Password State Enterprise Password Management

SQL Server Basic Availability Groups

for Passwordstate High Availability

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1 Overview

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

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

Please also be aware of the following SQL Server Limitations with Basic Availability Groups, as per Microsoft's documentation:

- Limit of two replicas (primary and secondary)
- No read access on secondary replica
- No backups on secondary replica
- No integrity checks on secondary replicas
- No support for replicas hosted on servers running a version of SQL Server prior to SQL Server 2016 Community Technology Preview 3 (CTP3)
- Support for one availability database
- Basic availability groups cannot be upgraded to advanced availability groups.
- Basic availability groups are only supported for Standard Edition servers.
- Basic availability groups cannot be part of a distributed availability group.
- You may have multiple Basic availability groups connected to a single instance of SQL Server.

2 Prerequisites

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

- You will need to have SQL Server 2016 (or above) Standard 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					- 🗆	×
File Action View Help						
 SQL Server Configuration Manager (Local) SQL Server Services SQL Server Network Configuration (32bit) SQL Server Network Configuration (32bit) SQL Server Network Configuration SQL Server Network Configuration SQL Server Network Configuration 	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	
	<					>

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	- 🗆 X
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 Server Roles	To remove roles, role services, or features: Start the Remove Roles and Features Wizard
Features Confirmation Results	Before you continue, verify that the following tasks have been completed: • The Administrator account has a strong password • Network settings, such as static IP addresses, are configured • The most current security updates from Windows Update are installed
	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		-		×
Select installation	type	DESTINA sql	ATION SERV Idb1.halox.	/ER net
Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	 Select the installation type. You can install roles and features on a running obvice machine, or on an offline virtual hard disk (VHD). Role-based or feature-based installation Configure a single server by adding roles, role services, and features. Remote Desktop Services installation Install required role services for Virtual Desktop Infrastructure (VDI) to create a or session-based desktop deployment. 	rcompute	er or virtu achine-ba	ial
	< Previous Next > Ins	tall	Cance	:I

 Select your server and click Next 	
---	--

📥 Add Roles and Features Wizard				-		×
Select destination	server			DESTIN so	ATION SERVi aldb1.halox.n	ER het
Before You Begin	Select a server or a virtual h	ard disk on which t	o install roles and features.			
Installation Type	 Select a server from the 	server pool				
Server Selection	O Select a virtual hard disk	c				
Server Roles	Server Pool					
Features						
	Filter:					_
Results	Name	IP Address	Operating System			
	sqldb1.halox.net	10.0.0.146	Microsoft Windows Server	2016 Standard		
	1 Computer(s) found					
	This page shows servers that	t are running Wind	ows Server 2012 or a newer	release of Wind	Serve	ar l
	and that have been added b newly-added servers from v	by using the Add Se which data collectio	ervers command in Server Ma n is still incomplete are not s	anager. Offline : hown.	servers and	d
	-					
		< Prev	ious Next >	Install	Cancel	

Leave the defaults and click Next • 📥 Add Roles and Features Wizard Х 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 Services Active Directory Certificate Service
Active Directory Domain Services Server Roles (AD CS) is used to create Active Directory Federation Services
 Active Directory Lightweight Directory Services certification authorities and related Features role services that allow you to issue and manage certificates used in a Active Directory Rights Management Services variety of applications. Device Health Attestation DHCP Server DNS Server Fax Server File and Storage Services (2 of 12 installed) Host Guardian Service Hyper-V MultiPoint Services Network Policy and Access Services Print and Document Services Remote Access Remote Desktop Services Volume Activation Services Web Server (IIS) Windows Deployment Services < Previous Next > Install Cancel

Add Roles and Features Wizard	4		- 🗆 X
Select features			DESTINATION SERVER sqldb1.halox.net
Before You Begin	Select one or more features to in:	stall on the selected server.	×
Installation Type	Features		Description
Server Selection	NET Framework 3.5 Feat	Ires	Failover Clustering allows multiple
Server Roles	 Inter Framework 4.6 Feature 	ures (2 of 7 installed)	servers to work together to provide
Features	Background Intelligent Tr	ansfer Service (BITS)	high availability of server roles. Failover Clustering is often used for
Confirmation	BitLocker Drive Encryptio BitLocker Network Unloc	n 🚬 Add Roles and Features V	Vizard
Rosulte	BranchCache		12310
	Client for NFS	Add features that an	e required for Failover Clustering?
	Data Center Bridging	Add readines that an	e required for railover clustering:
	Direct Play	The following tools are rea	quired to manage this feature, but do not
	Enhanced Storage	have to be installed on the	e same server.
	Group Policy Manageme	Remote Server Admir	nistration Tools
	I/O Quality of Service	 Feature Administr 	ration Tools
	IIS Hostable Web Core	 Failover Cluste 	ering Tools
	IP Address Management	[Tools] Fail	over Cluster Management 1001s over Cluster Module for Windows PowerShe
	iSNS Server service		
	LPR Port Monitor		
	<		
		<	,
		Include management	t tools (if applicable)
			Add Features Cancel

Confirूက install	ation selections	DESTINATION SERVER sqldb1.halox.net
Before You Begin	To install the following roles, role services, or features on selected se	erver, click Install.
Installation Type	Restart the destination server automatically if required	
Server Selection	Optional features (such as administration tools) might be displayed	on this page because they have
Server Roles	been selected automatically. If you do not want to install these optic their check boxes.	onal features, click Previous to clear
Features		
Confirmation	Failover Clustering	
Results	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	/

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

- 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 Cluster Manager						
File Actio	n View Help					
🔶 🏟 🛛 🖬						
📲 Failover	Validate Configuration	er Manager 🔷	Actions			
	Create Cluster 🔪 🛹	ailover clusters, validate	Failover Cluster Manager			
	Connect to Cluster.	orm configuration changes to	📲 Validate Configuratic			
	View	- over clusters.	🍓 Create Cluster			
	Defeash	riew	📲 Connect to Cluster			
	Refresh	er is a set of independent	View			
	Properties	t work together to increase the	🔕 Refresh			
	Help	nodes) are connected by	🛅 Properties			
nodes fails, ar services. This		another node begins to provide is process is known as failover.	🛛 Help			
	Clu: Name	sters				
		No items found.				

Select Next

Before You Begin Select Servers Validation Warning Access Point for Administering the Cluster Cluster Confirmation Creating New Cluster Summary More about Microsoft support of cluster solutions that have passed validation tests More about Microsoft support of cluster solutions that have passed validation tests	Create Cluster W	ou Begin	×
Next > Cancel	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	

• 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	 Yes. When I click Next, run configuration validation tests, and then return to the process of creating the cluster. 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. 	
	< 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 Wiz	zard				×
	oint for Administ	tering the Cl	uster		
Before You Begin Select Servers	Type the name you v	vant to use when a	dministering the cluster.		_
Validation Warning	Cluster Name:	pwscluster			_
Access Point for Administering the Cluster	The NetBIOS nan automatically. For address.	ne is limited to 15 c or each network to	haracters. One or more IPv4 be used, make sure the netw	addresses could not be configure ork is selected, and then type an	d
Confirmation		Networks		Address	7
Creating New Cluster			10.0.0/24	10.0.0.149	
Summary				1	
					- 1
			< Previous	Next > Cancel	

• Click Next

🏶 Create Cluster Wiz	rard X
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	soldb2 halox net	
Cluster	sgldb1.halox.net	
Confirmation	Cluster	
Creating New Cluster	pwscluster	
Summaru	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	X
File Action View Help							
🗢 🄿 🖄 🖬 🛿 🖬							
🍓 Failover Cluster Manager	Nodes (2)					Actions	
✓ ₩ pwscluster.halox.net	Search			Q,	Queries 🔻 🔚 🔻 👽	Nodes	
Roles	News	Orthur	Assistent Mate	Constitute	Ch-	Add Node	
Storage	H and the second	Status	Assigned vote	Current Vote	Site		
Networks	sqiab i	() () () () () () () () () () () () () (VIEW	
📕 Cluster Events	sqldb2	() Up	1	0		🖸 Refresh	
_						👔 Help	
	<				>		
	*						

6 Enable AlwaysOn Availability Groups

To enable AlwaysOn Availbility 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.

Sql Server Configuration Manager				_	
File Action View Help					
SQL Server Configuration Manager (Local)	Name	State	Start Mode	Log On As	Process ID
SQL Server Services SQL Server Network Configuration (32bit)	SQL Server (MSSQLSER	VER) Running	Automatic	HALOX\sqlservice	2996
> 💂 SQL Native Client 11.0 Configuration (32)	SQL Server Browser	Running	Automatic	NT AUTHORITY\LO	1380
J. SQL Server Network Configuration SQL Native Client 11.0 Configuration	Lipisote server Agent (Mi	SQL Server (MSSQLSERVER) Pro	operties	? × ```	4000
S 2 SQL Wadve Client 11.0 Configuration		Log On	Service	FILESTREAM	
		AlwaysOn High Availability	Startup Parameters	Advanced	
		Windows failover cluster name:			
		pwscluster			
		✓ Enable Alwayc⊖n Availability	v Groups		
		Allow this instance of SOL Se	rver to use availability grou	ups for high	
		availability and disaster reco	very.		
		OK	Cancel Apply	Help	
<	<				>

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

7 Configure Basic Availability Groups

We will now create a Basic 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.
 (Note, on older versions of SQL you may need to tick a box on this screen called 'Basic Replication')

👸 New Availability Group		– 🗆 🗙
Specify Availability	/ Group Options	
Introduction		🕢 Help
Specify Options	Specify availability group options	
Select Databases Specify Replicas	Availability group name: Passwordstate	
Select Data Synchronization	Cluster type: Windows Server Failover Cluster 🗸 🗸	
Validation	🖓 🚽 🖉 Database Level Health Detection	
Summary	Per Database DTC Support	
Results		
	< Previous	Next > Cancel

• Tick the **Passwordstate** database and click **Next**:

👸 New Availability Group		Ĵ		_		×
Select Databases						
Introduction					@ F	Help
Specify Options	Select user databa	ses for the availability	group			
Select Databases	User databases on t	his instance of SOL Serv	er:			
Specify Replicas	Name	Size	Status	Password		
Select Data Synchronization	🗹 passwordstate	9.5 MB	Meets prerequisites			
Validation						
Summary						
Results						
					Refrest	h
				+		
			< Previous	Next >	Cance	:1

• 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 Specify Options Select Databases Specify Replicas Select Data Synchronization Validation Summary Results	Specify an instance of S Replicas Endpoints E Availability Replicas: Server Instance SQLDB1	QL Server to h Backup Preferen Initial Role Primary	ost a secondary re ces Listener Automatic Failover (Up to 3)	plica. Synchronous Commit (Up to 3)	Readable Seco		
	< Add Replica Summary for the repli Replica mode: Asynch This replica will use async occur during failover. Readable secondary: In the secondary role, this Required sync second	Remov ca hoste ronous con chronous con Auti No s availability ary replica	Connect to Server ver type: ver name: hentication: User name: Password:	SQL Database E SOLDE2 Windows A HALOX Rem Connect	Server roine withentication Vasand cancel	Help	Coptions >>

• Select the Automatic Failover option and Synchronous Commit for both databases.

👸 New Availability Group					-	
Specify Replicas						
Introduction Specify Options Select Databases	Specify an instance of S Replicas Endpoints I	SQL Server to Backup Prefere	host a secondary i nces Listener	replica.	/	🕜 Help
Specify Replicas	Availability Replicas:	•			/	
Select Data Synchronization Validation	Server Instance	Initial Role	Automatic Failover (Up to 2)	Synchronous Commit (Up to 3)	Readable Seco	ondary
Summary	SQLDB1	Primary			No	~
Results	SQLDB2	Secondary			No	~
	Add Replica	Remove Re	plica	/)	\	ß
	Summary for the repli	ica hosted by	SQLDB2			
	Replica mode: Synchronous commit with automatic failover This replica will use synchronous-commit availability mode and will support both automatic failover and manual failover. Readable secondary: No In the secondary role, this availability replica will not allow any connections.					
	Required sync secondary replicas to commit					
				< Previous	Next >	Cancel

• 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	specity an instance of squ				
Specify Replicas	Replicas Endpoints Bac	kup Preferences Listener			
Select Data Synchronization	Specify your preference to	r an availability group listener that will provide a cli	ent connection	point:	
Validation	O Do not create an avail You can create the lists	ability group listener now ner later using the Add Availability Group Listener d	lialog		
Summary			naiog.		
Results	Specify your listener pr	roup listener eferences for this availability group.			
	Lister on DNS Names				-
	Listener Divs ivame:	pwsistener			-
	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	-		×
Select Initial Data	Synchronization		
Introduction		🕜 H	lelp
Specify Options Select Databases	Select your data synchronization preference.		
Specify Replicas Select Data Synchronization	SQL Server automatically creates databases for every selected secondary replica. Automa requires that the data and log file paths are the same on every SQL Server instance partic availability group.	tic seeding ipating in th	e
Validation	Full database and log backup		
Summary Results	Starts data synchronization by performing full database and log backups for each select: These databases are restored to each secondary and joined to the availability group. Mal share is accessible to all replicas and is mounted to the same directory on all Linux replic	d database. e sure the fi as.	ile
	Specify the file share path in Windows format:		
	\\SQLDB1\Backup	Browse.	
	Specify the file share location in Linux format:		
	 Join only Starts data synchronization where you have already restored database and log backups t secondary server. The selected databases are joined to the availability group on each sec Skip initial data synchronization Choose this option if you want to perform your own database and log backups of each database. 	o each ondary. orimary	
	< Previous Next >	Cance	

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

👸 New Availability Group	-		×
Validation 🔓			
Introduction		🕜 H	elp
Specify Options	Besults of availability group validation		
Select Databases			
Spacif - Paplicas	Name	Result	:
Specify Replicas	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	<u>is</u>
Validation	Checking for the existence of the database files on the server instance that hosts seconda	Succes	<u>is</u>
Summany	Checking whether the endpoint is encrypted using a compatible algorithm	Succes	<u>(5</u>
Summary	Checking shared network location	Succes	<u>is</u>
Results	Checking replica availability mode	Succes	<u>a</u>
	Re-rur	ı 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 Service account: HALOX\sqlservice Automated backup priority: 50 - Server instance name: SQLDB2 - Role: Secondary • Script < Previous Finish Cancel

• You should now see a successfully completed wizard

Results	_	
Introduction Specify Options Select Databases Specify Replicas	The wizard completed successfully.	🍘 Help
Select Data Synchronization Validation Summary Results	Name Configuring endpoints. Starting the 'AlwaysOn_health' extended events session on 'SQLDB1'. Configuring endpoints. 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'. Joining 'passwordstate' to availability group 'Paswordstate' on 'SQLDB2'. Joining 'passwordstate' to availability group 'Paswordstate' on 'SQLDB2'.	Result Success Success
	< Previous Next >	Close

 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

SQLQuery1.sql - SQLDB1.master (HALC) File Edit View Query Project B O O ID ID ID ID ID View Y Imaster ID ID <td< th=""><th>X\Isand (66))* - Microsoft SQL Server Management Studio Ebug Tools Window Help New Query 圖 읎 읎 읎 옶 요 ★ 라 읍 ? • < > ⊠ </th><th>Quic</th><th>: Launch (Ctrl+Q) → ☐ Gene</th><th>P _ C X</th></td<>	X\Isand (66))* - Microsoft SQL Server Management Studio Ebug Tools Window Help New Query 圖 읎 읎 읎 옶 요 ★ 라 읍 ? • < > ⊠	Quic	: Launch (Ctrl+Q) → ☐ Gene	P _ C X
Object Explorer 🛛 👻 🖡 🗙	SQLQuery1.sql - SQ(HALOX\Isand (68))* 😐 🗙 Passwordstate:SQLDB1		Properties	- ┦ ×
Connect - # *# = 🔻 🖒 🚸	SELECT SUSER_SID ('passwordstate_user')	÷	Current connection p	arameters 🔹
R SOLDB1 (SOL Server 14.0.1000.169 - H				
Databases				
🕢 🔲 Security		- 11	Aggregate Status	
🗉 📁 Server Objects		- 11	Elanced time	00-00-00 156
🗉 🛑 Replication		- 11	Einish time	25/05/2018 11/18/56 4
🗉 🛑 PolyBase		- 11	Name	SOLDB1
🗉 🛑 Always On High Availability		- 11	Rows returned	1
🕢 🔲 Management		- 11	Start time	25/05/2018 11:18:56 A
Integration Services Catalogs Integration Services Catalogs		- 11	State	Open
SOLDB2 (SOL Server 14.0.1000.169 - H		- 11	Connection	
			Connection name	SQLDB1 (HALOX\Isar
	100.8% (. ×	Connection Details	
		·	Connection elapsed	00:00:00.156
	🖽 Hesults 🗊 Messages		Connection encrypt	Not encrypted
	(No column name)		Connection finish ti	25/05/2018 11:18:56 A
	1 0x161D86476500E34EB821B6A0E766B89F		Connection rows ret	1
			Connection start tirr	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\Isand (68) master 00:00:00 1 rov	avs	Name The name of the conne	ection.
Ready			ol 40 Ch 40	

 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

and config-16 mpail	-
ie Bdt Formet View Help	
<pre>/wd version*1/d* encoding*UE-d*/> configuration> configuratio</pre>	Þ

 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'<mark>Welcome01</mark>', SID=<mark>0x161D86476500E34EB821B6A0E766B89F</mark>, 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



• 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 and in the connection string as per below example: