Detection 🍍			
Summary		Per Database DTC Support			
Results					
		< Previou	us Next >	Cance	I

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👸 New Availability Group		Î		-	
Select Database	es				
ntroduction					🕢 Help
pecify Options	Select user databases fo	ar the availability	group		
elect Databases	User databases on this in	-			
pecify Replicas	Name	Stance of SQL Servers	Status	Password	
elect Data Synchronization	passwordstate	9.5 MB	Meets prerequisites	Password	
alidation					
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					Refresh

• Under the **Relicas** tab, click the **Add Replica** button, connect to your second SQL Server, which in this case is **SQLDB2**, and then click **Connect** 

👘 New Availability Group					—	×
Specify Replicas						
Introduction					🔞 Hel	p
Specify Options	Specify an instance of S	OI Server to b	ost a secondary re	nlica		
Select Databases			-	piica.		
Specify Replicas	Replicas Endpoints E	lackup Preferen	ces Listener			_
Select Data Synchronization	Availability Replicas:			<u> </u>		-
Validation	Server Instance	Initial Role	Automatic Failover (Up to 3)	Synchronous Commit (Up to 3)	Readable Secondary	
Summary	SQLDB1	Primary			No	~
	Add Replica       Summary for the repli       Beplica mode: Asynch       This replica will use asynch       occur during failover.       Readable secondary:       In the secondary role, this       Required sync second	Remov ca hostec ronous cori hironous-co No availability	Connect to Server ver type: ver name: hentication: User name: Password:	Database F SOLDE2 Windows A HALOX	uthentication	× v v
					oancer	

for both databases. 👸 New Availability Group					_	o x
Specify Replicas						
Introduction						🕜 Help
Specify Options	Specify an instance of S	SQL Server to h	ost a secondary r	eplica.		
Select Databases	Replicas Endpoints	Backup Preferen	ces Listener			
Specify Replicas	Availability Replicas:			/	/	/
Select Data Synchronization	Server Instance	Initial Role	Automatic Failover (Up to 3)	Synchronous Commit (Up to 3)	Readable Seco	ondan
Summary	SQLDB1	Primary			Yes	~
Results	SQLDB2	Secondary	$\checkmark$		Yes	~
	Add Replica	Remove Rep	lica			
	Summary for the repl	lica hosted by S	QLDB2			
	<b>Replica mode:</b> Synch This replica will use sync failover.	ronous commit with hronous-commit av	n automatic failover vailability mode and	will support both au	itomatic failover and	manual
	Readable secondary In the secondary role, thi with older clients.	t: Yes is availability replic.	a will allow all conne	ections for read acc	ess, including conn	ections running
	Required sync second	dary replicas to c	ommit 0	•		
			[	< Previous	Next >	Cancel

• Select the **Automatic Failover** option, **Synchronous Commit**, and **Yes** as the Readable Secondary for both databases.

• Under the Listener tab, enable the Create an availability group listener option and enter a DNS name of a server which will provide a client connection point.

This will create a virtual computer object in Active Directory and will also create a Host DNS record for this Active Directory object. Enter the port as **1433** and enter a static **IP Address** that will be set.

New Availability Group			_		×
Introduction				🔞 Hel	lp
Specify Options	Specify an instance of SOI	Server to host a secondary replica.			
Select Databases					
Specify Replicas	Replicas Endpoints Bac				
Select Data Synchronization		r an availability group listener that will provide a cli	ent connection	point:	
Validation	O Do not create an avail You can create the liste	<b>ability group listener now</b> ner later using the Add Availability Group Listener d	lialog		
Summary			naiog.		
Results	Create an availability of Specify your listener pr	roup listener eferences for this availability group.			
	Listener DNS Name:	pwslistener			-
					-
	Port:	1433			
	Network Mode:	Static IP		`	~
	Subnet	IP Address			
	10.0.0/24	10.0.0.148			
			Add	Remove	Í
		< Previous	Next >	Cancel	

• Enable the **Full database and log backup** option and set the value of the share on your primary SQL server

👸 New Availability Group	- 🗆 X
Select Initial Da	ata Synchronization
Introduction	@ Help
Specify Options	Select your data synchronization preference.
Select Databases	○ Automatic seeding
Specify Replicas Select Data Synchronization	SQL Server automatically creates databases for every selected secondary replica. Automatic seeding requires that the data and log file paths are the same on every SQL Server instance participating in the availability group.
Validation	
Summary	Full database and log backup Starts data synchronization by performing full database and log backups for each selected database.
Results	These databases are restored to each secondary and joined to the availability group. Make sure the file share is accessible to all replicas and is mounted to the same directory on all Linux replicas.
	Specify the file share path in Windows format:
	\\SQLDB1\Backup Browse
	Specify the file share location in Linux format:
	<ul> <li>Join only</li> <li>Starts data synchronization where you have already restored database and log backups to each secondary server. The selected databases are joined to the availability group on each secondary.</li> <li>Skip initial data synchronization</li> </ul>
	Choose this option if you want to perform your own database and log backups of each primary database.
	< Previous Next > Cancel

• Ensure all of the tests have succeeded, and click Next

👸 New Availability Group	_		×
Validation 🔓			
Introduction		🕜 H	elp
Specify Options	Results of availability group validation.		
Select Databases			
Specify Replicas	Name	Result	:
	Checking for free disk space on the server instance that hosts secondary replica SQLDB2	Succes	<u>is</u>
Select Data Synchronization	Checking if the selected databases already exist on the server instance that hosts second	Succes	_
Validation	Checking for the existence of the database files on the server instance that hosts seconda	Succes	
Summary	Checking whether the endpoint is encrypted using a compatible algorithm	Succes	
	Checking shared network location	Succes	
Results	Checking replica availability mode Checking the listener configuration	<u>Succes</u> Succes	_
	Re-run	n Validat	ion
	< Previous Next >	Cancel	

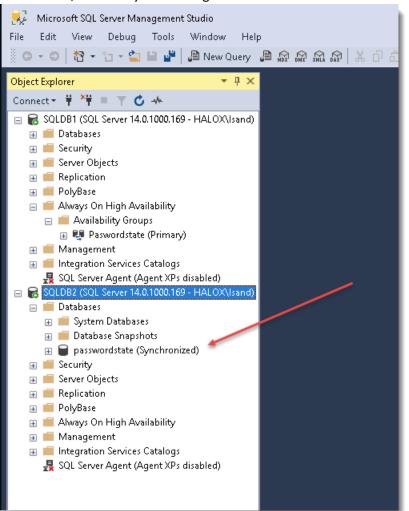
•

#### Review the summary, and click Finish 👸 New Availability Group $\times$ Summary 🕜 Help Introduction Specify Options Verify the choices made in this wizard. Select Databases Click Finish to perform the following actions: Specify Replicas 🖃 Availability group: Passwordstate ٨ Select Data Synchronization Primary replica: SQLDB1 Cluster type: Windows Server Failover Cluster Validation Availability group listener: pwslistener Automated backup preference: Secondary Database health trigger: True Results Required synchronized secondaries to commit: 0 Per database DTC support enabled: False 🖕 Databases i--- passwordstate (8.0 MB) Initial data synchronization: Full database and log backup Backup location in Windows format: \\SQLDB1\Backup 🛓 Replicas 🖕 Server instance name: SQLDB1 Role: Primary Replica mode: Synchronous commit with automatic failover Readable secondary: Yes 🛓 Endpoint: Hadr\_endpoint URL: TCP://sqldb1.halox.net:5022 - Encrypted: Yes Automated backup priority: 50 - Server instance name: SQLDB2 - Role: Secondary • Script < Previous Finish Cancel

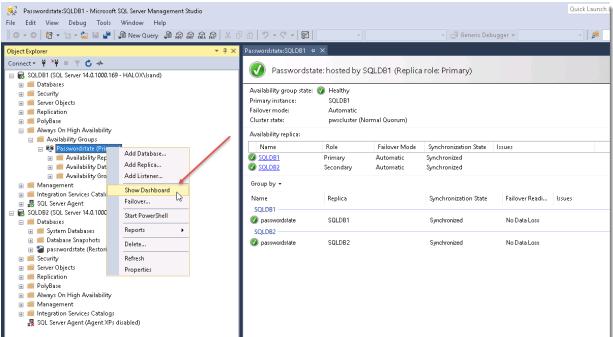
• You should now see a successfully completed wizard

The wizard completed successfully. mmary: Name Configuring endpoints.	@ ⊦ Resul	łelp
mmary: Name		lelp
mmary: Name	Resul	
mmary: Name	Resul	
Name	Resul	
	Resul	
Configuring endpoints.		t
	Succe	55
Starting the 'AlwaysOn_health' extended events session on 'SQLDB1'.	Succe	55
Configuring endpoints.	Succe	<u>ss</u>
Starting the 'AlwaysOn_health' extended events session on 'SQLDB2'.	Succe	<u>s s</u>
Creating availability group 'Paswordstate'.	Succe	<u>s s</u>
Waiting for availability group 'Paswordstate' to come online.	Succe	<u>s s</u>
Creating Availability Group Listener 'ag-listener1'.	Succe	<u>ss</u>
Joining secondaries to availability group 'Paswordstate'.	Succe	<u>ss</u>
Validating Windows Failover Cluster quorum vote configuration.	Succe	<u>ss</u>
Creating a full backup for 'passwordstate'.	Succe	<u>ss</u>
Restoring 'passwordstate' on 'SQLDB2'.	Succe	<u>ss</u>
Backing up log for 'passwordstate'.	Succe	<u>ss</u>
Restoring 'passwordstate' log on 'SQLDB2'.	Succe	<u>ss</u>
Joining 'passwordstate' to availability group 'Paswordstate' on 'SQLDB2'.	Succe	<u>ss</u>
	Starting the 'AlwaysOn_health' extended events session on 'SQLDB2'.         Creating availability group 'Paswordstate'.         Waiting for availability group 'Paswordstate' to come online.         Creating Availability Group Listener 'ag-listener1'.         Joining secondaries to availability group 'Paswordstate'.         Validating Windows Failover Cluster quorum vote configuration.         Creating a full backup for 'passwordstate'.         Restoring 'passwordstate' on 'SQLDB2'.         Backing up log for 'passwordstate'.         Restoring 'passwordstate' log on 'SQLDB2'.	Starting the 'AlwaysOn_health' extended events session on 'SQLDB2'.       Succe.         Creating availability group 'Paswordstate'.       Succe.         Waiting for availability group 'Paswordstate' to come online.       Succe.         Creating Availability Group Listener 'ag-listener1'.       Succe.         Joining secondaries to availability group 'Paswordstate'.       Succe.         Validating Windows Failover Cluster quorum vote configuration.       Succe.         Creating a full backup for 'passwordstate'.       Succe.         Restoring 'passwordstate' on 'SQLDB2'.       Succe.         Backing up log for 'passwordstate'.       Succe.         Restoring 'passwordstate' log on 'SQLDB2'.       Succe.

 If you now connect to your secondary server, you will now see the Passwordstate database has been added, and it is synchronizing



• If you run open the Always On Dashboard, you will also see information about this new Group including its health and the current primary database etc.



### 8 Configuring Passwordstate to work with Always On Group

The **passwordstate\_user** account is used to connect the Passwordstate website to the database. To ensure Passwordstate can connect correctly, we need to ensure the passwordstate\_user account has the same **SID** on both database servers. This process below will need to be completed to ensure if the databases failover, then the Passwordstate website will still be accessible.

• When connected to your **SQLDB1** server, run the following query in **SQL Management Studio Tools**:

SELECT SUSER\_SID ('passwordstate\_user')

• Take note of the output and copy it into clipboard

File Edit View Query Project €	XXIsand (68))* - Microsoft SQL Server Management Studio Ebug Tools Window Help New Query 🛢 🔊 옮 බ 이 🔏 다 습   🄈 - 🤇 -   🛛   👘 - ▷ Execute Debug = 🗸 많 클 🔒 많 않 🕶   🗐 🇃 🗗   크 🤨 - 王 두 ! 🍩 -		k Launch (Ctrl+Q) - 🎵 Gen	Р – □ ×
Object Explorer 🛛 👻 🕂 🗙	SQLQuery1.sql - SQ(HALOX\Isand (68))* 🗢 🗙 Passwordstate:SQLDB1		Properties	<b>-</b> ↓ ×
Connect - 🛱 🍟 🗏 🝸 🖒 🚸	SELECT SUSER_SID ('passwordstate_user')	÷	Current connection	parameters 👻
SQLDB1 (SQL Server 14.0.1000.169 - H		1		
Databases				
E Security		- 11	<ul> <li>Aggregate Status</li> <li>Connection failure:</li> </ul>	<b>^</b>
🗉 🛑 Server Objects		- 11	Elapsed time	00:00:00.156
🗉 📁 Replication		- 11	Finish time	25/05/2018 11:18:56 A
😠 🛑 PolyBase		- 11	Name	SOLDB1
🗉 🛑 Always On High Availability		- 11	Rows returned	1
🗄 📕 Management		- 11	Start time	25/05/2018 11:18:56 A
		- 11	State	Open
⊞      B SQL Server Agent     B SQLDB2 (SQL Server 14.0.1000.169 - +		- 11	Connection	- P
			Connection name	SQLDB1 (HALOX\Isar
	100 % -		Connection Details	
		2	Connection elapse	00:00:00.156
	III Results 📲 Messages		Connection encryp	t Not encrypted
	(No column name)		Connection finish t	ii 25/05/2018 11:18:56 A
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	K I		Connection start ti	r 25/05/2018 11:18:56 A
			Connection state	Open
			Display name	SQLDB1
			Login name	HALOX\Isand
			Server name	SQLDB1
			Server version	14.0.1000
			Session Tracing ID	-
	Query executed succe   SQLDB1 (14.0 RTM)   HALOX\ sand (68)   master   00:00:00   1 ro	avs	Name The name of the conr	nection.
Ready	Ln 1	С	ol 40 Ch 40	INS

 On your Passwordstate web server open Notepad "As Administrator", open the c:\inetpub\Passwordstate\web.config file, and take note of the password being used in the connection string

Contraction of the second seco	-
ret tas rooms de may (fan) versions".Jet encodings"//fi-0*/> <cordigication></cordigication>	
(saciionizop same-"talerik.web.ul") (saciion name-"faileniae" type="Telerik.keb.UI.AadichebieConfigurationietton" allowGefinition="MachineToApplication" repuireMermission="faile" /> (saciion name-"failcompression" type="Telerik.Web.UI.AadichebieConfigurationSection" allowGefinition="MachineToApplication" repuireMermission="faile" /> (factionGroup)	
<pre>(/comfiguration&gt;) (commentionStrings) (ad name*PasseerdstatemactionString* connectionString="Data Source=sqLdSjJsitial Catalog=passeerdstatejuse= 10=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstate_use=passeerdstateusets</pre>	t" />
(//commetized/scrime)* (applarting="SetupDitage" values"Setup Complete" //	

 Next connect to SQLDB2 and run the following command in SQL Management Studio Tools, which will create the passwordstate\_user account on this server with the same SID. Ensure you insert the correct SID into this statement that you discovered above. Also ensure the password is set correctly:

USE [master]

GO

CREATE LOGIN passwordstate\_user WITH PASSWORD=N'Welcome01', SID=0x161D86476500E34EB821B6A0E766B89F, DEFAULT\_DATABASE=passwordstate, DEFAULT\_LANGUAGE=[us\_english], CHECK\_EXPIRATION=OFF, CHECK\_POLICY=OFF

GO

 Back on your Passwordstate webserver, change the Data Source to be your new listener instead of SQLDB1



• If your database servers are located on different subnets, you will also need to insert ;MultiSubnetFailover=Yes into your connection string as per below screenshot:

edulerConfigurationSection" allowDefinition="MachineToApplication" requirePermission="false" /> ompressionConfigurationSection" allowDefinition="MachineToApplication" requirePermission="false" />
="Data Source=pwslistener;Initial Catalog=passwordstate;User ID=passwordstate_user;Password=Welcome01;MultiSubnetFailover=Yes" providerName=
462f3f0496e1d32e8e02e82d9db8f975140f4d03006a9de725a755117d4c222a33cdad139e990fe56b8e8f7be001b6b08594ed" /> 1def25152c0afa72b8d248077f5b2f144ddac659484b3c511e05584aeaab8ba3338b9260e4550c13231578030fb3c8628cb77eadc1" />
90" /> 90" />

Save your web.config file and the install is now complete

If your Primary SQL Server is unavailable for any reason, then it will automatically failover to the second server. The time it takes to failover will depend on network bandwidth and database sizes, but for a small database it is only a few seconds.

#### Note:

When failing over the database, if there is a time delay this can cause the Passwordstate website to generate a connectivity error. In this case you can insert **;Connect Timeout=30** into your web.config file , inside the connection string as per below example:

	,.
<connectionstrings></connectionstrings>	
<add connectionstring="Data Source=demoserver01.net;Initial Catalog=passwordstate;User ID=passwordstate_user;P&lt;/p&gt;&lt;/td&gt;&lt;td&gt;assword=XCL6ge7Mw1S#tG;Connect Timeout=30" name="PasswordstateConnectionString" pro<="" td=""></add>	
<appsettings></appsettings>	
Zadd kov-"SatusStaga" valua-"Satus Camplata" />	