SQL Server "AlwaysOn" setup on ObserveIT environment

Overview

ObserveIT can be easily installed on a SQL Server AlwaysOn environment.

The AlwaysOn is part of Microsoft SQL Server Enterprise Edition and should be deployed in a Windows Cluster environment.

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Document versions

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This document uses screenshots and procedures written for Windows Server 2012 R2 and SQL Server 2014.

Prerequisites and assumptions for this document

- This document assumes a Custom Installation is performed and the prerequisites from the document "Perform Custom Installation" are met as well.
- Windows Cluster setup is required between 2 or more NODEs that will participate in the AlwaysOn environment, up to 8 NODEs are supported.
- Port 1433 For SQL Server connectivity needs to be opened on the firewall on all NODEs
- Port 5022 For SQL Server Always-On replication needs to be opened on the firewall on all NODEs

Create a DNS Entry for the AG-Listener

The AG-Listener (Availability Group) is the DNS Name that is used as the SQL Server Name during the installation of the Web-Console and Application Server(s).

The DNS record we use is of type "A" – Address and has a IP Address assigned to it.

à	DNS Manager			_ □	x
File Action View Help					
🗢 🏟 🖄 📰 🗙 🖬 🗟 🖬					
🚊 DNS	Name		Туре	Data	~
⊿ 📋 QA2012-DC1	SUP1W2012		Host (A)	10.2.110.106	
🛛 🚞 Forward Lookup Zones	S1-W7X86		Host (A)	10.2.110.107	
corpnet.local	S1-W7X64	N	Host (A)	10.2.110.108	
⊳ 🛐 danny-dom.local	WSUS-SUPP	6	Host (A)	10.2.110.110	
obsgpo.local	AO-LISTEN		Host (A)	10.2.110.111	
⊳ 🛐 obsqa.local	S2-WIN08SQ8		Host (A)	10.2.110.30	
obsqa1.local	C2 W(=2002.44 =:=		11	10 0 110 01	

Install a SQL Server as a new install or as a new Named-Instance

Install a new SQL Server stand-alone Enterprise Edition or install a new Named-Instance, again using an Enterprise Edition of SQL Server; same Server Collation should be selected

-NOTE: The following should be done on all the SQL Server NODEs on each of the Windows Cluster NODEs.



Select the Full-Text Search Feature

1	SQL Serve	er 2014 Setup	_	
Feature Selection Select the Enterprise features to	install.			
Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Setup Role Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Peature Configuration Rules Ready to Install Installation Progress Complete	Features: Instance Features Instance Features Sol, Server Replication Database Engine Services Sol, Server Replication Data Quality Services Reporting Services - Nation Shared Features Reporting Services - Shared Reporting Services - Shared Reporting Services - Shared Integration Services Image: Integration Services	c Estractions for Sea re ePoint for SharePoint Proc > C:\Program Files\Mic C:\Program Files\Mic C:\Program Files\Mic	Feature description: Includes the Search engine that support Full-Text Extraction for fast text search a as Semantic Extraction for key phrases (tags) and similarly search on content st Prerequisites for selected features: Already installed: Windows PowerShell 2.0 Windows PowerShell 2.0 Microsoft NET Framework 3.5 Microsoft SQL ServerA rosoft SQL ServerA Instrument Source ServerA	is A is well III likely V A ilable A ····
		< Back	Next > Cancel	Help

Make sure the same Collation is selected on all NODEs

1	SQL Server 2014 Setup	_ D ×
Server Configuration Specify the service accounts an	d collation configuration.	
Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Setup Role Feature Selection Feature Selection Feature Selection Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete	Service Accounts Collation Database Engine: SQL_Latin1_General_CP1_CLAS Latin1-General, case-insensitive, accent-sensitive, kanatype-insensitive, width-insensitive of Unicode Data, SQL Server Sort Order 52 on Code Page 1252 for non-Unicode Data	Customize
	< Back Next > Cancel	Help

Choose Mixed-Mode for the Authentication Mode

1	S	QL Server 2014 Setup	_ D X					
Database Engine Configuration								
Specify Database Engine auther	- ntication security mode, a	administrators and data directories.						
Global Rules	Server Configuration	Data Directories FILESTREAM						
Microsoft Update	Specify the systematic	instign mode and administrators for the Database Engli						
Product Updates	specify the authent	cation mode and administrators for the Database Engli	ie.					
Install Setup Files	Authentication Mod	le	N					
Installation Type	 Windows authen 	tication mode	13					
Product Key	Mixed Mode (SQ)	L Server authentication and Windows authentication)						
License Terms	Specify the passwor	d for the SQL Server system administrator (sa) account.						
Setup Role	Enter password:	•••••						
Feature Selection	Confirm password:	•••••						
Feature Rules								
Server Configuration	Specify SQL Server a	dministrators						
Database Engine Configuration	SUPP\administrator	r (Administrator)	SQL Server administrators have unrestricted access					
Feature Configuration Rules			to the Database Engine.					
Ready to Install								
Installation Progress								
Complete	Add Current User	Add Remove						
		< Back Next >	Cancel Help					

Update the SQL Server Service to Log-On as the Service Account

The following should be done on all the Windows Cluster NODEs for each of the SQL Server Service

All the nodes should be configured to run with the same service account.

à		Services					SQL Server	(AO)	Properties (Local Cor	nputer) 🛛 🗙
File Action View	Help					ſ	General Log On Reco	verv	Dependencies	
Þ 🔿 📰 🔄 🖪) 🕞 🚺 📷 🕨 🔳 🕕 🕩					ľ			o op on a on noise	
Services (Local)	News	Description	Charleson	Charles Trans	Les Os As		Log on as:			
Services (Local)	Name	Eachlas star	Dunning	Manual Manual	Log OT As		 Local System account 	nt		
	Contrary Logon	Drawides stat	Kunning	Manual	Local System		Allow service to i	nteract	with desktop	
	Construction of the second sec	The startup	Pupping	Automatic	Local Service		This account:	SUP	'P\oitao	Browse
	Conver	Supports fil	Running	Automatic	Local System		0			
	C Shell Hardware Detection	Drowides no.	Running	Automatic	Local System		Password:	•••	•••••	
	Smart Card	Manager ac	Kunning	Disabled	Local System		Confirm pageword:	•••		
	Smart Card Device Enumeration Service	Creater coft	Rupping	Manual (Trig	Local System		commi passiona.			
	Canad Canad Device Enumeration Service	Alleurs the s	Kunning	Manual Manual	Local System					
	CMR Witness	SMP Witnes		Manual (Tria	Local System					
	Child Tran	Becoives tra		Manual Manual	Local System		23			
	Software Brotection	Enables the	Pupping	Automatic (D	Network Service					
	Consola Helper	Allows adm	Kunning	Automatic (D	Local System					
	Special Administration Console Helper	Verifier pot		Manual (Trig	Local System					
	SOL Full-text Filter Daemon Launcher (AO)	Service to Ia	Rupping	Automatic	NT Septice MSSOLEDLa					
	SOL Server (AO)	Drovider rto	Rupping	Automatic	SLIDD\ oitao					
	SOL Server (AG)	Everyter in	Running	Automatic	NT Service\SOL AgentSA					
	SOL Server Rowcer	Provides SO	Running	Automatic	Local System					
	C SOI Server VSS Writer	Provides th	Running	Automatic	Local System	L				_
	C SSDP Discovery	Discovers n	Ranning	Disabled	Local Service			l	OK Cancel	Apply
	C Storage Tiers Management	Ontimizes t		Manual	Local System	-				
	and storage ries management	optimizes the		manual	cocor system	_		\mathbf{r}	OK	Cancel
	\ Extended \ Standard /									

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Enable the Always-On feature from the SQL Server Configuration Manager

Open the SQL Server Configuration Manager, select the new SQL Server or new Named-Instance installation and check the 'Enable AlwaysOn Availability Groups', do this on all NODEs of the Windows Cluster.



Perform Custom Installation of ObserveIT Databases on NODE1

Please follow the instructions on the document "Perform Custom Installation" under the section "Installing the ObserveIT databases".

This should be done only on NODE1 of the Windows Cluster, the Active NODE.

Later the databases will be replicated to the rest of the NODEs automatically.

Configure the AlwaysOn Availability Group

Take full backup of ObserveIT's databases, this is a requirement before you can proceed



Right-Click and select 'New Availability Group Wizard...'



Name the Availability Group



Select the ObserveIT Databases

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- 1	New Availability Group	- 🗆 X
Select Database	5	
Introduction		Help
Specify Name	Select user databases for the availability group.	
Select Databases	User databases on this instance of SQL Server:	
Specify Replicas	Name 🔺 Size Status	
Select Data Synchronization	✓ ObservelT 1.3 GB <u>Meets prerequisites</u>	
Validation	✓ ObservelT_Analytics 1.3 GB <u>Meets prerequisites</u>	
Validation	✓ ObservelT_Archive_1 1.3 GB <u>Meets prerequisites</u>	
Summary	✓ ObservelT_Archive_Temp 1.3 GB <u>Meets prerequisites</u>	
Results	✓ ObservelT_Data 1.0 GB <u>Meets prerequisites</u>	
		Refresh
	< Previous Next	> Cancel

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Click 'Add Replica', add the second or more NODEs, Click 'Connect'

ä		New Av	ailabili	ty Group		_	□ X
Specify Replicas							
Introduction							@ Help
Specify Name	Specify a	n instance o	f SQL Se	rver to host	a secondary replic	a.	
Select Databases	Replicas	Endpoints	Backup	Preferences	Listener		
Specify Replicas	Availabil	ity Replicas:					
Select Data Synchronization Validation	Server li	nstance		Initial Role	Automatic Failover (Up to 2)	Synchronous Commit (Up to 3)	Readal
Summary	SUP1NC	DE1\AONO	DE1	Primary			No
Results							
	<						>
	Add R	eplica	Add A	zure Replica.	. Remove Re	plica	
	Replica This replic (with post	mode: Asyn ca will use asy sible data loss le secondar	chronous nchronou). ny: No	commit s-commit availa	ability mode and supp	ort only forced failov	er =
					< Previous	Next >	Cancel
el	Conne	ect to S	erver			x	

Microsoft SQL Server 2014						
Server type:	Database Engine	\sim				
Server name:	SUP1NODE2\AO	$\overline{}$				
Authentication:	Windows Authentication	$\overline{}$				
User name:	SUPP\administrator	$\mathbf{\nabla}$				
Password:						
	Remember password					
Connect Cancel Help Options >>						

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Make sure the 'Automatic Failover' are checked and the 'Readable Secondary' are configured to 'Yes', and click 'Listener'

- ñ	New Av	ailability Gr	oup		- 🗆 X
Specify Replicas	;				
Introduction					Help
Specify Name	Specify an instance of	SQL Server to	host a secondary	replica.	
Select Databases	Replicas Endpoints	Backup Prefere	nces Listener		
Spacify Replicas	Availability Replicas:				
Select Data Synchronization Validation	Server Instance	Initial Role	Automatic Failover (Up to 2)	Synchronous Commit (Up to 3)	Readable Seco
Summary	SUP1NODE1\AO	Primary	✓	✓	Yes
Results	SUP1NODE2\AO	Secondary	 Image: A start of the start of	✓	Yes
	<		Ш		>
	Add Replica	Add Azure Re	plica Remo	ve Replica	
	Summary for the repl Replica mode: Synch This replica will use synci and manual failover. Readable secondary In the secondary role, thi	ica hosted by ronous commit wi hronous-commit a : Yes s availability repli	SUP1NODE2\AO th automatic failover availability mode and ca will allow all conne	support both automa	tic failover
			< Prev	rious Next >	Cancel

Add the Listener: Type the Name, port and click 'Add' to add the IP Address

<u>10</u>	Ne	w Availability Group	_ 🗆 X
Specify Replicas	5		
Introduction			🕜 Help
Introduction Specify Name Select Databases Select Data Synchronization Validation Summary Results	Specify an instance of SQ Replicas Endpoints Bai Specify your preference for O Do not create an avail You can create the liste © Create an availability of Specify your listener pro- Listener DNS Name: Port: Network Mode: Subnet	L Server to host a secondary replica. Likup Preferences Listener ran availability group listener that will provide a client connection ability group listener now ner later using the Add Availability Group Listener dialog. proup listener ferences for this availability group. AO-LISTEN 1433 Static IP IP Address	W Hep
		Add	Remove
		< Previous Next >	Cancel

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Enter the IP Address and click 'OK'

. Q .		Add IP Add	dress		_ □	x
Subnet	10.2.0.0/16					~
Address						
IPv4 Address	10.2.110.111					
Subnet Mask	255.255.0.0					
IPv6 Address						
		2				
			ОК	Cancel	Help	

Click 'Next'

- <u>n</u>	New Availability Group				x	
Specify Replicas	5					
Introduction				0	Help	
Specify Name Select Databases Specify Replicas	Specify an instance of SQ Replicas Endpoints Bac Specify your preference fo	L Server to host a secondary replica. kup Preferences Listener an availability group listener that will provide a client connection	point:			
Select Data Synchronization	O Do not create an avail	ability group listener now				
Validation	You can create the listener later using the Add Availability Group Listener dialog.					
Summary	Create an availability group listener					
Results	Specify your listener preferences for this availability group.					
	Listener DNS Name:	AO-LISTEN				
	Port:	1433				
	Network Mode:	Static IP		~	-	
	Subnet	IP Address			1	
	10.2.0.0/16	10.2.110.111				
		Add	Rem	ove		
		< Previous Net >		Cance	21	

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All validations should 'Success' and press 'Next'

- <u>10</u>	New Availability Group	. 🗆 X
Validation		
Introduction		Help
Specify Name	Results of availability group validation.	
Select Databases	Name	Result
Specify Replicas	Checking whether the endpoint is encrypted using a compatible algorithm	Success
Select Data Sunchronization	Checking shared network location	Success
Select Data Synchronization	Checking for free disk space on the server instance that hosts secondary replica SUP1NODE2	Success
Validation	Checking if the selected databases already exist on the server instance that hosts secondary r	. <u>Success</u>
Summary	Checking for compatibility of the database file locations on the server instance that hosts sec	<u>Success</u>
Results	Checking for the existence of the database files on the server instance that hosts secondary r	Success
	Checking the listener configuration	Success
	Checking the availability mode compatibility between the primary and secondary replicas	Success
	Re-ru	n Validation
	< Previous Next >	Cancel

Click 'Finish'

- 1	New Availability Group	_ D X
Summary		
Introduction		🕜 Help
Specify Name	Verify the choices made in this wizard.	
Select Databases	Click Finish to perform the following actions:	
Specify Replicas Select Data Synchronization	Availability Group: OIT-AO-AG	^
Validation	Availability Group Listener: AO-LISTEN Automated backup preference: Secondary	
Summary	- Databases	
Results	ObservelT (Ans) Vice (13 GB) ObservelT Anshvice (13 GB) ObservelT Anshvice (13 GB) ObservelT Data (10 GB) ObservelT Data (10 GB) Initial data synchronization: Full Backup location: \SUPINODE \NOE Replica Replica mode Synchronous commit with automatic failover Repli	
		~
		Script 🔻
	< Previous Finish	Cancel

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Summary, this is how it should look with all components



ObserveIT components installation

Continue the installation following the 'Perform Custom Installation' document.

You will need to use:

For the database the AG-Listener DNS Name.

For the Application Server(s) use the Load-Balancer NODE name.